Women in Science Fiction
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Are Women Human?

In the previous lecture, we saw that many people in mid-nineteenth-century Britain were preoccupied with the question "Is man an ape or an angel?", a question which had, of course, been prompted by Charles Darwin's theory of evolution and then given considerable publicity by the gorilla sensation. The question of what (if anything) separated the great apes from humans created new interest in long-running debates about what defined human nature. In this lecture, I want to go back to the end of the eighteenth century and consider a question that had preoccupied earlier generations. In 1799, the English actress and novelist Mary Robinson wrote: "Let me ask this plain and rational question—is not woman a human being"?[1]

Science fiction offers some thought-provoking answers to that question, which are exemplified by analysing some of the stories that imagine the scientific creation of supposedly perfect woman. However, before we consider them, we need to understand that if most pre-eighteenth-century thinkers had been asked this question, they would have responded "of course not". Aristotle, for example, argued that only a man could be the head of a household, because he possessed the rationality that enabled him to rule over slaves (who had no freedom to think), children (who were too immature to think) and women (who were too emotional to think – at least, to think as clearly as men).[2] Unsurprisingly, since he was probably the single most influential philosopher in Western culture, Aristotle's views were echoed by many other writers. And during the medieval period, his philosophy was grafted onto the Judeo-Christian tradition of seeing women as morally weaker than men (it was Eve, after all, who was tempted and led Adam – and all of humanity – into sin). However, by the time Mary Robinson was writing, traditional sources of intellectual authority (religious and philosophical) were being challenged by the Enlightenment thinkers; despite their diversity, most agreed that human reason should replace ancient texts as the best guide to solving social and political questions.

Robinson's book was dedicated to the memory of Mary Wollstonecraft (1759–1797), the most famous eighteenth-century advocate of women's rights. We might assume that Wollstonecraft's answer to the question would be the same as the one we would give now ("of course"), but in fact even Wollstonecraft argued that women were not fully human, or at least not *yet*. She argued that the great struggle facing the women of her day was "to obtain a character as a human being"[3].

Wollstonecraft, like most Enlightenment thinkers, believed that rationality – the power of thought – was what separated humans from animals; she argued that God had endowed us, alone, with both immortal souls and minds with which to think. A human's duty was to use their power of reason to understand God and God's purposes, so that they could act virtuously.[4] As she put it:

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[1] *Letter to the Women of England, on the Injustice of Mental Subordination* (1799), quoted in: Eileen Hunt Botting, "Editor's Introduction: Reading Wollstonecraft's *a Vindication of the Rights of Woman*, 1792--2014," in *A Vindication of the Rights of Woman*, ed. Mary Wollstonecraft and Eileen Hunt Botting (New Haven: Yale University Press, 2020), 6.

[2] William W. Fortenbaugh, "Aristotle on Women: Politics I 13.1260a13," *Ancient Philosophy* 35, no. 2 (2015).

[3] Mary Wollstonecraft and Eileen Hunt Botting, eds., *A Vindication of the Rights of Woman*, 2nd ed. (New Haven: Yale University Press, 1792 (2020)), 31.

[4] Ruth Abbey, "Are Women Human? Wollstonecraft's Defense of Rights for Women," in *A Vindication of the Rights of Woman*, ed. Mary Wollstonecraft and Eileen Hunt Botting (New Haven: Yale University Press, 2020), 232.

"In what does man's pre-eminence over the brute creation consist? The answer is as clear as that a half is less than the whole; in Reason.

What acquirement exalts one being above another? Virtue; we spontaneously reply.

For what purpose were the passions implanted? That man by struggling with them might attain a degree of knowledge denied to the brutes."[5]

Wollstonecraft acknowledged that young children were at the mercy of their 'passions' and so were not yet ready to reason; they needed firm parental guidance and to be given clear, unambiguous rules to follow. However, as they grew and were educated, they became independent thinkers, able to take responsibility for their own actions – but only if they were male. While boys were being taught how to think for themselves, girls were only taught how to please: "they spend many of the first years of their lives in acquiring a smattering of accomplishments; meanwhile strength of body and mind are sacrificed to libertine notions of beauty", as they are taught how to improve their lot in "the only way women can rise in the world, —by marriage". As a result, women were never really allowed to grow up and "when they marry, they act as such children may be expected to act". Denied the opportunity to fully exercise the divine gift of reason, women would inevitably blight the next generation's minds by repeating the same kind of education that had been inflicted on them.[6]

One focus of Wollstonecraft's attack was her contemporary, the French philosopher Jean-Jacques Rousseau (who was widely regarded as Europe's foremost, progressive educational theorist). His educational ideas were most clearly expressed in his novel *Emile* (1762), which included a section (Book 5) that described the ideal education of Sophie, Emile's future spouse. Rousseau took it for granted that men and women were profoundly different. The major distinction in what he called "the moral relations of the two sexes" was that one "ought to be active and strong, the other passive and weak. One must necessarily will and be able, it suffices that the other put up little resistance".

"Once this principle is established, it follows that woman is made specially to please man. If man ought to please her in turn, it is due to a less direct necessity. His merit is in his power, he pleases by the sole fact of his strength. This is not the law of love, I agree. But it is that of nature, prior to love itself.

If woman is made to please and to be subjugated, she ought to make herself agreeable to man…"[7]

So, Rousseau insisted that women needed to be treated like children, subject to the power of wiser men; by contrast, Wollstonecraft argued that education should aim to "Strengthen the female mind by enlarging it". She noted that Rousseau himself had insisted that it was "a farce to call any being virtuous whose virtues do not result from the exercise of its own reason". And since that "was Rousseau's opinion respecting men: I extend it to women…"[8]

Wollstonecraft argued that the education and socialisation of women should equip them to take their place as equal citizens (and, in particular, to be fully qualified educators and guides to the young). Instead, society left them little better off than enslaved Africans, "subject to prejudices that brutalize them" in order "to sweeten the cup of man" (sugar was the most valuable commodity produced by slave labour, and the conditions under which it was produced were the most brutal that enslaved people faced). In 1791, the enslaved people of Haiti rose up, overthrew the slave-owners, proclaimed themselves a republic and forced France to abolish slavery throughout its empire in 1794 (until Napoleon reintroduced it a few years later). They took the ideals of the French revolution – liberty, equality and fraternity – seriously, and began the long struggle to transform them into genuinely universal *human* rights. Wollstonecraft had argued in her earlier *Vindication of the Rights of Men* (1790) that slavery was incompatible with the principles of Christianity, because Africans had also been created by God. If the French Revolution's ideals were to become genuinely universal, the same argument must apply to women, who had been created by God with the same potential and duties as men. As one of her contemporaries wrote:

"Thus Wollstonecraft, by fiery genius led,
Entwines the laurel round the female's head;

[5] Wollstonecraft and Botting, *Rights of Woman*, 37.
[6] Ibid., 32.
[7] Jean-Jacques Rousseau, *Emile, or on Education*, trans. Allan Bloom (New York: Basic Books, 1762 (1979)), 358.
[8] Wollstonecraft and Botting, *Rights of Woman*, 47–48.

Contends with man for equal strength of mind,
And claims the rights estrang'd from womankind".[9]

In Wollstonecraft's view, to deny women the opportunity to freely choose to act virtuously was "indirectly to deny woman reason", God's great gift to humanity. Women were educated to be "subordinate beings", and not "as a part of the human species".[10]

Hence Wollstonecraft's answer to the question "are women human" was – not yet, but they should be. Her ideas provide a perfect starting point for an exploration of what science fiction's depictions of women tell us about human nature, specifically about the role of reason in the definition of human. Wollstonecraft, of course, was the mother of Mary Shelley, whose book *Frankenstein, or the modern Prometheus* (1818) explored several of the themes in Wollstonecraft's work, notably the fundamental human rights to recognition, respect and parental care.[11] As Wollstonecraft wrote:

> *"A great proportion of the misery that wanders, in hideous forms, around the world, is allowed to rise from the negligence of parents; and still these are the people who are most tenacious of what they term a natural right, though it be subversive of the birth-right of man, the right of acting according to the direction of his own reason."[12]*

That image of misery "in hideous forms", caused by parental neglect could almost have inspired the poor, abandoned creature that Dr. Frankenstein brought into the world and then abandoned.

The British SF writer Brian Aldiss is one of many who have argued that *Frankenstein* should be considered the first SF novel, not least because it helped define what SF was. According to Aldiss:

> *"Science fiction is the search for a definition of man and his status in the universe which will stand in our advanced and confused state of knowledge (science), and is characteristically cast in the Gothic or post-Gothic mould."[13]*

Given that Aldiss' book is almost fifty years old, we might forgive him the then-typical use of 'man' to mean 'people', but it's worth thinking about what that old-fashioned habit reveals. Despite all that had changed since Aristotle's day, the assumption was still widely made that *male* people were the epitome of humanity, providing the standard by which everyone is measured. One of the things that created the conditions under which SF would eventually flourish was that a long series of eighteenth- and nineteenth-century thinkers argued that women were as human as men; gradually a literature emerged in which writers could explore the "definition of *woman* and *her* status in the universe". Was women's social inequality the result of innate, unalterable differences (as so many male philosophers and theologians assumed) or was Wollstonecraft right in arguing that women were educated into inferiority?

Almost like an SF writer, Wollstonecraft asked 'what if…'? What if women were given equal education, equal opportunities and equal respect? What would the world be like? She admitted that she didn't know, but the question refused to go away. Mary Shelley put the idea of creating an artificial life-form firmly into the public imagination and in the process opened up a whole new range of 'what if' questions. Shelley's story inspired numerous later writers to imagine alternative futures, where the very boundaries of life and nature were challenged. A large part of her story's power derives from the fact that Victor Frankenstein eliminated women from the process of creating life. (And it was his decision to deny his creature a mate – and thus the chance to reproduce, to found a family – perhaps a whole new species – which led to it turning on him.) The idea of completely bypassing the normal biological processes helped men imagine redesigning women according to their own specifications, desires and fantasies. Alongside these developments, increasingly sophisticated mechanical people – automata – were being created, which offered another way of imagining a perfect woman. (We will return to automata and their implications in the later lecture on robots.) The stories considered below are mostly about *men* making perfect women, and they tell us a lot about how men defined humanity and human nature. But eventually more women began to write scientifically inspired stories, in which they offered their own distinctive views as to what a perfect woman might be.

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[9] Colls, John Henry, "A poetical epistle addressed to Miss Wollstonecraft. Occasioned by reading her celebrated essay on the rights of woman, and her historical and moral view of the French Revolution" (London: Vernor and Hood, 1795: 19). Quoted in: Botting, "Rights of Woman," 9.
[10] Wollstonecraft and Botting, *Rights of Woman*, 174.
[11] Botting, "Rights of Woman," 9–10.
[12] Wollstonecraft and Botting, *Rights of Woman*, 184.
[13] Brian Wilson Aldiss, *Billion Year Spree: The True History of Science Fiction* (New York: Doubleday, 1973), 8.

Living Dolls

The founding myth that lies behind many of the artificial woman stories is that of Pygmalion, the sculptor whose statue comes to life. The Latin poet Ovid recorded Pygmalion's tale in his collection the *Metamorphoses*, where it appeared alongside numerous other examples of magical transformations. According to Ovid, Pygmalion was "dismayed by the numerous defects of character Nature had given the feminine spirit" and so decided to remain celibate.[14] He made an ivory woman, who so perfectly embodied his sense of the ideal of femininity that she came to life and he fell in love with her. As Julie Wosk argues, the numerous retellings of this tale make a familiar link: women are associated with nature, and their supposed imperfections are the reflections of inherent traits; men are linked with culture, including the worlds of art and technology. They alone are imagined as having the power to reshape nature (including women's natures) according to their expectations of supposedly proper male and female social roles.[15] Rousseau wrote a one-act opera *Pygmalion*, in which for the first time he gave the statue a name, Galatea (borrowed from the story of Acis and Galatea, which also appeared in the *Metamorphoses*). Ovid's tale has been retold many times, and clearly provided one of the sources for the numerous artificial woman stories that came later. However, statues coming to life remained firmly in the realms of myth and magic until the eighteenth century, when science began to make it possible to imagine the conscious creation of artificial people.

One of the earliest artificial woman stories was "The Sandman" (1816), written by E.T.A. [Ernst Theodor Amadeus] Hoffman, a polymathic German writer, composer, lawyer and musician.[16] It is a bizarre, Gothic tale that contains various passing references to German mythology, the occult, alchemy and other pre-scientific ideas (and was one of Freud's inspirations when he was working out his theory of the uncanny).[17] However, mixed in with all this were elements of the most up-to-date science of the day. The main character, Nathaniel, is a student of science, whose fictional teacher Spalanzani was clearly based on the Italian natural philosopher Lazzaro Spallanzani (1729–1799), whose work ranged from vulcanology and digestion to experiments with artificial insemination. He was best known for his book, *Prodromo di un opera da imprimersi sopra le riproduzioni animali* (Precursor of a Work to be Published Concerning Animal Reproduction), which led to him being appointed chair of natural history at the prestigious University of Pavia. His fellow countryman Luigi Galvani's *Memoirs on animal electricity* (1797) were dedicated to "the famous abbot Lazzaro Spallanzani".[18] Galvani (1737–1797) was a doctor, best remembered for his discovery that the muscles of a dead frog twitched when electricity was passed through them. Similar (but even more dramatic) experiments were done by Giovanni Aldini, who briefly re-animated human corpses using electricity. Aldini's most famous demonstration was done on the corpse of the executed criminal George Forster in 1803: onlookers reported that Forster's eyes opened, he raised and clenched a fist, and his legs moved. The seemingly intimate links between life and electricity were, of course, one of the inspirations for *Frankenstein*, where the creature is assembled from pieces of dead humans and then brought to life using electricity.

In Hoffman's story, Nathaniel falls in love with Spalanzani's daughter Olympia, who is "tall, very slim, perfectly proportioned and gorgeously dressed" (99). When he finally meets her at a party, her dancing is perfect but has a disconcerting "exactitude of rhythm" and her conversation is distinctly limited (all she ever says is "ah, ah, ah"). And when he finally kisses her, "his passionate lips encountered lips that were icy-cold", as were her hands, but they seem to "warm to life" as the kissing continues. One of Nathaniel's friends can't understand how he's fallen for a girl who seems like a "wax-faced doll", who moves as if "controlled by clockwork", and whose singing has the "unpleasant soulless regularity of a machine". By contrast, Nathaniel's imagination invests her with profound virtues, not least because she "refrains from the dull chatter which amuses shallow natures". Unlike his fiancé, Clara, Olympia listens to everything he says and never contradicts or interrupts him. She is completely passive and while listening, never fidgets, stares out the

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[14] Quoted in: Julie Wosk, *My Fair Ladies: Female Robots, Androids, and Other Artificial Eves* (New Brunswick, NJ: Rutgers University Press, 2015), 9.

[15] Ibid., 9--10.. See also, Sherry B. Ortner, "Is Female to Male as Nature Is to Culture?," *Feminist Studies* 1, no. 2 (1972).

[16] E.T.A. Hoffmann, "The Sandman," in *Tales of Hoffmann*, ed. E.T.A. Hoffmann and R.J. Hollingdale (Harmondsworth: Penguin Books, 1816 (2004)). All page references are to this edition.

[17] Although Freud made the concept famous (in *Das Unheimliche*, 1919) it had first been introduced by the German philosopher Ernst Jentsch (*On the Psychology of the Uncanny*, 1906). Like Freud, Jentsch Hoffmann's story to explain his concept, Silvia Micheletti, "Hybrids of the Romantic: Frankenstein, Olimpia, and Artificial Life," *Berichte zur Wissenschaftsgeschichte* 41, no. 2 (2018).

[18] https://wellcomecollection.org/works/gj6crun4

window, plays with her lapdog, or yawns (114–117).

Nathaniel's courtship of Olympia seems to be going smoothly until the sinister figure of Coppelius (who haunted Nathaniel's childhood and whom he identifies with the mythical Sandman of folk myth) reappears. He claims he owns Olympia, shouting "I made the eyes, I made the clockwork". When Nathaniel comes to find out what the noise is about, he discovers Spalanzani and Coppola fighting over Olympia. Coppola grabs Olympia and flees with her over his shoulder. "Nathaniel stood dumb with horror. He had seen all too clearly that Olympia's deathly-white face possessed no eyes; where the eyes should have been there were only pits of blackness—she was a lifeless doll!" (119–120). Olympia is an automaton, created by two fathers Spalanzani and Coppelius, whose biological and mechanical skills have combined to eliminate women from the process of creating new life. One inspiration for the tale was the increasing sophistication and complexity of eighteenth-century automata, but the repeated references to eyes (the windows to the soul) in Hoffmann's story are a reminder of that some mysterious essence of life was needed to bring the mechanical Olympia to life.

In the story, Spalanzani has to quit the university because his colleagues are outraged by the deception, he'd practiced on them. However, some of them claimed they had not been fooled, but had noticed that Olympia never yawned, yet often sneezed (to hide the sound of the clockwork being wound). As a result of the scandal:

> *"there stealthily arose in fact a detectable mistrust of the human form. To be quite convinced they were not in love with a wooden doll, many enamoured young men demanded that their young ladies should sing and dance in a less than perfect manner, that while being read to they should knit, sew, play with their puppy and so on, but above all that they should not merely listen but sometimes speak too, and in such a way that what they said gave evidence of some real thinking and feeling behind it. Many love-bonds grew more firmly tied under this regime; others on the contrary gently dissolved. … [and] To counter any kind of suspicion, there was an unbelievable amount of yawning and no sneezing at all at the tea-circles" (121–122).*

Various aspects of "The Sandman" reappear in later stories, including the use of the most up-to-date science to add a vague aura of plausibility to the story. Another theme that recurs in later stories is that the male ideal of female perfection is so limited: as long as Olympia looks good and doesn't fidget when he's mansplaining, that's good enough for Nathaniel. Hoffmann seems to satirise Nathaniel's ideal (hence the 'critical friend' who tries to alert him to the fact that everyone else thinks Olympia is staggeringly dull). However, the demand that women shouldn't be too perfect – for fear of being mistaken for automata – also offers a mocking critique of the supposedly ideal women. Perhaps, Hoffmann seems to hint, it is our imperfections that make us human? He certainly suggested that men don't really want what society's expectations makes them think they want – a compliant, passive, silent living doll. Such a creature would be utterly boring (to most men, at least).

One of the first stories to be directly inspired by "The Sandman" was by Villiers de L'Isle-Adam (1838–89), an impoverished French aristocrat who supported himself by writing. Among his works was *L'Eve Future* (*Tomorrow's Eve*, 1886), which quoted Hoffman's tale in one of its epigrams.[19] *Tomorrow's Eve* described how a fictionalised version of the American inventor Thomas Edison created a perfect, artificial woman for his friend, Lord Ewald, who was on the brink of suicide because he was in love with a woman, Alicia Clary, whose body is perfect but her mind is banal (according to Ewald, all she speaks are "platitudes, either inane or selfish", 190). Ewald asks, "Who will deliver this soul out of this body for me?" and Edison answers "I'LL DO IT" (43). He explains how he has created an 'android', which he will modify so that it resembled Alicia in every detail. However, instead of Alicia's mind, the android (who is called Hadaly), is built around two phonographs of unparalleled fidelity and made from "virgin gold" (because it "yields a more feminine resonance"), upon which Edison has recorded the world's greatest thoughts and songs (and even paid various male "geniuses" for the rights to their unpublished thoughts). As a result, Hadaly will have the power of "celestial" conversation and he claims he has replaced "*an* intelligence with Intelligence itself". The android will be able to conduct the kinds of high-flown, spiritual conversation that Ewald dreams of and which Alicia cannot supply (79, 101).

The imaginary Edison uses many of the technologies that his real-life model was associated with, particularly electric light (the whole book crackles with the magic of electricity) and the phonograph. At one point, he

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[19] Auguste Villiers de L'Isle-Adam, *Tomorrow's Eve (L'eve Future)*, ed. Robert Martin Adams, 1st paperback edition.. ed. (Urbana, Ill.: University of Illinois Press, 1886 (2001)). All page references are to this edition.

even shows Ewald a full-colour motion picture (the Lumiere brothers didn't actually show their first film until 1895 – almost a decade after Villiers' tale appeared). And in one of the novel's many extraordinary sections, Edison dissects Hadaly for Ewald, taking her apart to show her workings, and gives Ewald a whole book full of detailed care and maintenance instructions (she can even be jump-started if her battery runs down, 80–82). He explains to Ewald "It is by means of an intricate code recorded on these metal discs and automatically read off them, that warmth, motion, and energy are diffused through the body of Hadaly, through an interlaced network of complex wires, exact imitations of our nerves, arteries, and veins. It is by means of these little discs of hardened glass (their operation is quite simple, and I'll explain it to you in a moment) that the current distributed through the electrical network is modulated" (130). One of the hallmarks of SF was its use of a barrage of plausible-sounding technicalities (often inserted to gloss over the stark implausibility of the author's invention).

However, the connections between the real Edison and the fictional one was even close than one might imagine. Daniel H. Craig, a founder of the Associated Press and one of Edison's financial backers, was so over-awed by the variety of Edison's inventions that he wrote to say, "If you should tell me you could make babies by machinery, I shouldn't doubt it".[20] Craig's words were prophetic. In 1890, the US publication, *Scientific American*, reported that "Within a short walk of the world-renowned laboratory of Edison… over 500 people are engaged in the manufacture of the phonograph in its two principal forms, one of which is the commercial instrument repeatedly described in our columns, the other the phonographic doll, which we now present to our readers for the first time".[21] The dolls included a simplified miniature phonograph which allowed them to recite nursery rhymes when a string was pulled. The tone and technical details of the magazine's description of Edison's latest wonder was strikingly similar to that of Villiers' novel, published four years earlier:

> *"The cylinder carries a ring of wax-like material, upon which is recorded the speech or song to be repeated by the doll. Upon the same shaft with the record cylinder there is a large pulley which carries a belt for driving the flywheel shaft at the lower part of the phonographic apparatus. The key is fitted to the main shaft, by which the phonographic cylinder is rotated, and the flywheel tends to maintain a uniform speed."*

The efficient production lines churned out 500 dolls a day, but Edison had not invented a machine that could duplicate the recorded cylinders. So, the factory included was a row of "stalls", each inhabited by a young woman who sat there all-day reciting "Mary had a little lamb" or "Jack and Jill" over and over again into a recorder. (The women in Edison's factory led lives that were almost as constrained as those of the dolls they produced.)

Just as Shelley invoked Galvani and Aldini to add plausibility to her tale, and Hoffman used Spallanzani, Villiers' used the inventions most associated with Edison to add a layer of nineteenth century 'technobabble' to his tale, which gave it the aura of plausibility that is one of the hallmarks of science fiction – building an imagined future on the foundations of the just-about possible.

Tomorrow's Eve owed several debts to Hoffmann, including a discussion of imperfection. Edison notes in passing that the android is not perfect, faults have been retained "out of politeness to humanity", but these can be erased by Ewald if he wished (84). The possible uses of a compliant living doll are hinted at as explicitly as was possible in a novel published in the 1880s. Edison explains that Hadaly contains "women of several sorts" within her (as, he avers, real women do) and Ewald can select the desired model. When Hadaly is fully activated, she tells Ewald that she can only be, and thus will always be, whatever he wants: "I have so many women in me, no harem could contain them all. Desire them, and they will exist It's up to you to discover them within me" (199).

Villiers' tale is hard to interpret. At times, it seems almost like a satire of male fantasies, as for example, when Edison explains that Hadaly's cylinder records and can replay about 70 different gestures. (Which, as he notes, is "approximately the same number than any well-bred woman can and should command", because "what is a woman who gesticulates too much? An unbearable creature". 131). However, in one of the book's more chillingly misogynistic moments, Edison explains why he created Hadaly. He had a friend, Edward Anderson, who had an affair with a young woman called Evelyn Habal; the affair wrecked Anderson's marriage and his business, and he killed himself. From Edison's perspective, the man was entirely innocent, while the woman bore all the guilt. He describes her as "a deliberate assailant, avid with a secret and

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[20] Quoted in: Randall E. Stross *The Wizard of Menlo Park: How Thomas Alva Edison Invented the Modern World* (2007).

[21] Anon., "Edison's Phonographic Doll," *Scientific American* 62, no. 17 (1890).; Wosk, *My Fair Ladies*, 28.

instinctive lust to drag down … into the most sordid spheres of instinct" her male victim, so that she can enjoy "his destruction, his despair, his death" (112). To prove what a foul creature the late Evelyn Habal was, Edison shows a film of her dancing; she looks "ravishing", and he draws Ewald's attention to her perfect skin, lovely golden hair and "youthful freshness" (117). But then a second film is shown, which depicts "a little, bloodless creature, vaguely female of gender, with dwarfish limbs, hollow cheeks, toothless jaws with practically no lips, and almost bald skull, with dim and squinting eyes, flabby lids, and wrinkled features, all dark and skinny". This is what Evelyn really looked like, once deprived of her artificial beauty aids. Edison opens a drawer which is full of her relics, which include a set of false teeth that Edison plays like castanets, "some scraps of grey wadding, bulging, grubby, and giving of a particularly rancid odour", "two heavy, smelly stockings" full of padding, the remains of "ancient corsets", and endless pots and tubes of coagulated, half-used lotions, paints, varnishes and perfumes. Some objects ("oddly shaped to say the least") used "in the craft of rousing men to innocent transports of delight". As well as "certain herbs and specimens from the shops of the chemist", which show that Evelyn Habal "did not feel herself destined for the joys of family life" (120–121). It is impossible to ignore the fear and hatred of women that haunts these pages, prompted in part, no doubt, by an epidemic of syphilis (which can cause hair loss, such as that which Evelyn conceals using a wig). Syphilis was being blamed on female promiscuity and the modern woman's refusal to conform to traditional notions of 'purity'. By contrast, as Jennifer Forrest argues, when Edison dissects Hadaly we discover that she has no reproductive organs, so is guaranteed free from syphilis and hysteria.[22] Unlike real female bodies, Hadaly's is clean, metallic and electric. And, of course, cannot reproduce itself; as with Frankenstein's creation, the making of new people has come entirely under male control.

According to Edison, replacing women with androids would not be much of a change. He attacks women like Evelyn for using artificial means to make themselves more alluring; they are not more than a "banal assemblage of powder, rouge, false teeth, false complexions, false hair … false smiles, false glances, and false pretences of 'love'" (115). As a result, he realised that women already embody "the Artificial" – composed of makeup, social skills and discreet padding – "assimilated to or even amalgamated with human nature". So, why not "have the Android herself?" and, as Edison puts it "try to change their lie for another" (123). His android will be better than any real woman because – despite her limited range of speech and gesture – she will record and replay all the perfect (and only the perfect) moments in their love affair (135). He urges Ewald to try the as-yet-untasted delights of the artificial. Hadaly would embody a particular male fantasy; a woman who is compliant, ever willing and available, never contradicting her man, or asking for anything. Ewald cannot believe this is possible; when he sees Alicia again, he is struck by her beauty, her warmth, her humanity. He asks himself how he could have ever imagined that Edison's creation could be more that "a plaything, a puppet", a "ridiculous, senseless doll!" But, of course, the joke is on him; the "Alicia" he has just embraced is Hadaly, fully transformed as Edison promised and the inventor has proved his case; not only did Ewald not realise she wasn't human, he loved the new improved model more than he had ever loved the original.

Pulp fictions

"The Sandman" and *Tomorrow's Eve* share a sense that femininity is a kind of performance; something that has to be done well to be convincing.[23] In Villiers' hands, that became a misogynist insight (a machine could perform femininity better than any woman could), whereas Hoffmann offers a more nuanced, humorous account (women should be careful not to perform too well, or they'll be mistaken for robots). Stories like these provided a template for early SF writers who used the latest science to fuel their imaginations. When Hugo Gernsback, the man who largely founded the modern science fiction genre, launched his new magazine Science Wonder Stories in 1929, he claimed that its purpose was as much educational as entertaining. In the age of X-rays, radium, motion pictures and television it was clear that science was rapidly transforming the world: "What man wills, man can do". As a result, "anybody who has any imagination" clamours for the kinds of story that H.G. Wells made famous, "the story that has a scientific background, and is read by an ever growing multitude of intelligent people". The new magazine even boasted a scientific advisory board and would publish "only such stories that have their basis in scientific laws as we know them, or in the logical deduction of new laws from what we know. And that is the reason why ALL stories published in this magazine

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[22] Jennifer Forrest, "The Lord of Hadaly's Rings: Regulating the Female Body in Villiers De L'isle-Adam's "L'eve Future"," *South Central Review* 13, no. 4 (1996): 21, 26.

[23] Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity*, 2nd ed. (1990).

must pass muster before an authority. It is a guarantee to our readers that they will not get a false scientific education thru the perusal of these stories".24

Despite his rhetoric, Gernsback's definition of what counted as a "logical deduction of new laws" from existing ones seems to have been pretty flexible. The magazine's first issue included "The Marble Virgin", a re-telling of Pygmalion by first-time author Kennie McDowd.25 The main character is a sculptor, Wallace Lands, who creates a flawless marble sculpture of nude woman, a "maiden on the verge of womanhood", who he calls Naomi. As he works away at it, he confesses he's already in love with her as she takes shape, and feels curiously jealous when his neighbour, the independently wealthy successful scientist, Professor Carl Huxhold, drops in to watch him work and gazes longingly at the nude (54–56). Huxhold offers to buy the finished statue, and when Lands refuses to sell, he steals it, places it in his "electro-dissolver cabinet", which brings it to life using "Huxhold Rays", which also have the power to completely destroy matter by transporting its components to the "plane of split-electrons". The now living Naomi runs around the studio naked while constantly kissing the sculptor. All she can say is "Oooo" and "I love you Wal-ly". A promising beginning, from the sculptor's point of view, but such behaviour is going to limit his opportunities to socialise with his new girlfriend. And so he spends a week teaching her a few more words and takes her out on a walk, clothed "in a pretty dress of sheer French voile, silk stockings and black kid pumps, outwardly she was like any other lovely being of her sex". They bump into the scientist who becomes madly jealous, kidnaps Naomi and throws her back into the machine, dissolving her completely. The story ends (not a moment too soon) with Lands murdering Huxhold and then placing himself in the machine, in the hope that his disintegration will lead to him re-joining Naomi on that higher plane.

A reader wrote in to complain that the story was "wonderful" but impossible; an unknown ray might possibly transform one kind of atom into another but could not give a complex internal structure to a homogenous block of marble. McDowd wrote in to defend his tale, explaining that

> *"The refulgent phosphorescence shooting from the horn of Huxhold's Electron-dissolver to play over the statue standing in the curve of the Cabinet, was not ONE ray merely; it was literally thousands of vitally effective rays carefully calculated by Huxhold's mad genius to perform the task of transubstantiation! It did not occur at once, either; but over a good long period. It was not explained, in the story, quite so clearly as in this letter; but bear in mind that I was, after all, writing a scientific story—not a detailed treatise on metastasis, or transmutation of elements. In other words what I pictured as happening within a few minutes really took, or might take, hours, or days, or months— who knows!"26*

This flow of pompous technobabble suggests that the idea of scientific plausibility was not taken any more seriously by McDowd than by Gernsback. In the pulp's, sheer impossibility was not allowed to get in the way of a good story (or a really bad one). McDowd's letter concluded with the promise of a sequel ("even more dramatic, even more scientifically founded"), but Gernsback apparently didn't follow up the author's offer. No other stories by Kennie McDowd ever appeared in print.27

A slightly more plausible artificial women cropped in a later pulp – Lester del Rey's "Helen O'Loy" (1938). Two men, Phil (who's an specialist in hormones and emotions) and Dave (who runs a robot repair shop), become dissatisfied with their robot housekeeper (after she puts vanilla on a steak instead of salt).28 They decide to build a better one and buy the most advanced model available ("in a girl-modelled case"). Even the plastic and rubberite face was designed for flexibility to express emotions, and she was complete with tear glands and taste buds". They then modify it by inserting artificial glands ("heterones") while "a mechanical tape fed carefully prepared thoughts of consciousness and awareness of life and feeling into an auxiliary memory coil" (120). The experiment is a success, but the newly activated robot needs educating in human manners, emotions and social conventions in order to work efficiently. Dave leaves her alone for a day, to

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24 Gernsback "Science Wonder Stories" (editorial, in *Science Wonder Stories*, Vol. 1, No. 1, June 1929: 5.

25 Kennie McDowd, "The Marble Virgin," *Science Wonder Stories* 1, no. 1 (1929).

26 "Mr. MacDowd Defends 'The Marble Virgin' (Letter, *Science Wonder Stories*, Vol. 1, No. 3, August 1929: 280). The author's name was given as McDowd when the story appeared, but as 'MacDowd' in the letters column; neither spelling was corrected.

27 As the award for the year's best SF stories is called a Hugo, in honour of Gernsback, perhaps someone could found a 'Kennie' award, to be given to those who could raise the standard of the average SF story by not publishing any more?

28 Lester del Rey, "Helen O'loy," *Astounding Science Fiction* 22, no. 4 (1938).

watch soap operas and read romance novels – and when he gets home:

> *"it was a shock to him to feel two strong arms around his neck from behind and hear a voice all aquiver coo into his ears, "Oh. Dave, darling, I've missed you so, and I'm so thrilled that you're back." Helen's technique may have lacked polish, but it had enthusiasm, as he found when he tried to stop her from kissing him. She had learned fast and furiously—also, Helen was powered by an atomotor" (122)82*

The men discuss switching her off or reprogramming her, but she "wails" that that would be murder. She tells Phil that she really is in love with Dave: "I'm a woman. And you know how perfectly I'm made to imitate a real woman … in all ways. I couldn't give him sons, but in every other way … I'd try so hard, I know I'd make a good wife" (123–124). So, Dave marries her and they live happily ever after; none of their neighbours suspect she's not human especially as she "never lost her flare [*sic*] for cooking and making a home". Phil helps Dave to artificially age her, so she doesn't stay suspiciously young while her husband grows old. And Phil himself had almost forgotten Helen wasn't human until Dave dies and Helen asks to be dissolved in acid so she can be buried with Dave. Phil carries out her wishes, but we learn that he never married because "there was only one Helen O'Loy" (125).

These stories are based on the assumption that their readers were mostly men, who would imagine an ideal woman to be good looking, sexually available and an efficient cook/housekeeper (and would never have a headache, a period, or an idea of their own). Unsurprisingly, they reflect the values of their times, but from the 1920s to the 1970s, most authors and editors seemed to assume that their readers would not going to be interested in challenging or changing those values. The SF community was excited about changing many other things, but while motors might become atomic and robots would do the cooking and cleaning, it seemed that conventional gender roles were eternal. The result was what the SF writer Joanna Russ called "intergalactic suburbia"; no matter how far the fictional women in SF travelled, whether in rocket-ships or time-machines, they would find their male creators had imagined them following the same pattern.[29] Each love story started when she sinks into his arms, and ended with her arms in his sink (except that Helen O'Loy probably had her arms in his sink first). And if a woman found that prospect less than enticing, a robot would take over her job.

Perhaps the most famous example of perfect robot women fulfilling men's fantasies is Ira Levin's novel *The Stepford Wives* (1971), which became a successful movie in 1975 (dir. Bryan Forbes, starring Katharine Ross, Paula Prentiss, Peter Masterson and Nanette Newman). The sleepy, suburban town of Stepford is a retreat from the dangers of city life, such as the growing permissiveness of the contemporary world. (At the start of the film version, Joanna Eberhard, the main character, and her children are in the city, sitting in their car, waiting for dad. Joanna is a keen photographer and spots a man transporting a naked female mannequin under his arm, which she photographs. When dad arrives, their daughter says she just saw a man carrying a naked lady. Dad replies, "That's why we're moving to Stepford!").

Once they settle in Stepford, Joanna is appalled by most of the town's other women. Joanna thinks to herself "That's what they all were, all the Stepford wives: actresses in commercials, pleased with detergents and floor wax, with cleansers, shampoos, and deodorants. Pretty actresses, big in the bosom, small in the talent, playing suburban housewives unconvincingly, too nicely-nice to be real" (49). (There's a wonderfully funny scene in the film where Joanna and her friend Bobby try to organise a consciousness raising group for the town's women, which rapidly degenerates into a discussion of how Spray-On Starch can save the busy housewife enough time to do extra cleaning and baking.[30])

Joanna notices that all the women change after they've been in the town for a while (even her friend and fellow-feminist Bobby becomes a compliant housework enthusiast). She becomes convinced that the Stepford Men's Association is somehow responsible: their leader, Dale Coba, is nicknamed "Diz" because he worked for Disneyworld, creating their realistic "animatronic" robots and other members have scientific or

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[29] Joanna Russ, "The Image of Women in Science Fiction," in *The Country You Have Never Seen: Essays and Reviews* (Liverpool: Liverpool University Press, 1970 (2007)).; Raffaella Baccolini, "In-between Subjects: C.L. Moore's 'No Woman Born'," in *Science Fiction: Critical Frontiers*, ed. Karen Sayer and John Moore (Basingstoke: Macmillan, 2000), 140–41.; Lisa Yaszek, "Unhappy Housewife Heroines, Galactic Suburbia, and Nuclear War: A New History of Midcentury Women's Science Fiction," *Extrapolation* 44, no. 1 (2003).
[30] Jessica Johnston and Cornelia Sears, "The Stepford Wives and the Technoscientific Imaginary," ibid.52 (2011): 81–83.; Jane Elliott, *Popular Feminist Fiction as American Allegory: Representing National Time* (London: Palgrave Macmillan, 2008), 71–72.

technical expertise (many work for various secretive hi-tech companies).[31] Joanna is convinced that there's an explanation for the peculiar behaviour of the Stepford Wives: the men of Stepford simply replace their increasingly demanding and dissatisfied wives with robots.

The Disney animatronics add a degree of plausibility to the idea that such sophisticated robots might be possible in the not-too distant future. The book's other use of up-to-date science is a passing reference to one of the husbands reading Lionel Tiger's *Men in Groups* (1969). Tiger and his colleague Robin Fox were social anthropologists, who were recommended by Robert Ardrey to head the Harry Frank Guggenheim Foundation research on the biological basis of human nature "in the service of understanding the domination of some men by others". (Ardrey also gets a passing reference in the *Stepford Wives*; when the Eberhard family first move to Stepford, she looks out at her backyard and thinks "Robert Ardrey is right… I feel very territorial", 7.) Tiger was preoccupied with a supposed crisis of masculinity that was being caused by the denial of what they believed was a basic biological fact: women nurtured while men hunted. As Erika Milam has argued, they saw feminists and Freudians as attacking the supposedly natural gendered behaviours shared by humans and other primates.[32] Tiger's book got its most positive review from Ardrey himself, who argued that "two factions would find their cultural assumptions smashed by Tiger's findings: the Freudians, who held that all male friendship resulted from latent homosexual attraction, and the feminists who sought to challenge the 'age-old male bond'".[33] Ira Levin's book was shaped by these ideas; that men were feeling emasculated by the feminist challenge and needed to fight back to regain a safe, men-only space where they could relax without having to defer to female sensitivities. The film includes a final showdown between Joanna and Diz, in which she asks him, "Why?" and he responds, "Why? Because we can. We've found a way of doing it and it's just perfect. Perfect for us and perfect for you." He urges Joanna to "Think of it the other way around. Wouldn't you like some perfect stud waiting for you around the house? Praising you? Serving you? Whispering how your sagging flesh was beautiful no matter how you looked?". But, of course, there are no male robots to keep the women happy; they are killed to make space for their replacements.[34] (The film's gruesomely gothic ending doubtless contributed to its commercial success.)

By contrast with the film, the book is a little more subtle and enigmatic. When Joanna goes to see a psychiatrist and shares her fears, doctor Fancher refuses to believe that there are any robots. She suggests instead that perhaps like attracts like – women with outside interests or careers find a town like Stepford stiflingly dull and just move away, so the only ones who stay are those who are content to define themselves as full-time homemakers. We learn in the book that the pioneer feminist Betty Friedan supposedly once addressed a women's group in Stepford, and the book is clearly indebted to her classic *The Feminine Mystique* is mentioned.[35] Levin was hardly a feminist, but he clearly understood the feminist critique of housework as an endless, pointless drudgery (which Simone de Beauvoir famously compared to the labour of Sisyphus).[36] For a woman like Joanna, accepting the values of Stepford would be no better than being a robot – that's the real fear that haunts her.

No Woman Born

The idea that femininity was ultimately a performance was used in new ways as more women began to write SF and began to offer alternative definitions of female perfection that added complexity to the whole question of what it meant to be human – particularly when women and technology merged, instead of the technology simply replacing the woman. Dozens of examples could be offered, but I will conclude with just two, beginning with Catherine Lucille (C.L.) Moore's "No Woman Born" (1944).[37]

Moore's story concerns Dierdre, a world-famous dancer and singer who has almost died in a fire. Her body was burned, but (in some, entirely unexplained fashion) her brain survived and was kept alive while a scientist called Maltzer created a new metal body for her. The story is narrated by John Harris, her manager, who has not seen Dierdre since before the accident and is about to meet her new, cyborg form for the first time. He

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[31] Johnston and Sears, "Stepford Wives," 76–79.

[32] Erika Lorraine Milam, "Men in Groups: Anthropology and Aggression, 1965–84," *Osiris* 30, no. 1 (2015): 67–68.

[33] Quoted in: ibid., 82.

[34] See: Johnston and Sears, "Stepford Wives," 88.

[35] Betty Friedan, *The Feminine Mystique* (New York, N.Y.: W.W. Norton & Company, 1963).

[36] Elliott, *Popular Feminist Fiction* 71.

[37] C. L. (Catherine Lucille) Moore, "No Woman Born," *Astounding Science Fiction* XXXIV, no. 4 (1944).

is nervously expecting it to resemble one of the standard SF cliches: "Great, lurching robot forms, cylindrical, with hinged arms and legs. A glass case with the brain floating in it and appendages to serve its needs. Grotesque visions, like nightmares come nearly true" (138). Instead, the new body is golden and graceful, with a voice that is unmistakably Dierdre's. No face or eyes (just a blue, crescent shaped mask). No features ("he had been dreading some clumsy attempt at human features that might creak like a marionette's in parodies of animation"), other than a hint of cheekbones: "Light did not slip uninterrupted as if over the surface of a golden egg. Brancusi himself had never made anything more simple or more subtle than the modelling of Deirdre's head". And "Oddly enough, he did not once think of the naked brain that must lie inside the metal" (139–140). Perhaps because the brain is the seat of reason and women are not defined by their reason?

Dierdre's body consists of metal rings, held together by electromagnetic currents that she controls directly with her brain. Her movements are as graceful and fluid as ever, she sings perfectly and has the same, sexy, throaty laugh she always possessed. As Harris watches, "every gesture, every attitude, every flowing of motion into motion was so utterly Deirdre that the overwhelming illusion swept his mind again and this was the flesh-and-blood woman as clearly as if he saw her standing there whole once more, like Phoenix from the fire" (142–143). As Dierdre says, "So this is myself, … Metal—but me. And it grows more and more myself the longer I live in it. It's my house and the machine my life depends on, but much more intimately in each case than any real house or machine ever was before to any other human" (145).

Despite her obvious perfection, Harris is astonished to learn that Dierdre plans to resume her career. He and Maltzer try to dissuade her convinced that she is "delicate" and will be unable to cope when, as they assume is inevitable, the public reject her as "a jointed freak performing as if on strings" (147). She can now dance steps no human could manage and can not only sing perfectly as loudly as needed without assistance and thus without "the subtle distortions that amplification puts into music. This was utterly pure and true as perhaps no ear in all her audience had ever heard music before" (156).

Dierdre has clearly surpassed human abilities in many respects, but Maltzer insists on seeing her as frail and imperfect. His argument is that "She hasn't any sex. She isn't female anymore". She is merely "an abstraction" who has "lost everything that made her essentially what the public wanted". "One of the strongest stimuli to a woman of her type was the knowledge of sex competition. You know how she sparkled when a man came into the room? All that's gone, and it was an essential" (152). The implication being that, even though her brain is intact, and her professional skills are better than ever, she's "pitifully handicapped" simply because she isn't essentially, biologically female.

Dierdre's return to performance is a triumph, but Maltzer insists that she's "not wholly human", but "only a clear, glowing mind animating a metal body, like a candle flame in a glass" (167). She rejects his claim:

> "I'm not a Frankenstein monster made out of dead flesh. I'm myself—alive. You didn't create my life, you only preserved it. I'm not a robot, with compulsions built into me that I have to obey. I'm free-willed and independent, and Maltzer—I'm human" (168).

Maltzer refuses to accept this, convinced that he has created a monster, "that there's only one legitimate way a human being can create life. When he tries another way, as I did, he has a lesson to learn" (166). He tries to commit suicide by throwing himself out of a high window, but Dierdre is too fast for him ("Her motion negated time and destroyed space", yet she did not blur, but to seemed to move instantaneously, like a "tesseract of human motion"). She has become "superhuman" yet admits to being lonely and is therefore determined to use her art to remain human: "I'm not afraid of humanity! I won't lose touch with them unless I want to. I've learned a lot— I've learned too much already" (174). Yet, the story ends ambiguously, with Dierdre wondering whether she will be able to survive her uniqueness.

Among the many striking aspects of Moore's story are the ways in which Dierdre is unlike the other artificial women. She is not, for example, entirely artificial, but a complex biological/technological hybrid, a cyborg with previously unimaginable possibilities.[38] Nor was she born a virgin – pure innocent and untouched; she carries the memories of her own, mature sexuality (which she is able to communicate with her voice).[39] But

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[38] Susan Gubar, "C.L. Moore and the Conventions of Women's Science Fiction," *Science Fiction Studies* 7, no. 1 (1980): 20–21.; Baccolini, "In-between Subjects."; Melissa Colleen Stevenson, "Trying to Plug In: Posthuman Cyborgs and the Search for Connection," *Science-fiction studies* 34, no. 1 (2007): 90.. See also: Donna Haraway, "A Cyborg Manifesto," in *Simians, Cyborgs and Women*, ed. Donna Haraway (London: Routledge, 1991).

[39] Despina Kakoudaki, "Pinup and Cyborg: Exaggerated Gender and Artificial Intelligence," in *Future Females, the Next Generation: New Voices and Velocities in Feminist Science Fiction Criticism*, ed. Marleen S. Barr (Lanham, MD: Rowman & Littlefield, 2000), 172–73.

perhaps most interest of all is that she is mortal. When she first introduces Harris to her new body, she says that the "best thing" about it is that "I'm not going to live forever". Her brain will "wear out quite normally", like any other human brain. Her body wont' age, but:

> "The magnetic muscles that hold it into my own shape and motions will let go when the brain lets go, and there'll be nothing but a ... a pile of disconnected rings. If they ever assemble it again, it won't be me." She hesitated. "I like that, John," she said, and he felt from behind the mask a searching of his face" (146)

No need to dissolve the robot in acid, or drown it (as Villiers did), in order to avoid having a female machine mocking male mortality. Dierdre will simply live out a normal human lifespan and die. And perhaps that knowledge of mortality is what will keep her human?[40]

My final tale is "The Girl who was plugged in" (1973), by James Tiptree Jr. As is now well-known, "James Tiptree" was the pen name of Alice Hastings Bradley Sheldon (1915–1987), a popular SF author who was assumed to be a man until accidentally 'outed' in 1977 (when their mother's obituary revealed that she had no sons). Sheldon worked in air force intelligence and at the Pentagon, before joining the CIA in 1952. She left in 1955 and completed a PhD in experimental psychology in 1967.

Tiptree's story is about Philadelphia Burke, who is described as "the ugly of the world. A tall monument to pituitary dystrophy. No surgeon would touch her. When she smiles, her jaw—it's half purple—almost bites her left eye out". In a world where everyone is bombarded with images of the spectacularly beautiful media 'gods', Burke finds her life unbearable and tries to kill herself. She is 'rescued' by Global Transmissions Corporation (GTX), who take an interest in her because their computers have identified her as having unusual brain patterns. It seems she would make an ideal 'remote', controlling an android called Delphi, who has been created by the corporation to join the company of the gods (some of whom are fully human, but most have some kind of chemical or electronic augmentation). We learn that in this not-too-distant future, all advertising has been banned, so corporations create media personalities who inhabit a non-stop virtual reality show whose audiences can share all the sensations of their 'gods', including all the products they consume. Long before anyone had dreamt of YouTube influencers or reality TV, Tiptree had imagined them.

The mental skills needed to be a remote, to operate the flesh-and-blood body of Delphi are largely innate, but Burke is trained to make the most of them: How to walk, sit, eat, speak, blow her nose, how to stumble, to urinate, to hiccup—DELICIOUSLY. How to make each nose-blow or shrug delightfully, subtly different from any ever spooled before". To do this, she also becomes a cybernetic creature:

> "And here is our girl, looking—
>
> If possible, worse than before. (You thought this was Cinderella transistorized?)
>
> The disimprovement in her looks comes from the electrode jacks peeping out of her sparse hair, and there are other meldings of flesh and metal. On the other hand, that collar and spinal plate are really an asset; you won't miss seeing that neck."

However, what the viewers experience is Delphi: "the darlingest girl child you've EVER seen. She quivers—porno for angels". Like her audience, Burke falls in love with her new self and proves to be an astonishingly successful remote. She soon falls for one of the screen gods, a wealthy young man called Paul Isham. She performs the role of ideal woman for him (and for millions of viewers) and initially he has no idea what "Delphi" really is. Burke has to cut the link with Delphi to exercise feed and clean her real, physical body (which is housed in an underground GTX facility in Carbondale); when that is happening, Delphi 'sleeps' as if dead. But Burke hates being herself and stays linked to Delphi as much as possible, leaving her physical body to decay, while she entertains the impossible delusion that if her original body dies, she will be left to inhabit Delphi permanently. Paul realises that there's something not quite right about Delphi and believes she's had some given some kind of electronic implant that allows her to be controlled. He traces the signal to Carbondale, thinking he can free Delphi from her sinister managers, but when he breaks into the facility from which he believes Delphi is being controlled he is confronted by Burke's body, "a gaunt she-golem flab-naked and spouting wires and blood" that comes at him "clawing with metal studded paws". He pulls out its wires, which kills Burke's body, and thus Delphi's mind.

Tiptree's story is both darkly comic but deeply sad. In many ways, Burke is a victim of corporate greed and an unrealisable ideal of female beauty. However, she's also assertive: she refuses to give up Paul when the

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[40] Baccolini, "In-between Subjects," 150.

corporation tries to force her to.[41] Her single-minded desire to become Delphi seems fleetingly possible when the Delphi body mutters Paul's name in its "sleep" (while Burke is unplugged), which ought to be impossible according to her technician managers; it seems – for a moment – that Burke is so delighted to have been freed from the prison of her own flesh that she is almost able to transcend the limitations of the machine within which she's been imprisoned. Burke was initially cut off from the rest of humanity, but becoming a cyborg gave her the chance of an intimacy she might never otherwise have experiences. Most critics have focussed on her loss of agency to the controlling corporation, but Melissa Stevenson highlights the liberating aspects of Burke's existence as Delphi.[42]

"The girl who was plugged in" appeared in an anthology of Tiptree's stories, *Warm Worlds and Otherwise* (1975). In the book's introduction, Robert Silverberg commented that: "It has been suggested that Tiptree is female, a theory that I find absurd, for there is to me something ineluctably masculine about Tiptree's writing. I don't think the novels of Jane Austen could have been written by a man nor the stories of Ernest Hemingway by a woman, and in the same way I believe the author of the James Tiptree stories is male". (To his credit, he reprinted his original comments in the second edition, after Tiptree's gender had been revealed, and commented that Tiptree/Sheldon had forced him to rethink his assumptions about the supposed naturalness of gender: she "called into question the entire notion of what is 'masculine' or 'feminine' in fiction. I am still wrestling with that".) Alice Sheldon privately made the link between herself and her story: she was "an old lady in Virginia", who – like Burke – had an unacceptable body – unacceptable to a majority-male SF audience, at least. And 'Tiptree' was Delphi, a publicly desirable alternative body.[43] Becoming Tiptree was, for Sheldon, a kind of plugging in, to an alternative reality in which she could offer her own complex "definition of woman and her status in the universe".[44]

Conclusion

In her analysis of *Tomorrow's Eve*, Jennifer Forrest notes that Hadaly is intended to embody all women.[45] As we noted, Hadaly promises Ewald "I have so many women in me, no harem could contain them all".) And Edison explains that, once he's done his work, "the present gorgeous little fool will no longer be a woman, but an angel; no longer a mistress but a lover; no longer reality, but the IDEAL!" (54). A key source of Villiers' ideas was Plato, who referred to philosophy as the attempt to "carve the world at the joints", to separate everything into clear-cut, supposedly natural categories. He believed that these categories existed in nature because everything we see is the manifestation of a single, essential ideal Form. The imperfect triangles mathematicians drew were attempts to express the true Form of triangle, and the same was true of all fish, or all women – their respective Forms gave them their common properties. Hadaly becomes the embodiment of the Platonic Form of Woman. It's a view that implies that actual women are both imperfect and interchangeable; Edison might make an endless series of Hadalys, like Stepford Wives, each one would be literally as good as another. If woman's essence is assumed to be her sexual role, then the ideal woman is a compliant sex toy; if her essence is to cook and clean, that defines the operating parameters of her artificial replacement. The reduction of women to some, male-determined subset of human possibilities is the heart of many of the artificial women stories written by men, encapsulated by the various ways in which women are literally dismantled and rebuilt into supposedly better configurations.

The other philosophical tradition that haunts these stories is an approach to definition founded by Plato's pupil, Aristotle. Among other things, Aristotle pioneered biological classification; by examining and comparing many specimens of a creature, he hoped to discern their essential properties. He studied fish, for example, in order to try and discern what all fish have in common, which allows us to correctly classify them as fish. That, in turn, relies on identifying differences; what separates fish from other kinds of underwater life.[46] Such ideas were, of course, to prove fantastically powerful and useful; the scientific classifications that were built

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[41] María Ferrández San Miguel, "Appropriated Bodies: Trauma, Biopower and the Posthuman in Octavia Butler's "Bloodchild" and James Tiptree, Jr.'S "the Girl Who Was Plugged In"," *Atlantis: Journal of the Spanish Association of Anglo-American Studies* 40, no. 2 (2018): 40.
[42] Stevenson, "Plug In.".
[43] Ibid., 95. And in a similar way Catherine Lucille Moore felt she had to hide her gender by publishing under her initials.
[44] Katie Stone, "Living a Science Fictional Life: The Creation of James Tiptree Jr.," *Foundation* 49, no. 136 (2020).
[45] Forrest, "Hadaly's Rings," 30.
[46] Jim Endersby, *A Guinea Pig's History of Biology: The Plants and Animals Who Taught Us the Facts of Life* (London: William Heinemann, 2007), 4–6.

on Aristotle's legacy are, among other things, the key to understanding ecology and biodiversity. Yet, at times this style of thinking has a darker side. When it is applied to the question of what separates women from men, as in many of these stories, women are being effectively classified as a separate species – defined by their differences. And it often seems to be supposedly innate flaws that are the defining differences: less rational, less honest, less moral than men.

However, several of the stories – particularly "The Sandman", "No woman born" and "The girl who was plugged in" – play with the idea that what makes somebody a woman is whether or not they *act* like a woman. The idea that gender is a masquerade, rather than some innate biological essence, encourages readers to think about who sets the rules that govern a successful performance of femininity (in most of these stories, for example, only men are granted that power to judge). The richness of these stories lies in their complexity, in a refusal to simplify their female protagonists to a single essence. The intimate links between bodies and technologies in these stories hint at a refusal to be either just body or just mind. In different ways, these women resist male definitions of perfection: Dierdre refuses to let the men decide whether, when or how she will pursue her career, while Hoffman's story suggests that performing femininity *too* successfully might lead to a woman being mistaken for a robot. Collectively, these stories suggest that the answer to Robinson's question – are women human? – is more interesting than simply saying "yes". It's a question that forces us to think about how – and why – society wants to define both 'women' and 'human'.

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Please note suggested readings are indicated with an asterisk*

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