Title: Narrative Futures of Pregnancy Sickness: Reproduction, Disability, Animality

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Abstract

In Sarah Hall's short story 'Mrs Fox', a man wakes to find his wife, Sophia, 'vomiting into the toilet'. When Sophia's nausea continues he imagines her wasting from a rare cancer; instead, she mutates into a fox and, after a brief captivity at their home, leaves him for the woods, only to reappear months later with a litter he claims as his progeny. Sophia's sickness is belatedly revealed as nausea and vomiting of pregnancy (NVP), and her metamorphosis from human to fox seems to have been triggered by conception.

NVP or 'morning sickness', as it is colloquially known, tends to appear in culture as plot reveal or punchline but rarely as experience. This narrative marginalisation parallels the condition's medical status. In its most severe form, hyperemesis gravidarum, NVP can lead to malnutrition and other serious health complications. However, the condition often goes untreated, a situation that has been linked to cultural fears of congenital disability in the wake of thalidomide. Long assumed to derive from the pregnancy hormone HCG, NVP is the subject of new genetic research that holds the potential for new therapeutic interventions. Yet this research may also reinforce the theory that NVP is an evolutionary mechanism designed to isolate pregnant people from pathogens during the first trimester.

In this article, I draw on this context to read 'Mrs Fox' as a ironic allegory of the evolutionary safety-net explanation for NVP. Drawing on work at the intersection of disability justice and reproductive justice, I argue that the therapeutic futures opened up by new research into NVP spotlight the need for closer attention to narratives of gestational sickness.

Narrative Futures of Pregnancy Sickness: Reproduction, Disability, Animality

This article is about a medical condition with too many names. Its official, clinical name is nausea and vomiting of pregnancy (NVP). In practice, the colloquial term 'morning sickness' is used by doctors, midwives and patients alike, though the symptoms are rarely confined to the morning. Often they last all day; sometimes they last the whole nine months. Sometimes they are serious enough to demand Latin: *hyperemesis gravidarum* (hyperemesis), which carries significant risks of dehydration and malnutrition, and often requires hospital treatment. These proliferating terms express not discursive richness but linguistic insufficiency. As I write I am relieved by the wealth of synonyms but also dissatisfied; I do not know what to call this experience that seems to elude all the labels assigned to it. 'Pregnancy sickness' strikes me as a compromise between the medicalising 'NVP' and the trivialising 'morning sickness', though it is missing a necessary descriptive depth. The condition exemplifies what Virginia Woolf described as the 'poverty of the language' available to express the condition of illness (Woolf 1926; 1994, 318).

NVP, morning sickness, hyperemesis, pregnancy sickness: whatever it is called, it is more likely to function in popular culture as plot reveal or punchline than fully narrated experience. On screen, an unexpected and unexplained bout of nausea is a quick way to hint at a character's pregnancy. It is also an easy way to get a laugh: both vomiting and pregnancy are ready topics for humour; combined, they are a dependable source of gross-out comedy. In recent years, high-profile cases of hyperemesis in wealthy public figures like Kate Middleton and Amy Schumer, both of whom were hospitalised, have brought the disabling impact of severe NVP into mainstream cultural conversations, but its everyday, experiential dimension remains under-represented. This is not to say that NVP only ever functions culturally as a plot mechanism or joke. In contemporary literature, pregnancy sickness often seems to register a liminal state at the edges of the human, where the reproduction of the species becomes fraught with suggestions of animality or technology. Later in this essay, I analyse one instance of such entanglement – Sarah Hall's 2013 short story, 'Mrs Fox' – to explore its implications for a feminist approach to NVP at the intersection of reproductive justice and disability justice. I do so with an awareness that transgressive NVP narratives such as 'Mrs Fox' exist in uneasy relation to the condition's widespread socio-cultural trivialisation.

Pregnancy sickness is effective as a textual technology partly because it is widely received as a normal, natural part of pregnancy. The website of the National Childbirth Trust (NCT) files the condition under 'Common Discomforts' and informs its readers that while '[m]orning sickness happens to nine in ten women in the early stages of pregnancy', it is 'in fact associated with healthy babies at birth' (NCT, n.d.) The NCT follows the NHS in distinguishing between 'morning sickness', treatable with rest, small meals, ginger, or acupressure; and hyperemesis, requiring anti-emetic medication and sometimes intravenous fluids in hospital (NHS, n.d.). The charity Pregnancy Sickness Support acknowledges a 'pregnancy sickness spectrum', with hyperemesis at the extreme end; by contrast, both the NHS and the NCT construct a binary opposition between 'morning sickness' and hyperemesis (Pregnancy Sickness Support, n.d.). This tendency to emphasise the normality of pregnancy sickness, and to position hyperemesis as a distinct condition, may be reassuring for those with both mild and severe sickness. At the same time, the widespread insistence on NVP's normality occurs in the context of a paucity of treatments for the condition and, historically, very little research into its etiology. Pregnancy sickness has this in common with other feminised conditions, including endometriosis, Chronic Lyme Disease, and lupus. As the historian Elinor Cleghorn has argued, a 'pervasive aura of distrust around women's accounts of their pain has been enfolded into medical attitudes over centuries' (Cleghorn 2021, 6). The systemic dismissal, mistreatment and misdiagnosis of these conditions is amplified at the intersection of gendered, racialised and classed oppression.[1]

At the time of writing, there are signs of a shift in scientific understandings and medical approaches to NVP. Long thought to derive from the pregnancy hormone human chorionic gonadotropin, NVP is the subject of new research that suggests it has an alternative genetic basis. In a December 2023 *Nature* article, widely covered in the media, the geneticist Marlena Fejzo *et al* report their research suggesting that there is a specific genetic risk factor for severe NVP in a gene that codes for the GDF15 hormone, which rises during pregnancy (Fejzo, M. et al 2023). The research suggests that people with lower levels of the GDF15 hormone prior to pregnancy are more sensitive to its rise after conception, and so are more likely to experience a severe form of NVP. These research developments hold the potential for new therapeutic interventions: the researchers suggest potential strategies to increase levels of GDF15 before pregnancy, though research is in the early stages. What is clear is that this new medical account of pregnancy sickness is entangled with ongoing cultural histories

of reproduction and disability. These cultural histories shape the conditions of possibility for imagining the therapeutic futures of NVP.

What is at stake when we imagine new pharmaceutical technologies to treat pregnancy sickness? Media debates about the prospect of new treatments for NVP are contextualised by socio-cultural anxieties around congenital disability, particularly in the wake of thalidomide, the drug prescribed for pregnancy nausea in the early 1960s and subsequently linked to a range of neonatal impairments, including blindness, deafness, and limb difference. As Fejzo notes: ‘After that, pregnant women were scared to try medications, and doctors were afraid of prescribing them, and drug companies were afraid of developing them’ (Callahan 2018). Endorsing a move away from this culture of caution, a recent opinion article by Fejzo and collaborators invokes the prospect of childhood disability as a reason to fund research into new treatments for NVP. They write: ‘Severe nausea and vomiting of pregnancy is too common and devastating to be trivialized any longer. Authors of recent studies observed that children exposed in utero to severe nausea and vomiting of pregnancy had an increased risk for autism spectrum disorder, a decreased brain cortical volume, and developmental deficits’ (Fejzo et al 2022, 1). Here, the risk of childhood disability, framed explicitly in terms of deficit, is positioned as a reason to develop new treatments, in contrast to conventional warnings about the risks of medical treatment during pregnancy. The precise implications of the proposed link between autism and NVP are not clarified in the article; in another publication on the potential connection between NVP and autism, Fejzo and Patrick M. Mullin note that 'early intervention may have the potential to improve neurodevelopmental outcomes in children' (Fejzo and Mullin 2021, 237). Leaving the ambiguous nature of these early interventions aside, it is difficult to disentangle discourses of reproductive risk and disability from the history of eugenics, and the contemporary genetic screening technologies that can, as Lucy Burke has commented, 'render some groups of people with genetic conditions existentially vulnerable, with the potential literally to screen them out of existence' (Burke 2021, 193). Framings of disability as deficit necessarily engage these debates, even if not directly.

In this article, I make the case for a literary medical humanities approach to the therapeutic futures of pregnancy sickness, informed by work at the intersection of disability justice and reproductive justice. At this moment of scientific change, paying close attention to representations of pregnancy sickness can reveal much about the way gestation is culturally

constructed as a site for the making and unmaking of disability. Scholarly work in this field has tended to focus on prenatal screening and assisted reproductive technologies, where neoliberal values of choice, agency and risk management come into tension with disability justice. My own research is informed by the work of scholars including Burke and Alison Kafer. Kafer has critiqued the binary logic of abortion debates, in which the project of 'seriously wrestling with the ableist implications of prenatal testing' can seem 'dangerously close to dismantling abortion rights'. As Kafer argues, the framework of reproductive justice, developed in the US by Black feminists including Loretta Ross and the SisterSong Collective (2017), offers a route out of this impasse in its insistence 'as much on the right to continue a pregnancy (and be supported in doing so) as the right to terminate one' (Kafer 2013, 163). Burke draws on this framework to explore the way literary narratives can express 'alternative conceptions of human value' outside deficit models of disability (Burke 2021, 193). This scholarship has the potential to help us move beyond a presumed antagonism between the projects of reproductive justice and disability justice.

The case of pregnancy sickness represents a new way into these conversations, partly because it engages the prospect of disability in both the gestating subject and the foetus. This disrupts stereotypical representations of a healthy pregnancy polluted by reproductive risk (a stereotype that has always failed to account for the existence of disabled pregnant people). As I started researching this topic, I found myself conceptualising NVP's cultural life as a form of what the disability theorists David Mitchell and Sharon Snyder term 'narrative prosthesis': it functions 'as a stock feature of characterization' and 'opportunistic metaphorical device', but is rarely afforded narrative attention 'as an experience of social or political dimensions' (Mitchell and Snyder 2000, 47-48). At the same time, I have been keenly aware that to discuss NVP in terms of disability is hardly a straightforward endeavour. Disability justice critiques of medical regimes of cure and recovery are highly relevant to reproductive justice projects that seek to move away from deficit models of disability. The critique of cure, however, may be difficult to sustain in the context of severe NVP. As Stuart Murray phrases it in his exploration of feminised chronic health conditions at the intersection of medical humanities and disability studies, 'who wouldn't want such pain to go away?' (Murray 2023, 99) Yet pregnancy sickness calls into question rigid boundaries between health and illness, impairment and ability. The writer Lucy Jones opens her book *Matrescence* (2023) with two lists, one headed 'What I expected in pregnancy' and the other headed 'What I did not expect

in pregnancy'. Items listed under the first heading include 'sickness in the morning', 'glowing skin' and 'shiny hair'; those listed under the second heading include 'constant and severe nausea', 'mysterious infections', 'increased vascularity leading to increased intensity of orgasm', and 'incredible sense of smell' (the second list is significantly longer than the first) (Jones 2023, 23-24). Both lists combine signs of dis/ability, sometimes in the same item (an incredible sense of smell, for instance); what marks the second list is the intensity and diversity of symptoms and, crucially, their largely undocumented nature.

NVP also challenges regulatory temporalities of disability. In the UK, the Equality Act 2010's definition of disability requires a 'substantial and long-term effect' on someone's ability to do normal daily activities' (Gov.uk, n.d.). The temporal qualifier 'long-term' sits awkwardly in the context of pregnancy, which is necessarily time limited. At the same time, pregnancy is, of course, not always freely chosen, and the disabling impact of NVP will be amplified in the many global contexts where reproductive freedoms are curtailed. Further complex questions arise if, for instance, NVP prevents somebody from continuing with an otherwise wanted pregnancy, or results in miscarriage. In cases such as these, it is not always clear where or how to draw the temporal boundaries of cause and effect. Dominant understandings of disability time thus exist in uneasy relation with the transience of pregnancy, which belies the potentially long tail of its 'effects'.

The complex temporalities of NVP are evident in scientific accounts of the condition. The idea of a genetic component to pregnancy sickness has been hypothesised for some time, most notably in the idea that it is an evolutionary mechanism designed to isolate pregnant people from teratogenic chemicals during the first trimester. The condition has even been described as a form of 'wellness insurance' by the evolutionary biologists Paul W. Sherman and Samuel L. Flaxman, who have warned that treating less severe forms of NVP may risk undermining the protective qualities of nausea (Flaxman and Sherman 2000, 139). The research assumes a binary opposition between hyperemesis and 'normal' NVP, rather than understanding the condition as one involving a spectrum of severity (Flaxman and Sherman 2000, 117). Noting that 'morning sickness is a misnomer', Sherman has stated: 'It doesn't occur just in the morning, and it's not an illness. It can occur any time of day and it appears to be beneficial – we could call it a form of evolutionary wellness insurance' (Lang 2008). Sherman's flat assertion that pregnancy sickness is 'not an illness' recasts NVP as a biological

means of sacrificing the present to the future: the gestating subject's experience of illness is displaced by the projected health of her potential child.

Evident here is a familiar account of pregnancy as a site of antagonism between the gestating subject and the foetus. Twentieth-century understandings of foetal parasitism (Hanson 2004, 9) have been updated in twenty-first-century descriptions of pregnancy as a 'biological war' in which 'genetic conflict' plays out on the 'battleground' of the womb (Sadedin 2014). As Sophie Lewis puts it, '[i]t is a wonder we let fetuses inside us' (Lewis 2019, 1). Metaphors of parasitism and war are flexible: they might give rhetorical support to the cause of reproductive justice, but they can also be appropriated for discourses that position NVP as a sacrificial ailment to be endured for the good of the future child. A different set of metaphors may be necessary in light of the new research into GDF15 and NVP. As I have already noted, a possible link between pregnancy sickness and autism has been raised as a reason to research new medical treatments for NVP. This contrasts with Sherman and Flaxman's earlier warning that treating pregnancy sickness may compromise its protective effects. In both formulations, nevertheless, questions about how to deal with the disabling impact of pregnancy sickness are answered via an appeal to the future, represented in both cases by a potentially disabled child.

These discursive encounters of pregnancy and disability can be situated in relation to the historical notion of maternal impressions: the idea, taken up in early eighteenth-century medical circles, that pregnant women could 'mark' or deform their children through force of imagination. As Clare Hanson has suggested, even as literal understandings of maternal impression lost favour in the later eighteenth century, they developed into a more flexible understanding of 'maternal responsibility', which emphasised a connection between the emotional states of pregnant women and the health of their developing children (Hanson 2004, 26-28). The influence of these ideas, she argues, can be found in the 19th-century doctrine of the 'insanity of pregnancy', which 'offered a repertoire of symptoms for the expression of disease in pregnancy' (Hanson 2004, p. 69). As eugenic ideologies took hold in the early twentieth century, believers in the hereditary nature of 'insanity of pregnancy' suggested that sufferers should be discouraged from reproducing (Hanson 2004, p. 65). As a physical condition, NVP is distinct from ‘insanity of pregnancy’, yet across these shifting diagnoses, symptoms, and arguments, there is an enduring sense of pregnancy as a site for

what Harriet Cooper has discussed as 'the “making” of the “disabled child"', a process simultaneously ‘cultural, ideological and psychosocial’ (Cooper 2020, p. 1).

These historical examples point to the way discourses of pregnancy and disability involve collisions of different temporal scales. The first such collision is one I have already mentioned, where the present tense of illness is set against the future represented by the child-to-come. I draw this phrase from Rebekah Sheldon, who discusses the history of evolutionary thought in which the child is legible both as a record of the 'deep biological past of the species' and as 'the recipient of a specific biological inheritance freighted with consequence for the future' (Sheldon 2016, 3). Discussions of evolutionary mechanisms and heritable conditions also stage a collision between the deep time of heredity and the smaller scale of the individual life. At a smaller scale still is the temporality of the reproductive decision, relentlessly framed in terms of neoliberal individualism even as its contours are irrevocably social. In a contemporary context, the question of whether, for instance, to take medication for moderate pregnancy sickness, to consent to prenatal diagnostic testing, to continue with a pregnancy or have an abortion: these very different kinds of decisions are all contextualised in complex ways by discourses of heredity and futurity, which themselves operate differently across different axes of oppression and marginalisation, and all might be mulled over for months or weeks but made in an instant.

The collision of the deep time of evolution with the timescale of the individual reproductive decision can help make sense of why pregnancy sickness appears in contemporary cultural representations of states where the boundary between the human and the more-than-human is rendered flexible or uncertain. This is often not simply reflective of an association between vomiting and the abjection of the monstrous, but a more expansive engagement with the multiple meanings of the border erosion shared by all pregnancies. Gestation challenges binary distinctions between self and other, past and future; pregnancy sickness adds to this list the distinction between health and illness, disability and ability. To represent pregnancy sickness at the scene of human-animal metamorphosis is, inevitably, to invoke the eugenic histories that have so profoundly shaped reproductive politics, and the tropes of animalization used to categorise disabled, feminised and racialised people as less than human and expendable. Yet, as my analysis here seeks to show, the convergence of NVP and animality also has the potential to open up a narrative space through which these tropes might be contested and reimagined.[2] To investigate this space, I now move on to explore a

specific narrative of reproduction and animal transformation: Sarah Hall's 'Mrs Fox'. In this story, a bout of sickness precedes a woman's cross-species metamorphosis from woman into fox, and subsequent birth of a litter of kits. Pregnancy emerges here as a state that troubles the boundaries not only between the human and the nonhuman, but also between health and illness, disability and ability, present and future. In 'Mrs Fox', pregnancy nausea engenders a radical form of disaffiliation not only from the realm of the human, but from patriarchal structures of kinship and capitalist logics of development and productivity. This mode of reproduction as disaffiliation, I argue, has significant implications for cultural investments in the therapeutic futures of NVP.

'Mrs Fox' and pregnancy sickness

'Mrs Fox' is mostly focalised through the point-of-view of an unnamed man. Early in the story, this man wakes to find his wife, Sophia, 'vomiting into the toilet. She is kneeling, retching, but nothing is coming up' (Hall 2017, 4). When her nausea continues, he imagines her wasting from a rare cancer; instead, she suddenly transforms into a fox as the couple walk in the woods. After a brief captivity at their home, the vixen leaves him one night, fleeing through the door he has reluctantly opened. A couple of months later she reappears in the woods with a litter of kits he assumes he has fathered. Sophia's sickness is belatedly readable as nausea and vomiting of pregnancy. Her metamorphosis from woman to fox seems to have been triggered by conception, or perhaps vice versa.

My gloss of the story's plot here is broadly revisionary. 'Mrs Fox' has been the subject of several scholarly articles and book chapters, but it has not usually been interpreted as a narrative of pregnancy sickness, or even as a story of maternity and reproduction. This overlooking of pregnancy sickness in the story is, I suggest, part of a broader cultural tendency to overlook NVP when it escapes the narrative functions usually assigned to it. This tendency is shared by the husband in the story. When his wife gets sick, it does not occur to him that she might be pregnant, despite their frequent sex. Her body is described as a 'mystery he wants to solve every night' (Hall 2017, 2). The man watches his wife insistently, but the prospect of a link between her vomiting and pregnancy is beyond his grasp. His mind instead turns to the prospect of cancer, and of terminal illness: he recalls that in 'the year they

met she had some kind of mass removed, through an opened abdomen' (Hall 2017, 4-5). When her malaise endures into the next morning, his thoughts turn again to illness and death:

> He allows himself, for a few moments, to be troubled by irrational thoughts – she has a rapid, senseless cancer and will waste, there will be unconscionable pain, he will hold a fatal vigil beside her bed. Outliving her will be dire. Her memory will be like a wound in him. But, as he watches her stride in front, he can see that she is fit and healthy. Her body swings, full of energy. (Hall 2017, 7)

The husband's grim fantasies evoke other literary parallels between cancer and pregnancy. Kathy Acker's novel *Blood and Guts in High School* features the line, 'Having cancer is like having a baby' (Acker 2017). Christopher Hitchens described cancer as 'an obscene parody of the idea of being pregnant' (Brennan 2018). Such figurative analogies between pregnancy and cancerous tumours are literalised in the biology of pregnancy: as Lewis observes, the 'genes that are active in embryonic development are also implicated in cancer' (Lewis 2019, 2). NVP is commonly treated with the same anti-emetics prescribed for chemotherapy patients, while GDF15 has also been linked to cachexia, the muscle wasting syndrome associated with cancer and other illnesses. Across metaphor and medicine, pregnancy is a state that troubles binary distinctions between health and illness.

To read 'Mrs Fox' as a narrative of pregnancy sickness is to bring all these associations into the foreground. The coincidence of Sophia's metamorphosis and conception involves both illness and wellness. As I have already noted, the confusion of health and illness in the case of pregnancy sickness can be linked to the idea that the condition operates as a form of 'wellness insurance', where nausea and vomiting protect the pregnant subject from potentially teratogenic chemicals in food and drink. With this in mind, I want to consider 'Mrs Fox' in relation to nineteenth-century mediations of evolutionary theory through fairy and folk narratives of metamorphosis, in which the boundaries between species are transgressed. This context brings temporality into the discussion once more. In *Darwin's Plots*, Gillian Beer notes the difficulty of communicating the temporality of evolution in the nineteenth century because '[t]he rapidity of Darwin's narrative made it difficult for him to render accurately the extreme slowness of the processes he was describing' (Beer 2009, 98).

For instance, discussing a bear which swam in the water, catching insects in its open mouth, Darwin states: 'I can see no difficulty in a race of bears being rendered, by natural selection, more and more aquatic in their structure and habits, with larger and larger mouths, till a creature was produced as monstrous as a whale' (Darwin quoted in Beer, 98). Beer observes that this passage of Darwin's became a target for attacks on evolutionary theory, but also gave rise to fantasies of rapid metamorphosis, of a liminal creature at once bear and whale. This intermediate form was a textual creature, existing alongside the centaur and the mermaid but seemingly underwritten by science. I want to suggest that 'Mrs Fox' builds on this cultural legacy to develop an ironic allegory of evolutionary accounts of pregnancy sickness as a protective genetic mechanism.

The bear's imagined mutation is conceived as an evolutionary response to its need to find sustenance in the water. What, then, might be the evolutionary purpose of Sophia's metamorphosis in 'Mrs Fox'? If NVP is understood as a protective aversion to food in the first trimester, intended to isolate the pregnant subject from teratogenic chemicals, then Sophia's transformation into a fox and flight to the woods can be read as a fantastical hyperbolization of this process: a protective mutation necessitated and enabled by pregnancy. Hall's story speculates that, if nausea and vomiting protect pregnant people from toxins in food, Sophia's metamorphosis into fox might protect her from the realm of the human itself. Returning home after her transformation, Sophia 'jumps onto a chair next to the table. As if only now, after her walk and purging of the disease of being human, she is ready for breakfast.' (Hall 2017, 12) Immediately following her transformation, the vixen is described 'with her head thrust low and forward, as if she is looking along the earth into the future' (Hall 2017, 10). The rapidity of Sophia's metamorphosis condenses the multiple temporal scales of reproduction so her individual pregnancy is invested with larger stakes: the reproduction of the future. The future she reproduces is disarticulated from the reproduction of the species; indeed, it is imagined as a transgression, or even an abolition, of humanity itself. There is irony in the story's turning of evolutionary biology against itself to make the idea of genetically programmed behaviour serve the abolition, rather than the perpetuation, of the species.

The coincidence of Sophia's pregnancy and vulpine metamorphosis amplifies the sense of border erosion associated with both pregnancy and foxes. Ideological investments in a fixed boundary between self and other are challenged by the gestating body. As Sarah Franklin has observed, the term 'individual', defined as 'one who cannot be divided', cannot

apply to pregnancy, which is 'precisely about one body becoming two, two bodies becoming one, the exact antithesis of in-dividuality' (Franklin 1991, 203). Margrit Shildrick has theorised this aspect of pregnant embodiment in relation to social fears of monstrousness, noting that pregnancy 'speaks to an inherent capacity to problematise the boundaries of self and other' (Shildrick 2012, 5). The Enlightenment doctrine of maternal impressions, she notes, did not only function to explain 'the puzzle of monstrous birth' (Shildrick 2012, 11) – it also reflected anxieties about '[a]ll those processes of procreation which speak to change rather than to replication' (Shildrick 2012, 18), and all those processes of embodiment that disrupt fantasies of autonomous masculine individualism.

Hall's story alludes to the theory of maternal impressions at a point in the story's opening pages when the narration briefly shifts from the husband's point-of-view to an omniscient mode with access, albeit limited, to Sophia's inner life:

> After she has cleaned herself and joined him in bed, she dreams subterranean dreams, of forests, dark corridors and burrows, roots and earth. In her purse, alongside the makeup and money, is a small purple ball. A useless item, but she keeps it – who can say why? She is called Sophia. (Hall 2017, 3)

No sooner has this passage given us access to Sophia's dreams than it retreats, restoring her opacity with a rhetorical question about the meaning of the purple ball. The ball returns to the narrative later, when it is bestowed by the husband as a plaything for the fox cubs. The foreshadowing might suggest the inevitability of Sophia's transformation – that she has always had the mind of a fox, even before her body follows suit. Yet her 'subterranean dreams' can also be read as a form of maternal imagination, producing a posthuman birth that imprints not only the bodies of Sophia's children, but also her own. Sophia gleans power from her opacity: this paragraph begins with the observation that she is 'in part unknowable, as all clever women are' (Hall 2017, 3). The brief narrative glimpse of her dreams pierces that power, but also re-establishes it by gesturing towards her animal otherness. Meanwhile, the narrative's sudden announcement of her name affirms by contrast the imbalance between the story's treatment of Sophia and her husband, who remains nameless while focalising the narration for most of the story. Naming appears here as a fruitless exercise in attempting to fix a being who refuses fixity. By the end of the story, the memory of 'Sophia, the woman he

loved' is distinct from his devotion to 'the fox, in her blaze, in her magnificence' (Hall 2017, 28).

Foxes, like pregnancy, are associated with border transgression. As Timothy C. Baker puts it, 'Foxes are threshold creatures, and particularly suited to discussions of border crossing in all its manifestations' (Baker 2019, 77). Noting that foxes tend to signify wildness despite their familiarity in urban contexts, Baker notes that the fox 'is neither wholly human nor nonhuman, but is frequently an index of both similarity and difference' (Baker 2019, 78). Discussing 'Mrs Fox', Baker observes that, following the metamorphosis, the story's narrative focalisation becomes more ambiguous, particularly in its descriptions of the fox's natural habitat, suggesting that 'it is not simply that the fox can replace the human, but that her new physical form requires a different relationship with the world' (Baker 2019, 86). Julia Ditter makes a similar point in an analysis of the story's setting, the 'edgelands' that form the border between town and countryside. According to Ditter, the story's edgelands can be read as a Foucauldian heterotopia, a 'liminal space of encounter' that allows the husband to view the fox 'as a non-human other and approach her on an equal level' (Ditter 2019, 198-200). While both Baker and Ditter develop compelling accounts of the story's interest in border transgression, neither attend to the liminality of reproductive embodiment, though Ditter briefly notes the story's evocation of pregnancy sickness as a 'mundane' form of transformation that contrasts with Sophia's spectacular metamorphosis (Ditter 2019, 191). I would argue not only that the story's focus on border transgressions has implications for its reproductive politics, but also that the story's reproductive themes cast an alternative light on its environmental ones.

The reproductive politics of the story’s border transgressions are illuminated by Donna Haraway’s cyborg theory and its emphasis on ‘leaky distinctions’ between human and animal, and between organism and machine (Haraway 1991, 151-52). Hall’s prose evokes Haraway’s groundbreaking challenge to the nature-culture binary, as the story resists any attempt to interpret its edgelands setting in terms of a binary conflict between the natural and the technological. On the story's first page the husband is described on the train home from work, ‘glancing up at the commuter towns, land-steal under construction, slabs of mineral-looking earth, and pluming clouds’ (Hall 2017, 1). However, Hall subtly abrades any rigid opposition between the organic and the inorganic, often by using words that signify across both realms. The interior design of the couple’s home, a bland space of bourgeois comforts,

locates this collapse of the natural and the industrial in the lexis of product branding: ‘Its colours are arable: brassica, taupe, flax’ (Hall 2017, 3). On the day of Sophia's metamorphosis, 'a faint October sun has begun its industry' as the couple walk to the woods (Hall 2017, 7). Soon the sun is 'chromic', making Sophia's hair gleam as she starts to run (Hall 2017, 8). Later, when the husband visits the woods to discover the cubs, it is a 'palace of delicate filaments', another term that resonates both botanically and industrially (Hall 2017, 23).

Not only the edgelands but the vixen, too, is rendered in terms that confuse the boundary between organic and industrial materials. When the husband first apprehends his transformed wife's fox-like face, it is described in terms of manufacture: 'The bones have been re-carved' (Hall 2017, 8) Her vulpine nose is a described as a 'blade', a term that can refer to either a tool for cutting or a leaf of grass (Hall 2017, 8). Post-transformation, the husband considers whether his wife's 'thousand feral programmes' will cause her to flee instinctively to the woods (Hall 2017, 10); later, the fox cubs are described as they 'play in silence, programmed to safe mutism' (Hall 2017, 25). The term 'programme' here evokes both computing and genetically determined behaviour. Machinic language features at the points where the story depicts a stark alienation of man from animal. During his period of keeping the vixen captive, the husband eventually relents and brings her home a live pigeon; as she kills it, she is 'like machinery; the snapping and clicking of her teeth' (Hall 2017, 18). The description recalls the human Sophia's morning sickness earlier in the story, when the husband is startled by the ‘clicking sound in her gullet’ and the subsequent ‘coppery gleam’ of her skin, a description that suggests both fox fur and industrial metals (Hall 2017, 4). As he watches the fox nurse her cubs, the husband 'can see the discomfort of her being emptied, of manufacturing and lending nutrients' (Hall 2017, 26). The vixen is a cyborg, inhabiting a corporeal borderland as well as a geographical edgeland (Haraway 1991, 150).

Throughout, then, the story locates a form of cyborg hybridity in the proliferation of terms that signify both animal and machine. It is the collapse of these two realms that engenders a form of humanist disgust in the husband: after the fox has killed the pigeon 'like machinery', he 'is angry and ashamed' (Hall 2017, 18). This is the point at which he redraws the line separating the human realm from the wild: he opens the door and Sophia flees, after which he dreams of 'machinery and dogs, his own brutality, and blood' (Hall 2017, 19). The dream conflates two threats: fox hunting and property development. A road is under

construction nearby and, as the husband observes towards the story's end, 'the woods are temporary and the city is rapacious' (Hall 2017, 27). Before her transformation, Sophia works in the property industry; she is thus ambiguously complicit in the development that will threaten her habitat post-transformation. As the weeks pass following her metamorphosis and flight from the marital home, a 'letter arrives from her place of work accepting termination of employment': shifting species, she has also switched allegiances from the capitalist developers to the creatures whose habitat is under threat (Hall 2017, 20). Once the husband discovers the vixen's cubs, his loyalties switch too: 'He swears silent oaths to himself and to her: that he will guard this secret protectorate. That he will forgo all else. He will, if it comes to it, lie down in front of any digger before it levels this shrine' (Hall 2017, 24). There is, perhaps, a satire here of the man whose commitments to social justice are contingent on the reproduction of his genetic material; the husband recalls that stereotype, the self-professed 'father of daughters' who suddenly discovers sexism. But the story also subverts this stereotype: the husband's 'progeny' are of another species, so he cannot easily access a patriarchal fantasy of self-replication through fatherhood. For the vixen, as for Haraway's cyborg, 'fathers, after all, are inessential' (Haraway 1991, 151).

The story also subverts the discourses of maternal impression that Shildrick identifies with 'a conservative desire for ideal reproduction' (Shildrick 2012, 19). With 'Mrs Fox', Hall rewrites the fable of maternal impression as a tale of care across forms of irrevocable difference. In the story's opening pages, the husband's gaze casts his wife's difference as a form of gendered and racialised mystery. His perspective on Sophia is at first pitched between an Othering exoticisation and a consolidating identification. Before her transformation, he notes '[t]he shape of her eyes, almost Persian, though she is English' (Hall 2017, 1). He neutralises the threat of her difference by possessing her in marriage – or he imagines he does. Of course, Sophia's metamorphosis underlines the impossibility of possessing another. More than this, her transformation challenges her husband (and the reader) to imagine a form of care without possession – a love that does not stake a claim. Animality does not function here as a metaphor for human diversity, but as a challenge to the very principle of relation-as-possession. This disarticulation of care and possession may harbour a glimpse of what Bénédicte Boisseron has called an 'interspecies alliance against the hegemonic (white, human, patriarchal), dominating voice' (Boisseron 2017, xxv), though

in Hall's hands, and at the scale of the short story, the alliance is tentative, speculative and embattled.

The theme of rebellious, transformative reproduction is at work in the story's relationship with its apparent source text, David Garnett's 1922 novella *Lady into Fox*. Garnett's text, set in the late nineteenth century, also narrates the story of a man whose wife transforms into a fox and bears a litter of cubs. Garnett's husband, however, does not claim the cubs as his own, instead announcing, 'I know they are not my children, but I shall not use them barbarously because of that. You are still my wife. I swear to you they shall never be neglected' (Garnett 1923, 80). He declares that he will pay for their education and indulges in a fantasy of sending them to a prestigious private school, before remembering that 'they were foxes – mere foxes' (Garnett 1923, 81). The husband in Garnett's text is consumed by jealousy for the male fox he assumes has fathered his wife's brood. The thought does not ever occur to the husband in 'Mrs Fox', who feels an immediate claim on the kits: 'The lovely sting in him! They are, they must be, his' (Hall 2017, 24). Faced with Haraway's call in her more recent work to 'make kin, not babies', the husband of 'Mrs Fox' is determined to do both.[3] The husband's declaration of paternity in the face of such radical difference is illuminated by the relationship between Hall's text and Garnett's. As Baker notes, Hall does not directly acknowledge *Lady into Fox* as a source text (Baker 2019, 84). Instead, allusions to the text are peppered throughout the narrative, from Sophia's surname, Garnett, to the story's title, 'Mrs Fox' (Fox is the maiden name of the wife in *Lady into Fox*) (Garnett 1923, 2). At one point in Hall's story, the husband goes to the library to research animal transformations and comes home with 'a slender yellow volume from the twenties', presumably Garnett's novella (Hall 2017, 16). Given that literary influence has often been figured through metaphors of fatherhood, Hall's decision to leave her source text unnamed parallels the playful behaviour of her story's vixen, who presents the husband with a litter while leaving the question of paternity to the imagination.

From one perspective, the uncertainty around paternity in 'Mrs Fox' might be interpreted as a nostalgic return to the notion of fatherhood as cultural, rather than biological: as, in the words of Sigmund Freud, 'a hypothesis based on an inference and a premise' (Freud 2001, 113-114). As Judith Roof has discussed, before the development of DNA testing, the law had to be set up to regulate the assumption of paternity and the rights of fathers. Roof writes: 'The roles of fathers have changed in the twentieth century and the beginning of the

twenty-first century. The familial roles of individual fathers have become more nurturing at the same time that biological science has made the identities of fathers more certain (Roof 2007, 22). Hall's text resituates biological paternity in a realm of uncertainty, but cuts it loose from the legal infrastructure that might have invested this uncertainty with authority. The story's father figure, meanwhile, cares from a distance and accepts an exclusion that is 'gently painful, but it is enough to see them, to watch them grow' (Hall 2017, 25). The husband cultivates a form of what Amelia DeFalco has termed posthuman care, though he initially struggles with this practice. During the initial period of keeping the fox captive, he 'tries not to be disgusted' at the 'black, twisted scat' on the floor: 'If we were old, he tells himself, if I were her carer' (Hall 2017, 17). This attempt to reframe the 'leaky body' (Shildrick 1997) of the animal in terms of human vulnerability fails when the fox kills the pigeon and its cyborg machinic animality asserts itself. The passage recalls DeFalco's confrontation with the 'difficult work of fictional speculations of inhuman being' in her analysis of feral children narratives that 'communicate posthuman affinities and care that are largely outside the ken of human(ist) epistemologies' (DeFalco 2023, 79). Finally, it is a horizontal and dispersed model of care, rather than a genetic-paternal one, that Hall's husband settles into as he 'worries about the cubs' but accepts that 'they are hers, and perhaps his, though peripherally' (Hall 2017, 27).

What does this posthuman model of fatherhood mean for my speculative, allegorical interpretation of 'Mrs Fox'? If Sophia's pregnancy sickness suggests the 'genetic safety net' theory of NVP, then the story's conflation of pregnancy sickness and vulpine metamorphosis suggests that 'protecting a pregnancy' might mean more than just avoiding dangerous foods; in fact, it might involve a more profound disaffiliation from capitalist modes of production and reproduction. Foxes, as Martin Wallen has noted, are in some ways at odds with capitalism as creatures that will ‘never form a productive part of the barnyard menagerie’ (Wallen 2006, 147). From this perspective, one of the mysteries the narrative sets up in its early stages, the ball in Sophia's pocket, is hardly a mystery at all: she has been waiting all this time to quit her job and play. Her metamorphosis, then, can be seen to extend the 'protective' quality of pregnancy sickness into a rejection of life under capitalism, its equation of worth with productivity, and its attendant environmental destruction. The fox resonates here not only as a figure of border transgression, but also as a symbol of the refusal of the capitalist logics of development, productivity and environmental degradation embedded in dominant ideologies of reproductive self-perpetuation. Rather than expressing a nihilistic

anti-humanism, then, the story challenges us to imagine cross-species reproductive solidarity as an integral part of social transformation. If we don’t want to reproduce the same world, how do we reproduce a different one? In the final section of this article, I want to consider the implications of this revisionary account of reproduction for the therapeutic futures of pregnancy sickness.

From reproductive risk to reproductive solidarity

In my introduction to this article, I outlined how the 'evolutionary safety net' explanation for NVP has potentially contributed to a general social unease around its treatment, informed by the history of teratogenic medicines. The emerging genetic account of NVP is embedded in a different kind of story, where anxieties about childhood disability are instead invoked to shore up the promise of new treatments for pregnancy sickness and make the case for funding their development. It is possible to map these shifting accounts of pregnancy sickness onto changing discourses of genetics. The idea that NVP is intended to protect the pregnancy from dangerous substances may be compatible with familiar neo-Darwinist narratives of individual self-interest and competition, motivated by a need to ensure the survival of the organism's genetic material. By contrast, the new discourses around GDF15 are entangled with what Lara Choksey has described as a contemporary appropriation of evolutionary accounts of transformation into 'either genomic diagnosis (i.e. deleterious transformations that might be visible in the genome) or genomic futurism (i.e. the editing or eradication or insertion of elements that might facilitate better, longer and more productive lives’ (Choksey 2021, 4). As Hanson has argued, contemporary discourses of genetics register a tension between 'the emancipatory potential of epigenetics' and the risk that the disadvantaged come to be framed as somehow 'biologically distinct', while the promise of 'personalized regimes aimed at training and epigenetically modifying one's genome' would be available only to those with economic and social capital (Hanson 2020, 18).

Potential treatments for NVP can be contextualised in terms of both diagnosis and futurism. Projected therapeutic approaches include 'priming' those at risk for severe NVP with GDF15 prior to pregnancy, which it is thought will reduce sensitivity to GDF15 when it rises after conception. Such an approach seems to depend on the ideal of the planned pregnancy, institutionalised in the twentieth century but always inaccessible to many, even

setting aside the inequalities of access to medical therapies. Beyond these questions of access to new treatments are the discourses of reproductive risk summoned to make the case for their necessity. If the case against medication has historically been made by invoking fear of disability, then the case for medication could easily proceed simply by invoking the same fears in a different context. Paying attention to narratives of pregnancy sickness, which starts with locating them where they have often been overlooked, can help shape the way we imagine the therapeutic futures of NVP. My analysis of 'Mrs Fox' as an ironic allegory of evolutionary accounts of pregnancy sickness is intended to open up an expanded field in which to approach these debates. I have interpreted Hall's story as a speculative exploration of what new forms of solidarity across difference might look like, whether models of care liberated from racist and ableist notions of genetic kinship, forms of family detached from heteronormative gender roles, or acts of resistance against the social and environmental degradations of capitalist development. This reading has aimed to gesture towards an alternative discursive framework for genetic accounts of pregnancy sickness, one that moves away from ideologies of maternal sacrifice and disability-as-deficit, and towards the interlinked projects of reproductive justice and disability justice.

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[1] For black women, the medical dismissal of NVP takes place in a wider context of systemic racism in obstetric care. In the UK, maternal mortality rates were found in 2021 to be almost four times higher for black women than for white women (Knight et al 2021).

[2] For work at the intersection of animal studies and disability studies, see Taylor (2017) and Jenkins *et al* (2020). For work at the intersection of black studies and animal studies, see Boisseron (2018) (thank you to an anonymous reviewer for suggesting this source).

[3] For a critical analysis of Haraway's turn to populationism in *Staying with the Trouble* (2016), see Lewis (2017).