

Of Grafts, Interferences and Haploids: Speculative Reproduction and Biomachinic Time in Naomi Mitchison's *Memoirs of a Spacewoman*

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Naomi Mitchison's (1897–1999) science fiction novel *Memoirs of a Spacewoman* (1962) offers a speculative exploration of human-technology relations, particularly as they intersect with reproduction, interspecies communication and embodied scientific experimentation. This article argues that Mitchison's novel can be read as a sustained reflection on reproductive technologies, where bodies, affective relations and technoscientific practices merge into what we conceptualise as biomachines. The biomachine should here be understood as a formation that operates as a site of material reproduction, affective attachment and ethical negotiation. Through episodes involving grafting, haploid reproduction and interspecies interference, the novel stages reproductive scenarios that destabilise normative assumptions about gender, sexuality, ethics and the continuity of the self. Mitchison's protagonist, the spacewoman Mary, inhabits thresholds – of species, systems, places and temporalities – and functions as a reproductive actor across biological and machinic boundaries. Reading *Memoirs of a Spacewoman* through the lens of reproductive biomachines allows us to trace how processes of individuation unfold in entangled configurations of care, control and transformation as well as normative moral systems. The article thus positions Mitchison's novel as a feminist speculative archive that anticipates current concerns around biotechnological reproduction, post-human embodiment and technological mediation. Its imaginative rendering of biomachinic reproduction challenges logics of mastery and normalcy by foregrounding improvisation, vulnerability and ethical openness as conditions of life. In doing so, the novel not only reflects but expands contemporary debates on reproductive technologies, offering speculative insights into how time, relationality and technicity shape what counts as human life.

Reproductive Technologies and the Concept of the Biomachine

Reproductive technologies are central to contemporary debates about biomachines, from artificial wombs (Romanis, 2018; Bulletti *et al.*, 2023) and engineered embryos (Fogarty *et al.*, 2017) to grafted organs and interspecies chimeric embryos (Yamanaka, 2017). These technological formations challenge the boundaries between biology and technology, ethics and innovation, selfhood and otherness. In this article, we approach the biomachine not simply as a fusion of organic and mechanical components, but as a dynamic configuration that acts: as a technologically modified body, as a reproductive actor across species, and as a threshold where care, control and transformation are negotiated. We contend that speculative fiction offers a critical archive for exploring such biomachinic configurations, particularly where they intersect with reproductive experimentation and ethical ambiguity. Through a close reading of *Memoirs of a Spacewoman*, a 1962 novel by British author Naomi Mitchison (1897–1999), we examine how speculative narrative – in this case, a science fiction novel – renders visible the entanglements between communication, reproduction and technological embodiment. The novel offers a feminist vision of space travel, interspecies intimacy and experimental motherhood, and in doing so imagines the biomachine as a mode of becoming – biological, relational and temporal.

Our analysis centres on three reproductive scenarios – grafting, haploid reproduction and interspecies interference – through which Mitchison stages the biomachine as a generative yet unstable configuration that enables experimentation around forming a new, more inclusive feminist ethics, while simultaneously confirming normative moral boundaries along Western-centric, class and techno-optimist lines. These scenes challenge heteronormative and anthropocentric logics of reproduction while foregrounding vulnerability, improvisation and ethical negotiation as constitutive of life. As such, *Memoirs of a Spacewoman* does not merely depict futuristic reproductive possibilities; it explores the aesthetic and ethical conditions under which new forms of life might emerge.

We propose an understanding of the biomachine as a configuration that performs across ontological, ethical and relational registers. Drawing on the philosophy of Gilbert Simondon (2020), we approach life and embodiment not as pre-existing substances or stable categories, but as the effects of processes of individuation – of

becoming, differentiation and transformation. Simondon's theory invites us to think of the biomachine not as a hybrid of discrete parts (the biological and the mechanical), but as a dynamic site of modulation. As Elizabeth Grosz (2005: 46) writes in her reading of Simondon: 'Life is not a special kind of substance, a vital force that must be definitively distinguished from matter. Rather, for Simondon as for Bergson, life is a deviation of matter, one of the forms that matter generates'. Thus, biomachines are not prosthetic add-ons but technobiological processes that unfold across species, systems and timescales. They perform in ontological, ethical and relational registers, rendering visible how technoscientific mediation shapes affect, agency and embodiment.

By foregrounding reproductive technologies – grafting, non-normative gestation, interspecies kinship – we explore how Mitchison's novel makes thinkable a biomachinic logic of life that disrupts normative reproductive imaginaries. In what follows, we use this conceptual grounding to analyse how biomachinic reproduction unfolds across bodily, social and temporal dimensions in *Memoirs of a Spacewoman*. Ultimately, we suggest that the novel functions as a speculative feminist archive of reproductive technicity, one that speaks directly to contemporary concerns about how life is technologised, valued and imagined.

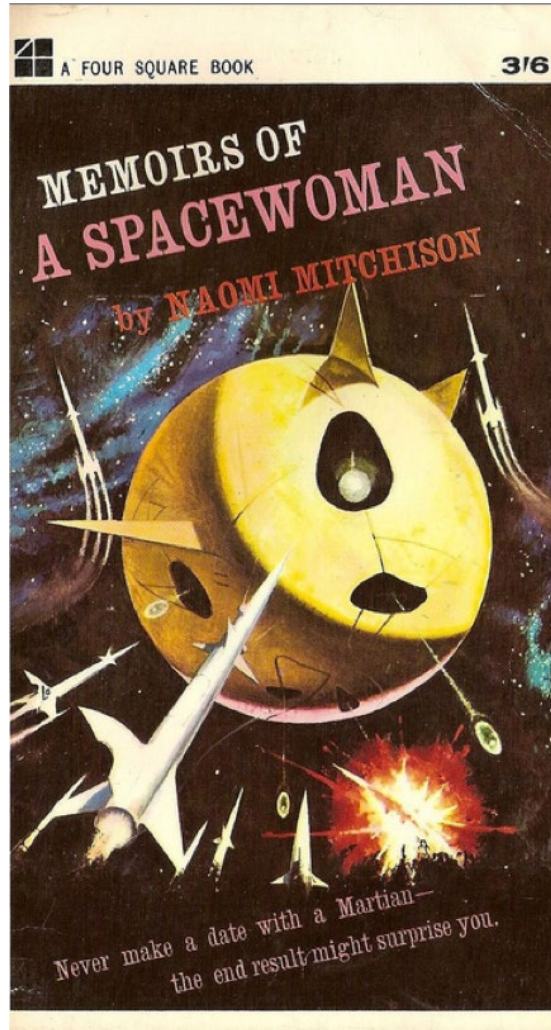


Figure 1. Front cover of the 1965 edition, designed by Rudolf Sieber-Lonati. The cover pictures a yellow ball with pointed fins – a space vessel or planet? – floating in outer space. The ball is surrounded by spiky, missile-like spaceships that approach it head on, exploding or avoiding it, while small droplets with what look like long tails shoot out of it. The scene makes visual reference to the meeting of egg and sperm moments before the formation of an embryo, but the reference is also inverted, given that the sperm-like droplet-tail elements apparently protrude from the egg while the machine vessels fly towards it. The cover's strapline – 'Never make a date with a Martian – the end result might surprise you' – sets a humorous frame around the unintended Martian pregnancy narrated in the book.

Grafting and the Experimental Womb

The novel's protagonist, Mary, is a woman from Terra, which we may presume to be either Earth or another Earth-like planet. A scientist by profession, Mary is the mother of five children born from her polyamorous and polyspecies choice of partners; she has also had a failed pregnancy arising from an implanted 'graft'. As an explorer who goes on expeditions with other scientists from Terra, she specialises in communication with the various non-human species she describes throughout the book, and she sometimes uses her own body to perform scientific experiments. This leads us to read the 'spacewoman' – a concept that features prominently in the novel's title – as a form of biomachine insofar as it renders the human body a vehicle for scientific engineering.

In the novel, pregnancy and childbearing are not only biological processes, but also a realm of scientific discovery and technological intervention. As 'Mother Mary', Mary thus has a dual nature. In the novel, Mary's biological body becomes pregnant; but as a scientist, she participates in experiments with the idea of 'grafting' other life forms onto bodies where they might develop. Initially these experiments only graft onto animals, including a Labrador dog, but when Mary offers up her own body for the experimental procedure, she feels an attachment to the growing body grafted onto hers, just as a pregnant woman might feel attached to a foetus growing in her womb (Mitchison, 2011: 45). However, the emphasis in the novel is not so much on bodily change or displacement as on the ways in which Mary's emotions – and potentially her subjectivity – are at stake in this interaction with an other. The graft is engrained in her body, which as a whole performs the function of a biomachinic womb insofar as it does the work of a life-sustaining container. Mary even suggests that biological women have an advantage in the grafting process: 'I don't believe this should be a man's job. You should get a woman to do it. She'd get a better relationship with the graft' (Mitchison, 2011: 45).

As she builds an emotional attachment to the foetus-like graft, moreover, Mary's physical body shows signs of human pregnancy: she stops ovulating, her breasts swell, her nipples darken, and she experiences nausea (Mitchison, 2011: 46–50). Indeed, we might say that an attachment is built to the point where Mary's gendered body communicates with her. But this communication goes against the grain of her scientific brain and thus performs a kind of tension between two forms of knowing, the biological and the scientific. Mary gives the graft the name Ariel, recalling the spirit rescued from

imprisonment inside a tree in William Shakespeare's *The Tempest*. In this way Mary simultaneously anthropomorphises the graft and centres it within Western and English culture, while also gesturing towards its otherworldliness and to the thingness of her own body. Notably, she lists the graft among her children in the book's opening paragraph, thereby stressing the familial connection between herself and the graft as a hazy continuum between the bio and the machine. The physical togetherness – Mary's donation of her body as a biomachinic incubator for another life form – becomes a vehicle for creating a long-lasting bond that begins while Ariel grows inside Mary's body (Mitchison, 2011: 53), even though they are not of the same species. However, Ariel eventually dies, and although the reasons are unknown, Mary suggests it may have been because of 'interference': 'Could it be that Ariel had absorbed too much of me?' (Mitchison, 2011: 54). The argument then becomes an ethical one: biochemical tests reveal that Mary is 'completely unchanged', but Mary's affection has changed her: again, science and biology, biochemistry and emotions, are at odds with one another.

This episode offers a particularly rich lens through which to understand the biomachine as a site where technoscientific control and affective entanglement interconnect. Mary's grafting experience reveals how she comes to conceive of her own body as a biomachine: a site of affective intensity, ethical complexity, and transformation through technological modulation which in and of itself facilitates a situated process involving vulnerability, care and corporeal negotiation. Her body becomes both interface and container: a life-sustaining vessel for a species other, and a surface across which emotional and ethical dynamics are inscribed. In this way, the grafting episode dramatises the porous boundary between experimental procedure and intimate attachment, and it highlights how biomachinic reproduction unsettles established distinctions between scientific detachment and emotional investment.

The question of interference – whether Ariel 'absorbed too much' of Mary – marks a key moment where affect and ethics converge. Rather than functioning as a failure of the experiment, interference becomes a measure of relational intensity in and through Mary's gendered physical body as more-than-container. Let us now consider how these dynamics unfold in Mitchison's depictions of interspecies interference and haploid reproduction, both of which extend this entanglement of reproductive labour, ethical uncertainty and machinic embodiment.

Interference

Mary is a scientist who performs ethnographic observational studies of the ways in which aliens on different planets communicate, and thus her space travels are in effect research trips. They require particular space travel technologies, the physical details of which remain unexplained in the book, although Mitchison offers the reader detailed speculations concerning what travelling vast distances across space might demand of human bodies conditioned by age and ageing. Moreover, Mary explains to the reader that space travellers undergo constant change due to their encounters with other worlds, or 'interference':

[One] must develop a stable personality and yet ... inevitably it will be altered by the other forms of life with which one will be in communication, [and] these bio-physical alterations must be accepted. And that can only be accepted by the stable. And that achievement of stability alone, even after what the mother has done in the first year, takes half an old-fashioned lifetime. (Mitchison, 2011: 9)

To explain what this means, Mary narrates her first ever space exploration, when she found herself radically altered by her attempt to communicate with species living on the planet Lambda 771. As literary scholar Ashley Maher (2020) suggests in her reading of Mitchison's novel, the work done by the individual during such processes of change can be understood in terms of maturation or even *Bildung*, a notion that speaks to the classical Western mindset of rationality and civilisation through technology and science, not to mention exploration as potential colonisation. However, throughout the novel, this normative framework is also contested in bodily and affective meetings with aliens and their worlds. For example, one of the species inhabiting Lambda 771 were what Mary calls 'radiates': somewhat resembling starfish, they had five tentacles that could be partially retracted or flattened, and which were studded with suckers that could grip onto tools (Mitchison, 2011: 11). They were a few centimetres in size, and their heads were crowned with a ring of 'brain-plus-eye material' (Mitchison, 2011: 14). Mary immersed herself in life with this group and did the slow, difficult work of beginning to communicate with them. Since they did not have names, she writes, 'slowly I began to forget my own name' (Mitchison, 2011: 19), and the encounter gradually changed her personality. Eventually, she reached a tipping point where she lost herself, and her cultural orientation, through her immersion in the *other* life world. Mary describes this experience as a pivotal and even cathartic learning

experience: because of their five-limbed bodies, the radiates required different forms of logic and communication from those entailed by the binary bodies that she ascribes to humans. It is humankind's 'two-sided brain, two eyes, two ears, and so on' that has led to humans' binary conceptions of 'either-or', as Mary explains:

They [the radiates] never thought in terms of *either-or*. It began to seem to me very peculiar that I should do so myself, and that so many of my judgments were pairs: good and evil, black or white, *to be or not to be* If alternative means, not one of two, but one, two, three or four out of five, then action is complicated and slowed It thus came about that with no sense of awkwardness, two or more choices could be made more or less conflicting though never opposite. Gradually I found myself getting into the same state of mind I was coming into tune with this five-choiced world. Naturally, I was not realizing it was affecting my own personality. (Mitchison, 2011: 18–20, emphases added)

Although, as we know from feminist thinkers such as Donna Haraway (1988), post-humanists such as Joanna Zylińska (2018) and postcolonial theorists such as Robin Wall Kimmerer (2015, such binary thinking may be ascribed to Western thought – as Mitchison can be seen to do by alluding to the canonical Western writers Shakespeare (to be or not to be) and Søren Kierkegaard (either-or) – rather than to human beings more broadly. However, Mary makes a clear connection between binary thinking and humans' biological composition as two-limbed bodies. Moreover, in this quotation we see how that binarism is shaken up by other types of bodies that open other configurations of thinking.

Her subsequent inability to make a choice between two options – about whether or not to return to Terra and have a baby with an attractive male scientist who is also on the mission – leads Mary to realise not only that she needs to find her own self, but also that she has to change it to get back in touch with what she sees as her humanity and, in turn, the binary thinking of the (particular) human culture from which she comes. Thus, she struggles to communicate with the *other* without becoming *other* to herself or to Terran culture. This process of interference, full of sorrow but also full of hope, is described in the novel as something that is particular to those who travel to other worlds – that is, particular to being a spacewoman. However, it is also described as a natural feature of the sequence of a life, and by drawing parallels between the process of maturation of a human being and that of a scientist, the novel establishes a normative

bond between modern science and human growth as maturation into adulthood. This is portrayed as part of a temporal process that happens as humans mature after they emerge from the 'first 35 years of nursery world' (Mitchison, 2011: 9). Mary writes: 'When I talk to people in my own age group, I often find that their personality took a knock on their first expedition, and then re-stabilized more firmly' (Mitchison, 2011: 24). This process of destabilisation spurs growth and self-reflection and thus is itself a civilising measure belonging to the modern Western world.

Interestingly, we are left to speculate as to whether Mary's life choice to have five children with five different fathers is related to her experience with the radiates' pentagonal culture, or if it has to do instead with the matriarchal culture that Mitchison ascribes to life on Terra, where biological women actively choose when and with whom they make babies. Although the novel portrays species that are able to shift gender, Mitchison does not challenge gender binaries as such; indeed, to some extent she enforces gender-normative thinking, for example by attaching maternal capabilities specifically to women. Moreover, the novel only gives us a glimpse into the life of a particular and presumably privileged group of people on Terra. We hear nothing of whether the space travel and scientific careers (or even matriarchal power over the choice of reproductive partner) are available only to a select few, or whether there is a silent class structure of men and/or women who are left behind on Terra to ensure the smooth running of those first 35 years of the nursery world. Mitchison herself occupied a privileged position that enabled her to cultivate an active writing career and life as a world traveller while also raising five children. At the time she was writing *Memoirs of a Spacewoman*, Mitchison's own children –three of whom had become scientists – were around the same age as Mary is when she undertakes her expeditions (Hoge, 1999; Jeger, 1999).¹ Nevertheless, Mitchison certainly challenges heteronormative binaries by presenting a matriarchal power system when it comes to reproduction, and also by conjuring up Mary's more-than-human and non-gendered children. After all, as Maher (2020) points out, her protagonist is not the traditional masculinised figure of the *Bildung* novel, but a middle-aged woman scientist.

By transplanting the anthropological encounter with the *other* – and other forms of relationship and procreation – to the speculative realm of science fiction, *Memoirs of a Spacewoman*'s carefully constructed narrative demonstrates that the self is malleable in the sense that it is built and changed in dialogue with the person's (or alien's) cultural and physical environment, including their body, and the sense of logic

inherent to that environment. The space traveller's relationships with the *other* and with *others* require a great deal of self-reflection, self-knowledge and self-preservation. Although the space traveller's scientific attitude entails an ethical concern about the need to resist interference, a certain kind of interference is nonetheless inevitable when the explorer is not just collecting specimens or rocks but actually wants to communicate with the other, insofar as that process includes coming to *understand* the other – even to some degree *becoming* the other, as we see in Mary's Martian adventures, to which we now turn.

Haploid Conception

In *Memoirs of a Spacewoman*, the body is a kind of machine; the womb is a kind of machine; the spaceship is a kind of machine; a planet, as a place for people, things and other beings to come together, is a kind of machine; but the most important machinic structure for Mary is the emotional nervous system, a biomechanical articulation for memory and relationship-building where her biological, scientific, cultural and class-based selves intersect. Converging or even coexisting in space, inside or outside a sexual relationship, these machines create an ethical bind that may or may not be tied to sexual reproduction or require a sex or gender. Although Mitchison implies that they have a female disposition, they unveil biomachinic reproduction as a material, affective and ethical practice that unsettles stable ontologies of the human. This takes us to another of Mary's expeditions, namely to Mars.

The problems Mary faces on Mars, caused by what she calls interference, make it all the more interesting that Martians – who, importantly in this context, are double-sexed non-humans – use a communication system that is the inverse of modern Western human civilisation. As Mary explains, the Martians 'rarely speak, or only indeed in what they consider embarrassing situations. They communicate through the highly educated tactile senses,' including 'tongue, fingers, toes, and sexual organs' (Mitchison, 2011: 55). This causes embarrassment, Mary notes, since earlier explorers reportedly had their trousers pulled off by the Martians, who 'asked very sympathetically if they weren't happier this way' (Mitchison, 2011: 57), and although the Martians eventually became accustomed to humans' strange coverings, Mary tells the reader that the Martians must have perceived the removal of clothes as way to break a human taboo, just as it was taboo for them to use words. During her stay on Mars, however, Mary experiences an emergency so severe that she needs help from a Martian named Vly, and she explains that the shock

of the emergency – the nature of which remains somewhat vaguely articulated in the novel – makes Vly take on and remain in a monosexual male form. During the intense communication required to make it through the crisis – remember that Martians communicate physically with ‘tongue, fingers, toes, and sexual organs’ – Mary accidentally has one of her eggs ‘activated’ (Mitchison, 2011: 62), setting pregnancy in motion as a biomachinic process. Mary worries about the outcome of her extraterrestrial pregnancy for several reasons, including ethically, and her emotional and cultural selves debate with her disposition as a utopian feminist scientist:

If this activation resulted in a living haploid, what would it be like? Probably small, female, infertile. The brain? The body? What right had I to create this entity? I knew it could never be normal, but could it be happy? Could it love? Would it be loved? By me? No doubt the thing could be stopped, not in the usual way with complete safety and certainty, but somehow. Yet, would not this be interrupting an interesting and perhaps valuable experiment? A haploid. The activation resulting in an offspring with none of the so-called father’s genes, but the mother’s doubled. (Mitchison, 2011: 62–63)

Mary’s knowledge of genetics tells her that going through with this pregnancy is a bad idea, but Vly’s influence and her own scientific urge to explore new forms of reproduction persuade her to go through with the pregnancy as an experiment, which – as the reader by this point in the novel already knows – leads to an important event in Mary’s life, namely the birth of Viola. Viola’s name is chosen because it is as close as possible to Vly (Mitchison, 2011: 64), but etymologically it has a bifurcating double meaning: the Latin name of the flower violet, and a stringed instrument of the violin family, thus encapsulating both the bio and the machine. As a haploid offspring with only Mary’s doubled genes, Viola becomes a paradigmatic biomachine: the outcome of affective encounter, technological mediation and ethical uncertainty.

Compared to the intensively monitored and corporeally invasive grafting procedure, the haploid conception emerges through sensory communication and unintentional activation, suggesting an unintentional but no less potent form of biomachinic reproduction. As Viola grows up, Mary has other children – her ‘normals’, as she calls them – with different fathers, whom she chooses deliberately. This contrast not only highlights different modalities of technoscientific reproduction but also foregrounds the

destabilisation of normative reproductive paradigms through which Mitchison uses speculative fiction to unlock alternative forms.

Yet reproductive experimentation in the speculative realm does not always have a happy ending. When another attempt at grafting goes haywire, Mary steps out of her intellectual scientific mindset, ‘ceasing to be a civilized scientist’ (Mitchison, 2011: 168) and falling ‘completely under the influence of my graft’ (Mitchison, 2011: 167), which gains independence and attempts to interfere with the reproduction. It all ends in the violent and bloody abortion of the graft, which is cut out of Mary with a scalpel, thereby indicating the life-and-death possibilities of the biomachine, possibilities that here depend on a human body as a life support. Although the link between Mary and the graft is so profound that they both bleed heavily, the graft does not survive. While Mary seems to have no ethical qualms about reproductive experimentation as such, she is deeply concerned about the fact that it has changed her so dramatically, marked as she is both by the scientific failure and by her sorrow at the loss of the graft, with which she built a relationship. Mary agrees to take a year off to restore herself, to ‘stabilize’ (Mitchison, 2011: 176). This is the same word she uses to refer to a mother’s actions during an infant’s first year, during which the mother is portrayed as a kind of vessel for the child before the latter becomes integrated into the world and leaves the mother free to pursue other interests. Again, we as readers are left to speculate about who does the dishes and takes care of Mary’s other children, as Mary takes a year off to get her scientific career back on track. Worried that the change may have taken hold of her, moreover, Mary sets out for Trondheim in Norway with a blond man called Peder to ‘engage in the traditional sport of making a baby’ (Mitchison, 2011: xviii), as the text puts it. Here Mary takes advantage of the spacewoman’s power as a biological woman to freely chose the biological fathers of children who are made ‘traditionally’, as it were, through intercourse, heteronormative relationships, and Mary’s biological and gendered body, in a very earthly geographical location.

Thus, although it does not use this terminology, *Memoirs of a Spacewoman* is full of biomachines and biomachinic encounters, indicating the spectrum of what a biomachine can be and what it can mean for human culture – not only positively, as a means to free and expand the minds and bodies of humans, but also to create chaos, trauma and disaster. In the fictional world, we encounter a number of different biomachines that can be placed along a continuum: from the scientifically engineered graft Ariel, to the haploid Viola as the result of interspecies intercourse, to Mary herself, the spacewoman of the

title, who – while distinctly human – is in continuous communicative relationship with other species and technologies, risks interspecies interference, and therefore undergoes continuous change. This raises the question not only of what form of maturation Mary undergoes, but also what form the memoir of spacewoman can actually take, and what kind of temporality it presents.

Temporal Manipulation and Queer Reproductive Time

Building on the previous sections' analysis of Mary's biomachinic reproduction – through grafting, haploid conception, interspecies interference and affective entanglement – we now consider how these reproductive scenarios are also temporal experiments, unfolding in syncopated rhythms that challenge normative life trajectories. The biomachinic processes explored above do not merely unfold in space or through bodies; they are also deeply temporal. In *Memoirs of a Spacewoman*, time itself becomes a medium of reproduction, stretched, paused, cycled and reconfigured through scientific expeditions, interspecies gestation and maternal care.

In the novel, the physics involved in intergalactic travel means that explorers experience 'time blackouts': during their space journey, time stands still. Consequently, when they return to Terra, they have not aged at the same speed as the people who remained there: for example, one might be the same age as one's own children, who will have grown up in the meantime. The halting of time involved in expeditions seems to make space explorers a privileged group or class: for example, the inability to take part in expeditions for one year after childbirth is a regrettable but necessary sacrifice, while a ban on participation in future expeditions is a punishment for those who transgress an expedition's rules. We must assume that many others remain on Terra for their entire lives. The halting of biological ageing processes through machinic interventions also suggests a biomachinic entanglement whose temporal, affective and ethical implications are key to the novel's negotiation of human and *other* taking place in an extended sense of now.

Time warps and the non-linear effects of extraterrestrial space-time are well-known themes in the science fiction genre. In *Memoirs of a Spacewoman*, the fictional narrative is a vehicle for speculation about what it would be like to travel massive intergalactic distances and to experience the strange temporal phenomena of the wider universe. For Mary, temporality and the experience of intersections between time and space are not neutral questions: time and life choices are

deeply intertwined. On the novel's very first page, she writes: 'Sometimes I think of my life in terms of time: my own time and the very different times of other people. And sometimes I think of it in terms of moral problems' (Mitchison, 2011: 5).

Some of the moral problems entailed by space travel's non-linear stretching of time concern reproduction and sexuality in a way that suggests different temporal registers – biological time (linear and cyclic), reproductive time, generational time, intergalactic time etc. When Mary's travels halt time, she effectively remains in the past, while Terra's inhabitants move into the future at the usual pace of planetary time measured by Terra's rotation and orbit. Moreover, not only do children and parents age asynchronously when the parents leave Terra; the lack of communication between space travellers and those remaining on Terra also leads to different forms of time gap. For example, when Mary was growing up, her own mother disappeared while on an expedition, but no one back on Terra knew about her disappearance – let alone what had actually happened to her – for many years. The event left Mary unwittingly motherless at a young age – a significant loss, we must presume in light of the novel's matriarchal world-building. As Mary explains, this asynchronism between generations led to scandals and problems during the early years of space travel, and parent-child relationships are now strictly organised according to ethical guidelines to avoid the possibility of Oedipal tragedies: parental love and affection must never be confused with romantic sentiments, regardless of the levelling of the age gap (Mitchison, 2011: 6). Nevertheless, asynchronism is an inevitable part of the work of the intergalactic space traveller, indicating some of the moral problems that can emerge when humans and technology – indeed, biomachines – emerge and interconnect in new ways.

Memoirs of a Spacewoman imagines a utopian feminist world where women's skills and contributions empower them on a par with men, and where they also exercise control of their own reproductive work. For Mary, scientific work means separation from her children, from Terran rhythms and temporalities, and from the cycles of her own gendered body; at times, this leads to dehumanisation as Mary herself takes on biomachinic forms. While her reproductive labour as a biological woman contributes to social reproduction of the Terran civilisation that Mary-the-scientist represents, the work of Mary's non-gendered scientific body – work whose conditions are improvisation and slow futurity – is bracketed off from, and supposedly thereby set free of, the work of the biologically gendered body. Although this bracketing takes a biomachinic route, the power relations and potential for liberation it entails are strictly human and

speak to the establishment of women as epitomising the modern, rational, civilising and superior intellect. However, when Mary's two bodies, gendered and non-gendered, intersect – as we see happen several times in the narrative – Mary's belief in the objectivity of her modern scientific training is shattered. Of course, this may seem a conundrum, or even a paradox: the more scientific developments take root and interlace with humans' bodies and minds, the more the very forms of thinking that brought those developments into being are thrown into question. The biological time of reproduction is both cyclic and linear, and its measures are length of pregnancy, whether biological or biomachinely activated or grafted; scientific time requires the halting of biological time during space travel, as well as involving significant time investment and even risk on the part of the scientist. The two times are sometimes harshly divided, sometimes in competition with each other, and sometimes intertwined through interference and biomachinic technologies. Nevertheless, Mary's biological and gendered body also endows her with some of her particular abilities as a scientist, thereby offering her the promise of qualitative growth as human civilising or *Bildung*.

We can tie *Memoirs of a Spacewoman's* various engagements with reproduction's impact on the human self with questions of temporality by way of the notion of 'queer time' (Edelman, 2004; Muñoz, 2009; Freeman, 2010; Halberstam, 2011). For Jack Halberstam (2005: 20), queer time describes the modes of temporality that emerge 'once one leaves the temporal frames of bourgeois reproduction and family, longevity, risk/safety, and inheritance'. Queer temporality focuses on 'the here, the present, the now' (Halberstam, 2005: 13), as opposed to the linear intergenerational promise of eternity through reproduction. It is notable here that the grafting experiments and the haploid child Viola take up the main part of Mitchison's narrative, emphasising their significance and their parity with Mary's 'normals'. This relationship between experiments with what constitutes life (Viola, Ariel) and 'normal' children can be likened to the novel's temporal negotiations of the narrative form, which challenge the traditional genre of the memoir foregrounded in the title. Focusing on the memoir genre allows us to explore the novel's tension, vacillation and sometimes convergence between an open-ended, speculative, utopian feminist ethics and the belief in modern science and civilisation. It also allows us to explore the novel's speculative insights into how time, relationality and technicity shape what counts as human life in a context where biomachines protrude all the way under human skin and into human reproductive systems.

Reading for the Plot?

Memoir is usually conceived as autobiography, often structured around coherent life arcs and identity development, often with an implicit ethos of *Bildung*. But in *Memoirs of a Spacewoman*, the narrative dwells more on embodied events, species interactions and ethical dilemmas, and personal development happens in bouts of transformative change. The memoir form becomes episodic, halting and speculative – reflecting a biomachinic temporality that is partial, affective and ethically open-ended.

The reception of the novel has focused on its episodic form. Notably, the editors of two different editions – Hilary Rubenstein in 1976, and Isobel Murray in 2011 – ask what kind of narrative this form creates. Rubenstein writes:

Memoirs of a Spacewoman bears little resemblance to a conventional novel: it has no significant beginning or climax, no plot, and its characterization, apart from that of the space heroine herself, is rudimentary[. It] simply tells a series of related anecdotes about inter-planetary travel. (Mitchison, 2011: vii)

Murray disagrees:

This is miles away from my experience of the novel. Mitchison's novel begins, not with spaceships or amazing rays but with a list of people. 'I think about my friends and the fathers of my children. I think about my children, but I think less about my four dear normals than I think about Viola. And I think about Ariel. And the other (S)'. For a novel without a plot, this opening certainly seems to promise one. (Mitchison, 2011: viii)

In content and form, *Memoirs of a Spacewoman* is indeed episodic, challenging linear notions of time, and this gives credence to Rubenstein's reading, suggesting that the answer to the question about narrative form may be not either-or but open-ended and sometimes self-contradictory. At the same time, as Murray points out, the novel does have a plot, one that concerns the quest for knowledge and Mary's growth – as a human and a scientist – through the various problems she encounters on her expeditions. The familiar home-away-home narrative structure is sedimented in various forms of family-building through the narrator's choice of fathers for her children, yet the repetition of this structure with different fathers (of

different species) also tears it away from a traditional heterosexual narrative framework.

Within the novel itself, Mary's life is stretched between space exploration – a suspension of personal time – and the human, linear, earthly time of procreation when women take a year off to share the 'slow time' of their infant. Murray sums this up:

By now we are beginning to be aware that this Memoir is basically a personal account which exists apart from an official record of the expeditions. Mary's account will irregularly include the fascination of attempting to understand the life forms she meets on different expeditions and the other fascination, her attitude to men, with a few of whom she will choose to have a baby, after which she will stabilize for a year before the next expedition (very happily, she loves babies!). So a certain pattern is created. (Mitchison, 2011: xi)

It is in this pattern, according to Murray, that we find the plot. Indeed, Murray's reading offers opportunities for us to think about the temporality of that plot in relation to the notion of the biomachine.

During the narrative turn of the 1980s, narrativity came to be broadly regarded as a fundamental and even universal way of representing experience. Despite frequent polemics to the contrary (e.g. Strawson, 2018: 480), a wide range of academic disciplines came to acknowledge that human beings experience their lives as narrative (Ricoeur, 1984–1988; Taylor, 1989; Bruner, 1987; Czarniawska, 1998). However, as we established above, a spacewoman is 'something other' than human in the traditional sense because she is altered through interference with other species. It therefore follows that the memoirs of a spacewoman must look different from traditional human memoirs, and we can use this notion as an entry point to consider what the memoirs of a spacewoman entail. This biomachinic temporality leaks and spills into the past as well as the future, but it is also a constant engagement with the now, and it feels the impact of the clash of temporalities, from the biologically cyclic or linear to the technologically asynchronous or halted. Moreover, it is thanks to this temporality that the novel – a work of speculative science fiction written in the 1960s – enables us to understand the temporal and species negotiations involved in today's biomachinic developments around reproduction, where assisted reproduction and bioengineering increasingly co-create how the technological, physical and affective aspects of reproduction's cyclic and linear temporalities are made possible and valued.

What emerges from *Memoirs of a Spacewoman*, then, is a temporality of biomachinic reproduction that deviates from both natural cycles and teleological life narratives. Whether through Ariel's failed integration or Viola's haploid singularity, reproduction is shaped by improvisation, interruption and asynchronous affective ties. This offers ways to understand reproductive technicity as a part of life that is neither dystopian nor utopian, and it unfolds the ambivalent, improvisational and vulnerable affective structure that comes with a deeply engrained form of ethical decision-making – thus uncomfortably pointing to the need for heightened reflexivity, or what Maher calls *Bildung*. In this sense, the novel does not simply depict alternative forms of reproduction; it enacts them, structurally and temporally. The memoir form itself becomes a biomachinic interface, assembling scattered fragments of care, grief and experimentation into a queer reproductive mode of narration. Rather than tracking linear development, the text foregrounds loops, stalls and transformations that challenge the coherence of self and species alike.

Conclusion: Mitchison's Speculative Archive of Past, Present and Future

Memoirs of a Spacewoman offers not only a speculative narrative of interstellar exploration and interspecies encounter, but also a feminist-ethical speculative archive of reproductive technologies. Through our analysis of grafting, interspecies conception and haploid reproduction, we have shown how Mitchison's episodic narrative unfolds across bodily, affective and temporal dimensions. These reproductive scenarios challenge assumptions about gender, embodiment and futurity. They are presented not as allegories or metaphors, but as speculative experiments in technobiological life that offer critical insights into how bodies and technologies co-constitute one another. By conceptualising these configurations as biomachines, we have traced how the novel reimagines reproduction as a material, affective and ethical practice that unsettles stable ontologies of the human.

To return to our earlier framing of the biomachine, the novel illustrates how technologically modulated reproduction operates at the intersection of ethical decision-making, affective attachment and systemic transformation. Mitchison's speculative imaginary positions the female reproductive body not as a naturalised site of care or continuity, but as an interface – responsive, experimental and deeply implicated in epistemic labour. Mary's body functions as what

Simondon (2020) might call a site of individuation, where processes of becoming – of self, species and technology – are not fixed, but continually negotiated. Following Simondon, we might understand these reproductive scenarios not merely as thematic elements, but as processes of ontogenetic individuation – acts through which the boundaries between species, technologies and temporalities become negotiable rather than fixed.

Memoirs of a Spacewoman thus contributes to a speculative feminist archive that allows us to think otherwise about contemporary biotechnologies and their sociocultural implications. Its portrayal of reproductive biomachines invites reflection on how emergent forms of care, control and communication unfold not only across bodies, but also across time. In a cultural moment where assisted reproduction and bioengineering increasingly mediate how life is produced and valued, Mitchison's narrative offers a vital resource: it enables us to imagine reproductive technologies beyond paradigms of mastery or crisis. Instead, it foregrounds vulnerability, improvisation and ethical openness as conditions of human technological being. In doing so, it contributes to contemporary debates in feminist theory, biopolitics and post-humanism by offering a model of reproductive technicity that is neither dystopian nor utopian but deeply entangled, ambivalent and generative.

Memoirs of a Spacewoman remains a prescient speculative document that helps to articulate the contours of a biomachinic future still in the making. In its episodic structure, temporal disruptions and reproductive experiments, it suggests that the memoirs we need today – and the life forms they recount – may already be mutating under the pressure of the machinic and the possible. Its archive is not a closed record, but an invitation to think with and through the biomachine as a site of speculative potential – where time, care and technological becoming intersect in open-ended configurations of life.

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Endnotes

1. Mitchison grew up in a wealthy family and became a prolific novelist, travel writer, feminist, socialist and political activist, publishing around 90 books during her lifetime. Described in the *Guardian* obituary as a 'compulsive traveller' (Jeger, 1999), she was an equally compulsive writer, producing fiction, memoirs and political commentary across continents as well as from the bustle of her home, Carradale House in Scotland. Mitchison supported her husband's political career as a Labour MP before he entered the House of Lords in 1964; she simultaneously pursued her own continuous writing projects and transnational engagements, including with the BaKgatla people in Botswana. Her writing was informed by her lifelong entanglement with questions of gender, science and social justice, and it often explored speculative futures shaped by feminist hopes and concerns. *Memoirs of a Spacewoman*, written while she was in her 60s, is one such work, situated at the intersection of scientific speculation and political imagination.