"A Chance of Life Against No Chance At All": Intergenerational Minds in Malorie Blackman's *Pig-Heart Boy*

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Abstract

Prompted by a newspaper article in the mid-1990s about xenotransplantation, the transplantation of organs from one species into another, children's literature author Malorie Blackman was inspired to write *Pig-Heart Boy* (1997), a novel that recounts the experiences of thirteen-year-old Cameron and his pig heart transplant. The novel not only depicts the physical and mental repercussions that the operation has on Cameron, but it also zooms in on how this ethically complex operation affects his grandmother, his parents, and his unborn sibling. Putting the thoughts of these three generations at centre stage, this article positions itself within the field of mind-focused research in literary studies, merging cognitive narratology with children's literature studies to demonstrate the importance of intergenerational relationships in approaching a challenging future. By doing so, it extends Alan Palmer's framework of "social minds" (2010) with age-sensitive analyses, providing close readings of how thinking across generations is depicted in *Pig-Heart Boy*. Through intergenerational exchanges, these characters find out that projecting oneself into the future can be hope-giving and life-affirming, underlining the role that imagination, and by extension, fiction, can play in such complex equations of imagining the future in times of climate crisis and in debates concerning multispecies justice.

Keywords: children's literature, cognitive narratology, intergenerational thinking, social minds, multispecies justice

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Introduction

Children's literature author Malorie Blackman described one of her most lauded novels, *Pig-Heart Boy* (1997), as being inspired by a newspaper article in the mid-1990s about xenotransplantation, the transplantation of organs from one species into another, which was, at the time, a speculative suggestion to solve the lack of human organ donors. *Pig-Heart Boy* recounts the experiences of thirteen-year-old Cameron Kelsey and his pig heart transplant. Cameron suffers from a viral infection that affects his heart, and the verdict is that he will die before his next birthday unless he goes along with Dr Bryce's suggestion of xenotransplantation. Dr Bryce, an immunologist specialising in transgenics, the transfer of genes between organisms, explains the rationale behind the pig-to-human transplant as follows: "Pigs are not 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" (1997, 37). However, Dr Bryce adds that "a number of animal rights and animal welfare groups don't agree" (1997, 32).

The dire circumstances that Cameron is faced with form the starting point for the plot of *Pig-Heart Boy*, which delves into the complications and ethical concerns of interspecies transfer. Yet Cameron is also confronted with other issues. While he struggles to fight for his life, his mother, Catherine, becomes pregnant unexpectedly. She refrains from informing her husband, Michael, about the pregnancy. On top of his life-threatening disease, Cameron navigates the strife that the situation causes between his parents. He also deals with grudges among his peers at school, who force him to take a stance when it comes to topics of animal cruelty and the pros and cons of

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transgenics and gene editing. Furthermore, Cameron catches his grandmother, whom he calls Nan, leafing through advertisements of coffins in a magazine, considering which coffin she will choose upon her death. Nan explains this to Cameron as follows: "I'm no spring chicken any more and I have to think about these things. I'm going to be in my coffin a long time, so I want to make sure I pick out one that's comfortable" (1997, 182). Her attitude towards death bothers Cameron. He juggles all this while trying to live a teenage life unspoilt by heart disease. However, Cameron, his parents, and his grandmother engage in intergenerational thinking that ultimately gives them hope.

This article puts thinking that spans generations at centre stage, positioning itself within the field of cognitive narratology, or mind-focused research in literary studies (Cohn 1978; Herman 2011; Bernaerts et al. 2013; Caracciolo 2014; Zunshine 2015). More specifically, it extends Alan Palmer's framework of "social minds" (2010) by discussing passages of *Pig-Heart Boy* that evoke "intermental thought, which is joint, group, shared, or collective thought" (Palmer 2010, 4) and by using an age-sensitive lens, while drawing on perspectives from children's literature studies. By engaging in close readings of intergenerational minds in *Pig-Heart Boy*, a novel targeted at young readers, this article examines how three generations attempt to overcome fatalistic scenarios, tracing how they confront their unstable futures.

The novel prompts readers to consider topics such as xenotransplantation, gene editing, animal rights, and the ethical complexities of using animals as "spare parts for humans" (Berchtold, 2022, n. pag.). After all, such procedures generate much debate: while advocates consider this approach as a potential solution that could help cut transplant waiting lists, animal rights activists are concerned with the ethical implications of genetically modifying animals so that they can serve as organ donors. As for the suitability of these topics for young readers, Blackman writes in the foreword to the 2022 edition of *Pig-Heart Boy* that "it never ceases to amaze [her] how some adults underestimate what subject matter will interest and stimulate children and teens […] the best stories encourage children to think for themselves" (n. pag.). The climate crisis brings about new understandings of human-nonhuman relations and animal rights, and there is no doubt that the generations to come will be forced to navigate how they approach such understandings in uncertain times.

As Marco Caracciolo points out in his discussion of narrating unstable futures in contemporary fiction, the element of uncertainty "is a source of deep concern, because it can obstruct action and fuel indifference and even fatalism about the future" (2022b, 2). Cameron and his family are unsure whether the pig heart transplant will work, but it is their only hope to lengthen his life expectancy. This uncertainty surrounding the future in *Pig-Heart Boy* does not only have repercussions on the personal futures of Cameron and his family, but it also plays a role at the level

of the human-nonhuman divide and the broader societal questions surrounding interspecies transplants. Despite their uncertain prospects, the family's thoughts about the future catalyse their collective will – across the grandparent-parent-child lineage – to proceed. Yet this raises questions about multispecies justice. In the field of animal welfare science, researchers such as Heather Browning (2023) and Walter Veit (2023) are asking whether we can compare well-being across species. Browning points out that such comparisons are morally problematic regarding how we go about assigning "moral weight to different species or individuals within our ethical decision-making" (2023, 531). For Cameron in *Pig-Heart Boy*, it's "a chance of life against no chance at all" (1997, 252), but what about the measure of welfare and the moral weight of Trudy, the donor pig?

To show how Cameron, his parents, and his grandmother engage in intermental thinking regarding the challenges they face, this article starts by sketching the complex themes of family and kinship in *Pig-Heart Boy*, based on Elisabeth Wesseling's understanding of the term "family" in children's literature studies and David Quammen's concept of the "tangled tree" (2018). Then, this article considers the idea of entangled intergenerational minds within the field of cognitive narratology. Following this, I engage in close readings of Cameron, his parents, and his grandmother thinking collectively (and not always harmoniously), both before the pig heart transplant and afterwards. Finally, this article concludes by discussing how such age-sensitive analyses of characters' interactions can extend Palmer's "social minds" framework and why children's literature forms an ideal basis to do so.

Family and "Tangled Trees"

When considering the social thinking that goes on across three generations belonging to one family in *Pig-Heart Boy*, the essay on the topic of family in the *Keywords to Children's Literature* (2021), written by Wesseling, is helpful, especially when it comes to her description of "genetic" and "elective" belonging in families:

> On the one hand, family seems to be an obvious fact, defined by a genetically circumscribed group into which one is born […] on the other hand, if a family is chosen through marriage, adoption, fostering, or comparable cultural practices of affiliation, the genetic determinism of the words seems much less certain. (74)

In *Pig-Heart Boy*, Cameron and his family must negotiate the impact of having "elective" matter in the form of a pig's heart being brought into the "genetically circumscribed group" of their family

(Wesseling 2021, 74). In her discussion of family and kinship across species, Woodward discusses the concept of the "tangled tree" (2022, 15), inspired by David Quammen's *The Tangled Tree: A Radical New History of Life* (2018). The "tangled tree" metaphor speaks to ecocritical questions and denotes how "genes can be traded laterally across the boundaries of species" (Woodward 2022, 15). Such instances of horizontal gene transfer, or "the sharing of genetic material between organisms that are not in a parent-offspring relationship" (Soucy, Huang and Gogarten 2015, 472) usually occur between plants, fungi, and bacteria (Emamalipour et al. 2020). However, in *The Tangled Tree*, Quammen points out that

> [w]e are composite creatures, and our ancestry seems to arise from a dark zone of the living world, a group of creatures about which science, until recent decades, was ignorant. Evolution is trickier, far more intricate, than we had realized. The tree of life is more tangled. Genes don't just move vertically. They can also pass laterally across species boundaries, across wider gaps, even between different kingdoms of life, and some have come sideways into our own lineage. (2018, 11)

Pig-Heart Boy thematizes interspecies transfer of a pig's heart into a teenage boy to save him from a life-threatening disease. Yet the novel also serves as a literary example of the tangled tree metaphor when it comes to its presentation of the entanglements of characters' thoughts across generations. The novel evokes the tangled tree concept in extreme modalities, both in its treatment of interspecies xenotransplantation and in its depiction of intergenerational minds.

Cameron's pig heart transplant is not something his family members or his peers step over lightly. In the following passage, Cameron's friends joke about his kinship with pigs as they plan to eat together after a visit to the swimming pool:

> "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. (1997, 203)

This bad attempt at humour lays the discomfort bare that Cameron's friends sense: they laughingly consider his pig heart as signifying a relationship of kinship with pigs. The novel questions the tensions between "nuclear and extended definitions of family" (Wesseling 2021, 74). Cameron's peers are confronted with uncharted waters: he is the first human being to undergo a pig heart transplant. His love interest at school, Julie, shares her opinion with him on this matter, albeit

coloured by her mother's thoughts: "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?" (1997, 179). His friend Andrew tells Cameron he "changed" after the operation, he is "more pushy" and "more arrogant" (1997, 195). Cameron refuses to believe that his perceived character traits of being pushier and more arrogant are the repercussions of having a pig's heart, yet the remarks made by his peers do have an impact on his mental health.

While Cameron, his parents, and his Nan navigate the challenges of the pig heart transplant in an effort to save his life, the world around them is less accepting. Yet within the Kelsey family, there is room for reading each other's thoughts and for engaging in difficult conversations. When analysing such forms of thinking in *Pig-Heart Boy*, which is described by Emma Trott as "both an illness narrative and a speculative *Bildungsroman*" (2024, 218), Palmer's framework of "social minds" (2010) is useful as are insights from the field of cognitive narratology. As Palmer explains, "all of us, every day, know for a lot of the time what other people are thinking. This is especially true of our loved ones, close friends, [and] family" (2010, 2). *Pig-Heart Boy* shows an interest in "the pursuit of knowledge about other minds" (Palmer 2010, 5) within the Kelsey family, and this in an intergenerational way.

Intergenerational Minds in *Pig-Heart Boy* through the Prism of Cognitive Narratology

Palmer urges cognitive narratologists to zoom out and consider "the whole minds of fictional characters in action" (2002, 28). His research on social minds in novels is a helpful way of approaching thinking that goes on between characters in books (2010, 4). However, it is important to be wary of not simply focusing on what Palmer describes as "characters in action" (2002, 28), or characters' outward behaviour, as Caracciolo and Cécile Guédon point out: it is just as important to take into account characters' first-hand experiences as their minds unravel throughout the narrative (2017, 47). In the case of *Pig-Heart Boy*, such a focus on both behaviour and first-hand experiences is vital, but the component of age plays an equally important role given that Cameron's teenage mind is evoked in intense interaction with his parents and his grandmother. Moreover, while *Pig-Heart Boy* grants direct access to Cameron's thoughts via first-person narration, the thoughts of his parents and grandmother are either filtered through Cameron's mind or are featured in speech acts.

According to David Herman, "approaches to narrative study that fall under the heading of cognitive narratology share a focus on the mental states, capacities, and dispositions that provide grounds for – or, conversely, are grounded in – narrative experiences" (2014, 46). The depiction

of such "mental states, capacities, and dispositions" (Herman 2014, 46) in narratives has been predominantly studied in relation to adult characters (e.g., Palmer 2002; 2004; 2010; Mäkelä 2013; Bernaerts 2014; Van Hulle 2014; Luyten 2015; Bernini 2016; Beloborodova 2020; Silva 2023b). Yet Caracciolo's "Child Minds at the End of the World" moves beyond adult characters to consider child focalization in postapocalyptic scenarios, stressing that "even in literature by adults, and largely, for adults […] the evocation of children's experiences may help audiences distance themselves from adultist ways of thinking" (2022a, 159).

Children's literature then, as Justyna Deszcz-Tryhubczak and Zoe Jaques write, forms an excellent backdrop for discussions of solidarity between generations (2021, xvii), and concepts from the field of cognitive narratology have filtered into children's literature studies (Trites 2012, 2017; Nikolajeva 2017; Alkestrand and Owen 2018; Pauwels 2019), prompting research into the complexities of how adult authors go about describing children's thoughts in books for young readers, for example (Silva 2022). The tenets of mind evocation in fiction targeted at child readers specifically have been explored by Maria Nikolajeva in her study of the depiction of consciousness in children's fiction (2001), by Deszcz-Tryhubczak in her article on social minds in children's fantasy fiction (2020), and by Emma-Louise Silva in her consideration of social and material minds in children's literature author David Almond's fiction (2023a). This article adds to such studies spanning children's literature and cognitive narratology by considering the minds of characters of different generations in *Pig-Heart Boy*. As such, the idea of intergenerational minds can be considered as a subtype of Palmer's "social minds" (2010): the mindwork of characters belonging to different generations – as evoked through depictions of their behaviour, their first-hand experiences, their mental states, and their capacities, dispositions, and speech acts – is depicted in an interconnected way, resembling Quammen's "tangled tree" metaphor (2018).

By analysing the passages in which the thoughts of Cameron, his parents, and his grandmother feature in *Pig-Heart Boy*, this article delves into the constantly fluctuating situations the family members find themselves in, ranging from family friction to intergenerational dialogue when it comes to Cameron's pig heart transplant, which is ultimately an operation that involves interspecies gene transfer across the human-nonhuman divide. Due to the life-threatening issues that dominate their present moment, the three generations in *Pig-Heart Boy* find it difficult to project themselves into the future, especially when it comes to what Cameron's grandmother calls "having a pig's innards in [his] chest" (1997, 181). Cameron, his parents, and his grandmother find it difficult to live in the moment, because they are constantly confronted with the future and what will become of them, and because they often struggle to envision what their future might look like, both before the pig heart transplant and afterwards.

Intergenerational Minds: Before the Pig Heart Transplant

Before the operation takes place, Cameron loses the will to fight for his life and flirts with death by sitting down at the bottom of a swimming pool to compensate for the game his friends play that he cannot, namely "Daredevil Dive" (1997, 15). Whereas his friends emerge from the water laughing, Cameron's lungs ache and he feels "a sharp, stabbing pain in [his] chest" (1997, 13). This experience forces him to come to terms with the repercussions of the viral infection on his body and makes it clear to him that his own heart will not allow for such physically strenuous activities in the present moment: if he wants to have any chance at becoming healthy enough to join in with the game of daredevil dive, he must undergo the pig heart transplant. The following passage displays how Cameron's parents navigate their son's will for agency and independence:

> "Cam, I really think-"
> "No, Dad," I interrupted. "It's my body and my heart so I have a right to ask questions and say how I feel."
> "What's got into you today?" Dad asked, bewildered.
> "I was wondering that myself," Mum added.
> "I realized something today," I said. "I'm running out of time. Every breath I take is a countdown. So I haven't got time to pretend to feel happy when I'm not. I haven't got time to keep quiet when all I want to do is shout at the top of my lungs. I haven't got time for any more *lies*."
> "My God …" Mum breathed the words, stunned. "Cameron, we don't lie to you."
> "We never have," Dad agreed.
> "You don't tell me the whole truth though. You leave things out. It adds up to the same thing." I knew my mum was hurt and upset and so was Dad, but I was too tired to search for the right words to water down my feelings. Prevarication and skirting around the truth took strength, patience and stamina and I was running out of all of them. (1997, 40-41)

Here, Cameron critiques the generation of his parents, who, along with the doctors and nurses, think they are protecting him by withholding information. Even though he depends on his parents' consent to go ahead with the operation (it was in fact his father who first contacted Dr Bryce in desperation), and even though he trusts in the doctors' and nurses' insights and skills to ensure the transplant goes smoothly, Cameron does not always think highly of the adults surrounding him:

"It seemed to me that that was all grown-ups ever did. They either talked down to you, ignored you or showed you up something chronic. I just hoped and prayed that I would grow older but not grow up. To be grown-up was the lowest of the low!" (1997, 97). The fact that adults do not always tell Cameron "the whole truth" (1997, 41) annoys him, yet he channels this annoyance into joy when he finds out that a baby sibling is on the way. When Cameron and his parents visit Dr Bryce's clinic to meet the pig donor, Trudy, they are asked to pass through an X-ray scanner. His mother, Catherine, refuses to go through the scanner and is forced to reveal her pregnancy to the rest of the family seeing as she does not want the radiation to harm the baby:

> I stared at Mum. I couldn't believe it.
> *Mum was going to have a baby.*
> Why hadn't she said anything before now? How could she and Dad keep it a secret? I was going to have a brother or a sister. Pure joy erupted in me like an exploding volcano. *I was going to have a brother or sister.*
> "Dad, why didn't you tell me?" I grinned.
> But Dad wasn't smiling. He was watching Mum. "I didn't know Cam. I'm just as surprised as you are," he replied quietly. (1997, 72-73)

Before this moment, Catherine had refrained from informing her husband and son that she is expecting a baby, fearing that her present state of being pregnant might hurt Cameron by implying a future he may not be part of. The concealment towards her husband prompts a tense atmosphere in the family home, yet Cameron sees the news as coming at "the best timing in the world" (1997, 81): becoming a brother is something he can look forward to. The video messages Cameron records on his camcorder for his unborn sibling, whom he calls Alex, allow him to vent his frustrations, doubts, and fears about his status of being the first human being to undergo a pig heart transplant. The messages also create a space where he can project himself into the future while sharing his thoughts with his unborn sibling. In these recordings, he aims to share "Life lessons" with Alex (1997, 109). These are presented as embedded narratives in *Pig-Heart Boy* and are rendered in italics throughout, conveying what Palmer describes as "the whole of a character's mind in action: the total perceptual and cognitive viewpoint, ideological worldview, memories of the past, and the set of beliefs, desires, intentions, motives, and plans for the future" (2010, 11). As such, *Pig-Heart Boy* evokes entanglements of minds across generations that serve as examples of the "tangled tree" metaphor (Quammen 2018, 11), in terms of thought transfer across generations. Cameron uses the video messages to ask his sibling (who will be thirteen years younger than him) to remember his

(by then possibly deceased) elder brother's life lessons towards the future, especially regarding their parents, for example:

> *The thing to remember about Mum and Dad is that they don't know everything. I'm not saying that they think they know everything. That's not the case. But they do think they have all the answers! But that's not just Mum and Dad really. That's most, if not all grown-ups. They don't like to be told things by anyone under twenty-one. It's as if they believe that the whole world will think they're stupid if we know something that they don't. So watch out for that. It's a real pain.* (1997, 110)

Cameron is vehement that he may take his video recorder with him to Dr Bryce's clinic and wants to have it in his room after the operation. In fact, the last thing Cameron does before the operation is record a message for Alex: "*But what am I wittering about? I'll soon be healthy and fit myself. We are going to have such fun. I can't wait*" (1997, 119).

Intergenerational Minds: After the Pig Heart Transplant

The first day after the operation, Cameron takes to his video recorder again to record messages for Alex, using the videos as a kind of diary format (1997, 133). This journalling has positive effects on Cameron's evolution and his mother encourages it. Furthermore, Cameron gains a sense of responsibility towards his unborn sibling, especially when it comes to the rift between their parents. In one of the videos, he confesses: "*That's another reason why I'm desperate for this operation to work. If it doesn't, I'm not sure Mum and Dad will still be together when you're born*" (1997, 110). Later in the story, Cameron decides that he will "try to hang on long enough to see her or him" so that he is able to "say goodbye to Alex in person" (1997, 238). The future birth of his sibling charges Cameron with the will to live and become an elder brother, yet his grandmother also has a great impact on Cameron's positive mindset. While other family members, such as Cameron's aunts, "turned away or changed the subject – or both" (1997, 46) when it comes to his heart condition, his grandmother does not. Just like Cameron insists on being told the truth, Nan also insists on her right to be informed:

> "So what's all this about you having a pig's innards in your chest?" Nan thumped the back of her hand against my chest. "And why do I have to buy the *Daily Press* to find out what's going on with my own grandson?"
> "We told you Cam was going to have a heart transplant," Mum tried.

> "You didn't say where the heart was coming from though, did you?"
> Mum sighed. "I've been getting grief for that all day."
> I made the big mistake of trying to explain. "Nan, we couldn't tell anyone. Dr. Bryce told us not to."
> "And just when did I become – anyone! I'm your nan – not *anyone*."
> "Mother, don't start again. *Please*." (1997, 181)

Whereas Cameron's mother bemoans the grief Nan has been giving her, Cameron knows that indeed, Nan is not "anyone": she even becomes his ally in openly talking about suffering and death. The following passage conveys Cameron's horror when he discovers the hate mail hidden in a drawer in the guest room where Nan is staying. Cameron's grandmother decides to stay over to help the family cope with the ordeal of the press camping outside their home following Cameron's operation. This situation is brought on by Cameron's best friend, Marlon, and his parents, John and Erica, who reveal the news of the pig heart transplant to the press in exchange for money, which only adds to the grief Cameron and his family are experiencing:

> It was horrible. Some of the letters accused Mum and Dad of only letting me have the operation so they could cash in on the resulting publicity. Some were from animal lovers who sympathized with Mum and Dad's position but asked if they had explored all the options. Some were actually from people wishing us well but they were few and far between. Most were just nasty.
>
> Profoundly shocked, I looked up at Nan. "Have you seen these?" I asked.
>
> "Some of them," Nan admitted. "They're today's batch of letters. I read some of them when I arrived this morning. I didn't know your mum had put them in there. I wish she'd told me." (1997, 189)

In this passage, readers gain direct access to thirteen-year-old Cameron's thoughts as they unfold. The passage is depicted in first-person narration from Cameron's vantage point. In terms of intergenerational thinking, it shows, firstly, that Nan is aware of the letters, but that she is not aware of their hiding place; secondly, that Cameron's parents thought it wise to hide such hate mail from Cameron; and thirdly, that he is shocked at discovering this secret that his grandmother and his parents are keeping from him. Even though readers are not granted direct access to his parents' or his grandmother's thoughts, we do gain knowledge of the workings of their minds filtered through Cameron. By piecing together his first-hand experience and the speech act of Nan, readers gain

access to the actual focalised perspective of one mind that implies multiple entangled minds. Yet these multiple other minds are adult minds being implied by a teenage mind, and as Palmer notes, "the results of an analysis of a single fictional mind can then be enmeshed with those of the other minds in the storyworld" (2010, 11). Such an enmeshing also unites Cameron and his Nan when it comes to their thoughts on facing possible death. Cameron reflects on the fact that "she [Nan] was always talking about death and dying. She said that at her age it was a topic that interested her! In some ways, it made a refreshing change" (1997, 46).

Both Cameron and Nan demand their rights while facing death, and this shared experience strengthens their bond, across the grandparent-grandchild age difference. Linking such age differences between grandparents and their grandchildren to childhood studies and age studies, Vanessa Joosen has pointed out that both fields are faced with "the challenge of fighting the marginalisation and deprivation of agency of people who need care or are at least perceived as needing care" (2022, 6). Nan's understanding of the end of the life course exemplifies the "animating tension between despair and integrity" (Woodward 2022, 18). Nan's detached projection into the future is refreshing for Cameron as is her relationship with her grandson: "I could talk and argue with Nan in a way that I couldn't with my parents. Not that Nan stood for any nonsense – she wouldn't go for that at all. But she didn't talk down to me and she didn't talk to me like a parent" (1997, 246). This is a recurring pattern in books that thematize the relationships between children and old people (Joosen 2015). Nan often functions as a bridge between Cameron and his parents, soothing intergenerational tension. Nan understands Cameron's keenness to go swimming with his friends and to get back to life as normal, whereas his parents fear for his safety and forbid such excursions. She respects his abilities and needs in the here and now, while his parents are more concerned with safeguarding his future. Nan also appears more attuned to what is going on in Cameron's mind:

> "Can I watch?" I asked, hoping Nan wouldn't spot what I was trying to do.
> "No, you can help!" she replied at once. "You may be smart, child, but I'm smarter!"
> […]
> "I want you back down here in five minutes – maximum," said Nan. "Or I'll come upstairs to fetch you – and you don't want that."
> "Are you reading my mind or something?" I asked, impressed.
> Nan laughed. "Now if I told you that, you'd know as much as I do!" (1997, 187)

In fact, Nan is the only one on Cameron's side when it comes to his decision against having a second pig heart transplant when it appears that the anti-rejection and immuno-suppressant drugs are not working after the first operation (1997, 239). However, Nan's time runs out in the course of the novel, and it is ultimately her death that propels Cameron to grasp this second chance of a new beginning after all. Nan dies of natural causes in her sleep, and in one of their last conversations, she urges her grandson to not give up and to reconsider having the second pig heart transplant: "But Cameron, dear, you're allowed to be scared. You're just not allowed to give up – not without a good fight. So put your fists up and come out slugging" (1997, 240).

In a video recording for his unborn sibling Alex, Cameron reflects on how this piece of advice from his Nan who was "so full of life" (1997, 251) has repercussions on his decision: "*Another pig's heart. To be honest, I wasn't going to, but a couple of days after Nan's death I decided that I would.* […] *A chance of life against no chance at all*" (1997, 252). By engaging in intergenerational exchange, Nan's thoughts infuse her grandson's thoughts, and his thoughts are then recorded to pass on to his unborn sibling should Cameron not live to see the day of the birth. While Cameron's response to Nan's death forms a pivotal prompt in his decision to go for the second pig heart transplant, the effect of Nan's passing away is not centralized when it comes to Cameron's parents. We do not gain insights into how Cameron's parents feel about Nan's death. While this does not suggest an unfavourable evocation of the parents throughout the novel (as is the case in *The Granny Project* (1984) by Anne Fine, for example (Joosen 2022, 15)), it does strengthen the intergenerational bonds between grandmother and grandson, resulting in solidarity and dialogue in their shared navigating of agency and death. However, it also shows that intergenerational thinking can just as well revolve around tensions and contradictions on the pathway towards mutual support.

Conclusion

The close readings above show how an age-sensitive approach can be used when considering narratives that depict characters' thoughts that are entangled across generations. Such an approach extends Palmer's "social minds" framework by adding a lens that is focused on how the generational links between characters can influence intermental thought in ways resembling "tangled trees" (Quammen 2018). The novel closes with hope-giving intergenerational understanding that spans the grandparent-parent-child continuum in *Pig-Heart Boy*, which is built on thinking across generations against the backdrop of interspecies crossover. Children's literature often thematizes age (Joosen 2024, 229) and Blackman's *Pig-Heart Boy* forms an excellent example of this. Despite the complex circumstances, the three generations depicted in *Pig-Heart Boy* find out

that projecting oneself into the future can be hope-giving and life-affirming, underlining the role that imagination, and by extension, fiction, can play in such challenging equations of imagining the future in times of climate crisis and in debates concerning multispecies justice.

In her reflection on "multi-species literary ethnography" (2022, 1), Woodward stresses the importance of literary imagination: "A novel is also a thing that grows. From an idea, an image, an object, a seed […] giv[ing] life to ideas that have taken root, branching in multiple directions" (2022, 23). *Pig-Heart Boy* functions as a literary lab that experiments with how people from different generations engage with each other – in both moments of conflict and in fruitful dialogues – while challenging readers to stretch their imagination into realms of xenotransplantation, gene editing, animal rights, and the ethical concerns these topics imply. Together, Cameron and his family stay positive in the face of adversity, and this despite their age differences.

By analysing passages that depict Cameron's thoughts during exchanges with his grandmother, his parents, and his unborn sibling, it becomes possible to see how forms of thinking across generations can impact the will to confront uncertain futures. Through moments of intergenerational connection, they find out that projecting oneself into the future can help, even in the light of potential or imminent death. Cameron and Nan talk openly about death, his mother speaks freely about her pregnancy, and Cameron finds the strength to live if only to make it for the birth of his unborn sibling. Through conflicts, honest dialogue, and empathy, intergenerational minds are centralised in *Pig-Heart Boy*, and as such, an understanding is fostered that respects all generations – the unborn, the child, the adult, and the old adult.

Bibliography

Alkestrand, Malin, and Christopher Owen. 2018. "A Cognitive Analysis of Characters in Swedish and Anglophone Children's Fantasy Literature." *International Research in Children's Literature* 11 (1): 65-79. https://doi.org/10.3366/ircl.2018.0254.

Beloborodova, Olga. 2020. *Postcognitivist Beckett*. Cambridge: Cambridge University Press.

Berchtold, Kristina. qtd. in Reuters. "German researchers to breed pigs for human heart transplants", in: *The Guardian*, February 3, 2022: https://www.theguardian.com/science/2022/feb/03/german-researchers-to-breed-pigs-for-human-heart-transplants.

Bernaerts, Lars. 2014. "Narrative Games and Fictional Minds in B. S. Johnson's *House Mother Normal*." *Style* 48 (3): 294-312. https://biblio.ugent.be/publication/5794141.

Bernaerts, Lars, Dirk De Geest, Luc Herman, and Bart Vervaeck, eds. 2013. *Stories and Minds: Cognitive Approaches to Literary Narrative*. Lincoln: University of Nebraska Press.

Bernini, Marco. 2016. "The Opacity of Fictional Minds: Transparency, Interpretive Cognition and the Exceptionality Thesis." In *The Cognitive Humanities: Embodied Mind in Literature and Culture*, edited by Peter Garratt, 35-54. London: Palgrave Macmillan.

Blackman, Malorie. [1997] 2022. *Pig-Heart Boy*. London: Penguin Random House.

Browning, Heather. 2023. "Welfare Comparisons Within and Across Species." *Philosophical Studies* 180: 529-551. https://doi.org/10.1007/s11098-022-01907-1.

Caracciolo, Marco. 2014. *The Experientiality of Narrative: An Enactivist Approach*. Berlin/Boston: De Gruyter.

Caracciolo, Marco. 2022a. "Child Minds at the End of the World." *Environmental Humanities* 14 (1): 145-161. https://doi.org/10.1215/22011919-9481484.

Caracciolo, Marco. 2022b. *Contemporary Fiction and Climate Uncertainty: Narrating Unstable Futures*. London: Bloomsbury.

Cohn, Dorrit. 1978. *Transparent Minds: Narrative Modes for Presenting Consciousness in Fiction*. Princeton: Princeton University Press.

Deszcz-Tryhubczak, Justyna. 2020. "Reading About Solidarity and Collective Action: Social Minds in Radical Fantasy Fiction." *Children's Literature in Education* 51: 144-159. https://doi.org/10.1007/s10583-018-9379-1.

Deszcz-Tryhubczak, Justyna, and Zoe Jaques. 2021. "Towards Intergenerational Solidarity in Children's Literature and Film." In *Intergenerational Solidarity in Children's Literature and Film*, edited by Justyna Deszc-Tryhubczak and Zoe Jaques, xi-xxvii. Jackson: University Press of Mississippi.

Emamalipour, Melissa, Khaled Seidi, Sepideh Zununi Vahed, Ali Jahanban-Esfahlan, Mehdi Jaymand, Hasan Majdi, Zohreh Amoozgar, L. T. Chitkushev, Tahereh Javaheri, Rana Jahanban-Esfahlan, and Peyman Zare. 2020. "Horizontal Gene Transfer: From Evolutionary Flexibility to Disease Progression." *Frontiers in Cell and Developmental Biology* 8: 1-16. https://www.frontiersin.org/articles/10.3389/fcell.2020.00229/full.

Herman, David, ed. 2011. *The Emergence of Mind: Representations of Consciousness in Narrative Discourse in English*. Lincoln/London: University of Nebraska Press.

Herman, David. 2014. "Cognitive Narratology." In *Handbook of Narratology*, edited by Peter Hühn, Jan Christoph Meister, John Pier, and Wolf Schmid, 46-64. Berlin/Boston: De Gruyter.

Joosen, Vanessa. 2015. "Second Childhoods and Intergenerational Dialogues: How Children's Literature Studies and Age Studies Can Supplement Each Other." *Children's Literature Association Quarterly* 40 (2): 126-140. https://doi.org/ 10.1353/chq.2015.0016.

Joosen, Vanessa. 2022. "Connecting Childhood Studies, Age Studies, and Children's Literature Studies: John Wall's Concept of Childism and Anne Fine's *The Granny Project*." *Barnboken: Journal of Children's Literature Research* 45: 1-21. https://doi.org/10.14811/clr.v45.745.

Joosen, Vanessa. "Age". 2024. In *The Routledge Companion to Children's Literature and Culture*, edited by Claudia Nelson, Elisabeth Wesseling, and Andrea Mei-Ying Wu, 229-240. New York / London: Routledge.

Luyten, Alison. 2015. "Cognitive-Genetic Narratology and the Fictional Mind in *To the Lighthouse*." *Manuscrítica: Revista De Crítica Genética* 28: 94-111. https://www.revistas.usp.br/manuscritica/article/view/177801.

Mäkelä, Maria. 2013. "Cycles of Narrative Necessity: Suspect Tellers and the Textuality of Fictional Minds." In *Stories and Minds: Cognitive Approaches to Literary Narrative*, edited by Lars Bernaerts, Dirk De Geest,

Luc Herman, and Bart Vervaeck, 129-151. Lincoln: University of Nebraska Press.

Nikolajeva, Maria. 2001. "Imprints of the Mind: The Depiction of Consciousness in Children's Fiction." *Children's Literature Association Quarterly* 26 (4): 173-187. https://doi.org/10.1353/chq.0.1496.

Nikolajeva, Maria. 2017. "'Haven't you ever felt like there has to be more?' Identity, space, and embodied cognition in young adult fiction." *Encyclopaideia* 21 (49): 65-80. https://doi.org/10.6092/issn.1825-8670/7604.

Palmer, Alan. 2002. "The Construction of Fictional Minds." *Narrative* 10 (1): 28-46. http://dx.doi.org/10.1353/nar.2002.0004.

Palmer, Alan. 2004. *Fictional Minds*. Lincoln: University of Nebraska Press.

Palmer, Alan. 2010. *Social Minds in the Novel*. Columbus: The Ohio State University Press.

Pauwels, Frauke. 2019. "Reading as a Scientist: Children's Nonfiction through a Cognitive Lens." *Children's Literature Association Quarterly* 44 (4): 432-446. https://doi.org/doi:10.1353/chq.2019.0049.

Quammen, David. 2018. *The Tangled Tree: A Radical New History of Life*. London: William Collins eBook.

Silva, Emma-Louise. 2022. "Cognitive Narratology and the 4Es: Memorial Fabulation in David Almond's *My Name is Mina*." *Age, Culture, Humanities* 6: 1-29. https://doi.org/10.7146/ageculturehumanities.v6i.131854.

Silva, Emma-Louise. 2023a. "Social and Material Minds through the Lens of Cognitive Narratology in *Clay* and *Bone Music*." In *Age in David Almond's Oeuvre: A Multi-Method Approach to Studying Age and the Life Course in Children's Literature*, edited by Vanessa Joosen, Michelle Anya Anjirbag, Leander Duthoy, Lindsey Geybels, Frauke Pauwels, and Emma-Louise Silva, 36-58. New York / London: Routledge. https://doi.org/10.4324/9781003369608.

Silva, Emma-Louise. 2023b. *Modernist Minds: Materialities of the Mental in the Works of James Joyce*. Leiden/Boston: Brill.

Soucy, Shannon M., Jinling Huang, and Johann Peter Gogarten. 2015. "Horizontal Gene Transfer: Building the Web of Life." *Nature Reviews Genetics* 16: 472-482. https://doi.org/10.1038/nrg3962.

Trott, Emma. 2024. "A Change of Heart: Animality, Power, and Black Posthuman Enhancement in Malorie Blackman's *Pig-Heart Boy*." In *Animals and Science Fiction*, edited by Nora Castle and Giulia Champion, 217-238. London: Palgrave Macmillan.

Trites, Roberta Seelinger. 2012. "Growth in Adolescent Literature: Metaphors, Scripts, and Cognitive Narratology." *International Research in Children's Literature* 5 (1): 64-80. https://doi.org/10.3366/IRCL.2012.0044.

Trites, Roberta Seelinger. 2017. "Cognitive Narratology and Adolescent Fiction." In *The Edinburgh Companion to Children's Literature*, edited by Clémentine Beauvais and Maria Nikolajeva, 102-111. Edinburgh: Edinburgh University Press.

Van Hulle, Dirk. 2014. *Modern Manuscripts. The Extended Mind and Creative Undoing from Darwin to Beckett and Beyond*. London: Bloomsbury.

Veit, Walter. 2023. "Can We Compare Well-Being Across Species?" *Psychology Today*.

https://www.psychologytoday.com/intl/blog/science-and-philosophy/202306/can-we-compare-well-being-across-species.

Woodward, Kathleen. 2022. "'Old Trees Are Our Parents': Old Growth, New Kin, Forest Time." *Age, Culture, Humanities* 6: 1-29. https://doi.org/10.7146/ageculturehumanities.v6i.132851.

Wesseling, Elisabeth. 2021. "Family." In *Keywords for Children's Literature*, Second Edition, edited by Philip Nel, Lissa Paul, and Nina Christensen, 74-76. New York: New York University Press.

Zunshine, Lisa, ed. 2015. *The Oxford Handbook of Cognitive Literary Studies*. Oxford: Oxford University Press.