



# A Change of Heart: Animality, Power, and Black Posthuman Enhancement in Malorie Blackman's *Pig-Heart Boy*

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## INTRODUCTION

In January 2022, a medical procedure conducted at the University of Maryland Medical Center hit the headlines: 57-year-old David Bennett had become the first to receive a porcine-to-human cardiac xenotransplant. Bennett, a patient with advanced heart failure, survived for two months after an expert team replaced his native heart with that of a pig. While cardiac *allotransplantation* (organs exchanged between beings of the same species) is an established therapy with good outcomes,

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xenotransplantation (between two different species) has until now been mostly the stuff of laboratory experimentation, venture capitalist speculation, ethics debates, and, of course, science fiction. Since the first in 1964 (chimpanzee-human, on an adult who died on the operating table), a handful of mostly unsuccessful cardiac xenotransplants involving humans had taken place, with the most successful until now a 1984 baboon-human experiment on an infant who survived for 20 days.<sup>1</sup> But researchers have now made significant advances in gene-editing and immunosuppressant drugs, and Bennett's increased survival time suggests he may be only a first among many to receive a pig's heart. The chronic shortage of donor organs for transplants—"[i]n the UK alone, it is estimated that three people die every day while waiting for an organ"—is driving research into alternatives.<sup>2</sup> These include mechanical and bioprinted hearts as well as xenotransplantation, which "promises a potentially unlimited supply" of organs.<sup>3</sup> If pigs can be reared in conditions sufficiently sterile to minimize chances of zoonotic (nonhuman to human) disease transmission, and genetically engineered to circumvent the recipient's rejection mechanisms, what is to stop any of us who needs a transplant from simply ordering an organ tailored especially for us? What might the moral, psychological, or imaginative consequences of this look like, and what might cultural reception of such a bioresource be? This chapter seeks to engage with such questions regarding identity, bodily integrity, and ethical responsibility and to consider how xeno medicine might intersect with other cultural systems of power.

### *Boy*

Malorie Blackman's popular young adult novel *Pig-Heart Boy* (1997) follows 13-year-old Cameron, who, since contracting a virus the previous year, has been suffering from critically reduced heart function. His only chance of living beyond a few months is a transplant, but the waiting list for human hearts is simply too long. He is offered the chance to be the world's first to receive a pig's heart, and he ultimately accepts. Cameron shares his experience of facing his own mortality at a very young age as he negotiates the tension between the urgency of his situation and the ethical complexities and challenges to identity that xeno presents. The novel is both an illness narrative and a speculative *Bildungsroman*, and Blackman uses Cam's intersecting identities as a young Black Londoner and a cardiovascular patient to explore racial health inequalities and

xenotransplantation's potential impacts on embodiment.<sup>4</sup> His parents disagree about whether the experimental treatment is right for their son, and the implied breakdown in parental authority encourages Cam to develop his own agency as he transforms into adulthood. Aged 13, he is working out what kind of man he might be, in terms of his body, health, and disability; his family role and romantic self; and his burgeoning political and ethical self. The physical aspects of Cam's experience are central to his developing self-understanding—many teenagers experiencing puberty may relate to his all-consuming experience of bodily changes, if not in quite the same way—and the significance of the organ in question at this pivotal life stage draws on cultural conceptions of the heart. How do received assumptions of the heart as locus of character, selfhood, and identity shape this teenage boy's decision making as he is told that he (quite literally) needs a change of heart?

### *Heart*

Transplant science depends on the common “machine” model of human physiology, where the body is an interconnected assemblage of essentially discrete parts, and broken parts can be replaced without challenging the integrity of the whole. Novel research challenges this implied Cartesian mind/body split, aligning with Western cultural conceptions of the heart and with many lay beliefs about transplantation: “[b]y early elementary school age, children report that trading hearts with someone has the power to cause the recipient to take on the donor's traits,” and there are numerous cases of cardiac allotransplant recipients reporting personality changes post-operation.<sup>5</sup> Research finds that “heart transplantation [is] likely to provoke uncertainties with regard to the nature of the embodied self”; Cam, however, resists any suggestion that his selfhood is under threat, insisting: “It's just a heart. A muscle. It has nothing to do with what I am or how I think or behave or feel.”<sup>6</sup> Without explicitly challenging the “body as machine” metaphor, the novel nevertheless explores xenotransplantation's shaping of identity, in terms of species categories, ethical responsibility, and, despite his overt resistance to the idea, the part the new heart plays in Cam's developing selfhood.

Cam describes himself as “piggy in the middle” between his arguing parents, invoking in this children's game two challenges to identity: moving from childhood to adulthood and accepting the pig organ “in the middle” of his body, or at, we might say, the heart of him.<sup>7</sup> Crucial

questions emerge: after the transplant, is it still the pig's heart, now beating for Cam (the piggy in his body's middle), or has it become Cameron's heart, incorporated and subsumed? Does the cross-species transplant make Cam *literally* a "piggy" between his parents? Xeno provides what is perhaps a special challenge to the category of the human, but it has not emerged in a vacuum:

xeno scientists and engineers view their efforts as part of a long progression within medicine ... One need only consider porcine and bovine heart valves, cochlear implants, hip replacements, and animal-derived hormones to realize the extent to which our bodies are indeed hybrid.<sup>8</sup>

Nonhuman (organic and machine) enhancements demand a new understanding of identity as our bodily encounters with actors, including medical, pharmaceutical, and technological, replace the notion of the "natural" human body with myriad posthuman bodies. Posthumanism is a "new conceptualization of the human" and "an ontological condition in which many humans now, and increasingly will, live with chemically, surgically, [and] technologically modified bodies."<sup>9</sup> This might "[open] up new ways of thinking about what being human means," yet cardiac xenotransplantation, because of the heart's significance both biologically and culturally, presents bigger challenges than therapies involving valves or hormones.<sup>10</sup> We might identify a "decentering of the human by imbrications in technical, medical, informatics and economic networks"—yet "the commodification of human and non-human life in bioengineering [can] lead to the exploitation and exclusion of the less powerful members of society."<sup>11</sup> Transatlantic slavery and its Eurowestern legacies produced for Black bodies "the historical experience of being configured as a not-quite-nonhuman form of life," while pigs have over millennia learned just what it means to be treated *like animals*.<sup>12</sup> If, by producing posthuman bodies, xeno really will "decenter" the human, how might this shape the structures of power that never allowed either Black bodies or pigs (full) access to personhood in the first place?

### *Pig*

Nonhuman animals, "combining biophysiological proximity to human *corporeality* with ethical, social, and cognitive distance from full human *being*," are perceived to comprise the precise balance of similarity with and

difference from humans to make them the perfect organ bioresource.<sup>13</sup> Early xeno research used baboons as “donors,” but after an intervention by renowned primatologist Jane Goodall, researchers agreed to find a less ethically problematic alternative.<sup>14</sup> In *Pig-Heart Boy*, consultant Dr. Bryce explains that primates are

“too closely related to humans ... But pigs, on the other hand...” The doctor smiled drily. “Pigs are not an endangered species, their organs are very close to humans’ in size and, as they’re already bred for food, we thought it would make sense to use them in our line of research.”<sup>15</sup>

Pigs invite much less public resistance than primates, and much of what resistance there is, is less out of empathy than revulsion. Pigs are intelligent, clean, social creatures yet are reviled as literally and conceptually dirty, a “despised status” that is evident in “derogatory terms” in English.<sup>16</sup> In Gill Haddow’s research into attitudes toward different kinds of potential heart transplants (allo, xeno, and mechanical), many participants argued against xeno with merely: “It’s a pig.”<sup>17</sup> How might such aversions shape the experience of a porcine xenotransplant recipient?

### POSTHUMAN BODIES AND POSTSPECIES BOUNDARIES

Zoe Jaques asks: “when does the ‘post’ human go too far, whether on moral, technological, or biological grounds? Occurrences of posthumanism can be frightening as much as they can be liberating.”<sup>18</sup> The creation of chimeras is crucial to avoiding rejection post-xenograft, as genetic modification of “donor” pigs prevents the recipient’s body from perceiving the organ as foreign. Like allotransplantation, xeno may “destabilize lay understandings of the body’s integrity,” but xenotransplantation also challenges categories of “human” and “animal.”<sup>19</sup> Haddow describes “a deeper-seated repugnance expressed as ‘yuck’ due to the perceived challenge to what is considered the natural species’ boundaries” and suggests that “[t]his socio-cultural rejection may be as challenging to overcome as the human biological rejection of any foreign organ.”<sup>20</sup> Such disgust may be conceptual and emotional: “long-established myths” teach us that “the transgression of boundaries can ... be frightening.”<sup>21</sup> Blackman plays on the heart’s traditional role in romance through emerging difficulties between Cam and his adolescent love interest, Julie, when he returns to school with renewed vigor post-operation. Confused by her newly cold

behavior toward him, he demands an explanation: “She took a deep breath. ‘Look, Cam, I’m not being funny but Mum said you could have all kinds of germs and diseases in you now. Germs and diseases that are new to humans and dangerous.’”<sup>22</sup> Cam protests, “Julie, it’s still me—inside and out. I haven’t changed,” but his defiant insistence on the continuity of his identity fails to convince Julie, who, clearly scared by xenotransplantation, tells Cameron: “I think Mum’s right. You’ve got a pig’s heart inside you, so how d’you know what’s going on in your body now?”<sup>23</sup> The specific concern about zoonosis broadens into a less easily defined perception of foreignness and alienation in Cameron’s body, a loss of control over the material self and over the ability to categorize what makes us human.

Margareta Sanner suggests that “[w]hen accepting an animal organ as a transplant this challenges one’s humanity.”<sup>24</sup> Cameron’s best friend, Marlon, is less hostile than Julie but also reveals anxieties about Cam’s identity, specifically in relation to xeno’s challenge to species boundaries:

“But aren’t you afraid that the pig’s heart will somehow ... *change* you?”

“Change me—how?”

“I don’t know. Maybe it will ...” Marlon trailed off, anguished.

I couldn’t help it. I burst out laughing. “Turn me into a pig? D’you think I’ll start walking on all fours and grow bristles and turn pink?!”

“Cam, it’s not funny,” Marlon fumed. “You don’t know what that thing will do to you once it’s inside you.”

“I know it won’t turn me into a pig – that’s for sure. My brain will be the same and my soul, the thing that makes me *me*—that’ll be the same.”<sup>25</sup>

David Bennett’s first response to the idea of the transplant was, “Well, will I oink?”<sup>26</sup> In Haddow’s focus groups, “[s]ome comments were made about whether xenotransplantation would make the recipient ‘pig-like,’” while many children in Meyer et al.’s study believed that a heart transplant recipient would not only take on the personality of a *human* donor, but that s/he would likely begin “acting like a pig [from a pig’s heart].”<sup>27</sup> Marlon shares those concerns, but Cam (perhaps unconsciously) sustains the human/animal divide by invoking “the question of the soul [which] has been integral to defining the categories of human and animal for millennia.”<sup>28</sup> His laughter is also significant here: Blackman uses jokes to

present thorny ethical or conceptual issues in ways that promote discovery rather than fear. Jaques quotes Brian Boyd, on “the pleasures of the as if”:

“Children”, he observes, “are fascinated with the boundaries between humans and other animals ...” ... because they enjoy “the sheer pleasure of the surprise, of seeing that there could be other ways to be.”<sup>29</sup>

Cam is not apparently threatened by the idea of his assuming pig characteristics post-transplant, and he is able to communicate his confidence in xeno to Marlon in part by inviting him into “the pleasures of the as if.” A subsequent jocular exchange demonstrates shared conviction about Cam’s enduring humanity:

“I guess it’s lucky you’re not a Rasta...” Marlon said wryly.

“Or a Muslim.”

“Or a vegetarian.”

Marlon and I both began to chuckle.

“There you are. My luck’s getting better already!”<sup>30</sup>

Attitudes to xeno among Rastafarians, Muslims, and vegetarians do not always follow beliefs about eating pigs, but the boys’ connecting transplantation and eating speaks to the powerful correlation between two ways of bringing pig flesh into the body.<sup>31</sup> After the transplant, joking about eating is again a way of exploring questions around identity and incorporation:

“Cam, you can have a bacon burger,” Andrew told me.

“Or a couple of pork chops,” Rashid laughed. “If you don’t mind eating your cousins!” Andrew was doubled up with laughter now.

I glared at him, my lips pursed, my face stony. “Blow it out your ear, Rashid.” I told him.

They all creased up at that. I had to admit my lips did twitch a bit. Eating my cousins! Yeuch! What an idea!<sup>32</sup>

Although there is some ambiguity here—is the “yeuch” factor purely conceptual, or is there some extent to which Cam *would* now consider his eating pork a cannibalism?—more generally he does not entertain any notion of becoming part-pig. Yet despite his confidence in his identity’s integrity, it is not the case that Cam experiences no alteration. For instance, his friend observes him standing up to a bully: “You’ve changed since

your operation, d'you know that?' Andrew told me as we walked along. ... 'You're more pushy.'"<sup>33</sup> Cam protests, and then: "'I'm not Julie,' said Andrew. 'A heart is just a pump. It's not the real you, that's all.'"<sup>34</sup> If Cam does not change from human to pig, we might instead track his transformation from childhood to adolescence and from human to posthuman, where technology has altered the human body to the extent of shaping selfhood and challenging self-categorization.

Rosi Braidotti suggests that "becoming post-human ... is a process of redefining one's sense of attachment and connection to a shared world."<sup>35</sup> Cam stops eating red meat after the operation, which he casually justifies as "just healthier, that's all."<sup>36</sup> He wants to take care of his new heart, but elsewhere he privately expresses a wish to show gratitude for the pig's "help," perhaps by acting on the difference between accepting the organ (which was necessary for his survival) and eating meat (which is not).<sup>37</sup> Yet this dietary change might also further reveal his need to maintain the human/animal divide:

Although the act of eating meat can be seen as a powerful assertion of human supremacy and dominance over nonhuman animals and the natural world ... thus serving to maintain this distinction, it simultaneously blurs it. The act of eating animal flesh has often been thought to transmit those desirable qualities which humans have filed under "animal," such as strength and virility<sup>38</sup>

Cam's new refusal of red meat might indeed stem from health and ethical concerns, but also reveal the strength of his resistance to the blurring of hard distinctions between animal and human, with all the consequences for his own identity and subjectivity that would have. Eating animal flesh thus provides the reader with one more way to consider the ways xeno might "challenge one's humanity" in a physical sense—in the cases of both xeno and eating, after all, pig flesh becomes part of the body in a lasting way.<sup>39</sup> Blackman's rendering of the comparison serves, too, to draw comparisons between eating animals and xeno in terms of ethics, acknowledging the challenge to a different inflection of "humanity" by invoking the concepts of animals as bioresources and interspecies responsibility. What can we learn from *Pig-Heart Boy's* exploration of non/human power?

## ANTHROPOCENTRISM, RIGHTS, AND POWER

Cameron is concerned for the pig's welfare, understanding her as an intelligent individual with a personality and a right to life. Before accepting the transplant, he asks what she is like, and Dr. Bryce tells him she's "a fine pig ... independent and strong and extremely intelligent. She can be a bit stubborn," to which Cameron smiles and quips, "You mean, pig-headed!" and this metaphor—another joke—allows an important moment of identification between boy and pig to take place.<sup>40</sup> Violence toward nonhuman creatures is often encoded in language, and this use of "pig-headed," affectionate rather than criticizing, might redefine assumptions about pigs.<sup>41</sup> After laughing about this phrase, Dr. Bryce reassures Cameron that she has "*A heart of gold.*"<sup>42</sup> This dead metaphor, now revived, implies good quality (subtly refuting clinical skepticism about the surgery's safety), benevolence (ironically raising animal rights issues since the "donor" pig is powerless), and financial wealth (hinting at multi-million dollar corporate investments and the high cost that may prohibit xeno's roll-out beyond the developed world). As Cameron pauses on this neat turn of phrase from Dr. Bryce, he may be considering the pig's sentience and capacity to suffer, extraordinary scientific hurdles in a highly experimental domain, and the ethics of using one group of creatures to reduce the suffering of another. Enquiring after the pig's welfare, he is breezily told: "Besides, Trudy and the others love all the fuss we make of them. They think it's a great game."<sup>43</sup> While it is welcome to know the pigs are well-treated, pig behavioral science suggests that "early weaning [and] use of biosecure facilities" that preclude socialization and expression of natural behaviors would cause extreme suffering, and "genetically modified animals might suffer more than 'normal' animals," suffering that is elided by Dr. Bryce's words.<sup>44</sup> Trudy, after all, may not think it is such a "great game" if she knew what was in store for her at the game's end.

Cam's ultimate decision to accept the direct exchange of Trudy's life for his own is based less on his more analytical ethical deliberations than on an individualistic moral justification emergent from the news that his mother is pregnant. Wanting to be around for his new sibling is an understandable response—after all, in a world where billions of pigs are slaughtered each year for food, why should one young boy be expected to lose his life in a stand against xeno? Yet Cam eradicates his resistance to the surgery by depending on what is a fallacious tendency in children's animal fiction to write nonhuman animals as giving "consent":<sup>45</sup> "She looked

straight at me. ... And I prayed she didn't mind."<sup>46</sup> After the transplant, he creates a fantasy anthropomorphized Trudy: "I even dreamt that Trudy was smiling at me!"<sup>47</sup> Within an anthropocentric moral code, the pig is afforded an unrealistic self-sacrificing benevolence that marks her as ripe to be used. This reader does not dispute that Cam's early death would be tragic, but moral red lines already exist (we quite rightly do not permit direct exchange of one human life for another) and there is arguably a more nuanced analysis of xeno that asks not "a question of saving human lives or not, but a question of different roads to the saving of human lives."<sup>48</sup> The novel's animal rights activists are caricatures who evoke little sympathy as they throw pig's blood over Cameron and call him a "murderer," facilitating his choice by delegitimizing the claims of animal ethics and so pushing him back into the anthropocentric world rich in "animal biocapital."<sup>49</sup>

As we might expect in a British boy, Cameron's philosophy—evident in ideas about selfhood, the soul, and animals—is markedly humanist. Agonizing about his decision, he remarks, "the trouble was, I did believe that animals had rights."<sup>50</sup> Yet this typically Western notion of ostensibly humane "rights" is undergirded by the concurrent Western philosophy of human essentialism, and Cam's development from childhood to adulthood is marked by a disassociation of his actions from his beliefs. Xeno demonstrates how understanding the very porous boundaries between humans and other animals—we can share the most important organs—leads not to an ethics of care, but to newly configured oppressions. The humanist framework directs scientific understanding toward the creation of exploited animal bioresource, and Cam's participation in xeno requires him to double down on the human/animal divide. Sustaining the boundaries is not necessary for accepting the pig heart per se, but it is necessary to legitimize the circumstances of exploitation from which the organ comes. The consequences of xeno may be to divide humans even more completely from nonhuman beings, perversely just at the time when "the boundary between non human and animal is thoroughly breached ... language, tool use, social behavior, mental events, nothing really convincingly settles the separation of human and animal."<sup>51</sup> Questions around power and the animal in *Pig-Heart Boy* can be even more fully understood in relation to the novel's other key ethical strand: race.

## ANIMALIZED BEINGS AND “THE DREADED COMPARISON”

The moral and ethical wrangling Cameron goes through shapes his developing moral agency. His experiences as a Black British boy growing up in London inform his recognition that inherent to xenotransplantation are issues of power and oppression, and he acknowledges the parallels between speciesism and racism:

So why did I feel so ... guilty? More than guilty, I felt horrible – almost like a murderer. I told myself not to be so stupid. Trudy was just a pig. Just a pig ... the words sounded like an excuse in my head.

*Just a pig ...*

People always used that argument whenever they wanted to use and abuse animals—or even other people. Part of the excuse used to justify slavery was that we black people were “less than human.” And the Nazis said the same things about Jewish people. Like Mum said, it was such a convenient excuse. If other people and animals were different but *equal*, then you had to treat them with the same respect that you wanted for yourself. Different but “less than” was an entirely different proposition.<sup>52</sup>

From his perspective as a boy who experiences *both* privilege (as a human, as someone with access to cutting-edge healthcare) *and* discrimination (as a Black person in Britain), he suggests that oppressions of enslaved Africans, Jewish people, and pigs have been enacted within similar power structures, contributing to a history of parallels between racist and speciesist oppressions known in Marjorie Spiegel’s terms as “the dreaded comparison.”<sup>53</sup> Since the 1800s, “the US animal liberation movement has ... evoked Holocaust and slavery analogies as a way of characterizing the treatment of nonhuman animals,” and “abolitionism, once restricted to slavery, is now a word applied to animal welfare.”<sup>54</sup> David Sztybel and Charles Patterson each find parallels between generally accepted animal farming practices and Nazi crimes against Jewish peoples; Steven Best and Spiegel note similarities between animal exploitation and slavery.<sup>55</sup>

Spiegel writes that, “[c]omparing the suffering of animals to that of blacks (or any other oppressed group) is offensive only to the speciesist.”<sup>56</sup> Diana Leong, however, argues that the comparison is used by people who think that Black rights are a *fait accompli*.<sup>57</sup> Indeed, it is not easy to forget that animalization as *sub-* or *part-*human have been core tools of Eurowestern scientific racism and genocide of Black and Jewish peoples. Racial science was central to US pro-slavery arguments and “became ...

the primary instrument used to examine and study the Black body positing it as a sub-creation, animal, ... a nonhuman species.”<sup>58</sup> In a cruel twist, animal rights advocacy was then used to diminish Black Americans: “Whites were seen as capable of compassion and advocacy for animals, but African Americans, as savage, were seen, conveniently, as incapable of such humane sentiment.”<sup>59</sup> Comparisons between human and nonhuman oppressions must not “flatten ... out historical contexts that determine the differential use of animal (and other) figures in the processes of racialization.”<sup>60</sup> As Philip Butler writes, “Black bodies, inclusive of Black minds, have not forgotten what it means to be associated with animality.”<sup>61</sup> From a different perspective, Catherine Bailey argues that “part of what is objectionable about protesting the enslavement of blacks because it is like the caging of animals is that it naturalizes the condition for animals,” while, from another perspective, Claire Jean Kim notes that these comparisons are “transgressive” in that they “disrupt settled notions of species difference.”<sup>62</sup>

How, then, are we to navigate “the dreaded comparison,” with so much at stake from all sides? Cameron’s personally inflected contemplations of racism and speciesism might shed some light. He suggests that lines demarcating difference between Nazis/Jewish people and xeno scientists/pigs are arbitrary. Indeed, those relationships operate within the same power structures, as Kim explains:

race, species, gender and other forms of difference are constructed through the articulation of a core set of dualisms—master/slave, male/female, human/animal, white/black, reason/nature, culture/nature, civilized/savage, mind/body, subject/object, and so forth—which undergird Western thought and culture.<sup>63</sup>

The othering of different groups might operate in a similar fashion, depending on the establishment of a standard category (e.g. whiteness, humanness), against which anything else is *other*. Florence Chiew quotes Cary Wolfe: “The violence of humanism ... ‘is species-specific in its logic (which rigorously separates human from nonhuman) but not in its effects (it has historically been used to oppress both human and nonhuman others)’.”<sup>64</sup> Far from compromising anti-racist (or animal rights) work, the comparison might support multiple forms of resistance, and exploring the roots of animal oppression might be as productive an anti-racist activity as an animal rights one. Bénédicte Boisseron suggests that we need to avoid

“the slavery era measurement of subordinate existence in an equation of life where the black and the animal have to battle in order not to be last” and instead explore how “the black and the animal ... can empower each other as well by turning this intersectional bond into defiance,” into “interspecies alliances.”<sup>65</sup> The sympathy generated for Trudy works in narrative tension with the difficult circumstance that any such alliance between her and Cam would necessarily end with one of their deaths. Broaching “the dreaded comparison” acts as a thought-provoking but non-didactic introduction for Blackman’s young readership to a complex and potentially radical kind of ethical thinking. This is limited, however, by the instrumentalizing of one event (transatlantic slavery or the Holocaust) to think about another (animals in labs), rather than engagement with shared underlying causes. Ultimately, Cameron turns from the comparison and endorses a zero-sum game in which one must choose human or animal, but never both, and the novel misses the opportunity to explore the foundations of oppression. Nevertheless, within the humanist framework, Blackman’s anti-racist project offers an important speculative reimagining of Black experience in Western healthcare and firmly authenticates the Black body’s centrality to the future of medical technology. It is this that is under consideration in this chapter’s final section, as I track what we might see as a move from (Black) humanism to (Black) posthumanism.

### THE PROMISE OF BLACK ENHANCEMENT

In her youth, Blackman was struck by the dearth of Black authors and protagonists in children’s literature, and throughout her career she has worked to advance Black representation in fiction and education.<sup>66</sup> On occasion being forced to resist publishers’ suggestions to change characters’ ethnicities, she proved that Black stories were widely relatable and normalized their place in YA fiction, and as a form of resistance she has refused to let her characters be defined by race. There is only one written reference to Cameron’s heritage (explored above), and one grainy newspaper photograph. Rashid’s name suggests Islamic heritage, but it never comes up in the boys’ conversations. Dr. Janice Ehrlich, Dr. Bryce’s assistant, has “dancing dark-brown eyes” and “black hair”; though, like Rashid, her heritage is not made explicit, the description implies a woman of color who is approachable and in a senior professional role.<sup>67</sup> Black is successful, relatable, and normal, and Blackman’s oblique treatment of race, by being

non-didactic, gives the novel political power to speculate on race within experimental medicine.

Race is embedded in the story of heart transplantation, and early procedures reveal a disturbing potentiality for ideas about difference to be co-opted in bioresource development. The world's first cardiac allotransplant, in apartheid South Africa, in which a Black donor heart was transplanted into a white recipient, provoked outcry both from those defending a notion of so-called racial purity *and* those concerned that Black bodies would become a resource for saving white lives. For others, the cross-racial transplant provoked anti-racist delight at apparent biological proof of the lack of meaningful difference between Black and white physiologies. In a notorious case in 1968s segregated US South, a young Black man was hospitalized with a fractured skull, and, before his family were informed of the accident, his heart was transplanted into a white recipient. This sparked fears "that medical researchers were preparing black people to be spare parts for whites"; such a dystopia has not come to pass, though discrimination meant that "[i]nstead of being a poignant reminder of physiological equality, interracial heart transplant now stood as a symbol of technology that aided the rich and white at the expense of the poor and other races."<sup>68</sup> A young Black patient as the subject of experimental medical treatment recalls dark histories of Black bodies in medicine, from transatlantic slave trade-era non-consenting experimentation on enslaved Africans to Henrietta Lacks and the twentieth-century Tuskegee syphilis experiments and present-day legacies in health inequalities.<sup>69</sup> But while science fiction has been a typically white space, it nonetheless "offers authors of color the ability to write stories that address issues of colonization without the burden of needing to address past historical representations of their race or culture," and Blackman is not compelled to make racism (historic or present) central to the story.<sup>70</sup> Instead, with (unspoken, tacit) acknowledgment of ancestral medical histories, the novel speculates on a world where a young Black boy has the cultural capital to be the first to receive cutting-edge treatment. The participation of Dr. Ehrlich and the agency Cam asserts negate any historically founded anxiety that he may be "figured as venture capital, a natural resource available to white investors speculating in the stock market of tomorrow."<sup>71</sup> *Pig-Heart Boy* reimagines the medical life of a Black body where it is not exploited subject but agential participant.

Within these changing narratives around Black opportunities for medical technology and enhancement, Cam holds significance within a

posthumanist discourse that has typically lacked Black bodies.<sup>72</sup> Nevertheless, we might pause before making the human *animal* when s/he has been animalized before to terrible ends and might also pause before making the Black human *post* before s/he has ever had the chance to fully experience her humanity.<sup>73</sup> It is here that the novel's genre is so effective. It enables subversion of scientific racism by imagining a very different (and lifesaving) way in which a Black body might be animal *and* by the reinvention of a world where Black patients are not habitually excluded from healthcare. Blackman demonstrates how speculative fiction can, by questioning boundaries such as child/adult, human/nonhuman, self/other, draw connections between past, present, and future to suggest that if (or when) xeno becomes mainstream, it might matter to and for Black lives in historically unprecedented ways. Kristen Lillvis argues "that the boundary crossings that exist within posthuman [artistic and literary] cultures enable black subjects to make connections to diasporic history in the present and also imagine the future as a site of power."<sup>74</sup> Blackman's optimistic speculation imagines, in traditions of "[i]magination, hope, and the expectation for transformative change" that recall Afrofuturism, a future in which African descendants are co-creators of the worlds they inhabit.<sup>75</sup> Cam's agency is consequential not only individually, but culturally, suggesting how young Black men can play crucial roles in designing future worlds. The detail with which Blackman works through the possibilities and implications of xenotransplantation in the life of a family like Cameron's is driven by the expectation that such "transformative change" is truly possible.

## CONCLUSION

Cameron is a Black boy and a so-called pig-heart boy, but beyond either of those demarcations he is simply a boy, human and relatable, quietly but firmly challenging racist and ableist discrimination. As new lifesaving medical technologies become increasingly viable, the terrible history of experimentation on Black bodies is reimagined as a medical system in which a Black boy might easily be offered, and choose to accept, first-rate care while also making a significant contribution to human knowledge. Nonetheless, there does remain an ambivalence beneath the novel's hopeful rendering of technology and race. Cam's transplanted heart begins to fail, and he is forced to undergo a second porcine transplant; he survives the operation but as the novel ends he is still in recovery, more protracted

than after the first, setting himself a target of being alive when his new sibling is born. For all the apparent promise of xeno, the uncertainty about the end to Cam's story reflects huge hurdles that remain in terms of patient suffering and longevity, for the David Bennetts as well as the Camerons. Reserving absolute judgment about xeno itself, Blackman is not prescriptive to her young readership but invites them into the debate.

What is not fully accounted for in the novel's optimistic speculation on Black experience and (admittedly more muted) hopes for developing medical technologies is the necessary suffering of pigs (and other laboratory animals). The discussion relating to animal rights is concluded in relation to Cam's story but his understandable, individual justification for accepting the heart does not necessarily map onto broader ethical discussions regarding allocation of research funding and society's interspecies responsibilities. Might the novel have more hope if it tried to challenge humanism rather than sustaining it? Activist Aph Ko argues for the potential that exploring the shared experience of violence done to animalized beings—human and nonhuman—holds for developing serious anti-colonial critique: "As black folks, we have been encouraged to create borders around our own racial oppression without realizing that white supremacy provides us with those border walls to ensure that we never fully see how complex our oppression really is."<sup>76</sup> *Pig-Heart Boy* misses an opportunity to more radically critique power structures. Sami Schalk writes that "[s]peculative fiction allows us to imagine otherwise ... For marginalized people, this can mean imagining a future or alternative space away from oppression or in which relations between currently empowered and disempowered groups are altered or improved."<sup>77</sup> The novel adeptly reimagines such "relations" to radically normalize a Black family's agency in receiving care and contributing to potentially hugely significant changes in transplant medicine. Schalk continues: "Speculative fiction can also be a space to imagine the worst, to think about what could be if current inequalities and injustices are allowed to continue"—and despite the researchers' benevolence toward their pigs, the exploitation and suffering of huge numbers of them might designate xeno, from Trudy's perspective, "the worst."<sup>78</sup> *Pig-Heart Boy*, in its fascinating rendering of xenotransplantation, thereby encapsulates both sides of speculative fiction's possibilities and offers intriguing perspectives on the contribution of historically racialized beings to medical and technological futures.

## NOTES

1. Chaban, Cooper, and Pierson, "Pig Heart and Lung Xenotransplantation," 1015.
2. Shaw et al., "Creating human organs in chimaera pigs," 970.
3. Sharp, *The Transplant Imaginary*; Reichart et al., "Pig-to-non-human primate heart transplantation," 752.
4. My own embodied experience is shaped by, among other things, my family's experience of anti-Semitic persecution and my experience of open heart surgery (I received a mechanical valve). Having Caucasian appearance, I cannot relate to certain elements of Cam's experience. I do not seek to compare the experiences, privileges, and traumas of different races (human and nonhuman), though in this chapter I explore relevant points of connection.
5. Smith et al., "Marital Discord and Coronary Artery Disease"; Meyer et al., "My Heart Made Me Do It," 1696; Alberti, *Matters of the Heart*, 1–2.
6. Shildrick, "Imagining the Heart," 234; Blackman, *Pig-Heart Boy*, 154.
7. Blackman, *Pig-Heart Boy*, 29.
8. Sharp, *The Transplant Imaginary*, 43.
9. Pramod K. Nayar, quoted in Hill, "Introduction," 3.
10. N. Katherine Hayles, quoted in Jaques, "Introduction," 6.
11. Cary Wolfe, quoted in Desblache, "Guest Editor's Introduction," 246; Desblache, "Guest Editor's Introduction," 246.
12. Bennett, *On Being Property Once Myself*, 6.
13. Squier, *Liminal Lives*, 254, emphasis in original.
14. Hancock, "Pig Hearts in Human Chests?"
15. Blackman, *Pig-Heart Boy*, 37.
16. Trachsel, "Befriending Your Food," 4.
17. Haddow, *Embodiment and Everyday Cyborgs*, 66.
18. Jaques, "Introduction," 4.
19. Sharp, *The Transplant Imaginary*, 43.
20. Haddow, *Embodiment and Everyday Cyborgs*, 74 and 11.
21. Desblache, "Guest Editor's Introduction," 247.
22. Blackman, *Pig-Heart Boy*, 178.
23. Blackman, *Pig-Heart Boy*, 178; 179.
24. Sanner, "Exchanging spare parts or becoming a new person?" 1497.
25. Blackman, *Pig-Heart Boy*, 46–47.
26. Johnson and Wan, "The ethics of a second chance."
27. Haddow, *Embodiment and Everyday Cyborgs*, 80; Meyer et al., "My Heart Made Me Do It," 1708.
28. Taylor, *Beasts of Burden*, 176.
29. Jaques, *Children's Literature and the Posthuman*, 8.

30. Blackman, *Pig-Heart Boy*, 49.
31. Green, *Death with Dignity*, 14–15; Padela and Duivenbode, “The ethics of organ donation”; Haddow, *Embodiment and Everyday Cyborgs*, 70.
32. Blackman, *Pig-Heart Boy*, 203.
33. Blackman, *Pig-Heart Boy*, 195.
34. Blackman, *Pig-Heart Boy*, 196.
35. Braidotti, quoted in Hill, “Introduction,” 3.
36. Blackman, *Pig-Heart Boy*, 134.
37. Blackman, *Pig-Heart Boy*, 77.
38. Jovian Parry, qtd. in Schmeink, *Biopunk Dystopias*, 90.
39. Sanner, “Exchanging spare parts or becoming a new person?” 1497.
40. Blackman, *Pig-Heart Boy*, 77.
41. Nibert, *Animal Rights/Human Rights*, xv.
42. Blackman, *Pig-Heart Boy*, 77, emphasis in original.
43. Blackman, *Pig-Heart Boy*, 68.
44. Griffith et al., “Genetically Modified Porcine-to-Human Cardiac Xenotransplantation,” 36; Shaw et al., “Creating human organs in chimera pigs,” 973.
45. Trachsel, “Befriending Your Food,” 12.
46. Blackman, *Pig-Heart Boy*, 77.
47. Blackman, *Pig-Heart Boy*, 122.
48. Christoffersen, “Xenotransplantation,” 78.
49. Blackman, *Pig-Heart Boy*, 207; Sharp, *The Transplant Imaginary*, 80.
50. Blackman, *Pig-Heart Boy*, 76.
51. Christoffersen, “Xenotransplantation,” 78; Donna Haraway, quoted in Jaques, *Children’s Literature and the Posthuman*, 12.
52. Blackman, *Pig-Heart Boy*, 75–76.
53. Spiegel, *The Dreaded Comparison*, 24.
54. Kim, “Moral Extensionism or Racist Exploitation?” 312; Boisseron, xi.
55. Szybel, “Can the Treatment of Animals Be Compared to the Holocaust?”; Patterson, *Eternal Treblinka*; Best, *The Politics of Total Liberation*; Spiegel, *The Dreaded Comparison*.
56. Spiegel, *The Dreaded Comparison*, 30.
57. Leong, “An(im)alogical Thinking,” 66.
58. Hill, “Introduction,” 13.
59. Lundblad and DeKoven, “Introduction,” 10.
60. Ahuja, “Postcolonial Critique in a Multispecies World,” 558.
61. Butler, “Making Enhancement Equitable,” 111.
62. Bailey, “We Are What We Eat,” 43; Kim, “Moral Extensionism or Racist Exploitation?” 313.
63. Kim, “Moral Extensionism or Racist Exploitation?” 312–13.
64. Chiew, “Posthuman Ethics with Cary Wolfe and Karen Barad,” 54.

65. Boisseron, *Afro-Dog*, xv, xix and xx.
66. Blackman, *Just Sayin'*, 181–85.
67. Blackman, *Pig-Heart Boy*, 57–58.
68. The *Baltimore Afro-American*, quoted in Koretzky, “A Change of Heart,” 409; Koretzky, “A Change of Heart,” 425.
69. Trivedi et al., “Racial Disparities in Cardiac Transplantation”; Gee and Ford, “Structural Racism and Health Inequalities”; see *Just Sayin'* for a moving account of Blackman’s own experiences of racial discrimination in medicine.
70. Sanchez-Taylor, *Diverse Futures*, 7.
71. Yaszek, “Afrofuturism, Science Fiction, and the History of the Future,” 49.
72. Butler, “Making Enhancement Equitable,” 107.
73. Weheliye, *Habeas Viscus*, 10.
74. Lillis, *Posthuman Blackness and the Black Female Imagination*, 8.
75. Womack, *Afrofuturism*, 42.
76. Ko, “Bringing Our Digital Mops Home,” 9.
77. Schalk, *BodyMinds Reimagined*, 2.
78. Schalk, *BodyMinds Reimagined*, 2.

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