

Finding the 'human' in the 'posthuman'

The representation of the technologically enhanced
posthuman in Young Adult fiction

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ABSTRACT

Technology has become an increasingly significant element of humans' lives in recent years, and it continues to shape them in ways hitherto only imaginable in science-fiction. Moving beyond humanism, the human/technology relationship has caused the question of what it means to be human to be considered through posthuman thought. I see the reality of technology's effect on human lives giving rise to the figure of the posthuman, in which aspects of the human are replaced or enhanced by technology. Through the posthuman subject, I propose the idea of a postchild and the notion of a posthuman trialism as new ways in which to examine representations of posthumans.

Texts aimed at teenage readers frequently offer perspectives on questions of identity formation and the need for adolescent protagonists to find their place in the world. I use a range of young adult texts, with a variety of different types of posthuman protagonists written over the past twenty years, to explore how the posthuman is represented through the narratives, and how power structures and ideologies are conveyed. Through my analyses I demonstrate that, despite technology's apparent superiority, it is human qualities that remain more important in the posthuman, although the extent to which the human is prioritised depends on the way in which technology is employed.

My findings provide a clear illustration of how teenage readers are being shown about the ways in which technology can be used and viewed in their lives, and how the human/technology relationship may shape their lives. While the presentations do not portend the dystopian vision of the future still prevalent in many people's minds, they stress the need for humans' use of technology to be questioned by its users and those with power in societies. My new approaches to the posthuman also mean that my work gives ways in which representations of the posthuman in any media can be critically examined.

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INTRODUCTION

Just seven years ago, the most recent work on the subject of technology in children's literature was the negative view of its representation by Noga Applebaum (2010), which built on the dystopian representations seen by Carrie Hintz and Elaine Ostry (2003). This is no longer an accurate reflection of the field. There has been a change in attitudes towards technology over the intervening years as people are increasingly obliged to engage with it in their everyday lives, and as Millennials and members of Generation-Y have reached adulthood. Both the physical and mental relationships people have with technology are blurring boundaries on a regular basis, and the consequences and serious explorations into the effects of humans' greater use of technology have only recently started to emerge.

Technology affects many aspects of twenty-first century life, but the aspect upon which my research focuses particularly is the long-standing relationship between the human body and technology. The body/technology boundary is one which has been transgressed for centuries. Humans became technologically enhanced when they first started using tools to work, or started wearing glasses to enhance their vision, but as their external technologies are an accepted part of society they are still acknowledged as humans. A human with the internalised technology of a pacemaker is also seen as human, but what of someone with a microchip implanted under their skin to which buildings with sensors to detect their presence can react? Although arguments about the medical necessity for some enhancements – whether external or internal – are unavoidable, other enhancements cannot be dismissed as results of vanity projects or the archetypical 'mad scientist' portrayed by real-world reporting of new human/technology interactions. Today's developments in both the real world and in fictional representations demonstrate that the human/technology relationship is empowering its users and consequently creating new opportunities for them.. The boundary between human and technology is fluid, and as our perceptions of technology continue to change, so our view of the relationship between the body and technology will change.

The use of literature for children and young adults receives little attention as a means of examining teenager's existence in a highly connected world. In contrast, studies of the role of technology in the real world, reports of phenomena such as cyberbullying, the changing attention span of teenagers, and the use of 'new media' in teaching appear regularly. My research seeks to address this omission and to consider how literature can help its readership make sense of their technologically-enabled lives. have seen and been a consumer of the

commodification of technology over the past forty years, and am part of a micro-generation labelled as “Xennials” which “serves as a bridge between the disaffection of Gen-X and the blithe optimism of Millennials” (Stankorb & Oelbaum, 2014, np), having “lived a childhood free of the internet but [being] young enough to have spent their working lives online” (*Guardian*, 2017, np). I was at school when computers began to be introduced to classrooms, and I then worked in IT in the early 2000s. My experiences have led to the research focus of this thesis, as technology has been a part of my life for the past three decades. My knowledge of a range of technologies and the variety of ways technology has developed is a personal asset in comparison to the ‘always-on’ generation which simply accepts and expects the personal and personalised networked technology surrounding it. Working as a teacher with children aged 11-18 since 2008 has shown me that the ways members of Generation-Z, or “digital natives” (Palfrey & Gasser, 2008, p1), think and work is subtly shifting. As ‘always-on’ children progress through secondary school, the ways in which they think and work continue to change. Hayles believes that “there are uncanny similarities between what literature is doing at a given time and what scientific fields are doing” (Piper, 2010, p319), and these similarities are at the heart of my research. My personal background means that I have the contextual knowledge and understanding to enable me to ask broader questions about the representation of technology in texts which have digital natives as their prospective readership.

The science and technology studies scholar Donna Haraway finds herself indebted to science-fiction authors whose stories explore “what it means to be embodied in high-tech worlds” making them “theorists for cyborgs” (1991, p173) and believes that the “boundary between science-fiction and social reality is an optical illusion” (1991, p149). It is against the blurred distinction of real-world technology and fictional cyborgs that I site my research into the examination of representations of technologically-enhanced adolescent posthumans in young adult fiction.

Throughout my work, in common with many critics, I use the term ‘science-fiction’ loosely, encompassing the group of nineteenth-century texts which gave rise to the label, along with fantasy writing and dystopian fiction. Daniel Hahn notes, “the overlapping of the genres has led to the emergence of the term ‘speculative fiction’” (2015, p522), which includes all three of these genres. However, I have retained ‘science-fiction’, rather than ‘speculative fiction’ in acknowledgement of the role that both technological and scientific developments have played in the creation of the fictional posthumans upon which I focus.

In my overarching research focus I adopt the conventions used by Mary Hilton and Maria Nikolajeva in *Contemporary Adolescent Literature and Culture* (2012, p1ff): I use the word ‘adolescent’ to refer to literary constructed humans (or members of existing or potential species of the *Homo* genus) approximately aged 12-18; ‘teenager’ to refer to living humans aged 12-18; and ‘young adult’ to refer to the genre of fiction and literature – whether viewed as a marketing construct, or not – featuring adolescent characters and/or having teenagers as their projected readers. Hilton and Nikolajeva offer a simple definition of young adult fiction, but trying to fix a more specific definition is problematic. As the oft-quoted Michael Cart first noted in 1996 in his history of young adult literature, “the field is in flux” as adolescence is a “state of continual change – of becoming not being” (p11). He goes on to suggest that the “best definition [...] will be the least specific one” (p11). In the second and third editions he describes the term – still used in the title of his book – as “inherently slippery and amorphous” (2010, p3; 2016, p3). As he traces the history of the term, he indicates that the problem arises both because of the texts’ target audience and adolescents’ indeterminate position between childhood and adulthood, and their being tied up with youth culture and sociological and psychological perspectives on growing up. In the most recent edition, his introduction unhelpfully suggests he has given up on a definition, seeing young adult books as offering stories which are “simply enjoyable to read” (2016, px) in contrast to adult novels. He notes the use of the term ‘new adult’ for readers aged from 19-25, suggesting this has led to a “growing sophistication [...] in both subject and style” (*ibid.*). While one of the texts in my corpus might be considered to fall into this category, I avoid such categorisation as I see it as a marketing innovation to appeal to crossover adult readers. I also find his implication that older young adult novels are less sophisticated troubling, as this denigrates genre-shaping texts, and there are some recent young adult novels which simply attempt to build on the increasing popularity of the genre, with scant regard for quality. Nevertheless, Cart’s continued use of the term indicates a shared understanding of what constitutes young adult fiction even if, as he concluded in 1996, “I’m not sure we need a formal definition” (p11).

While Cart uses the readership to define the term, Alison Waller considers textual features (2009, p15), but also finds this problematic. She notes that “it is widely accepted that a young adult novel should be *about* adolescence [...] it should have a teenage protagonist and a plot that incorporates adolescent experience or interest” (*ibid.*). Her discussion of the term hints at leaving it to the publishers to decide, but ultimately she edits Peter Hunt’s 1996 definition (that “a particular text was written expressly for children who are recognisably children, with a childhood recognisable today” (p16)), to conclude that the context of the implied adolescent reader at the time it was written needs to be considered, as it is not necessarily a childhood

recognisable today. In my consideration of texts, especially older ones, the historical context of the technology described is something of which I am aware when commenting on its role and relationship with the human.

Although Trites uses the term ‘adolescent’ alongside ‘young adult’, she determines the texts’ concern with the way in which “social power is deployed during the course of the narrative” (2000, p2) to be an identifying feature of the genre. She notes the young adult fiction’s reliance on “adolescent protagonists who strive to understand their own power by struggling with the various institutions in their lives” (p8). For her, this is tied to “novels of growth or development” and “coming-of-age novels” (p9), and through the history of the *Entwicklungsroman* and *Bildungsroman* she concludes that young adult fiction is a “romantic literature”, as all those involved in it “need to believe in the possibility of adolescent growth” (p15). However, rather than the clichéd happy endings and hopefulness for the future of young adult fiction which could be associated with her ‘possibility’, I see the possibility in my corpus as the potential of Clémentine Beauvais’s 2015 work nuancing Trites’s idea of power being at the heart of young adult fiction.

Although aspects of my corpus match elements of the definitions of young adult fiction that abound, Marah Grubar neatly warns against trying to characterise the genre by recurrent traits as it risks “obscuring rather than advancing our knowledge of [a] richly heterogeneous group of texts” (2011, p210). Flanagan observes that the thematic preoccupation of “literature for children and adolescents [...] with the processes of subject formation” is unavoidable (2017, p29), and she goes on to note that children’s literature is “inherently concerned with the question of ethical subject development (p38). While I am not arguing that a definition should be dismissed, I use the phrase ‘young adult’ on the understanding that I address features of my corpus using appropriate scholarship within my analysis without being burdened by a restrictive or unhelpful definition.

My research acknowledges Jacques Derrida’s comment that

No-one is allowed on these premises if he is afraid of machines and if he still believes that literature, and perhaps even thought, ought to exorcise the machine, the two having nothing to do with each other
(2004, p322).

Even when Derrida wrote this in 1972, the need to accept and explore the interconnectedness of technology and contemporary culture was clear. Forty-six years later, as technology is changing the lives of all its users and shaping the lives of the first members of the ‘always-on’ generation, the way technology and its users are represented in contemporary fiction cannot be overlooked.

My Master's research (2011) demonstrated that both biologically and technologically dominant adolescent posthumans are like typical teenagers who unquestioningly accept their embedded technology and the technology around them. I argued that, in a reversal of traditional models of authority in young adult fiction, power is not held by adults but by the adolescents through their understanding of technology. This shift is a logical extension of Trites's observation of a defining trend in young adult novels which relies on "adolescent protagonists who strive to understand their own power struggling with the various institutions in their lives" (2000, p8). Beauvais's work on the "mighty child" refines the idea of the power dynamics at play, seeing the child's potential in relation to the authoritative adults' perception of themselves as "less than" and not being consistently in power (2015, p3). In my work, the perception of adults being "less than" arose through their limited knowledge of technology. Although real-world adults are increasingly technologically able, either having lived a digital childhood or because of technology's prevalence, the teenage students with whom I work regularly suggest that adults' technical knowledge is dated or inadequate. Just as an adult naming who they believe to be a popular musical band to a class of teenagers is met with derision, so naming Facebook or Twitter as a favoured social media platform garners embarrassed giggles and exchanges of knowing glances. While this principle merely demonstrates established generational differences, technology's pervasiveness means that outdated knowledge and understanding places adults at a disadvantage as they find themselves being 'less than'. In my previous research, I also found technologically-enhanced adolescents displaying humane characteristics as part of their development as individuals within society. Demonstrations of their human rebellion against aspects of technology were also apparent, and this view of humanness is supported by Ostry who observes that "human values and human nature will prevail no matter what changes the human body endures" (2004, p235). I also demonstrated that the contemporary reader is most frequently presented with dystopian views of the technologically-rich societies of the future which can be read as warnings about the consequences of the use and unquestioning adoption of technology. My current research is influenced by my earlier findings, but my focus has moved to look at the posthuman body itself and the way in which its enhancement can both disrupt and enforce traditional ideas about what it is to be human and I explore these ideas in depth through the representation of different posthuman body types in Chapter IV. Using ideas from Beauvais's 2015 work, in Chapter II I also theorise the existence of a postchild as opposed to an implicitly adult posthuman which challenges aetnonormative power structures.

In looking at the posthuman body, I am concerned with the representation of posthumans, and I use the term ‘representation’ to describe the ways ideas and concepts – both tangible and abstract – are expressed in a symbolic way through language (Hall, 1997, p15ff). As I actively interpret the language and discourse of my corpus, my dominant approach is constructionist. In terms of the development of technology which influences texts that are produced, I use mimesis to reflect on the facts behind the fictions. However, as Elaine Graham states,

representations [...] *build worlds*, and it is important to ask how something gets constituted through representational practices [...] as they [...] serve not only to portray and report, but to legitimate, to reproduce and to normalize or to subvert, to contradict and destabilize.
(2002, p26; original emphasis)

When the projected teenage audience of the texts is considered, Graham’s list of functions of representation emphasises the importance of such a study as readers shape their own identities through fictional representations, and the representations serve to legitimise, normalise or destabilise broader ideas.

As I have noted in my previous research, the boundary between the human and posthuman is often unclear, and scientific research, particularly in nanotechnology, is described as redefining “the very essence of life” (Mallan, 2011, p147). In 2002 Colin Milburn wrote that “nanotechnology foresees a technocultural revolution that will, in a short time, profoundly alter human life as we know it” (p263), and in 2005 he discussed the “collapse of science-fictional speculation into the technological present” (p284). Even in humans, priorities have changed and, as Marie-Laure Ryan observed in 1999, material possessions are no longer the most desirable goods, rather it is “knowledge itself”, which also embodies blurred boundaries as it is an “eminently virtual resource since it is not depleted by use and since its value resides in its potential for creating wealth” (p94). In the two decades since Ryan wrote this, the information economy has not only become more blatant, but – through immediate free access to hitherto incomprehensible quantities of data gathered through Google’s indexing of the world’s information – a human expectation.

The question of what it is to be posthuman is constantly evolving. In Chapter I, I consider the origins of the posthuman subject alongside more recent critical studies of what it is to be posthuman. In 1999 Katherine Hayles picked four novels published between 1985 and 1995 to “indicate the range of what counts as the posthuman in the age of virtuality” (p24). She found that, like the “scientific models, change occurs in a seriated pattern of overlapping innovation and replication” (*ibid.*). Hayles identifies binary oppositions within her definition of “virtuality” in her consideration of posthumans (247ff). The posthuman challenges established dichotomies in the same way as Donna Haraway’s cyborg in her *Cyborg*

Manifesto. In my later reading of her seminal work, I show how her thinking can be applied to the embodied posthuman today. My approach to the posthuman takes into account Hayles's reflection on her original work that, were she to carry out her research again, she would "balance the emphasis on the sedimented history of the body with the idea of the continuing adaptation of the human brain to contemporary environments" (Piper, 2010, p329).

The binary oppositions seen through Hayles's work, and her view that the body and the brain's contemporary environment should be treated equally indicate the need to look at individual identity and the posthuman's place in society. The question of identity is also raised by Alison Waller (2009), although she is primarily concerned with adolescents' identity in fantastic realism as created by adults, rather than either posthuman identity or the identity of a posthuman. In considering the adolescents in my corpus, Waller's criticism of Jacqueline Rose and Karin Lesnik-Oberstein's disregard for adolescence by conflating it with childhood (2009, p5) offers a position from which the 'otherness' of the characters can be explored. Waller sees adolescence as a "liminal space onto which a distinct dichotomy of desires or fears cannot easily be projected", meaning it is a "less stable and more fluid concept, defined by its 'in-between-ness'" and its "dependence on fleeting popular culture" (2009, p6). Just as adolescence is neither childhood nor adulthood, the posthuman is neither biological nor technological. The posthuman body could therefore offer an impossible embodiment of liminal physicality, meaning its appearance, abilities and actions depend on contemporary culture and science. I see the posthuman's dependence on contemporary technology necessitating an awareness and understanding of the technology as distinct from whatever form the body takes. I develop this division into a theory of posthuman trialism in Chapter III.

In 1985, Humphrey Carpenter wrote that "all children's books are about ideals" and that where books for adults present the reality of the world, children's books "present it as it should be" (p1). His use of "should" indicates his belief that children's books should serve an educational purpose, and when the dystopian visions of so many technology-infused worlds in recent texts are considered, the characters' human reaction to technology can often be seen to be the plot element that rescues the situation. The implication is that readers have to be aware of the technology surrounding them, and it has been suggested that

[t]he ideal outcome is the awakening of readers in the hope that they will extrapolate from the world of the text to their actual social realities and to grapple with the struggles, tensions and problems that are inherent to the "real world". (Bradford *et al.*, 2008, p184ff).

Bradford *et al.*'s observation elucidates the hope that the texts will serve to educate or enlighten. Farah Mendlesohn, however, sees children's science-fiction as sometimes "limiting itself [...] through an insistence on didacticism" (2004, p286). I have not found posthuman

representations to be didactic in themselves, but the presentation of ideas inevitably helps readers to consider the *potential* of technology in the real world and ways in which it might influence and shape their future.

My research is sited in a posthuman boundary-blurring position as the interconnectedness of aspects of the real world – both in terms of potential and existing applications of technology and the social issues raised – are examined through science-fictional representations. The representations themselves are directed towards adolescents making sense of a world increasingly powered by technology, and places the same adolescents in the empowered position to shape such a world through their use of, and demands for, technology. This provides a feedback loop of the type Kathryn Hume describes in her critical look at fantasy (1984/2014, p10ff), in which she sees fantasy’s potential to develop an understanding of the way we live now as being limited only by the conventionally static nature of published book.

CORPUS AND SELECTION CRITERIA

My corpus is divided into two categories. First, in Chapter III, I use *Nexus* and *Crux* by Ramez Naam to demonstrate my notion of posthuman trialism in. Second in Chapter IV, I use ten texts – *MILA 2.0*, *Cinder*, *Eva*, *Rachel in Love*, *Airhead*, *The Adoration of Jenna Fox*, *iBoy*, *brainjack*, *Little Brother* and *Hex* to illustrate and discuss the different posthuman body types. *Airhead* and *Hex* are the first books in trilogies, *MILA 2.0* is the first book in a trilogy to which a prequel has subsequently been written, and *Cinder* is the first book in a series of five. I have only used the first published book in the series as these are the texts which establish the fictional worlds which have led to the posthuman’s creation and/or the characters’ acceptance of the posthumanness, while the following books focus more on events and characters’ actions. The exceptions to my selection criterion are *Nexus* and *Crux* which are the first two books of a trilogy, but *Crux* reveals more about the technology which makes the characters posthuman and develops the way in which identities in *Nexus* are established. *Eva* and *Rachel in Love* are outside my preferred definition of the posthuman, but their usefulness as a part of my research is clear throughout their analysis during Chapter IV.

To ensure my selection of primary texts is representative of current titles, I have adopted a similar approach to Applebaum (2010) in her selection of science-fiction titles: I follow young adult book blogs (written by teenage and adult readers) to find reviews of new titles, regularly review Amazon’s recommendations based on my previous purchases, use Twitter to follow authors of texts I have read, frequently search Google for young adult reading lists (often linked to dystopian texts), and participate in online discussion fora. Although my research

focus falls under the auspices of the science-fiction genre, young adult texts are not always labelled as such for marketing reasons and it was useful to have a range of sources from which to identify texts. The use of online sources also helps to avoid the limitations imposed by what Applebaum calls the “gatekeepers of children’s literature”, the “librarians, reviewers and academics” (p13) (although I have considered advice from such gatekeepers). My selection of texts is only from commercially published material and does not include self-published works or fan-fiction.

To enable me to make conclusions with a wider application to the field of Children’s Literature studies, I have used the methodology described by Maria Lassén-Seger who “worked with a large number of texts” from which she “selected some representative texts for more thorough discussion whilst other texts figured more briefly as examples” (2006, p8). She notes the issue of “keeping an acceptable balance between the generalisations to be made and the need to discuss texts in greater depth”. My list of primary texts means that I have made a careful selection of representative texts from the over one hundred detailed in Appendix 1. As I have organised my analysis by posthuman body type, some sections of Chapter IV include more texts than others, as this allows me to make comparisons and links between representations to explore more complex ideas of representation in a more useful, widely-applicable manner. However, in other sections a single text provides a wealth of material which I use to explore relevant ideas in depth.

An initial consideration about the selection of my corpus was that although a posthuman reading may be a relatively contemporary idea, there are valuable young adult texts from the 1990s which exemplify features of the technologically-enhanced posthuman. My inclusion of older texts also demonstrates that it is possible to apply the idea of the postchild to older texts, and to use trialism to deconstruct the figure of other posthumans. It is also interesting to see how fictional human reactions to the posthuman have – and have not – changed in the past thirty years. My corpus is biased towards the early twenty-first century (partially because of the publishing boom in young adult fiction), but includes novels from the late 1980s and 1990s. My knowledge of technology puts me in a position to be able to mediate the concerns which Hume notes can arise “if authors and readers disagree too strongly on their basic assumptions about consensus reality”, as I do not necessarily have to make the grudging acceptance of dated technology which a modern audience may have to make for an earlier author (1984/2014, p58).

A second consideration about my corpus was as a result of the dominant language of technology and the Internet being English: the selection is drawn from English, and North American authors. During my research I monitored reading lists for texts from Asian countries in English which could help redress the enforced Anglo-centricity of the research but did not find any which developed my thinking. The Western technological bias also manifests itself in the novels' settings: they are predominantly based in the North America or Britain of the present or relatively near future, although the distinction in temporal setting is not always clear. As Waller notes in her study of fantastic realism, in such texts cultural differences are generally collapsed "in favour of a naturalised Anglo-American teenager" (2009, p26).

Thirdly, as the number of authors in their twenties and thirties who have grown up with greater access to technology than writers further away from their anticipated readers' ages increases, I have included differently aged authors, and their years of birth range from 1927 to 1984¹. Age was a conscious concern in order to encompass a range of representations, rather than defaulting to older, technophobic texts, or biasing the corpus towards newer pro-technology texts.

Fourthly, the focus on adolescence and young adults in my research placed an inherent restriction on my selection of texts, as their protagonists and/or target reader need to be aged between approximately 12 and 18. Although this did not, necessarily, exclude picturebooks or graphic novels, I decided to limit my analysis to the written word in order to ensure that direction comparisons and connections can be made.

My corpus therefore includes both English and North American texts written between 1988 and 2013 by authors of a variety of ages. In keeping with a literal definition of 'young adult', the protagonists of my texts range in age from approximately 15 to their early twenties, and the texts are those which are both marketed to people of a similar age, and which typify the

¹ My corpus's authors' years of birth are as follows:

The Modified Body, or Cyborg	<i>Mila</i>	1970
	<i>Cinder</i>	1984
The Organically Embodied Cyberbody	<i>Eva</i>	1927
	<i>Rachel in Love</i>	1955
	<i>Airhead</i>	1967
The Synthetic Cyberbody	<i>Jenna Fox</i>	1955
The Enhanced Body	<i>iBoy</i>	1959
The Geek	<i>brainjack</i>	1962
	<i>Little Brother</i>	1971
The Millennial Body	<i>Hex</i>	1977

genre of novels marketed to this demographic through the thematic issues they consider. As part of my selection criteria, I have made no aesthetic evaluations of the texts, and I avoid making such comments in my analysis. Based on my awareness of technological developments, I accept the uses of technology as being feasible, unless otherwise noted, choosing to focus on the texts because of their usefulness in exemplifying various forms of the posthuman.

THEORETICAL APPROACHES

My approach to my corpus is constructionist, and in order to make sense of the representations of the posthuman, my readings are supported by mimesis, narratology, and an awareness of the way in which ideological concerns can shape the presentations of ideas. Each approach highlights aspects of the representation of posthumans in my corpus, and I now offer a brief overview of the usefulness of each approach in terms of reading the posthuman.

MIMESIS

Fictional representations of the effects of technology on the human body highlight connections between the real world and the fictional worlds, which reflects Haraway's perception of the cyborg as being a creature of both social reality and fiction. Her blurred distinction can be seen in Albert Borgmann's observation that "[i]n both the computer and the learner, the complement to 'having the world database at your fingertips' is to have nothing in your head" (1999, p206), and Richard Watson's comment that "a new type of mind is emerging from an osmotic interaction with digital objects and environments" (2010, p22). I see the physical embodiment of the posthuman as central to their posthumanity but, as the posthuman is a creature of social reality, I also consider the social and psychological elements of the digital/biological interaction. Aleks Krotoski's exploration of "how technology affects our minds and bodies, [...] the modern meaning of family, home and the neighbourhood [...] and whether] we love and hate in the same way", and how the web is "upending modern society" (2013, loc78ff) has grounded my thinking of the way in which the psychological social reality of the posthuman in the twenty-first century can be understood.

Some of Krotoski's work links to Sherry Turkle, a social psychologist studying computer culture and humans' relationship with technology since the 1980s. Turkle's study, *Alone Together* (2011), includes, amongst specific examples of human relationship with technology, longer-term research following "children who grew up with Tamagotchis and Furbies through their adolescence and young adulthood as they entered the networked culture to become fluent with texting, Twitter, MySpace, Facebook, and the world of iPhone apps" (p*xiv*). These

children are some of the fictional adolescents within my corpus, and their characters share an understanding and acceptance of technology as a part of their lives with their likely readers.

Using real-world psychological and social research to support the reading of fictional worlds might be seen to be blurring boundaries and losing focus on the text. However, as Ryan argues, because “the culture of the screen has now become the norm of culture itself [...] the consequence is that reality is lost, and along with it goes critical thought” (1999, p47). I make a clear distinction between what is real and what is fictional in the texts, and my understanding of real-world concerns helps to explore fictional worlds by enforcing critical probing and questioning of literary representations. An issue which is raised through this distinction is the questioning of real-world users’ unthinking acceptance of technology into their lives. I site my own reading of the posthuman within my own historically-informed context of the characters, and wholly subscribe to Graham’s view that “science and literature have common origins in culture and social history: both use generic conventions and both have authors and audiences. In short, there can be no divorce between text and context, either for literary or scientific representations of the world” (2002, p27).

I believe that the relationship between the real world and its imitative fictional representations, and the nature of science-fiction, mean that mimesis has a key role in understanding the creation of fictional posthumans. Much science-fiction criticism adheres to Darko Suvin’s definition that it is a genre achieving “cognitive estrangement” through offering “an imaginative framework alternative to the author’s empirical environment” (1979, p8), thereby indicating a mimetic study is impossible. Seeing a mimetic study as impossible is meretricious as it consigns texts to the realms of fantasy and imagination where the realities of the worlds that are portrayed are ignored. Seo-Young Chu’s *Do Metaphors Dream of Literal Sheep* offers a reimagining of science-fiction as “a mimetic discourse whose objects of representation are nonimaginary yet cognitively estranging” (2010, p3). Chu sees realism and science-fiction on a spectrum where science-fiction is able “to generate mimetic accounts of reality that defy straightforward representation” (p10). As an aside, Chu notes that “the status of a text as a mimetic representation of a highly cognitive estranging phenomenon may vary with circumstance” (p8) as times change and cultures develop, implicitly stressing the need for his approach to be used in conjunction with new historicism. If the cyborg is taken to be both a characteristic feature of and figurehead for science-fiction, the texts themselves take on Haraway’s view of the cyborg (and implicitly the posthuman): they become products of social reality as well as fiction, blurring the boundaries in the way the juxtaposition in the genre’s name implies.

If fictional posthumans are accepted as reflections of the real world, the fictional societies in which they live are also allied to the real world. Maria Nikolajeva's textbook chapter on the aesthetic of the content of a text provides a series of questions to prompt an exploration of society, which includes a consideration of attitudes towards social institutions, the way power structures are viewed, the ways authority figures perpetuate their roles, the presence of laws (and lawlessness), and the values given importance in the society (2005, p77). Nikolajeva's questions also raise the issue of power within societies, and I understand power hierarchies to be those in which adults have the economic, political and social power to impose their wills upon children. Trites, meanwhile, in her examination of power in fiction, uses Althusser's definition of Ideological State Apparatuses which have a "self-perpetuating interest in instilling their ideologies into the masses in order to retain their hegemony" (2000, p4) and use language "simultaneously to repress and to empower their constituents", meaning that those dominating society "gain power from the very people whom they regulate" (2000, p22) as she considers the portrayal of authoritarian societies. She concludes, more generally, that "[a]dolescents have power that becomes institutional power as they (necessarily) engage in the social forces that simultaneously empower and repress them" (2000, p52). Ultimately, she sees the *status quo* as being maintained, meaning boundaries cannot easily be transgressed. However, in the figure of the posthuman, the *status quo* is not so readily maintained: while it does happen, it cannot be asserted with such confidence. To this end, Beauvais's 2015 work, which strongly questions the idea of the maintenance of the *status quo*, provides a useful bridge between the questions of authority and my response to the posthuman, and leads to my proposal of the postchild in Chapter II as a means by which to consider the shift in power.

Rosemary Jackson's approach to fantasy is also applicable to the science-fictional view of the posthuman, as she sees "the fantastic trac[ing] the unsaid and the unseen of culture: that which has been silenced, made invisible, covered over and made 'absent'" (1981, p4). She sets fantasy's 'unreal' against the reality of culture which means that the fantastic is able to challenge reality. The proximity of the figure of the fictional posthuman to the real world (as opposed to the fantasies of C S Lewis and J R R Tolkien she discusses) makes this more pertinent, as the posthuman forces the contemporary reader to interrogate their world and their daily actions and attitudes. Although not labelled as such, Jackson sees the cognitive estrangement of fantasy as allowing "confusion and alternatives" (1981, p35), something which readers of posthuman fiction will immediately recognise. She describes the texts' mimetic reliance on "conventions of realistic fiction" to "assert what they are telling is real"

before breaking the “assumption of realism by introducing what [...] is manifestly unreal” (1981, p34). She sees this combination of the extravagance of the unreality and ordinariness of the realism meaning that fantasy texts come without “assumptions of confidence or presentations of authoritative ‘truths’” (p35). The implicit issue of didacticism in her conclusion is linked to ideas of the adult/child imbalance and Beauvais’s ‘mighty child’, and subsequently the postchild.

NARRATOLOGY

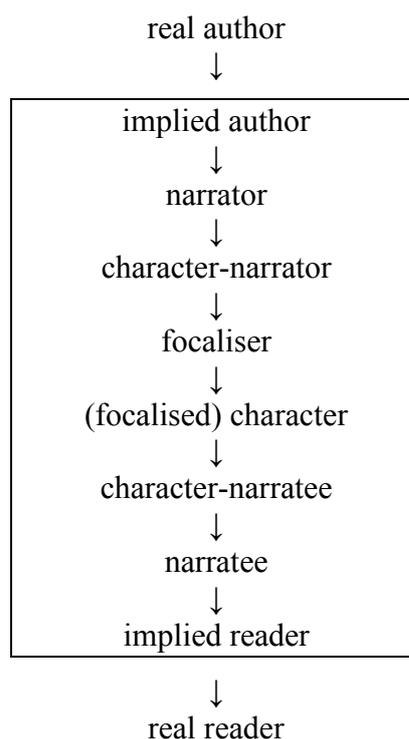
My analysis of the representation of the posthuman and the way in which the figure of the postchild changes society’s established power dynamics is supported by narratological methods which allow me to answer the questions of how aspects of the text are presented. Just as I have shown the relevance of mimesis to the study of the posthuman, I now detail aspects of narratology which I found pertinent to my study.

My corpus includes texts with both first and third person narrators, methods which, respectively, allow readers to empathise with protagonists and to view them with a greater critical distance. Gérard Genette observes that “any narrator can speak in the first person [therefore] the narrator can be in his narrative *only* in the first person” (1980, p244; original emphasis). The first-person narrators in my corpus are all posthuman themselves, so the reader is mediating posthuman experiences narrated and focalised by a posthuman. The reader’s need to mediate the levels of posthuman experiences may create the science-fictional cognitive dissonance and can other the posthuman; however, the anticipated readers’ (arguably postchildren themselves) personal experiences of technology mean that the distance is not as great as it would be for adult readers. This therefore offers a means by which the reader can make sense of their own world. The third-person narrators in my corpus are omniscient human narrators and, like the first-person narrations, the anticipated reader is encouraged to empathise with the posthuman protagonist. Even though the narrations and focalisers are both human and posthuman in my corpus, the overriding ideas about subjectivity and identity formation are similar.

Mikhail Bakhtin (1981) describes the novel as heteroglossic, as there is often a clash of voices in the narrator’s words which recognises differences of gender, class, age and ideology. To his definition I add differences in technological enhancement. Jonathan Culler exemplifies Bakhtin’s clash by demonstrating that while events may be seen through a child’s consciousness, the language used to relate them could either be that of an adult reporting the

child's perceptions or the child's own language (1997, p87). As a result, this can lead to an incongruity between the character's sociolect and the inherent ideology. In my corpus – to update Culler's example – events are frequently seen through a posthuman's consciousness, and the language used to relate them is both that of a human reporting the posthuman's perceptions and the posthuman's own language. However, because we neither know what a posthuman consciousness is, nor what might constitute posthuman language, human language has to be used. I include a brief discussion in the following subsection to consider the issues of the language used by and of the posthuman.

The questions of who is narrating the events and through whom they are focalised lead to the question of to whom the narrator is speaking. To be able to consider the potential distance between the reader and the account of events in my corpus, I have used Nikolajeva's expanded model of narrative communication (2002, p3; boxed and rotated), based on Seymour Chatman's original 1978 model,² with the real author and the real reader placed at the beginning and end of the chain respectively for completeness:



At each stage of the model, the narration constructs an audience – the implied reader – through what the author takes for granted. From a posthuman perspective, the implications are connected to the characters' relationships with, and use of, technology and the way such presentations demonstrate the implied (and possibly real) audience's acceptance of it within

² The original model comes from Chatman, S (1978) *Story and Discourse: Narrative Structure in Fiction and Film*. New York: Cornell University, which Chatman subsequently updated in Chatman, S (1990) *Coming to Terms: the Rhetoric of Narrative in Fiction and Film*. New York: Cornell University.

their lives. These ideas are linked to the mimetic reading, as all readers are informed by the context, scientific developments, social structures and power relations of their worlds. The different levels of narration both distance the human from technology, in keeping with technophobic attitudes, but also exemplify the proximity and interconnectedness of technology and the human. The effect of different levels of narration is therefore another means by which human/technological boundaries and their transgression are demonstrated.

In children's literature, the model outlined above implies an adult author (whether real or implied) in opposition with, or at least in contrast to, the (real or implied) adolescent reader, although in my corpus I have generally found this division less clear. As the real authors are often closer to their implied readers' natural age, there is less discord between the two and – superficially at least – the books might consequently be perceived as less didactic. However, Beauvais picks up on Nodelman's idea of the 'hidden adult' in children's literature (2008), describing the hidden adult's agency as not coinciding with "either author or narrator, or with adult characters in the books", but as the "adult volition conveyed within the book" or the text's "construction of adulthood with its accompanying intentions, fears, desires, values and attitudes towards childhood" (2015, p10). For Beauvais, even if the author and reader have shared similar experiences, the author – through the 'hidden adult' – can often still be seen to be presenting an ideological perspective delivered from a position of implicit authority within the text. Although Beauvais sees this version of adulthood as a construction, it remains constructed by the (implied) author and is shaped by their ideological perspectives.

The author/reader framework also demonstrates the "adult/child imbalance", clearly seen in the discrepancy between the "ostensibly adult narrative voice and the child focalizing character" (Nikolajeva, 2010, p8). The question of the powerful adult and powerless child is also linked to ideology and the way the adult implied author writes the story, although my conceptual figure of the postchild is imbued with more power than the adults around them. This carnivalesque inversion of traditional ways, or at least expectations, of things was seen by John Stephens as being used in literature for adolescents to teach them to question the social order (1992, p35). More recently, Nikolajeva sees this in the figure of Harry Potter, and her ideas are mirrored in the figure of the posthuman: while in J.K. Rowling's novels Harry appears to be permanently empowered having been born a wizard, he has to learn to "steer and control his power" as the "adults at Hogwarts have more power than Harry" (2005, p91; *qv* 2010, p15). While in *Harry Potter*, the carnival device is magic, throughout my texts it is

technology. Additionally, technology, like magic, moves beyond the carnivalesque as the characters are all empowered by it, rather than being returned to a state of disenfranchisement.

For Nikolajeva, technology also challenges adult aetonormativity (2008; 2010) as the empowered adolescent posthumans question and subvert adult normativity. Although technology is not the exclusive preserve of the adolescent (and this has become increasingly true during over the course of my research), it remains the adolescent's willingness to *engage* with technology – rather than simply use it – which provides the opportunity for subversion. Beauvais's idea of the mighty child as the authoritative adult's intended addressee in writing for children can also be seen through this subversion, as she considers the “paradoxical adult desire to *ask the child didactically for an unpredictable future*” (2015, p4; original emphasis). While newly empowered adolescents are frequently able to use technology to challenge adults' power, the ideological shift of the rebels to become the institutional power holders is also significant. Trites writes that “[a]dolescents have power that becomes institutional power as they (necessarily) engage in the social forces that simultaneously empower and repress them” (2000, p52) and these changes reflect a conformist need to fit into a society – a concern often at the root of posthuman characters' existence. As she considers didactic address, it is on this potential to act or to conform that Beauvais places fundamental importance. While the critique of an issue “is still within the adult-specific power of the children's book”, a meaningful “acting upon that critique [...] is the domain of the child reader's specific power – might” (2015, p81). These aspects of the way in which power in society is presented are brought together in the figure of the postchild in Chapter IV.

The questions of power and might which the posthuman and postchild raise are intrinsically linked to narratological thinking. They can also be seen in the way the power dynamics of the narrative communication model are, in a literary embodiment of the carnivalesque, in flux through their subversion and inversion: the model cannot remain neatly delineated with the real and implied authoritative adult at the top of the hierarchy. As Culler writes, “it is the structure of the controller and controlled that the notion of the post-human puts in question” (2000, p128), and the importance of this is developed within my consideration of ideologies (hidden) within the texts later in the Introduction. Therefore this thesis closes naturally with reflections on power.

THE HUMAN LANGUAGE OF THE POSTHUMAN

Writing about the posthuman brings with it complications about the nature of the language used of, and about, posthumans. Despite Peter Stockwell's study of the poetics of science-fiction in 2000, I have taken his consideration of language and the experience of the reader in a different direction. His work encourages reflection on the assumptions which can be made about posthumans, the ways in which the author has written about them and/or encouraged the reader to empathise (or not) with the posthuman. The language used of and about the figure of the posthuman and its representation is necessarily complex and intricate. As the posthuman is inevitably set against the human, the binary divisions and categorisations which concern writers about gender, race, sexuality and disability concerns arise in relation to the posthuman too. Here, therefore, in preparation for Chapter IV, I note some of the difficulties which need to be remembered when reading and writing about posthumans both in the fictional worlds of my corpus and considering our – or maybe their – place in the real world. Writing about fantasy, Rosemary Jackson notes “[t]elling implies using the language of the dominant order and so accepting its norms, re-covering its dark areas” (1981, p4) and the use of human language therefore denigrates and dismisses the posthuman. However, in the absence of a posthuman language, considering how norms can be challenged *despite* the use of the dominant order's language is significant.

Inevitably the pronouns ‘he’ and ‘she’ confer human characteristics upon posthumans, while ‘it’ emphasises the posthumans' technology. Ursula Le Guin addresses a similar problem with gendered pronouns in the 1994 Afterword to her 1967 book, *The Left Hand of Darkness*, in which she originally used male pronouns in the belief that they were “genuinely generic” to describe a predominantly sexless race who become highly sexed for just a few days per month (1994, p287). She plays with the use of *e/en/es/enself* for the genderless equivalents of (s)he/her or him/hers or his/herself or himself, and uses genderless equivalents to personal nouns such as ‘sovereign’ for ‘king’ (1994, p290ff), and is able to set these against gendered pronouns for the periods of time when they are sexed. Proposals for genderless pronouns abound on the Internet in transgender discussion groups and writing fora, but while some seem more prevalent than others, the lack of adoption demonstrates a continued sense of the need to identify binaries within social norms. The inherent resistance to genderless pronouns can also be seen in the slow progress made in Sweden, where a group of five preschools have specialised in gender equal teaching since 2011. If children express ideas in gendered language, teachers use open questions to discuss their feelings, and they use ‘hen’ (derived

from Finnish which has no grammatical gender) as a gender neutral pronoun to discourage stereotyping. However, the schools' coordinator describes the challenges of "changing deeply-ingrained attitudes to gender from staff", and the difficulty some parents have in accepting the approach, although commentators suggest it will get easier with each new generation as "children and young people are far more accepting of the fluidity of gender and sexuality than older generations" (Leach, 2016, np). The changing attitudes in younger generations parallel changing attitudes towards technology over the past twenty year and reflect the greater awareness and understanding the technologically-enhanced posthuman in the real world today.

As it is frequently those labelled as cisgender who struggle to find appropriate language to describe transgender individuals, so it is humans (or maybe they should be cishuman) – or posthumans before they have come to accept a new posthuman identity – who often have difficulty in finding appropriate or consistent pronouns and nouns to label posthumans. Throughout my examination of my corpus, I maintain the authors' choice of pronouns and nouns to describe the posthumans as they serve both to give an indication of the human/technology balance and also the sense of fractured and/or confused identity. Where authors have made what might be deemed to be surprising choices within the context of the texts, I comment to consider the way this affects the posthumans' representation. As well as gendering, pronouns also serve to imply the inclusiveness of the binary oppositions. The central question is whether the real writer positions the implied reader to see the posthumans as 'they' or 'them', or the implied writer acknowledges the real reader will see the posthumans as one of 'us' or 'ours' (Shakeshaft, 2011).

Stockwell discusses the forms and functions of verbs (2000, pp38, 64, 126, 175), and while all these techniques can give an indication of the extent of characters' (post)humanness, I have found that the meaning and connotations of verbs are more telling. Unlike the choice of standard English pronouns, which offer clear cut divisions, the choice of verbs offers a spectrum running from human to post- (and therefore, implicitly in the binary oppositions frequently established in texts, non-) human. While some verbs (such as 'injure' as opposed to 'damage') demonstrate a clear demarcation between human and non-human, others indicate a greater sense of ambivalence and might only tend towards one end of the spectrum based on the context. I identify ambivalent examples in the texts, but a clear example of ambivalence can be seen in the fact that while a human is likely to be born and a posthuman manufactured, verbs such as 'build', 'wire', 'program', 'create' and 'conceive' can apply to both humans and

posthumans in a variety of contexts. At the other end of their life (or existence), humans are likely to die and posthumans may be decommissioned, but ambiguity can be seen in ‘fail’, ‘terminate’, and ‘sleep’. Similarly, a human might be abducted, whereas a posthuman is more likely to be stolen, with more ambiguous verbs such as ‘taken’ or ‘seized’ sitting between the two.

It is not just in actions beyond the (post)human’s control that differences can be seen, as internal processes can be categorised on a spectrum too. However, in these cases the distinction between the two ends of the spectrum is less clear: while a human is more likely to think or realise, ‘calculating’, ‘deducing’, ‘reasoning’, ‘analysing’, and even ‘computing’ are all ambiguous, and in some cases even seen as desirable human traits. In such lexical choices, the blurred human/posthuman division and fluidity of the nature of the posthuman in both fiction and reality is reinforced. I have seen a spectrum of verb choice considered elsewhere in relation to the posthuman, and it is something which I believe my analysis implies could be explored further; it would be interesting to see whether it could be extended to other binaries.

It is worth remembering that even though humans are frequently presented as being in conflict with posthumans, fictional representations of posthumans use the language of humans to communicate, and their stories are told in human language. A tentative real-world development of this would be the conversation that two of Facebook’s chatbots were reported as having, which sensationalist journalism saw as technology developing its own language (Simonite, 2017). However, as Maylis Rospide and Sandrine Sorlin wonder, “how can human language represent things that have no known referent in the reader’s world of experience, and how can genre literature do justice to radical alterity and its language?” (2015, p4). And, if language is accepted as defining identity through its users’ interactions with the world, posthumans using human language must be seen as human. Although the posthumans’ means of communication may not necessarily involve writing or speaking, its fictional representation is still recognisable. MT Anderson uses this to an extent in his 2002 novel *Feed* through the stilted narration of the posthuman protagonist and his use of neologisms, but the language remains recognisably human. Despite the use of human language being inevitable as authors and their readers are (presumably) predominantly human, this could be reversed with the authors and readers being accepted as posthuman. Posthuman fiction therefore demonstrates similarly blurred boundaries to the figures of the posthumans themselves.

While I have made the assumption that real authors are inevitably human, in 2016 a Japanese artificial intelligence co-wrote a short novel which made it past the first stage of a literary contest. Although “[h]umans decided the plot and character details of the novel, then entered words and phrases from an existing novel into a computer, [it] was able to construct a new book using that information” (Schaub, 2016, np). While a heavy human involvement is shown, technology’s ability to construct a convincing narrative from its human inputs shows that real authors do not have to be – and may not always be – human.³ The distinction between human and technology illustrates the increased blurred division, and acknowledges that while language demonstrates the transgression of boundaries, it also shows the flexibility of such boundaries.

IDEOLOGY

In Chapter I, I consider other scholars’ understanding of what the posthuman is, and I look at the work of Clare Bradford, Kerry Mallan, John Stephens and Robyn McCallum and Victoria Flanagan. Their work is grounded in ideological concerns, and although I have not found the need to depend so heavily on particular discourses in my reading, I have found it helpful to have considered the (real) authors’ (hidden) ideologies and attitudes which are occasionally visible in my corpus. This section is – like mimesis and narratology – a brief consideration of the ways in which the authors’ ideologies are conveyed through my corpus.

Although early ideological analyses of texts focused on the negative aspects of the ideas portrayed, Peter Hollindale’s 1988 paper argues for the need to look beyond this and at the inherent ideologies within the text itself and the language used to communicate ideas. John Stephens goes further, observing that a “narrative without ideology is unthinkable: ideology is formulated in and by language, meanings within language are socially determined, and narratives are constructed out of language” (1992, p8). Hollindale identifies three ways ideology is conveyed: firstly, “the explicit social, political or moral beliefs of the individual writer, and his wish to recommend them to children through the story” (1988, p10); secondly, the writer’s “passive ideology” or their “unexamined assumptions” (p12); and thirdly, “the relationship between the author and the reader” (p15). Hollindale’s three ways are not mutually exclusive and my corpus can be seen to encompass them all, but the means of conveying them are usefully considered separately.

³ The only publicly available text from the metanarratively entitled novel *The Day a Computer Writes a Novel* is the unnerving final paragraph, as reported by Schaub:

I writhed with joy, which I experienced for the first time, and kept writing with excitement. The day a computer wrote a novel. The computer, placing priority on the pursuit of its own joy, stopped working for humans.

Although more recent texts could be described as more sophisticated and less overtly ideological than nineteenth and early-twentieth century children's literature, Robyn McCallum and John Stephens note that as many children's texts are concerned with "social issues and values, books may openly advocate attitudes or positions as desirable for readers to espouse" (2011, p361). While these do exist in my corpus, it is the 'hidden' implicit values and assumptions (which reinforce existing societal norms rather than challenge them) that are more powerful in the texts. Hollindale offers a series of questions to ask of a text to examine a writer's ideology (1988, p19ff), but the questions I have asked of my corpus consider the ways in which the texts' conclusion restate a more technophobic agenda in contrast to the values displayed earlier in the text, and decisions which characters make when there is more than one defensible course of action.

Ideological beliefs are also transmitted through the narrative communication model which allows adult ideologies to percolate through the narration and perspective of characters to the reader. In terms of the ideological concerns that are conveyed, the time of narration relates to the timing of events, as a later recounting of events gives the narrator the benefit of hindsight. As McCallum and Stephens note, if "the time of narration is considerably later than the time of the events, the narrating self can judge the narrated self from the perspective of experience" (2011, p362). The judgement that the character makes of themselves can reveal even more didactic messages. Similarly, the limits that are placed on the knowledge and understanding of the focaliser by other characters is significant, especially where the protagonists are awaking after an accident and they are discovering their new identities which have been created for them.

The focaliser's social position as an insider or outsider also helps to shape the reader's empathetic response and, in doing so, convey or challenge ideological attitudes towards the posthuman. The effect of cognitive estrangement, or defamiliarisation, to "contest readerly passivity" demands engagement from the reader, either to "increase emotional identification" or to "increase critical distance [...] or sometimes both" with the ideas raised (Easterbrook, 2005, p254). Assuming readerly engagement, both of these effects are important as empathy can lead to ideas being accepted unquestioningly, but a critical distance (a more complex reading skill to develop) can lead to a dismissal of ideas. Neil Easterbrook considers the speed of change in technology, and notes the temporal and contextual limitations of estrangement in older texts, as "one era's shocking defamiliarisation becomes another's cliché" (2005, p255)

which means that ideas presented in the texts could be overlooked as they are simply a part of the reader's world, rather than a fictional creation.

Finally, in the model of narrative communication, awareness of the implied reader is necessary. Nikolajeva defines the implied reader as “the authors’ idea about their audience, the idea found in the text itself” (2005, p247): this is important in terms of the way technology is written about, as authors anticipate levels of technical understanding in their implied readers that an older audience may not have. While the consideration of the reader offers a useful perspective from which to consider the text and could be an interesting empirical study, my extension of the narrative communication model to include the real reader reminds me that I am constructing the meanings from the texts in my reading of my corpus. However, I am also conscious of my personal position as the potential parent of projected readers of the texts, which may put me in opposition to ideas inherent within the texts. I have therefore considered possible differences which an adolescent reader may see, when the discussion of the interpretation of an idea could differ from my own reading, to ensure the distinction between views is clear in my analysis.

Although ideologies concerned with the varied perspectives of power permeate my analysis, where other work has been done on texts in my corpus some writers have founded their work in other critical approaches. Therefore, I have included some commentary on a queer reading of *Cinder* and aspects of disability in *The Adoration of Jenna Fox*. I believe that approaching the posthuman using an explicit theoretical approach can be restrictive, and while I am aware of their potential usefulness, I have not limited myself to a single approach. Theories of race, disability, gender, and sexuality perpetuate – whether intentionally or not – binaries frequently negated by the posthuman. Forcing such readings on the posthuman is meretricious and unhelpful if the posthuman is to be given the freedom to shape its own identity. The posthuman allows texts to circumvent the issue of reconciling real-life impossibilities with genre conventions, if authors understand the posthuman's potential. In exploring other options, intersectionality appeared to offer a potential resource as it provides a way to combine mutually exclusive aspects of experience through its attention to black women. However, Nikol Alexander-Floyd's arguments against the “re-visioning of intersectionality [...] designed to give it greater appeal” (2012, p15) are convincing: she concludes that it is founded on a specific group of people and it must therefore “be properly understood as the purview of researchers investigating women of color” (p19). As with the binary-based ideologies, placing an artificial framework on the posthuman's potential marginalisation

restricts the development of a posthuman ideology, and stifles the “self-reflexive and interrogative qualities of posthumanism [which] enable it to perform a critical examination of many of the binary concepts [...] used to make sense of human experience” (Flanagan, 2017, p29).

Bringing together a diverse range of approaches reflects what Kerry Mallan observes when she suggests that the focus of critical theory has been shifting

into questions of *what matters* in a world characterized by rapid changes in political economy (globalization), wide-ranging social and cultural shifts, the collapse of distinctions between public and private, environmental crises, and continuous advances in technoscience and nanotechnology (2011, p147; original emphasis).

Today’s reader can see Mallan’s areas of change as features of many recently published novels. In terms of the young adult texts within my corpus, Romantic notions of the child and childhood have been replaced by the contemporary image of empowered digital natives, sometimes inhabiting imagined worlds. I explore such new notions of the child and their worlds and, as Hayles summarises, “[l]iterary texts are not, of course, merely passive conduits. They actively shape what the technologies mean and what the scientific theories signify in cultural contexts” (1999, p21): they can bring meaning to abstract ideas and scientific developments.

THESIS STRUCTURE

Following the contextualisation of my research in my introduction, my thesis is divided into four chapters: Posthuman, Postchild, Trialism, Representation which are followed by my conclusions. In Posthuman, I consider the figure of the posthuman subject as the focus of my work, as opposed to the philosophical concept of posthumanism, and examine founding and recent scholarship in the field. To enable me to approach the posthuman subject, I then examine different types of technologically enhanced posthuman body types which provide the shape for my subsequent analysis. The Postchild chapter is the first principal original contribution to knowledge, and it offers a theorised proposal for the conceptual figure of the postchild as distinct from the implicitly adult posthuman. The next chapter, Trialism, is my second principal original contribution and comes from my consideration of the posthuman and its body types. I theorise a new approach to the posthuman subject which extends the Cartesian idea of dualism into a posthuman trialism; I use two recent novels to illustrate this in practice. Representation moves on to examine specific texts, exemplifying the different posthuman body types in isolation, and identifying similarities and differences between them. This section demonstrates how the posthuman subject is represented in contemporary young

adult fiction and allows me to show how my notions of the postchild and trialism can be used alongside more established approaches to reading texts. Some body types are illustrated by multiple texts as the posthuman subjects offer complementary perspectives through similarities and differences between the premises of the texts, whereas others can be demonstrated through a single text. The final section, Conclusions, brings together my research, reflecting on my findings in relation to other views of the posthuman and posthumanism and the real world. I also offer tentative suggestions for ways my work could be used in the future and possible directions in which it could be extended

CHAPTER I: POSTHUMAN

THE POSTHUMAN SUBJECT⁴

From the outset, it has been apparent to me that ‘posthuman’ is something more tangible than the more widely accepted philosophical concepts of posthumanism. Francesca Ferrando views a posthumanist methodology as not being definitive, but “dynamic, mutant, shifting” (2012, p11). I appropriate the posthuman as something real against such mutability to give a fixed point of reference; this allows me to make a more confident analysis of the subject. I also believe that the posthuman is a figure recognisable to everyone in its embodiment of previously fantastical aspects of technological enhancement in the late twentieth/early twenty-first centuries. To provide a foundation for my reading of the nominalised posthumans in my primary texts and to illustrate its distinction from theorised posthuman thought, this chapter considers the literary history of the posthuman in relation to real-world developments. I also consider approaches to the posthuman in key critical texts from the recent past to show how my research into the representation of the technologically enhanced posthuman borrows and develops ideas from these. In focusing on the embodied posthuman, I highlight where I believe previous research has been limited, whether through a focus on the philosophical implications of posthumanism, a focus on mainstream media representations, or more restrictive approaches based on existing critical theories. My consideration of the posthuman, its history and its limitations leads me to conjecture the existence of the *postchild* in relation to the *posthuman*. The *postchild* is particularly pertinent to representations of the posthuman in young adult fiction. My exploration of what constitutes the posthuman also leads me to propose my notion of a *posthuman trialism as a development of dualism*. In a standalone section, I exemplify trialism using two contemporary texts; trialistic readings are then incorporated into my analyses of the representation of the posthuman in my corpus to demonstrate its applicability. Thus, the concepts of the *postchild* and *trialism* are my major original contributions to scholarship which I use in my analysis but also expect to be helpful in future research.

‘Posthuman’ has existed as an adjective since at least 1916⁵ but it was only coined as a noun as recently as 1985 by one of the founding cyberpunk⁶ authors, Bruce Sterling, in his novel

⁴ The first section of this chapter has been published in an edited form in the second edition of *Modern Children's Literature: An Introduction* (2014).

Schismatrix describing two competing posthuman species each using different technological means to enhance themselves. In terms of exemplifying the range of the term, this early usage helpfully considers various methods of enhancement which Brian McHale summarises:

The ‘Mechanists,’ or ‘Mechs,’ use electronic and biomechanical means to augment themselves: prosthesis [...]; brain-computer interfacing [...]. Their rivals, the ‘Shapers,’ use bio-engineering techniques – cloning, genetic engineering – to achieve the same ends
(2010 p15).

The references to technological and biological enhancements neatly encompasses the two main elements of the posthuman; however, seeing them as two distinct and opposing groups in 1985 is unusual, since the division frequently occurs between posthumans and humans.

The sense of enhancement and progress is indicated by the familiar ‘post-’ prefix to suggest *that which comes after the human*. The word appears interchangeably as ‘posthuman’ and ‘post-human’ throughout literature, but Elaine Graham chooses to use ‘post/human’ to “suggest a questioning both of the inevitability of a successor species and of there being any consensus surrounding the effects of technologies on the future of humanity” (2002, p11). As novelists implicitly, and futurologists explicitly, endeavour to describe a realistic view of the future, the term ‘post/human’ offers a more open-ended and less threatening label to consider the impact of technology on the human, humanity and society in the future. Although this is an important distinction when the worlds in which posthumans exist are often portrayed as dystopian⁷ (Shakeshaft, 2011), I omit the slash for the sake of convention, but do not believe that a consensus on the effects of technology on mankind has been reached.

Although the nominal posthuman has only been labelled as such in the past three decades, its origins can be traced back through literature for some three thousand years. Understanding its history helps to place real and fictional posthumans in a biological, social and historical context and provides a backdrop against which to examine its nature. I am therefore using

⁵ The OED’s earliest citation of the adjectival form is from Maurice Parmelee’s *Poverty and Social Progress* (New York: Macmillan) and reads ‘An animal no longer human, or far that matter mammalian, in its character... But even if such a post-human animal did come into existence, it is difficult to believe that it could carry on the necessary economic activities without using a certain amount of formal organization’ (2018c)

⁶ ‘cyberpunk’ is a sub-genre of science-fiction which is dystopian by nature and incorporates advanced technological developments which are seen throughout the posthuman texts which make up my corpus. However, although the genre originated alongside developments in science-fiction in 1960s and 1970s America, it is rarely allied with young adult fiction.

⁷ Under the umbrella term of ‘science-fiction’, dystopian fiction offers young readers “a glimpse of imagined futuristic possibilities [...] in which society has all but broken down and extreme forms of governmental, societal, or environmental disorder have taken over”, which gives them the “space to reflect upon their society and its future” (Hahn, 2015, p177). Therefore, a situation described as dystopian is a disorganised, or mis-governed possible future.

‘posthuman’ in a narrower way than other scholars who use it to describe a philosophical approach which, according to Francesca Ferrando, confusingly and unhelpfully can encompass “posthumanism, transhumanism, [...] new materialisms, [...] and the heterogeneous landscapes of antihumanism, posthumanities, and metahumanities” (2013, p32). I separate posthumanism from the posthuman subject to provide clarity within my readings, and my narrower definition contributes towards the originality of my research by offering practical approaches to reading the posthuman.

I use ‘posthuman’ adjectivally to connote the aspects of the posthuman that separate it from the human. It distinguishes details such as bodies and thought processes which are no longer entirely human, or are beyond natural human abilities and norms. I refer to ‘humanness’ which the sense of my discussion conflates with ‘real-ness’ through a perception of the human as being a real, tangible entity in contrast to science-fictional view of the posthuman. The distinction is akin to the online shorthand ‘IRL’, for ‘in real life’, to differentiate between real and online experiences. I also use ‘humanness’ to indicate behaviour, appearance, and emotions more associated with irrational human nature rather than the cold, calculating logic and behaviour allied with the technological processes of the posthuman. While seeing humans as irrational contradicts the philosophical understanding of man as rational, my interpretation stems from the 1974 psychological research of Amos Tversky and Daniel Kahneman which shows the way in which humans regularly make logic-defying decisions. More recently, Yuval Noah Harari’s 2018 work describes artificial intelligences in contrast to human intelligence, and concludes that “intelligence and consciousness are very different things. Intelligence is the ability to solve problems. Consciousness is the ability to feel things such as pain, joy, love and anger. We tend to confuse the two because in humans and other mammals intelligence goes hand in hand with consciousness. Mammals solve most problems by feeling things. Computers, however, solve problems in a very different way”. (2018, loc1193). Mammals’ feelings can lead to irrational and unexpected actions, whereas programmed responses remain logical and true to their algorithms.

Posthumanism, as a critical discourse, offers a world view which questions, and in Flanagan’s eyes “dismantle[s]” (2017, p35), the superiority of the human, rather than signifying a species that is an evolution of the human. It is described by Ferrando as “‘post’ to the concept of the human and to the historical occurrence of humanism, both based [...] on hierarchical social constructs and humancentric assumptions” (2012, p29) and by Rosi Braidotti as the “historical moment that marks the end of the opposition between Humanism and anti-

humanism” (2013, loc670). Similarly, Zoe Jaques sees posthumanism circulating around “issues of likeness and difference” to “expose [...] establish boundaries between the human and the non-human to facilitate a dialogue as to how those borders might become more fluid” (2015, p22ff). Cary Wolfe notes the “decentering of the human by [posthumanism’s] imbrication in technical, medical, informatic and economic networks” (2010, pxxv), but also sees it as coming before humanism as it “names the embodiment and embeddedness of the human being in not just its biological but also its technological world” (*ibid.*). In the twenty-first century, the posthuman is a figure of social reality. Flanagan sees the posthuman existing “in a world where the boundaries that once defined humanity [have] been redrawn as a result of technological impact” (2017, p35); although recent technological innovations have reshaped boundaries, they are boundaries which have been explored for millennia.

In order to contextualise the reality of the twenty-first century posthuman, I offer a historical overview of the posthuman subject which shows not only its prevalence, but also supports my consideration of the fixed posthuman subject, rather using a shifting posthumanist methodology.

The uncertainty and mystique surrounding the posthuman can be seen in the idea of the golem which, only dating back to sixteenth-century Prague in popular culture, can be traced back to the Bible. Such legends remain in people’s collective consciousness, and in 2009 it was reported that the golem, which was “fashioned from clay and brought to life by [Rabbi Loew] to protect Prague’s 16th-century ghetto from persecution, and is said to be called forth in times of crisis”, was “once again experiencing a revival” (Bilefsky, np). Daniel Dinello describes the golem as being “designed to serve and protect humans” and as a “slave to do [humans’] bidding” while seeing the way it was brought to life through a chanted appeal to God as being akin to a “medieval method of programming” (2005, p38). The obfuscated inclusion of religion is an aspect of the posthuman which is seen in varying degrees within my corpus and can be a part of trialism. Without the historical context, both Bilefsky and Dinello’s description could be applied to the modern incarnations of mythical or futuristic warriors designed to protect mankind seen in science-fiction.

Although the story of the posthuman-like golem is only four hundred years old, its origins are centuries older. Graham notes that the word can be found in Psalm 139 where is literally translated as ‘embryo’ (2002, p87), or poetically in verse 15 of the English 1662 *Book of Common Prayer* as “my substance, yet being imperfect”:

- 13 I will give thanks unto thee, for I am fearfully and wonderfully
made: marvellous are thy works, and that my soul knoweth right
well.
14 My bones are not hid from thee: though I be made secretly, and
fashioned beneath in the earth.
15 Thine eyes did see my substance, yet being imperfect: and in thy
book were all my members written;
16 Which day by day were fashioned: when as yet there was none of
them.

The speaker's creation is hidden in the way they are "made" (not born, despite the associations of 'embryo') in secret; in them being made "beneath the earth" there is something natural about their creation which embodies the nurturing power of the earth. The inevitable connection of a natural process to the creation story of Adam being fashioned from the dust of the Earth means there is something even more fundamental than man's appeal to God for the golem's animation.

Rather than simply accepting the psalm as the earliest reference to a posthuman, Graham explores the symbolism in light of the psalm as a "hymn of praise from Adam to God", interpreting the golem as a "thing which testifies to the wonders of creation" (2002, p87). While some texts position the posthuman to be worthy of adoration and therefore implicitly as a successor species, Moshe Idel sees the golem as a warning, within its historical and social context, against worshipping false idols and the animated statues associated with Paganism (1998, p19). Seeing the posthuman as something superior to humanity is a position which frequently dominates modern texts, but the human resentment of being replaced leads to tension between them. The tension means that the posthuman often seems intended to be read as a warning about humanity's over-engagement with technology.

Another significant ancient reference to posthumanist ideas is in Ovid's retelling of the story of Pygmalion in *Metamorphoses X*. In the story Pygmalion "carv'd in iv'ry such a maid, so fair, / As Nature could not with his art compare, / Were she to work"; the statue is duly animated by Venus and Pygmalion's wish is granted. As the golem is made by man looking for something more than a natural human for protection, so Pygmalion is angered by the lasciviousness of womankind and is motivated to create a woman beyond Nature. In both the stories of the golem and Pygmalion's statue the biological aspects of the posthuman are exemplified: although the motivations of their creators are different, the life-giving gods are Judeo-Christian and Pagan (or Greco-Roman) which begins to demonstrate the wide background from which posthuman ideas are drawn. The involvement of gods in the creation

imbues the posthumans with a greater sense of humanity than manufactured synthetic humans which are often made by self-designated god-like humans.

In contrast to the ultimately organic golem and Pygmalion's statue, the myth of Talos presents a manufactured, automaton-like creation. However, even in Apollodorus' *Bibliotheca*, where he is first described, his heritage is uncertain:

Some say that he was a man of the Brazen Race, others that he was given to Minos by Hephaestus; he was a brazen man, but some say that he was a bull (Apollodorus 1.9.26).

The uncertainty resonates with contemporary readers and in the way fictional posthumans are viewed warily by humans with the distrust often ending in conflict. Apollonius's account describes Talos as a "man of bronze" and of the "sons of the gods" (Book 4 l.1638, trans. Seaton, 1912) but, whether he is a remnant of the Bronze age or was forged by the Greek god of fire Hephaestus, his existence has a purpose. His simple 'program', described in Apollonius' *Argonautica* (Book 4 l.1639-1693), is to protect the island of Crete by striding around the island thrice daily to protect it from attack by throwing rocks at enemy ships. Dinello describes Talos as "an early version of a technological weapon" (2005, p37) and Telotte suggests that Talos "typified [the ancient Greeks'] hopes for a rational mastery over an unpredictable universe" (1995, p29). The technology is prevalent in Talos, but he is flawed: Apollodorus and Apollonius describe the flaw differently but in each case Talos's ankle is a point of weakness where his single vein can be attacked and this is how he dies or is killed (depending on the translation). Unlike the predominantly biological posthuman, his flaw could be seen as a form of 'emergency override' whereby the mechanical posthuman could be stopped by humans or the gods in whom the humans put their faith. In Talos, the contemporary fear of technology overcoming humans is recognisable in a 2000 year old story.

The golem, Pygmalion's statue and Talos are mythical creatures but their characters provide a context for the types and elements of posthumans seen in literature and reality today. As Sterling shows two distinct types of posthuman in 1985, their organic and technological roots can be seen in Greek mythology, early technologies and religion.

While the golem, statue and Talos are created for the service of man, two significant seventeenth-century literary landmarks demonstrate different motivations for the creation of posthumans. In the age of the Industrial Revolution, with its advances in technology and automation and the development of the novel, E T A Hoffmann's *The Sandman* (1816) and

Mary Shelley's *Frankenstein* (1818) were published and present technology as the foundation for posthuman characters.

In *The Sandman*, Olympia is described as being “most symmetrically formed”, and having an “angelic countenance” with a face embodying “wondrous beauty” (np); her physical descriptions echo the ideas of Pygmalion's statue and the connection is reinforced when Nathaniel (one of the epistolary story's letter writers) describes her as a “beautiful statue” (np). Through Nathaniel's observations, the reader is given hints about Olympia's non-human nature but her measured and stiff deportment and step, and dexterous piano playing seem to be part of her character. Her appearance and skills echo the desirable qualities of young, marriageable daughters portrayed in the contemporary novels of manners. Even when she can only utter “Ah, ah!” in response to questions and stares “immovably” (np), Nathaniel's love for her beauty prevents him from recognising the truth. Nathaniel's feelings do not allow him to see the truth, demonstrating both his human weakness and Olympia's technological perfection.

It is only towards the end of the story when Nathaniel accidentally sees her ‘father’, Professor Spallanzani, and the ogre-like Coppelius/Coppola fighting over the body, that Spallanzani describes her as his “best automaton—a work of twenty years—body and soul set upon it—the clock-work—the speech—the walk, mine”, but her only human element, her eyes, had been “stolen from Nathaniel” (np). The mechanical elements of creating a life form able to dance, play the piano and sing, prefigure developments in robotics today but the story also provides the “literary prototype of another science-fiction icon – the mad scientist, a figure intimately connected with the creation of evil artificial humans” (Dinello, 2005, p40). It is the human Nathaniel who ends up suffering as he goes mad and eventually commits suicide having learnt that his paramour is merely a “wooden doll”.

Written two years later, *Frankenstein* is often seen as an early example of modern science-fiction, and Humphrey Carpenter and Mari Prichard describe Shelley as having “pioneered” the genre (1995, p471). Where the golem, Pygmalion's statue and Talos are entities that have been moulded, fashioned and built from nothing, and Olympia has been made from raw materials, Frankenstein's monster starts with the death of humans and is made up of organic items “from charnel-houses, [...] the dissecting room and the slaughter-house” (Shelley,

1818/2003, p55).⁸ The use of human body parts makes the monster literally posthuman, as its creation comes after the human. Unlike the deific animation of the earlier examples, the monster is given life by a process implicitly based on the new technologies of “electricity and galvanism” (p43). By utilising new technologies, Shelley demonstrates man’s desire to take control over nature as J P Telotte observed in Talos, but to the nineteenth-century reader the new technology may have been seen to be as mystical as the life granted by gods in earlier texts. Similarly, the convincing nature of Hoffmann’s technical creation proved to be mystifying to the human in the text and in both Olympia and Frankenstein’s monster there is something beyond nature, or supernatural, in their existence.

The electrical animation of Frankenstein’s monster allies it with the mechanical, despite its being constructed from organic components, whereas a god-given existence would suggest the existence of some form of soul. Frankenstein’s bringing together of biological and technological blurs the boundaries of what life is and, by extension, questions what it means to be human. The uncomfortable nature of Shelley’s juxtaposition is explored throughout *Frankenstein*: the monster is seen to have human feelings and emotions, but the hideousness of its appearance means it is always outside society. It is aware of its otherness and yearns to be human as it becomes self-conscious, educates itself and tries to find an identity. The monster’s quest may be similar to a teenager’s search for their personal identity, but its yearning both to be human and to be accepted by society embodies contemporary developments in robotics, in which engineers are endeavouring to make their creations increasingly human.

In a twenty-first century bringing together of elements of the stories of both Hoffmann and Shelley, the Istituto Italiano di Tecnologia has been developing a cognitive humanoid robot since 2004 which “looks like a child and acts like a child, but most important, it learns like a child” (Al-Khalili, 2011). Although wholly mechanical, the metal and plastic body resembles a young child and the language used to talk about it illustrates the difficulty in perceiving it as either a robot or human: while it is one of twenty iCubs⁹ which has been “built”, it is seen as having an “extended family” and the original iCub has a human “mentor” (*ibid.*). This

⁸ Often overlooked, the alternative title which Shelley offers for *Frankenstein* is *The Modern Prometheus* which refers to the Titan’s creation of man from clay, like the golem and the biblical creation story. However, Prometheus was punished for his subsequent theft of fire for man’s sake from the gods, and this suggests Dr Frankenstein deserving punishing for his actions in taking a divine power by creating life.

⁹ The iCub is the institute’s name for the robot and stands for Cognitive Universal Body; presumably the ‘i’ is a Freudian allusion to the ego, or simply adopting Apple’s propensity to employ the ‘i’ prefix to indicate something desirable.

difficulty is something which I have also faced, and I exemplify other linguistic issues when discussing posthumans at the opening of *Representation*. Unlike Frankenstein's monster, iCub uses technology to learn and become more human; it is here that Olympia falls short as she is an automaton and not able to develop on her own. One of iCub's creators explains, it is "learning by interacting with the world around it; it is learning by experience" (*ibid.*), exactly as a child does. If learning and developing as a human make it difficult to separate machine and human within the iCub, so does the way it is able to convey the simple human feelings of happiness and confusion through the movements of its electrically illuminated mouth and eyebrows.

The golem, statue and Talos lay the foundations for the figure of the posthuman through the creation of a biological life from clay, and the manufacture of a programmed robot. Frankenstein's monster and Olympia subsequently refine the idea of the posthuman in their fusion of technical prowess and the human in fiction. More recent technological developments have embodied the fictional representations through cyborgisation and xenotransplantation in the posthuman of the real world.

Although scientific and technological developments can be seen throughout the nineteenth-century, Telotte suggests that it was in the inter-war period (1918 to 1939) that

the modern establish[ed] the terms for the emergence of a contemporary postmodern culture [which] draws much its character from the technology that seems to be constantly reshaping our world, reworking our culture, even modifying our humanity (1999, p1).

Isaac Asimov's robot stories of the 1940s subsequently demonstrate a concerned response to the rise of technology as he repeatedly refutes "the Frankenstein complex", or the "apprehension that artificial life-forms are stronger and more intelligent than their human creators [and] would inevitably pose a threat to human beings" (Hollinger, 2010, p194). A human fear of technology runs through both fiction and reality, and is often dated back to the Luddites' reaction to technological innovation during the Industrial Revolution. While the concerns may not be about factory machinery today, in popular culture, the 1984 film *Terminator* portrays a self-aware robot of human appearance with the task of killing a particular human, and Disney's *WALL-E* (2008) shows an unhealthy, unthinking human race entirely reliant on robots. Current developments in artificial intelligence frequently return to the notion of the technological singularity at which point AI will surpass human intelligence, resulting in fundamental changes to human civilisation. The same concerns – whether

explicitly stated or simply assumed – form the premise for many futuristic dystopian novels, which serve to enforce concerns about the rise of technology.

Despite the concerns about the proliferation of technology throughout society, it is not until 1960 that technology and the human form are combined in what Manfred Clynes and Nathan Kline described as a ‘cyborg’ (p26), although Olympia had embodied many of the ideas associated with cyborgs in 1816. The word ‘cyborg’ blends the technology of the automatic communication and control systems of ‘cybernetics’ with the ‘organism’ of the natural world and was coined in a paper discussing the benefits of “altering man’s bodily functions to meet the requirements of extraterrestrial environments” (p26). As the concept pushes the boundaries of the human, so the intended purpose of the cyborg was to push the limits of humanity to facilitate the exploration of outer-space. Clynes and Kline describe how the alterations would involve the human body “incorporat[ing] exogenous components [...] in order to adapt to its new environment” (p27). They saw the process as beyond the Darwinian “alter[ation] of bodily functions to suit different environments”, as it would be “possible to achieve this to some degree *without alteration of heredity* by suitable biochemical, physiological, and electronic modifications of man’s existing modus vivendi” (p26; original emphasis). Thus, in the cyborg, an individual human will be enhanced without genetically changing that which makes them human, or altering the species by making them incapable of sexual reproduction. As Clynes and Kline position the cyborg in the real world helping mankind’s endeavours (thereby echoing the reasons for the creation of the golem and Talos), the reality of a cyborg is also shown by Haraway, describing it as “a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction” (1985, p65).

I confidently use ‘posthuman’ to describe the golem, Pygmalion’s statue and Talos, because of the ways in which they were made and because of their behaviour, but Mike Featherstone and Roger Burrows see ‘posthuman’ as a more recent innovation deriving from with Clynes and Kline’s vision of the alteration of mankind. Featherstone and Burrows use ‘posthuman’ to describe both the body on which “developments in technology [have] entailed a process of the extension of the body and bodily functions” and the world (or worlds) in which the bodies or their consciousness could exist (1995, p2). Featherstone and Burrows’s separation of the body and consciousness informs my fundamental approach the figure of the posthuman as I consider its constituent parts to be separate but interrelated. Offering a focus on the body itself allows concerns pertinent to teenage readers – such as body image – to be examined before

showing how the body connects to the non-bodily facets of the posthuman. Both the separate components and the way(s) in which they are interrelated combine to offer the representation of the posthuman, and my approach to breaking down the posthuman provides a more precise insight into the reality of the posthuman than a theorised posthumanity. Although I only apply my division of the posthuman to fictional representations, the principles behind it are clear in the real world, whether it is a human mind being treated by a psychotherapist with the body being treated by a doctor, or a modern car being attended to by both a mechanic and a software programmer for the increasingly complex on-board computer systems.

I therefore use the noun 'posthuman' to refer to a particular type of posthuman in which technology enhances or replaces any aspects of the human. In doing so, I exclude definitions used by other scholars, including Jaques (2015) who considers the posthuman subject but uses the term more inclusively to cover, amongst other things, animals and toys. While these demonstrate posthuman issues, my focus allows for a clearer understanding of the technologically enhanced posthuman subject and its relationship with humans. My research considers the technologically enhanced posthuman in young adult fiction, but it can also readily be identified in other media, including film, television and computer games. Although I narrow the definition of the posthuman subject and examine it within young adult fiction, my narrower definition is not limited any particular type of text, and my understanding of the posthuman is applicable to any representations of the technologically enhanced posthuman.

Although I attempt to keep my definition of the posthuman clear and ground it within a historical context, there remain problems of the nebulosity of the concept and its concomitant academic study. Ivan Callus describes the uncertainty of what the posthuman is in this necessarily prolix summary, and I identify with the continual looking forwards and backwards as we attempt to come to terms with the posthuman:

We must wait for posthumanism to announce itself, or be announced, as having happened; [...] Of course, we shall not wait. Too much has already been done in the name of posthumanism, which is already constituted as a discourse with a scarcely negligible disciplinary identity. For this is the oddest thing about posthumanism: it has clearly happened even while in another sense it hasn't: not quite, not yet. It hasn't happened because humans and humanism are still around, because cyborgs aren't, because technology is still regarded as prosthetic to the human rather than indivisible from it, because the apocalyptic does not necessarily appear inevitable. But it has happened because it has been foreshadowed: in our contemporary technologies, in our present discourses, in the tales we relate to

ourselves that carry back our perspectives and idioms of future natures
(2009, p205)

As posthumanism blurs boundaries between technology and biology, its nature is also indeterminate. From the ancient posthumans to the cyborg, seeing the posthuman as a successor species is problematic because of its inability to procreate and produce a posthuman offspring. Without procreation (whether occurring naturally or as the result of a medical procedure), a species cannot survive and this is an issue ignored in texts, presumably due to the incomprehensibility of an organic process creating something with mechanical elements. The posthuman can therefore only exist as a development of a particular human, or group of humans, at any particular time. The question of whether it is an organic or engineering development is another issue which can be explored in examples of posthumans being created by natural processes and more manufacturing-like methods (Shakeshaft 2011), harking back to Sterling's *Shapers and Mechs*.

Recent fictional texts have built on ideas seen throughout the literature of the past three millennia. My historical contextualisation places today's developments – both in reality and fiction – in context and demonstrate, first, how twenty-first century ideas have been influenced by the past and second how, from a historicist perspective, even the apparent modernity of technology is nothing new.

THE THEORISED ROOTS OF, AND ROUTES TO, THE POSTHUMAN

I have used the historical literary context to demonstrate my definition of the technologically enhanced posthuman; I also want to position the posthuman *as a part of existing posthuman scholarship*. Although I treat the posthuman as a real artefact, transhumanists such as Nick Bostrom (2005), would argue that everything I label ‘posthuman’ is merely a different state of transhumanism. In transhumanists’ terms this is true, but I choose not to use ‘transhuman’ as I contend that transhumanism cannot lead to either a posthuman or a posthumanism since there is always another tweak which could be made. When used alongside ‘transhuman’, ‘posthuman’ suggests something or someone in a state of completion. If posthumanism is reached when nothing recognisably human remains or that something has been created or given birth to by a non-human intelligence, a mockery is made of the epithet ‘posthuman’, and a new term would be needed to describe the new being, whether or not it embodied or demonstrated recognisably human traits or behaviours. I therefore avoid the complications of the transhuman for the sake of this discussion.

Taking the 1985 citation of posthuman as a noun as the earliest acknowledgement of the posthuman subject, it is fitting that 1985 also saw the first publication of Haraway’s *Cyborg Manifesto*. In the ensuing thirty years, the prevalence of technology has meant the figure of the posthuman has become increasingly recognisable, and ideas of posthumanism have entered a wider consciousness. In order to see changing ideas about the posthuman through time, I consider key theoretical texts about the posthuman in chronological order of publication. They initially deal with science-fiction more generally, but the emergence of the young adult novel means that there is a more specific focus on the ideas on children’s literature and young adult texts in the recent studies. Like the Ancient Greek and biblical posthumans, the earlier work lays the foundation for my thinking and my confidence in considering the posthuman subject. It also shows the development of my critical approach.

Neither the real figure of the posthuman nor any notion of posthumanism are explicitly introduced or taught to the adolescents of the twenty-first century: they simply experience being posthuman and living in a posthuman world. While recent young adult texts may help readers to make sense of the world and their social reality, this is nothing new. Haraway’s *Cyborg Manifesto* asserted that “we are all chimeras, theorized, fabricated hybrids of machine and organism: in short we are cyborgs” (1985/2006, p118) some thirty years ago, in a world of prohibitively expensive and cumbersome computing power. Today’s humans have become

posthuman without being taught what it is to be posthuman. The change has happened with the same connotations of the mythical chimera, succinctly distilling the uncertainty of what it is to be posthuman or quite where the posthuman came from. More presciently, today's teenagers and consumers of young adult fiction were born into a highly connected world, and they know no other existence. Although I am not carrying out empirical research, my teaching experience adds a level of personal understanding of real-world teenagers and contributes towards my interpretation of fictional representations. I am confident that trying to understand what it means to be a posthuman today is as pressing a concern as it has been for people to understand what it means to be human for the past three millennia.

Although Haraway has subsequently commented of her *Manifesto* that “very few people are taking what [she] consider[s] all of its parts” (2003, p378), she acknowledges that readers “read it for what they want” and use the manifesto's figure of the cyborg for their own purposes (p326). It is with this cautionary comment in mind that I consider the entirety of the *Manifesto* from a posthuman perspective to focus on its usefulness in exploring what the posthuman is. Using Clynes and Kline's 1960 definition of the cyborg as an augmented human, the cyborg is clearly a posthuman and Haraway's thinking, which was exploratory at the time of writing, has informed recent posthuman criticism. In 1999, Hayles described the common theme of the posthuman as “the union of the human with the intelligent machine” (p2). While the notion of the intelligent machine is unspecified, the OED (2018b) traces the term back to 1846, with a 1969 super-intelligent machine “transcend[ing human] intelligence”, meaning that the form of the augmentation is purely mechanical or something digital. As Hari Kunzru wrote in the technology magazine *Wired* in 1997 when considering Haraway's work to describe the late twentieth century figure of the cyborg, he portrays an easily recognisable figure of the posthuman:

The '90s cyborg is both a more sophisticated creature than its '50s ancestor – and a more domestic one. Artificial hip joints, cochlear implants for the deaf, retinal implants for the blind, and all kinds of cosmetic surgery are part of the medical repertoire. Online information retrieval systems are used as prosthetics for limited human memories. In the closed world of advanced warfare, cyborg assemblages of humans and machines are used to pilot fighter aircraft – the response times and sensory apparatus of unaided humans are inadequate for the demands of supersonic air combat. (1997, p1)

Haraway's 1985 definition of a cyborg is implicitly more generalised than the augmented human form of the cyborg envisioned in 1960. She sees it in biological and technological terms as a “cybernetic organism, a hybrid of machine and organism” (p117); however, in terms of social science and culture, she considers it to be a “creature of social reality as well

as a creature of fiction” (*ibid.*). In both these definitions, boundaries between academic disciplines and ways of thought are blurred and she sees “the boundary between science-fiction and social reality [as] an optical illusion” (*ibid.*). As I have shown in my historical contextualisation of the posthuman, the blurring of the posthuman boundaries is one of its most obvious characteristics and therefore cannot just be restricted to the cyborg. Regardless of Haraway’s inclusion of her cyborg’s biological aspects, it remains – to her – a construction and something manufactured, despite charting what she calls “our social and bodily reality” (1985/2006, p118), by which she presumably means human’s biological and physical social and bodily reality. Even when the different posthuman body types I explore in the following section are considered, there is an element of being manufactured (again, highlighting the problems of biological creation or procreation) in all of them. The only possible exception is my theorised postchild – a concept for which I argue after considering the posthuman body types – which challenges notions of the posthuman. However, when the nature/nurture aspects of the postchild’s upbringing are considered, it could, to some degree, still be seen as having been manufactured either genetically or culturally. In my reading of the posthuman, Haraway’s bias towards the manufactured cyborg is not a fair representation of it, whether fictional, or a creature of social reality. It is their humanity, their humanness or a combination of both, in conjunction with their technological or manufactured aspects which make them a fruitful site of research. Despite her bias, the general sense of Haraway’s cyborg is consistent with what I am considering to be the figure of the posthuman. In reading the *Manifesto*, I therefore treat her cyborg as synonymous with the posthuman.

To Haraway, the cyborg is unencumbered by the need to seek “organic wholeness through a final appropriation of all the powers of the parts into a higher unity” and has “no origin story in the Western sense” (1985/2006, p118). This view, again, disregards the human aspects of the cyborg which I firmly believe are something which cannot be ignored. Even taking the cyborg as a type of posthuman – rather than using the terms synonymously – there is always a need for the figure of the cyborg to unify the human and augmented aspects of their identity: this can be seen in Frankenstein’s monster some two centuries previously, and in sections of novels with cyborg protagonists being devoted to the telling, or character’s discovery of, their origins. As the cyborg in science-fiction and reality is an embodiment of human ambition and, to Haraway, a hope for the future, they must be able to develop individually and have a history. While there might not be an *origin* myth in the sense of human religious creation stories, each posthuman I have encountered has its own story, and this is a part of the representation of fictional posthumans. Despite living in a posthuman world, it must be

remembered it is a comparatively new world: considering that *homo sapiens* is around 200,000 years old, it is only for the past three millennia that what we recognise as the Christian creation myth has existed. There is still time for posthuman creation myths to be written. The individual posthuman's creation myths remain themes of young adult marketed books and they are therefore not an aspect of the representation of the posthuman which can be overlooked. While seeing the cyborg figure as being "outside salvation history" (1985/2006, p118) offers a sense of human – rather than godly – control over events, I see this merely as a reflection of the late twentieth-century secularisation of society rather than Haraway appreciating her cyborg's humanness.

Haraway's inclusion of the notion of the "ghost in the machine" (1985/2006, p120) is limited to pre-cybernetic machines, and she acknowledges that this is readily explained by labelling it as "spirit or history" (*ibid.*). In terms of the perceived mystical nature of technology, its indeterminate quality is summarised by Arthur C Clarke's Third Law: "Any sufficiently advanced technology is indistinguishable from magic" (2000, p2) which attempts to adopt a more rational perspective than deferring to a religious spirit. Going on to suggest that such machines only caricatured mankind as they were not autonomous is to forget the theatre afforded by such machines and the inspiration that they offered, much as science-fiction overlaps with science fact today. Even in the 1985 world of the *Manifesto*, Haraway already shows her understanding of the potential for self-developing machines and the concomitant blurring of the artificial and natural which futurists keep looking towards in the singularity. However, her observation that "our machines are disturbingly lively and we ourselves frighteningly inert" (1985/2006, p120) presciently captures the way today's technology is designed to be increasingly human, as Turkle's examination of a range of examples in which humanoid robots can provide emotional replacements for lovers and caregivers in *Alone Together* (2011) shows. Ironically, the increasingly human machines can be put alongside humans who see having their abilities described in terms of technology – and thereby consigning them to the inertness of a calculating machine – as a positive attribute. As Brian Christian notes, "[i]n the mid-twentieth century, a piece of cutting-edge gadgetry was 'like a computer'", but now in the "twenty-first century, it is the *human* math whiz that is 'like a computer'" (2011, p11; original emphasis). My notion of the posthuman shows the unification of the best (and sometimes worst) bits of human and machine in making them something beyond the unenhanced human.

In 1985 the miniaturisation of technology was its creators' – and users' – aspiration; Haraway makes comparisons to the clunky technology of the 1950s and 1970s. The technological power in today's handheld and wearable devices surpasses these many times over and she describes the best machines as being “nothing but signals, electromagnetic waves”, unlike people who are “both material and opaque”. In her words, this makes cyborgs “ether” or “quintessence” (1985/2006, p121). In human terms, the electrical signals of the brain therefore make it the ideal technology, but the brain still needs a body in which to operate, and – in a perfectly reciprocal arrangement – it is the body which generates the energy for the brain to function. Like Haraway, cyberpunk writing also sees the body as an encumbrance, but my work on the posthuman shows that it is an unavoidable component, although its fallibility and frailty must be acknowledged. Whether the body is a manufactured technological marvel, or a digital storage device, the brain's signals and the machine's calculated output need a physical embodiment. If a posthuman consciousness is taken to be a networked consciousness, the nature of the network still needs individual physical nodes which constitute the network. In the figures of the human and the cyborg, both the physical body and the mind are necessary: whether they are organic or mechanic is unimportant, but despite the brain being a part of the body, both remain required. Haraway's quintessence is therefore something beyond either the machine or the human with the word itself having spiritual connotations. Whether religious or not, this additional third, less tangible, aspect of the posthuman is something I explore further in my consideration of a posthuman trialism later in this chapter.

While Haraway describes the “ubiquity and invisibility” of cyborgs being deadly (1985/2006, p121) this is – again – to ignore aspects of the human. Technology on its own cannot be seen as being either good or bad. Rather, it is the use to which it is put which has moral implications, and the users of technology (whether human or posthuman) still have degrees of humanness about them. As she has observed, “we are all cyborgs”, and in the smartphone infused twenty-first century this has never been truer, but the technology remains a tool which can affect its users' lives through the way it is put to use. It is certainly everywhere and, as wearable technology becomes increasingly commonplace, its invisibility is achieved through its normalisation. However, its human users' choices remain the site of the moral decisions. Similarly, in current Artificial Intelligences (which I define as technology choosing how to use technology), the constraints of the intelligence have been programmed by humans. Until an intelligence is ‘born’ of a machine (and even then its ‘genetic bloodline’ will still have been started by the human), the deadliness of technology remains within human control.

Although human control was ultimately shown, it did not stop the dramatic language of media reports of “panic” at Facebook in late July 2017 as researchers were forced to “kill” bots which began to chat between themselves in “garbled sentences” (or “secret language”). The conversation, it transpired, was simply the output of a failed attempt at machine learning to negotiate (Simonite, 2017, np).

Within this examination of the figure of the posthuman within existing posthuman scholarship, two contrasting perspectives of a cyborg world are offered by Haraway. She sees one as being about an “imposition of a grid of control on the planet” and the other as being about “lived social and bodily realities in which people are not afraid of the joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints” (1985/2006, p122). Of the two, the first presents a technological apocalypse which can be seen to be borne of fears arising from what were the final years of the Cold War at the time of writing, but today could be voiced in fears of the technological singularity. The second presents the world in which we are currently living and can be seen as a step towards the singularity. While science-fiction frequently revels in the dystopian outcomes of machines’ dominance, I contend that – through the understanding and critical review of humans’ acceptance of the social and bodily realities of human/machine kinship – the technology naysayers’ fears should be unfounded. It is when the relationship is unchallenged or unquestioningly accepted that humankind places itself, through arrogant inaction, in peril. In an age in which many people live both on- and off-line, I question whether identities could be described as ‘partial’: ‘multiple’ might be more convincing. However, as Krotoski has suggested that online identities are often cultivated to create an “idealised me” (2011a, np), multiple identities might be consciously ‘partial’ in their creation. From my contemporary real-world view of partial identities, it is noteworthy that Haraway presciently continues by exploring fractured identities.

In her reflection on the influence of science and technology on society, Haraway matches “comfortable old hierarchies” with “scary new networks”, such that ‘organism’ has become ‘biotic component’, and ‘physiology’ has become ‘communications engineering’ (1985/2006, p129ff). These are just two examples from her list which demonstrate the move away from the natural. To her, “communication technologies and biotechnologies are the crucial tools recrafting our bodies” (1985/2006, p130), and she prioritises technology in the recrafting. While her position on technology may have been more pertinent in the 1980s, technology’s ubiquity (and invisibility) means that today, the (human) body is the crucial tool in recrafting

communication technologies and biotechnologies through the demands and expectations of technology. Rather than focusing on the shift from the old to the new, the two-way relationship revealed by the passage of time serves only to force the dichotomies listed by Haraway – “mind and body, animal and human, organism and machine, public and private, nature and culture, men and women, primitive and civilised” (1985/2006, p130) – to be more forcefully questioned in terms of the culturally established ideological associations of each pairing. Even in 1985 Haraway noted the evidence of the “economic reality” to support her claim that “sciences and technologies indicate fundamental transformation in the structure of the world for us” (1985/2006, p131). But again, this is a two-sided relationship as humankind strives to make technology more human while simultaneously commending what would previously have been seen as technological abilities in humans. Haraway’s argument and the reality of the world some thirty years after the *Manifesto* highlight the blurring of the boundaries between the dichotomies she lists, rather than just challenging them. As she comments and we embody in the twenty-first century, “mind, body and tool are on very intimate terms” (1985/2006, p132). The relationship between the biological human and their external technology is clear, and her description hints at the three constituent parts of the posthuman which I propose as a posthuman trialism in Chapter III.

Considering the impact of technology in the economy, particularly in terms of women’s jobs, Haraway suggests that “the new communications technologies are fundamental to the eradication of ‘public life’ for everyone” as “[t]echnologies like video games and high miniaturized televisions seem crucial to the production of modern forms of ‘private life’” (1985/2006, p135). While the common sight of people walking around engrossed by their mobile phones could indicate the eradication of public life for everyone over the past thirty years, in the twenty-first century personal and private devices are predominantly used to create and access a very public world. The networked and permanently connected nature of today’s society offers a different perspective on technology’s use, and its ubiquity means it is having a far greater impact on the structure of the world. The previously tangible boundary between the digital and real worlds becomes wholly obfuscated.

Nowhere can the removal of the boundary be more clearly be seen than when two people sit in the same room, typing messages to each other via their mobile devices. Communication is rarely mentioned in terms of the cyborg’s extension of human capabilities, but the networked nature of twenty-first century life means that communication is another aspect of the posthuman which needs to be borne in mind. However, as I prove throughout my corpus, the

figure of the posthuman is often presented as an outsider – or what might be seen as the node within a network – and must remain the core focus of an examination of the posthuman. The more drone-like connectedness which Haraway seems to imply removes any sense of humanness from posthumans, which contradicts all the representations of the posthuman I have encountered. Her view of connectedness can be seen in the zombie-like representation of armies of clones or the real-world hijacking of computers through malware to act as zombies for malicious purposes, such as the WannaCry ransomware which attacked the NHS in May 2017.¹⁰ It is worth noting that the word ‘virus’ used to describe the software used in such attacks is borrowed from biology: such an attack could therefore be viewed as being innately human (especially as it was initiated by a human) rather than posthuman.

Human and posthuman are commingled once again Haraway’s conclusion in which she describes cyborg writing as being “about the power to survive, not on the basis of original innocence, but on the basis of seizing the tools to mark the world that marked them as other”, and she sees the tools as frequently being retold stories which “subvert the central myths of origin of Western culture” (1985/2006, p141). From her original femino-political perspective this may be true, but from a posthuman perspective I see the retelling as building on and developing the ideas of what it is to be human through the figure of the posthuman, rather than undermining the human figure. If, as she states at the outset, we are all cyborgs now, the retelling and reviewing of our origin myths helps us to understand how we become posthuman, the question to which Hayles has proposed an answer through her emphasis on the “role that narrative plays in articulating the posthuman as a technical-cultural concept” (1999, p22).

As Haraway returns to the more generic concerns of the blending of human and technology in her conclusion, her comments could be read as increasingly relating to what I treat as the posthuman. She considers the way identity formation is confounded by the way technology challenges dualisms: “It is not clear who makes who and who is made in the relationship

¹⁰ ‘NHS cyber-attack: GPs and hospitals hit by ransomware’ (BBC News): <http://www.bbc.co.uk/news/health-39899646>

‘NHS seeks to recover from global cyber-attack as security concerns resurface’ (*The Guardian*):

<https://www.theguardian.com/society/2017/may/12/hospitals-across-england-hit-by-large-scale-cyber-attack>

‘NHS cyber attack: International manhunt to find criminals behind WannaCry ransomware that crippled hospital systems’ (*The Independent*): <http://www.independent.co.uk/news/uk/home-news/wannacry-wanna-detector-accident-and-emergency-patient-appointment-operation-a7734831.html>

‘NHS cyber attack: Everything you need to know about “biggest ransomware” offensive in history’ (*Daily Telegraph*): <http://www.telegraph.co.uk/news/2017/05/13/nhs-cyber-attack-everything-need-know-biggest-ransomware-offensive/>

between human and machine. It is not clear what is mind and what body in machines that resolve into coding practices” (1985/2006, p143). Her use of the pronoun ‘who’ emphasises her human perception of the cyborg, despite both the fuzzy relationship between human and machine that she notices and her prioritisation of technology in her work. Haraway’s work therefore seems sometimes deliberately, sometime subconsciously, to blur the boundaries between human and machine, to confuse human and posthuman.

My notion of posthuman trialism developed later in the chapter goes some way to explaining the lack of clarity between what is mind and what is body, as it is often a technology-infused third strand which bridges the gap between them both. However, my corpus demonstrates that the third element of the posthuman does not lend itself to a fixed definition. I use Ramez Naam’s novels to exemplify it since they inspired my thinking, and they offer a clear view of the three strands; his interest in technology means the divisions are more explicit.

Nevertheless, in other fictional representations the technological processes which make the posthuman are often obfuscated, and ultimately the calculating precision of technology is set alongside human uncertainty and unpredictability.

Haraway cites Katie King’s observation that pleasure in reading feminist science-fiction “is not largely based on identification”, as the characters of such novels “refuse the reader’s search for innocent wholeness while granting the wish for heroic quests, exuberant eroticisms, and serious politics” (1985/2006, p144). However, in young adult fiction, I see the fictional posthuman (and its posthuman reader) *to be looking for wholeness*. To me, it is the acceptance of the posthuman embodied technology which gives the posthuman its subjectivity. I therefore wholly disagree with Haraway’s comment that “[the cyborg] does not seek unitary identity” (1985/2006, p146), as it so frequently seems to be the one thing for which the cyborg *does* yearn: for it is only when it has found its unitary identity that it is able to accept its various constituent parts, whether organic or manufactured.

As Haraway starts by asserting that we are all cyborgs, so she finishes by concluding that “[t]he machine is us, our processes, and aspect of our embodiment” (1985/2006, p146). Nowhere more than in the early years of the twenty-first century can this assertion be seen to be true. However, her assurance that “[w]e can be responsible for machines; they do not dominate or threaten us. We are responsible for boundaries; we are they” (2006, p146) rings less true today, both in the reality of our posthuman lives and the representation of posthumans in fiction. As we hand an increased control of our lives to technology through our

dependence upon it, the safety of a defined boundary between machines and humans is obliterated. However, as this boundary and a host of other dualisms are broken down in the figure of the cyborg, so others are constructed – or at least perceived to be created – by those involved. The posthuman’s boundaries are blurred, both in social reality and fiction. However the conflicts between human and posthuman, between advocates of technology and those with a more cautious approach, and between those with and without the financial wherewithal to access technology are all unavoidable and frequently the site of tension.

Where Haraway offers a theoretical introduction through her posthuman figure of the cyborg, Hayles’s subsequent study, *How We Became Posthuman* (1999), focuses on representations of posthumans which incorporate technology. Her considerations of the figure of the posthuman resonate with my current work. At the outset, she refers to the posthuman with the definite article, but in her opening chapter in response to the question “What is the posthuman?” she suggests thinking about it “as a point of view” characterised by four assumptions. In her title, and subsequently seeing the posthuman as a point of view, the posthuman is reduced to the abstract, rather than concrete form that she goes on to consider. However, while this fluidity is perhaps typical of the subject area, I consider her four assumptions (which she stresses are suggestions rather than being prescriptive) in terms of the figure of the posthuman which I address. The assumptions, in summary, are

1. the posthuman view privileges informational patterns over material instantiation
2. the posthuman view considers consciousness as an epiphenomenon
3. the posthuman view think of the body as the original prosthesis
4. the posthuman view configures human being so that it can be seamlessly articulated with intelligent machines

(1999, pp2-3; summarised)

Whether Hayles sees the informational patterns in the sense of an organic human brain or a synthesised digital process is not clear. However, in the figure of the posthuman the acceptance of a new body (either a replacement, an improvement, or both) illustrates the importance of posthuman materiality, which contrasts with the “postmodern ideology that the body’s materiality is secondary to the logical or semiotic structures it encodes” (1999, p192). Hayles sees humans “regarded solely as informational patterns” as having something to lose, since the “resistant materiality [of the body] has marked our experiences of living as embodied creatures” (1999, p29). While the posthuman can prioritise the data-like aspects of being, this cannot be a given: I demonstrate that posthuman bodies offer new ways for the world to be understood.

Even in posthuman thought the notion of a posthuman (and therefore non-human) body is not necessarily secondary. Mischa Peters, a researcher into the representation of new technologies in science and cyberpunk fiction, exemplifies the importance of embodiment in her separation of the theoretical posthuman into four body types. She includes what she describes as the theoretical cyberbody (2003, p56) since which the physical body is immaterial as the contents of the brain are downloaded to a digital storage medium. Hayles, on the other hand, comments: “autopoiesis [...] insists] that information without a body does not exist other than as an inference drawn by an observer” (1999, p149). Nevertheless, she also notes how the “contrast between the body’s limitations and cyberspace’s power highlight[s] the advantages of pattern over presence” providing that as “the pattern endures, one has attained a kind of immortality” (1999, p36). This is objectively true and can be seen in the digital immortality gained through our online presence that Krotoski discusses (2013, pp21ff), when shared content on social media is curated to maintain an online memorial to the deceased. However, the fictional posthumans which I have encountered generally view digital immortality negatively, as their immortality removes something of what they perceive to be human and reduces their lives to a commodities.

While Haraway theorises about the cyborg from a purely scientific perspective and I consider the posthuman as a figure of reality represented in many different ways in fiction, Hayles sees the importance of literary texts in bridging the gap between theory and reality. She sees them not as “passive conduits”, but as “actively shap[ing] what the technologies mean and what the scientific theories signify in cultural contexts” (1999, p21). Although Haraway contextualises the cyborg figure as a practical means to explore space, science-fiction places the posthuman’s multitudinous forms in late twentieth and early twenty-first century contexts. The variety of posthuman forms demonstrates the real-world practical and ethical considerations surrounding posthumans: they force readers, who are still most likely to perceive themselves as human, *to realise the reality of the (inevitable) posthuman elements of their lives*. Hayles stresses the importance the “narrative plays in articulating the posthuman as a technical-cultural concept” (1999, p22), but literary texts go beyond just an articulation and help readers to an understanding and acceptance of the reality of the posthuman. In her observation that “posthuman implies [...] a coupling so intense and multifaceted that it is no longer possible to distinguish meaningfully between the biological organism and the informational circuits in which the organism is enmeshed” (1999, p35), I perceive she must be referring only to non-young adult texts, because the question of the humanness of the

posthumans in the young adult texts I explore is impossible to ignore. While the science or technical process of the posthuman modifications may be indeterminate or indistinguishable in fictional texts, the representation of the figure of the posthuman itself is clear. Thus it is crucial for scholarship to make a distinction between adjectival posthuman concepts and the (fictional) reality of the posthuman, as I demonstrate in my analysis in Chapter IV.

In considering the real-world implications of Artificial Intelligence and the way it will necessarily reconfigure the body of information, Hayles puts roboticist Hans Moravec's ideas, which "privilege consciousness as the essence of human being" (1999, p235), alongside Rodney Brooks's who sees "the more essential property of the human being [its] ability to move around and interact robustly with the environment" (*ibid.*). Although I show the figure of the posthuman creating new boundaries as Haraway suggests, it is still responsible for blurring other boundaries. While both the prioritisation of the consciousness and the body can be robustly defended, I contend that the reality of the posthuman incorporating both technology and humanity means that there is a fine balance between mind, body (and potentially a third more nebulous strand) which needs to be achieved in and by the posthuman. Christian observes that humans may aspire to be more machine-like (2011, p11) and I have shown technology's aspiration to be more human, but in the posthuman the balance is (ultimately) achieved.

While this balance may be an idealistic unachievable position, each step towards it is an achievement in the field of scientific developments. When the first pair of glasses was worn by a human to improve eyesight, the first hearing aid used, the first prosthetic limb fitted, the first chip installed, each created a new posthuman which represented the limits of technological advancement of the time. Glasses, hearing aid, prosthetics and implants are continuously being developed; in each incarnation a balance between human and technology (and a desire for the two to be united) allows the acceptably human posthuman figure to thrive.

Hayles's concluding chapter considers what terrifies and excites people about the posthuman. Although her final words acknowledge that "some current versions of the posthuman point toward the anti-humans and the apocalyptic" (1999, p291), the majority of the chapter addresses the inherent fear of the 'post-' prefix suggesting humans' days might be numbered. Nearly twenty years after this was written, I suggest that the media reporting of technological successes instils the fear of the applications of technology, since people are regularly using (or

are having used on their behalf) high levels of technology happily without being aware of it. Ideologically, I believe that people must understand the technology they are using to enable them to make an informed choice but, to take one example, Google regularly proves that many informed people are willing to tolerate targeted advertising in exchange for free software; it is in fact the media presentations and representation of the technology which distresses people. Fiction has developed to offer more positive representations of technology recently: as Hayles commented in 2010, “there is an uncanny similarity between what literature is doing at a given time and what scientific fields are doing” (Piper, 2010, p319).

Attempting to address the fears of the posthuman, Hayles suggests that rather than marking the end of humanity, it merely marks the end of a conception of the human which only applies to a fraction of humanity with the “wealth, power, and leisure to conceptualize themselves as autonomous beings exercising their will through individual agency and choice” (1999, p286). Hayles describes a social boundary which can determine access to technology, and it is therefore a boundary which the figure of the posthuman reinforces, rather than one it destroys. While I see posthuman agency in my corpus, the access to the technology needed to be, or to become, posthuman is often costly and the representations of fictional posthumans are frequently of those with the wealth to facilitate this. Such enhancements often bring social power with them, and therefore the idea of the fraction of humanity that Hayles sees as being ended, is simply repositioned within the human/posthuman dichotomy.

Hayles continues to assert the importance of boundaries in terms of the human body and in relation to the posthuman. However, I see such boundaries as necessarily flexible and impossible to determine so rigidly. Therefore, when she writes

[a]s long as the human subject is envisioned as an autonomous self with unambiguous boundaries, the human-computer interface can only be parsed as a division between the solidity of real life on one side and the illusion of virtual reality on the other (1999, p290)

she starts from an unstable position. From humankind’s earliest use of tools in the Bronze Age to the implantation of digital technology within the human body, the physical boundary has been ambiguous. Certainly today, the human/computer interface – both physically and cognitively – is wholly blurred, with people’s online identities necessarily melding with their real-world identities. However, I do not see this as weakening the self, but enhancing and developing the solidity of real life through the use of a technological medium. As Hayles continues, when considering inhabiting a virtual realm:

human functionality expands because the parameters of the cognitive system it inhabits expand [...] extending embodied awareness in highly specific, local and material ways that would be impossible without electronic prosthesis (1999, p290ff).

While the inhabitation of virtual realms may still be the stuff of science-fiction, the high levels of engagement with social media by people today demonstrate the reality of aspects of this. In her 2010 reflection on her defining work, Hayles considers she would have possibly chosen to increase the emphasis on the “idea of the continuing adaptation of the human brain to contemporary environments” (Piper, 2010, p329) and in my corpus, my examination of the adaptability of the posthuman characters’ brains to their understanding of their (new) selfhood is a continuation of her line of thought.

Haraway notes that her *Cyborg Manifesto* has been used in multitudinous ways and provides a backdrop for much contemporary posthuman criticism through its starting point of the technological enhancement of humankind. While Jaques’s 2015 study, *Children’s Literature and the Posthuman*, uses Haraway’s work, Jaques explores the posthuman within a more historical context. She consciously shies away from works of recent science-fiction as “this genre has received the most extensive ‘posthuman’ coverage to date, in relation to both children’s and adult literature, in keeping with a sense that posthuman philosophy must be tied to the eras of biotechnology, virtual reality and informatics”, arguing that “posthuman agendas have circulated from a much earlier date in children’s texts” which are “important interventions in the evolution of posthuman ideas” (p21). Acknowledging that we are all cyborgs now, I have deliberately taken the opposing view in terms of my choice of text although I have shown posthuman ideas developing through millennia of literature.

As I see contemporary representations as crucial to question issues of today’s teenagers’ identity formation, it is useful to consider how Jaques’s posthuman readings both influence and support my examination of the works of more recent science-fiction. Jaques argues that “[c]hildren emerge as distinctive creatures who align with much posthuman thinking in their ability to accept (and enjoy) the possible and reject the absolute” (2015, p8ff), but through technology, today’s children have greater access to a greater range of possibilities. That could be trying out new identities online or the increasingly easy bringing together of real and virtual worlds. I believe that absolutes are ever more difficult to find, and the cliché of the ‘world of possibilities being at the fingertips of children’ means it would be foolish not to align their thinking and understanding of the world with the posthuman ideologies present in their lives and presented to them through fiction.

Jaques builds on Haraway's work, as my thinking does. She notes that "posthumanism, as a discourse, both exposes and ironically establishes boundaries between the human and the non-human to facilitate a dialogue as to how those very borders might become more fluid" (2015, p2). While this is an established perspective on posthuman thought, I reiterate that it is not just 'posthuman' used adjectivally to describe an ontology which needs to be considered as questioning the boundaries of the human, but the figure of the posthuman – both in fiction and real life – which forces people to face the issues of the posthuman reality of the twenty-first century. She subsequently comments that "[b]oth children's fiction and posthumanism, then, might be said to have the unique potential to offer a forward-focused agenda that unites the possibilities of fantasy with demonstrable real-world change" (2015, p6). As I have alluded to science-fiction becoming 'science fact', the union of fantasy or science-fiction and real-world developments is a two-way process which highlights the importance of the academic study of contemporary representations.

Although her definition of the posthuman is wider than mine, Jaques considers the technologically-enhanced posthuman in her chapters on the cybernetic figures of robots in children's literature; she focuses on "beings which exude a form of cybernetic ontology even while they seem, ostensibly, rather distinct from it" (2015, p20). A specific example she considers is from Ted Hughes's *The Iron Woman*, showing the "Iron Woman's face [belying] her robotic construction while her curiously opaque assurance of 'realness' sets her apart from other integrations of man and machine which, Hughes begins to suggest, can divorce humanity from the essence of being" (2015, p194). While the initial paradoxical description embodies the contradictory nature of the posthuman, I would see such representations in the twenty-first century as a part of posthuman understanding, and I do not separate humanity from the essence of any posthuman's being. Despite being published in 1993, *The Iron Woman* has its roots in the *The Iron Man* (1968), the product of a time in which the acceptance of embodied technology was necessarily understood and received in a different way because of the far larger physical size of technological components. I contend that although the subjects which Jaques considers are manufactured, they all demonstrate the essential humanness of the posthuman figure, despite their historical situations. As Jaques considers definitions of posthumanism, she argues that "posthumanism is best understood as 'postanthropocentrism' – while it usefully decenters man, the human nevertheless is crucial to its formation" (2015, p11). This supports my consideration of the posthuman: although I

focus on the technologically-rich posthuman, it is still their human understanding and/or acceptance of their technology which is critical to the posthuman's ability to gain subjectivity.

Jaques writes of robots that they are "at once part of the evolutionary history of the more liberating cybernetic organism and also ensconced in traditions of servitude" (2015, p182). Again this contradiction can readily be seen as part of any posthumanity, but she suggests that projecting "humanness onto [robots] can thus be read as ways to empower or curtail the inhuman" (*ibid.*). Inverting this idea to test its applicability to the technologically-enhanced posthuman, in many of the posthuman figures I consider, the technology is at least projected, and at worst forced, on the human. While the technology is often initially seen as curtailing what it means to be human, once it is understood and/or accepted, the technological elements of the posthuman are only ever strengthened by the humanness.

Jaques concludes her study by suggesting that "[t]he various types and forms of agency that emerge across these works provide not a mirror for human contemplation [...] but rather a kaleidoscope of fractured, hybrid, shifting and powerfully unstable identities that pollute the boundaries by which the human and the non-human are constructed." (2015, p237ff). There can be no doubt any consideration of the posthuman demonstrates fractured and unstable identities. However, this does not offer the full picture. In too many contemporary fictional representations, the posthuman is ultimately shown to have gained subjectivity and this is only possible through the unification of the different aspects of their identity. The reader is frequently faced with a kaleidoscope of posthuman identities in science-fiction texts, but it is this very kaleidoscope which provides the mirror for human contemplation and shows the instability of identities and the transgression of boundaries. Such a reflection duly forces the reader to consider the ways the human and technology co-exist and intermingle. As is seen in her work on the historical instances of posthumanism in children's literature (and in my own work here), "[t]here can be no doubt that "children's literature offers sophisticated interventions into what it means to be fully human, more-than-human, and, indeed, posthuman" (2015, p239). In my specific focus on the figure of the technology-infused posthuman, Jaques's thesis is shown to be true, and it is also reflected in my understanding of the posthuman itself. My exploration of the posthuman, which illustrates the unification of human and technology, demonstrates what it means to be both human and posthuman in terms of the agency and subjectivity the posthuman gains.

Where Jaques provides a more recent theoretical view of posthumanism and Hayles began to apply posthuman thinking to fiction texts to explore the real figure of the posthuman in 1999, Victoria Flanagan's work is even closer to my research as she considers technology and identity in young adult fiction through the posthuman subject. From the outset she, like I, acknowledges that more recent "children's books [...] redress a stark disjunction between the reality of children and teenagers' experiences with technology and the narrative presentation of dystopian hyper-technical futures that has been common in children's books since the 1980s" (2014, p2). As our research is similar, so are our findings (Shakeshaft, 2011; 2016), and Flanagan sees a noticeable change being "the way that these fictions construct the relationship between human beings and technology – primarily because they represent technology as enabling, rather than disempowering, for child and adolescent subjects" (2014, p2).

Flanagan's work appears to be a personal culmination of collaborative work over the course of several years. A 2006 conference paper by Robyn McCallum, but co-authored by Flanagan and their supervisor, John Stephens (who seems to have had a strong influence on their work), became Clare Bradford, Kerry Mallan, John Stephens and Robyn McCallum's 2008 chapter, 'The Struggle to be Human in a Posthuman World' in *New World Orders in Contemporary Children's Fiction*. Beyond the original paper, the chapter also considers posthumanism in utopian and dystopian terms. They argue that the postmodern, and subsequently posthuman, critiques of humanist binaries mean that they are no longer seen as necessary to make sense of experience, as "the prospect of a posthuman future is invariably aligned with notions of dystopia" because of human fears of technology (2008, p155). As I have already argued, such a technophobic stance is increasingly dated, and while it contextualises some attitudes towards posthumans, I see it as prejudicing explorations of contemporary presentations.

My approach to the posthuman and its representation therefore takes more studies of technological representations forwards and complements more contemporary research. Bradford *et al.* see developments within information theory and cybernetics as having driven posthuman ideas since in the 1940s as "conceptualisation[s] of being 'human' have been increasingly problematised and rendered inadequate" (*ibid.*). Putting this alongside the acceptance that humans are only a short-lived part of the Earth's history, they comment that others see the notion of a posthuman future being celebrated "for the possibilities it opens up" (*ibid.*). While this blurred division between human past and posthuman future is common, they comment specifically about narratives which are directed at young readers and note that

they represent a dystopian state which evokes technophobia: this then “seek[s] to determine what value might be posited against a metanarrative grounded in the end of human subjectivity” with the value usually being “some (positive) sense of being human” (2008, p156). I have found the emphasis on the value of the humanness of the posthuman is often inescapable, whether or not the texts display a technophobic agenda, and their focus on the technophobic could be seen to illustrate what they describe as the “pervasive way” ideological implications have entered fictions and films for young people (*ibid.*). In the paper’s and chapter’s heritage, their prioritisation of particular ideological concerns represents a specific – and to my mind dated – trend in the study of children’s literature which can be seen to stem from Stephens’s 1992 work in *Language and Ideology in Children’s Fiction*. He examines the potential of fiction to shape its reader’s social response, based on the belief that children’s fiction exists “for the purpose of socializing [its] target audience” (1992, p8). I am conscious of this bias as I comment on their work.

In Bradford *et al.*’s consideration of humanism and posthumanism, a connection is made between posthumanism and postmodernism: where liberal humanism has considered consciousness as the seat of human identity through Cartesian dualism – with the self possessing agency though being unique – posthuman subjectivity is “fragmented, decentred, tenuous, constructed, hybridised, and enacted or performed” (2008, p158). It is this fragmentation which echoes the postmodern subject. *In contrast to this, I argue that a posthuman with agency is a unified being, although the descriptions of posthuman subjectivity they offer are frequently applicable as part of the posthuman’s realisation of selfhood.* However, they see the erasure of embodiment and privileging of cognition as the key posthumanist idea, since “posthumanist conceptualisation of the subject problematises the link between cognition and agency that underpins humanist notions of agential subjectivity” (2008, p158). Their thinking is a development of Hayles’s question of how to define and articulate notions of agency in a posthuman context (1999, p5), accompanied by the ethical dimensions of “human judgement and responsibility [which] hinge on the possibility of conscious agency” (2008, p158). The ideas of human judgement and responsibility are something I see recurring in posthuman texts and have felt compelled to label as the posthuman characters’ ‘humanness’. While ‘humanness’ may be seen to be a vague term, it encompasses the state of being human and all that it might entail without ruling out any questions of the spiritual or notion of the soul. Considering just the connection to Hayles’s question is to ignore Bradford *et al.*’s belief in the erasure of embodiment, which I repeatedly demonstrate is not possible in the range of posthuman bodies I examine.

The texts which Bradford *et al.* use to demonstrate cybernetic engineering on human bodies criticise societies for using technology in a way which “reduce[s] human beings to resources, products or consumers” (2008, p166). While such technology might not (quite) yet be embodied in real-world humans, echoes of these fictional dystopian societies are difficult to avoid when considering the high levels of commercialisation in the developed real world today. Since 2008, the development of social media has also served to commercialise the individual through the data they are willing to share. Although this type of commercialisation is not what Bradford *et al.* are specifically referring to, the warnings about the use of personal data are clear in the news and political arenas of the USA, Russia and the UK. Although social media is not a new thing, the way in which people have begun to use it over the past ten years and the way in which the information is used by corporations has reduced human beings to resources.

Bradford *et al.* also use a disembodied consciousness to explore the cyborg figure, as they see “consciousness transferred to, or re-embodied within, a machine” to be an example of a cyborg posthuman subject (2008, p168). However, when the female character they consider takes on a physical form, she “takes on the concerns of humanity, expressing a compassion and feeling for others”, not demonstrated by the other incorporeal beings (2008, p169). This leads to them reaching the same conclusion I have already described, that there is an implicit “correlation between the assumption of a physical body and lived bodily experience, and a sense of altruism and benevolence” and that “in order to truly understand human beings, [...] she needs to experience what it is like to be embodied, what it means to be human”, and that “embodiment and lived experience is presented as having intrinsic value, and as an essential part of being human” (2008, p169). While I and other writers see the importance of embodiment, the need for ‘life’ experience (upon which other posthumans must implicitly draw to demonstrate their humanness) is not promoted so forcefully elsewhere.

Bradford *et al.*'s conclusion agrees with Hayles's argument that posthumanism does not spell the end of humanity, despite the preponderance of fictional examples indicating the opposite view. They feel that this is supported by the implicit ideological move to emphasise cognition over embodiment leading to the assumption that “consciousness and subjectivity can exist independently of material bodily experience”; this view “privileges mind over body” which in turn “reinstates and recuperates humanist vision of the subject” (2008, p179). Alternatively, and more hopefully for the human subject, rather than seeing mind and body as a simple

dualism they see it as a dialogical relationship between mind and body in which “the body [defines], through its interactions with the environment, the parameters within which the cogitating mind can arrive at certainties”. In other words, it gives “a reevaluation [...] of the Cartesian mind/body dualism which conceived of conscious agency as the essence of human identity” (2008, p180). The interrelatedness of mind and body in the figure of the posthuman is something I have seen from the outset: while the mind and body need to be considered separately – alongside the third more nebulous technological strand if my following theory of posthuman trialism is accepted – it is still only when they are unified that the posthuman is able to gain subjectivity and agency and operate as a functioning member of society. The prioritisation of cognition over embodiment is therefore not something to which I can subscribe. This could reflect the “dialogical reconfigurations of cognition, affect, and the body” (*ibid.*) which Bradford *et al.* see as opening a dialogue between humanism and posthumanism.

Their conclusion finishes by asking why, in the exemplar texts, a created posthuman child which performs childhood when performativity embodies subjective agency is not a child. Posthumanism is therefore seen not as necessitating an evolution or devolution of the human, rather it sees difference and identity as being redistributed, with ideas of humanity naturalising and hierarchising differences within the human and making absolute distinctions between the human and non-human. Like other scholars, Bradford *et al.* demonstrate neither the posthuman nor posthumanism just destroying binaries, but creating new binaries which force real-world issues into the light as new relationships between human and technology are developed.

Building on and demonstrating this ideological foundation, Flanagan’s work, like Haraway’s, approaches the figure of the posthuman from a feminist perspective; this is particularly true where she considers issues of embodiment. In my corpus, the proliferation of female protagonists could also be seen to make a feminist starting point unavoidable, but Flanagan sees the agency achieved by female subjects through material bodies to be a way those traditionally othered achieve empowerment. When such embodied posthumans are considered on their own or in relation to other similarly embodied posthumans, the comparison to more familiar searches for empowerment are appropriate.

The opening chapter of Flanagan’s study considers the definition of ‘posthumanism’ and the varied ways the term is used. In starting with ‘posthumanism’ she, like others who address the

subject, focuses on the critical ideology rather than the figure of the posthuman with which I am more concerned. She only clarifies the difference later in the chapter, noting the way others, such as Ostry (2004), use the terms interchangeably which results in implicit links to “humanist paradigms of selfhood, rather than their posthuman reformulations” (2014, p24). Although she does not justify the notion of the reformulations, Flanagan comments that “posthumanism should not be understood as an ideology that entails the end of the humanist subject. Instead it should be viewed as a reconceptualisation and expansion of the human subject” (2014, p11). I argue it is a given that this view of posthumanism is true of the posthuman itself. The issues which Flanagan considers are best exemplified through the figure of the posthuman which she defines in the same way I have viewed it, as a “technologically mediated human subject, whose existence has been transformed through technoscience – either chemically, surgically or mechanically” (2014, p14). In our approaches to the idea of the posthuman, our starting points are therefore similar, but our ideological positions are markedly different.

Influenced by Haraway’s original work and her perspective on the cyborg, Flanagan notes the communality posthumanism has with feminism, poststructuralism and postcolonialism, as they are all “concerned with the deconstruction of the humanist subject” (2014, p27). These are links which I also see in my research. My work also reflects Flanagan’s approach focusing on deconstructing children’s narratives offering “the most innovating textual representations of technology, for the purpose of assessing the kinds of strategies that can be used by authors to explore the effects [...] of technology on human and identity” (2014, p34), although my choice of texts has also been driven by the desire to exemplify different types of posthuman bodies represented in young adult fiction. While I note the prevalence of female subjects in the texts in my corpus, Flanagan acknowledges that feminist discourses have played an essential role in her interpretation of “the ways in which technology might be viewed as an enabling force in the endowment of agency to marginalised subjects” (2014, p36). Her corpus leads her to the conclusion that the use of non-human protagonists and narrators contest established humanist paradigms of selfhood and identity “from a position of ‘otherness’” (2014, p69) suggesting that the novels themselves use unreliable narrators, demonstrate parodic intertextual relationships with traditional texts and position the reader in critical interpretive roles (*ibid.*). These are all features which are visible in the range of texts in my corpus, but I consciously endeavour to steer away from such explicit feminist discourses in my consideration of the posthuman, because I see her readings to be limited due to her focus on the female and feminism. I avoid feminist critical theory because of what I believe is a

more widely applicable interest in power and aesthetic elements of my corpus rather than gender. Flanagan's 2011 paper on the representation of the female body can be seen to be a foundation for some of the work in her study and her 2014 book revisits ideas from her 2011 paper, 'Girl Parts: the female body, subjectivity and technology in posthuman young adult fiction'. She argues that, historically, "feminine subjectivity is so closely linked to the physical body and its cultural significance" that women have been excluded by humanist constructions of the subject (2014, p101). However, this is not something which I find to be the case when the predominantly female protagonists in my corpus are considered: thus I argue her approach is self-limiting.

The question of embodiment is central to the posthuman and posthumanism, and my twenty-first century thinking is more in line with Pramod Nayar's 2014 view of critical posthumanism which sees "machine and the organic body and the human and other life forms [to be] more or less seamlessly articulated, mutually dependent and co-evolving" (p8). Although Flanagan sets this perspective against Hans Moravec's 1988 proposal that it will eventually be possible for the human mind to be downloaded into a computer, I see Moravec's proposal as a product of his time when computers were perceived to offer unrealistic utopian opportunities to humanity. Real-world contemporary developments in technology and its acceptance in people's lives have meant the co-evolution of machine alongside the body. I therefore find it surprising that Bradford *et al.* downplay the importance of embodiment within a posthuman ideology in their 2008 work. However, I reiterate the helpfulness of considering the biological and technological aspects of the posthuman separately as a critical approach: it forces consideration of implicit biases and ideologies associated with both fields. I believe it is often easier to see the two strands separately before the posthuman accepts their unified self in narratives, but tracing the two strands often means they can still be seen in the unified posthuman with agency and subjectivity. Considering the move towards the unification of mind and body, Myra Seaman writes that "posthumanism rejects the assumed universalism and exceptional *being* of Enlightenment humanism and in its place substitutes mutation, variation and *becoming*" (2007, p247; original emphases). However, Flanagan concludes that while technology can be both enabling and empowering for female subjects, none of the texts she considers demonstrate a willingness to abandon humanist thought completely (2014, p127). She understands her texts to be asking questions about what it means to be a young woman living in a technological age (2014, p127; 2011, p52): to my mind, however, her biases and reliance on questions of gender skew her readings. I contend that many of the (theoretical) questions that the reader is obliged to ask are not

gender-specific (or even applicable only to the young) and my avoidance of such explicit questions of gender separate my work from hers and make my findings more widely applicable.

Importantly, Flanagan concludes – as she posited at the outset – that “posthumanism does not entail a total rejection of humanist traditions of the past”, arguing that “it involves a reconceptualisation of selfhood and social relations” which, essentially, “fit more readily with human experience in the digital age” (2014, p187). I agree with her final comment, as it is through the real world’s acceptance of technological advances allied with science-fictional explorations of possible uses and effects of technology that the posthuman world has, since the first decade of the twenty-first century, become something not to be feared, but critically embraced. Flanagan therefore tacitly acknowledges the figure of the posthuman in the twenty-first century, and not just posthumanism. However, she sees agency as having been transformed within the texts she has explored and reconstituted “as a collaborative rather than individualistic attribute” (2014, p188): although this is the case in some instances of the posthuman, I do not accept this to be true for all posthuman representations. The fallacy shown by inverting such a generalisation to say that representations of humanism are only about individual agency and never a collective agency shows this cannot be a universal posthuman truth.

The common themes which I have seen in this chapter convince me *that the figure of the embodied posthuman remains the most useful way to consider posthumanism in fictional representations*. Flanagan describes the posthuman as “the subject who exists in a world where the boundaries that once defined humanity have been redrawn as a result of technological impact” (2017, p35), and both the historical contextualisation of the posthuman in relationship to technology and the existing scholarship I have considered here provide the foundations for considering different types of embodied posthumans, leading me to consider the Cartesian duality of the posthuman and its limitations in terms of the way the figure of the posthuman should be approached.

THE TECHNOLOGICALLY-ENHANCED POSTHUMAN'S BODY TYPES

Bradford *et al.* (2008) organise their texts thematically into narratives about robotics and artificial intelligence, those about genetic engineering, cloning and cybernetics, and virtual reality narratives. I am more concerned with the embodied figure of the posthuman, and to me thematic concerns are secondary to the characters, even where characters define a theme in fiction. I therefore take my analysis of the embodied figure of the posthuman further by reference to Judith Halberstam and Ira Livingston's seminal collection of essays (1995) and a chapter by Mischa Peter's (2003) to consider the posthuman body and structure of my analysis of primary texts.

In the introduction to their collection of essays, *Posthuman Bodies*, Halberstam and Livingston immediately note that posthuman bodies "emerge at nodes where bodies, bodies of discourse, and discourses of bodies intersect to foreclose any easy distinction between actor and stage, between sender/receiver, channel, code, message, context" (p2). It is such intersections which make the posthuman a rich area for investigation, and I see the particular fascination in technologically-enhanced posthuman bodies occurring because their fictional representations are still so recognisably human, either in body or mind. Halberstam and Livingston see the recognisability of posthuman bodily forms as monstrous not just because of the intersecting of the aspects of the self, but because they "overlap between the now and the then, the here and the always" (p3). I have shown this to be true by tracing the history of the posthuman and demonstrating that the posthuman body remains something which has existed for millennia but still manages to appear forward looking and reflect contemporary concerns. They also see the posthuman body as driven by the "double impossibility and prerequisite to become other and to become itself" (1995, p14), and again the paradox embodied in the posthuman body distorts Haraway's vision of the cyborg destroying binaries. It creates new divisions, but is able to blur and destroy them through its embodiment. Continuing their paradoxical description of the posthuman, Halberstam and Livingston state that "posthuman bodies never/always leave the womb" and that "posthuman bodies were never in the womb" (1995, p17). They see posthuman bodies making bodies and their material extensions indistinguishable, using the metaphor of the umbilical cord to show the interdependency of bodies on their network. However, as I will explore further and counter in my proposal of the postchild, they also see posthuman bodies as a product of wholly asexual systems. Pre-empting Hayles's 1999 assumption by observing more stridently "you're not

human until you're posthuman. You were never human" (1995, p8), they successfully encapsulate the need to research the embodied posthuman.

Halberstam and Livingston continue by presenting a series of essays which consider different forms of fictional and real-world othered posthuman bodies. Allucquere Rosanne Stone considers a murder case in which the defendant suffers with multiple personality disorder demonstrating how a single body can embody multiple people. While only one of the body's personalities committed the murder, the defendant is found guilty as "cultural meaning is constructed in relation to bodies and selves" (1995, p36). My analysis of a range of posthuman texts demonstrates this too: reactions to the posthuman characters are a clear aspect of their identity formation, as their embodiment treads a fine line between them shaping their own identity and having it shaped for them. When they are either able to balance this or to compromise, their unification is shown to be successful within the narrative. The power of society and culture to shape the posthuman identity is also discussed by Steven Shaviro who sees self-identity as a "symptom of parasitic invasion, the expression within me of forces originating from outside" (1995, p40). His description of the 'parasitic invasion' indicates a critical view of the posthuman body and identity being shaped by external forces, and this is frequently seen in my corpus as the protagonists rarely choose to be enhanced or modified by their technology.

The notion of posthuman bodies being shaped by external forces is clear in Alexandra Chasin's work as she considers the question of power over the bodies in terms of class: she starts off by asking whether a human servant is a subject in their own right or an othered object designed to make the life of the human subject easier. She suggests the possibility of an ambivalent response, and goes on to see computers as tools built to serve humans, but imbued with the inevitable potential for them to replace human workers (1995, p74). The examples of technology she uses may seem dated in 2018, but they underpin the idea that posthuman bodies are created by humans and constructed to mimic humanness in their service to humans. Even though she uses the term 'posthuman' tentatively, considering the technology of the mid-1990s she challenges the conventional differences between definitions of people and machines (p93). Her conclusion discusses the "theoretical displacement of hierarchical boundaries" thanks to the emergence of working machines (p94), but as I show in my subsequent analysis the posthuman body of fiction and twenty-first century reality has simply redrawn the boundaries of power hierarchies when human and posthuman, or posthuman and posthuman, are put alongside each other.

Presenting the human body which is “defamiliarized, rendered other” in cinema is described by Kelly Hurley as a hybrid genre encompassing science-fiction, horror and suspense called ‘body horror’ (1995, p203). She equates such bodies with posthuman bodies through their ambiguity, liminality and impossibility and the concomitant demolition of the human body. She chooses to overlook the “postmodern fragmentation of human identity”, focusing instead on its “reconfiguration through the pluralisation and confusion of bodily forms” (p205). Cinema is able to present the monstrosity of the posthuman graphically, and the ‘horror’ element of the genre she considers is made richer by special visual effects. She concludes that body horror works to “disallow human specificity [...], to evacuate the ‘human subject’ in terms of bodily, species, sexual and psychological identity”, offering instead “speculations on alternate logics of identity that rupture and exceed the ones we know” (p220). In contrast to cinematic presentations, I see literary posthuman embodiment presenting monstrous images of the human, but very much embodying the human subject as a part of the monstrous presentation; it is therefore from the embodiment that the posthuman identity frequently originates. It is potentially both medium and genre differences between cinema and young adult fiction that means she sees the human subject ruined through cinematic narratives, whereas young adult novels offer a greater understanding of what it is to be human through posthuman embodiment.

The preceding brief consideration of posthuman embodiment touches on different possibilities of posthumans but demonstrates underpinning features of the embodied posthuman. Considering technological enhancement, Flanagan’s recent chapter in *The Edinburgh Companion to Children’s Literature* supports my focus as she acknowledges the importance of technologically-enhanced posthuman embodiment. She writes that “it is precisely the strangeness of the cyborg body (in relation to the human consciousness of the subject who possesses it) which necessitates an ongoing self-reflexivity about how the body produces selfhood” (2018, p33). As I have seen in Haraway’s work, ‘cyborg’ is a somewhat generic term, and Mischa Peters’s 2003 essay provides a method of categorising the technologically-enhanced bodies that I examine in my corpus.

Peters specifically considers bodies which involve technology, and her focus matches my narrowed definition of the posthuman. She notes the “complex and often contradictory attitudes toward [the technological body] and issues of embodiment and subjectivity” and she

goes on to separate them into four “body concepts” (2003, p51ff including table) which I use as the starting points for categorising the posthuman characters within my corpus:

	External Technologies	Internal Technologies
Human	Natural Body	Cyberbody
Posthuman	Modified Body	Enhanced Body

To illustrate her categorisations in terms of their usefulness in identifying the posthuman, it is necessary to consider each one individually. Peters sees the natural body not as one which utilises *no* technology, but as one which has defined boundaries and although technology may be used within the body it “serve[s] fundamentally as prosthesis to improve and perfect the frail and failing human body” (2003, p53). Anne Balsamo’s observation that “the body is always comprehended as an interaction between the materiality of what is given in a particular body and the symbolic constructions of the ‘body’ embedded within a particular culture” (1996, p12) is pertinent in the natural body, but it must be coupled with the way the technology is perceived by the individual in question and the society in which they operate. A fundamental shared understanding of a human body’s biological boundaries mean that the emphasis is on the human with technology as an adjunct in the natural body.

Where technology is used to keep the natural body functioning as a human, the modified body employs technology as a “necessity or commodity” which is “willingly used” but “not internalized or seen as an integral part of the self” (Peters, 2003, p53). This type of posthuman can be seen in Clynnes and Kline’s description of the cyborg as a body which has been altered to survive in a different environment. In literary terms, the character of Molly in William Gibson’s cyberpunk-defining novel, *Neuromancer* (1984), demonstrates the willingly used necessity as she has to purchase technologies to be added to her body to fulfil her job as a bodyguard. This also exemplifies Peters’s description of the modified body as always coming “at a certain price [...] either financial or physical” (p53). While there is a necessary connection between the body and the technology, it is still seen an external appendage. This concept of a posthuman body type contradicts elements of Hayles’s description that “embodiment replaces a body seen as a support system for the mind; and a dynamic partnership between humans and intelligent machines replaces the liberal humanist subject’s manifest destiny to dominate and control nature” (1999, p288). Thus she sees the relationship between body and technology as a partnership rather than an obligation.

While the natural and modified bodies have technology as an external commodity, the enhanced body is a concept with which consumers of science-fiction and followers of

technological developments are likely to be most familiar. Peters describes the enhanced body as one “whose boundaries are stretched to their utmost and often even transgressed” (2003, p54). It is therefore the type of body often seen in dystopian literature combining “anxieties about mortality and fallibility of the flesh” and “fears and anxieties about technologies” (*ibid.*). In the enhanced body, the boundaries between organic and technological are blurred as implants give individuals ‘superhuman’ physical qualities, such as extending the capability of their senses or strength, and/or giving them qualities associated with technology of the age, such as access to an Internet-like communication system through their brain, or a head-up display within their vision: the functional, but limiting and limited, human elements of their body have been enhanced.

In the real world, recent reports detail work that is being done on “reconstruct[ing] words, based on the brain waves of patients thinking of those words” (Palmer, 2012, np), and exploring how brain-computer interfaces “can control various objects, like a robotic arm” (Hogenboom, 2013, np). While the implicit purpose of such research is therapeutic, the technology is developing “neuro-control over virtual or physical devices” (*ibid.*) which I see as an augmentation of a human’s capabilities and therefore as being internalised, rather than an external prosthesis for the natural body. Peter Thomas, in *New Scientist*, raised questions about the process in a similar study in Japan: “What about the philosophical implications of a bug in the software ingrained in the human brain? Would we still be able to make a distinction between a software bug and psychological illness?” (1996, p42). In an interesting reflection of the role of popular culture in society today, he suggests that “even a Hollywood script writer would be hard-pressed to picture the consequences” (*ibid.*), demonstrating the democratisation of the consideration of moral and ethical issues, as technology becomes an increasingly accepted aspect of people’s lives offering them new possibilities.

Peters’s 2003 cyberbody is a more conceptualised idea but one seen in science-fiction texts and alluded to by Mike Featherstone and Roger Burrows at the opposite end of a “complex continuum of human-machine fusions” to “‘pure’ humans” (1995, 11). Peters describes cyberbodies as those which “no longer make the distinction between beings of flesh and blood versus beings made of or mediated by technology” (2003, p56). The physical body is – literally – immaterial, as the content of the human’s brain is transferred to a form of computer memory or the body is recreated in a virtual reality or cyberspace. The world – either virtual or real – in which a cyberbody exists is important to consider as it still contributes towards the posthuman’s identity, but the cyberbody is a clear example of a “construction of a hierarchy

in which information is given the dominant position and materiality runs a distant second” (Hayles, 1999, p12). In the real world, the ideas behind the cyberbody are connected to the question of digital immortality which has received greater prominence as social networks have grown since the inception of Facebook in 2007. As Krotoski notes, converting a loved one’s social network account into a memorial page “can preserve the online identity as part of the whole person, something that, pre-Facebook, wouldn’t have been part of the mainstream idea of ‘self’” (2011b, np); more recently Google has introduced provisions for their users to plan their “digital afterlife” (Tuerk, 2013, np). Through its division between mind and body, the cyberbody exemplifies Cartesian dualism in the posthuman, and the cyberpunk notion of the physical body as being merely ‘meat’ is taken to the extreme, as consciousness exists without a recognisably human body.

Peter Menzel and Faith D’Aluisio suggest another combination of technology and biology foreseeing a time when “people will become robots, electronically merging the extraordinary consciousness of *Homo sapiens* and the almost infinitely durable body of robots: *Robo sapiens*” (2001 p21). This tongue-in-cheek label raises the notion of the technological body becoming more than a prosthesis allowing the human to continue their life, and developing its own identity by having a human consciousness downloaded into it. I have encountered technology being ‘improved’ by the addition of aspects of human-ness, and as a step beyond the original technology, I have labelled it ‘posttechnology’.

In this consideration of the posthuman body, I have demonstrated the foundational impact of Halberstam and Livingston’s early collection of essays and the importance of Peters’s work. It is Peter’s work which I now develop as, although not extensively cited elsewhere, her tabulation of the four posthuman body types is an attractive and accessible part of her work and has provided the foundation for much of my thinking about the posthumans of young adult fiction. It has provided the outline structure for my analysis, and allowed me to develop her ideas further in considering the effect of technology on children in the real world.

CHAPTER II: POSTCHILD

In Chapter I I outlined scholarship pertaining to the posthuman, and in Chapter II I now develop the central concepts of my research within the posthuman which I move beyond previous studies. I posit the *postchild* and explain what the concept of the postchild contributes to a scholarly engagement with today's young adult fiction.

It is ironic that where science-fiction portrays the physical body as the posthuman's limiting factor, it is the dominance of both the information and the technology which presents it with a problem in terms of generational transmission and social replication. When either the ancient posthumans, Clynes and Kline's concept of the cyborg, or any of Peters's body types are considered in relation to the posthuman as a successor to the human (literally, 'post-'), a problem lies in the inability of these 'conventional' posthumans to procreate and produce a posthuman offspring, or postchild. Without procreation a species cannot survive, and while the 'meat' of the physical body is an encumbrance to its technology, in genetic terms it is the technology, and/or data, which is the hindrance. The posthuman's inability to pass technological elements on to future generations naturally means that it can only exist as a development of a particular human, or group of humans, at any particular time. However, the postchild is able to unify its 'software' and 'hardware' promising a future more wholly imbued with technology.

My exploration in Chapter I of the embodiment of the posthuman in the secondary literature provides the starting point for what I label the 'postchild'. To paraphrase Haraway: as the posthuman can be seen to be both a theoretical creation and (as I prefer) an embodiment of the fusion of technology and human biology, so the postchild is both a theoretical proposal and something at large in the real world of the early twenty-first century. My notion of the postchild demonstrates the effects of technology on real-world youngsters, but does so in conjunction with Peters's body types. While I use 'adolescent' to refer to the protagonists of my corpus, I choose to use 'postchild' rather than 'postadolescent' to demonstrate the potential and might of naturally technologically capable children from a young age, both in fiction and anecdotally in the real world.

Peters's natural, modified and enhanced posthuman body types can also be applied to children. The cyberbody is also applicable in terms of children, but it is notable that the cyberbody's division of body and mind (thereby rendering the body immaterial in children),

seems to be far removed from the Romantic idea of a child whose physical development is closely linked to its moral and intellectual growth and to sensation. However, when a consciousness is transferred from the human body to another vessel – whether an undefined storage device or replacement mechanical body – it is obliged to learn to come to terms with, or embrace, its new physicality, as a real-world child does. Thus, in neither adult nor child cyberbodies can the body (or storage medium) be ignored. Similarly, I argue that both body and mind need to be reconciled in representations of Peters’s other three body types.

Even when subdividing the posthuman and human, seeing Peters’s posthumans as successors to the human still fails, as the technological aspects of their existence cannot be passed on to future generations. Peters concludes with what might be seen as a typically technophobic warning to humanity that “fantasies and dreams of transcendence might be too strong to resist, and this could leave us with digital bodies suited only to a virtual world” (2003, p57).

While the postchild will grow older and reach an age where ‘child’ may not be an appropriate epithet, it has features which (currently) differentiate it from the adult. Hayles writes that

[w]hether or not interventions have been made on the body, new models of subjectivity emerging from such fields as cognitive science and artificial life imply that even a biologically unaltered *Homo sapiens* counts as posthuman. The defining characteristics involve the construction of subjectivity, not the presence of nonbiological components (1999, p4).

This statement provides part of the foundation to consider not only the posthuman, but also the postchild. While Peters’s differentiations between human and posthuman also apply to the child and postchild, if Peters’s body concept table is extended to include the postchild as distinct from the implicitly adult posthuman, it provides a starting point for the changing literary and philosophical notions of the child. I also use the distinction between the adult posthuman and the postchild to demonstrate the way technology has redrawn, and continues to redraw, the boundaries between child and adult as it has altered definitions of humanity. I therefore extend Peters’s original tabulation of body types by adding the postchild, and subdividing it into what I choose to label as the Millennial Body and the geek:

	External Technologies	Internal/ised Technologies
Human (including child)	Natural Body	Cyberbody
Posthuman and Postchild	Modified Body	Enhanced Body
Postchild	Millennial Body	Geek

What I call the ‘Millennial Body’ is closely allied to the traits demonstrated by Palfrey and Gasser’s concept of the “digital native” (2008, p4): the members of Generation-Y born after the early 1980s, frequently seen sporting headphones or headsets while handling a variety of mobile devices, and those labelled as ‘Millennials’, or the first digital generation who grew up surrounded by technology and “live much of their lives online, without distinguishing between the online and offline” (*ibid.*). This is distinct from the modified body, as in the millennial body the technology becomes an integral part of the self. In the integration of the technology, the blurring of boundaries is a typical posthuman trait which reflects the reality of developments in “biotechnologies, information technologies, entertainment and surveillance technologies, and more recently nanobiology [as they] redefine the very essence of life” (Mallan, 2011, p147).

As the potential for using biotechnology has increased, so have the ways humans have become increasingly insistent on using technology in all aspects of their lives. Product designers look for ways to make technology more human-centric and intuitive to use and to embed it within day-to-day objects. Even though, as Ivan Callus suggested in 2009, “technology is still regarded as prosthetic to the human rather than indivisible from it” (p205) echoing Peters’s description of the natural body, more recent research compiled by Statistica in 2017 shows the increase in smartphone usage as a percentage of mobile phone users increasing over the past seven years. With the smartphone’s permanent connection to the wired world and people’s heavy use of social media tools to share their life voluntarily, the increase indicates a real-world phenomenon of technology being more than just a prosthesis:

Region	2010	2017
Western Europe	45.2%	76.6%
North America	43.2%	71.4%
Central and Eastern Europe	16.0%	46.2%
Central and Latin America	12.6%	45.6%
Asia Pacific	11.3%	43.1%

More locally, Deloitte (2016, p28; 2017, p13) reports that the percentage of the UK’s population with access to smartphones continues to rise:

Year	2012	2013	2014	2015	2016	2017 (ytd)
Device Penetration	52%	62%	70%	76%	81%	85%

Nascent technologies, such as Google Glass,¹¹ demonstrate a further blurring of the distinction between the virtual and real worlds as they offer the user an ‘augmented reality’ and the ability to record aspects of their life in real time, as implants previously only seen in the posthuman bodies could. Considering smartphone uptake and the potential of devices offering access to an augmented reality alongside statistical and anecdotal evidence for the use of tablets as an additional screen, and adolescents’ use of a variety of connected devices, the child’s comfort with, and expectation of access to, technology is a clear millennial characteristic. The summer of 2016 saw an explosion in the use of augmented reality through the launch of PokémonGo in which users located, collected and battled Pokémon cartoon characters through the GPS functionality of their mobile devices. The game was launched on 6 July and within just a few days it was attracting more than 20 million daily users, with a peak of 28.5 million on 13 July. Although the use of the game tailed off, it “provided an important glimpse into the potential of augmented reality to engage users” as only 60 per cent of its users were 18-34 year-old millennials (comScore, 2017, p21), which demonstrates the engagement of a much wider range of people than might be expected.

Users of smartphones are able to exist with friends in online worlds of social media, thereby offering aspects of what may previously have been seen as the cyberbody through an externalised technology. Again, technology challenges and blurs the division of mind and body. Similarly, as technology continues to be miniaturised, the potential for a child’s external technologies to become the internalised technology of the enhanced body also exists, but (at present) it is the prevalence and use of technological devices which creates the millennial body of the postchild. In 1991, Haraway noted that “[m]iniaturization has turned out to be about power: small is not so much beautiful as pre-eminently dangerous” (p153) showing that, as the technology becomes increasingly invisible and ubiquitous, the power it gives the child user – or, in her case, cyborg – goes unnoticed.

Unlike Peters’s definitions of the difference between the external and internal uses of technology in the posthuman, the boundary between the external use of technology in the millennial body and the geek is more fluid. However, this is in keeping with her differentiation, as she notes that an external technology “does not prevent [it] from become naturalized or part of the body image” (2003, p58). The technical prowess of those labelled by

¹¹ Google Glass launched in 2013, but the project was halted in 2015 with press reports claiming Google says the “kit is not dead” (<http://www.bbc.co.uk/news/technology-30831128>). In 2017, *Wired* reported that while the consumer version remains cut, the Enterprise Edition for use as a practical workplace tool has continued to be developed very successfully (<https://www.wired.com/story/google-glass-2-is-here/>).

society as geeks, nerds, or dorks, is human-based but is often presented and perceived as being beyond human norms, much as the posthuman demonstrates capabilities beyond the human. However, the manner of internalisation is not through the specific processes intimated by ‘becoming posthuman’, but as a development from the use of the external technology through which the child becomes technologically ‘superhuman’. Debra Dudek and Nicola Johnson describe how “[i]n the 1980s, being a computer geek set one apart and turned nerds into heroes” (2011, p185), but Applebaum comments on the way technology is seen as a “corrupting force” and therefore the “fiction [...] endorses a technophobic agenda” (2010, p1). Haraway’s *Manifesto* pre-empts technophobic concerns as she believes that in the figure of the cyborg “[i]ntense pleasure in skill, machine skill, ceases to be a sin, but an aspect of our embodiment” (1985/2006, p146), and her description supports my consideration of the geek within the different body types stemming from the cyborg. Despite Applebaum’s bleak outlook, more recent texts such as Cory Doctorow’s *Little Brother* (2008) and Brian Falkner’s *brainjack* (2011) have celebrated the figure of the geek, featuring teenage protagonists using technology to empower themselves, reflecting the earlier idea of the “hackers as heroes”, and showing the expertise of the young in using existing and emerging information and communication technologies (Dudek & Johnson, 2011, p186).

By using technology to empower themselves and stretch the boundaries of humanity, geeks can be seen as the successor suggested by the ‘post-’ prefix of the postchild. However, unlike Peters’s posthuman bodies which only exist in one time, postchildren have a marked advantage in that they can, or have the potential to, procreate. Although there is no guarantee that a geek will mate with another geek, network theory indicates that “whether real or virtual, the process of searching for a mate is usually driven by *homogamy*, or the tendency of like to marry like” and “spouses also become more similar over time because they influence each other” (Christakis & Fowler, 2011, p70). As geeks grow and become parents, the children who are brought up in these households of high technical ability are likely to assimilate such skills through the parents’ nurturing and thus be naturally born postchildren. While nature is also a facet of a child’s character – with network theory indicating the potential for, and likelihood of, such traits being carried forward in genetic terms – it does not restrict the definition of a postchild to heteronormative social structures, as the postchild’s upbringing will help to pass on the characteristics. The postchild will inevitably blur its own already indistinct boundaries as it grows up, and will eventually challenge and change the types of adult posthumans seen both in fiction and social reality. However, at present the very real

postchild is still in the early stages of its own development, as is the connected world in which we are currently living.

Even though Alexandra Robbins notes that there have been “surprisingly few trickle-down effects from the adult Age of the Nerd to the student world” (2011, p364), nearly a decade later the exponential rate of technological growth within society will inevitably mean that the rate of trickle-down will increase as more members of Generation-Y start families. Thus, while a human can be enhanced and become posthuman in the sense of my definition, the progeny of either human or posthuman can only be a child. However, as the postchild – with its natural affinity for technology – physically matures, its biological progeny, through both nature and nurture, are also likely to be postchildren, thereby creating an enhanced successor to *homo sapiens*. This offers a natural development of the postchild, but the potential for the use of genetic engineering to ‘install’ transmittable desirable traits at some point in the future should not be forgotten, although this is beyond the scope of my current research.

The millennial body of my theorised postchild can be readily recognised in the real world, but the geek is a little more nebulous and the label itself is an insult to some and a badge of honour to others. Nevertheless, both the figure of the postchild and its subdivision into body types with externalised and internalised technology provides a new means by which to consider users of technology in the real world and in fictional representations. In Chapter IV, I return to the Millennial Body and the Geek to consider their fictional representations, but the ideas behind the postchild support my analysis of some of my other primary texts.

Before I move to my analysis of young adult representations of different body types in Chapter IV, I develop another new approach to consider the figure of the posthuman as an extension of humanist thought: trialism.

CHAPTER III: TRIALISM¹²

As I see technology redefining Rousseau's eighteenth century notion of the Romantic child for the twenty-first century, I also look to extend René Descartes's division of the mind with its associations of consciousness and self-awareness and the physical body to consider how technology can be a part of the posthuman and the postchild. I also consider how technology – just like science – can be seen to sit comfortably and necessarily against religious beliefs in the twenty-first century, in the same way in which Harari suggests Dataism as a religious-like belief system, central to the world's existence in the twenty-first century (2016, p429).

Despite attracting criticism from the seventeenth century onwards, Descartes's notion of the duality of mind and body has had a lasting effect on Western philosophical ideas of subjectivity and made the notion of the self an abstract concept. Cartesian dualism sees identity as being situated within the mind as distinct from the body, and the body is – in a more contemporary cyberpunk allusion – simply 'meat': something to be controlled by the mind and therefore not a part of the formation of subjectivity. Twentieth-century developments in cognitive science and psychology support the concept of 'embodied cognition' which that argues "reason is not disembodied [...] but arises from the nature of our brains, bodies and bodily experiences" (Lakoff & Johnson, 1999, p4), and is also based on the understanding that

cognition depends on the kinds of experiences that come from having a body with particular perceptual and motor capabilities that are inseparably linked and that together form the matrix within which reasoning, memory, emotion, language, and all other aspects of mental life are meshed (Thelen, Schöner, Scheier & Smith, 2001, p1).

While contemporary ideas demonstrate the unification of mind and body in the human, the separation of mind and body remains a way human identity is considered, and the same separation leads to the understanding of embodied cognition. However, I am concerned with the question of identity in the figure of the posthuman as distinct from the human, and as young adult literature is often read in terms of identity formation, it offers a rich seam of material which can be used to examine the nature of the posthuman. Unless specifically stated, I therefore use 'posthuman' to encompass both adults and postchildren. In the posthuman, the philosophically traditional dualistic idea of consciousness and self-awareness existing separately from the physical brain is exemplified in the cyberbody (a posthuman in

¹² This chapter has been published in an edited form in *Critical Perspectives on Artificial Humans in Children's Literature* (2016).

which the physical body is inconsequential as an individual's human consciousness is transferred, copied or downloaded from their brain into a technological storage medium in which it lives independently). Having a consciousness existing in a virtual world without the encumbrance of a body prone to sickness demonstrates the prioritisation of the mind, with the dualistic view of the body as meat. By extension, if the storage medium – be it a replacement body or memory stick – with the risk of physical failure is seen as 'the body', it too is an encumbrance to the consciousness.

The Cartesian separation of mind and body can also be seen in fictional posthuman figures in which technology is used as a prosthesis on which the human depends, or is implanted into the human to enhance them. In such figures, the human and the technological aspects of their body are often in conflict, and it is only when the biological and technological can be unified that the posthuman is able to fulfil its potential by reconciling its posthuman identity and gaining agency. In beginning to examine how the (human) mind and (manufactured) body are brought together in these posthumans, it is helpful to consider the mind and body independently. A dualistic approach is therefore a useful starting point. However, Haraway observes that

high-tech culture challenges these dualisms in intriguing ways. It is not clear who makes and who is made in the relations between human and machine. It is not clear what is mind and what body in machines that resolve into coding practices. (1985/2006, p143)

In the figure of the posthuman with its nebulous boundaries, dualism is too simplistic a notion. I consequently argue for a posthuman trialism in which a human mind (or consciousness) and the body (whether human or non-biological) can either be subject to the whim of technology or in conflict with it (Shakeshaft, 2014). This means that – unlike the human need to see mind and body as one – the posthuman's successful survival is dependent upon the unification of mind, body *and* technology. The technology of the posthuman is sometimes an indeterminate process or procedure which made a human posthuman, something which is vaguely described or obfuscated, or something 'magical' beyond human comprehension. The technology may also be conflated with either the body or the mind, but it is still something which can helpfully be considered separately to explore what constitutes the posthuman.

The term 'trialism' is not new: it was first defined somewhat generically in 1891 as 'the doctrine of the threefold constitution of man, as body, soul, and spirit, or other three separate essences' (OED, 2014). John Cottingham subsequently provides a reading of Descartes which

sees sensation as a union of mind and body and consequently part of a more flexible threefold pattern of human (1985, 224). As far as I am aware, however, I am the first to take the idea of a tripartite division and develop it specifically in terms of the posthuman.

As trialism offers a theoretical approach to consider the posthuman in texts, it is most helpful to exemplify it in the representation of posthumans in two recent novels, *Nexus* (2012) and *Crux* (2013), by Ramez Naam to demonstrate both the theory and how it can be applied to other texts. The context of two novels is important as Naam's biography (nd) describes him as a "computer scientist, futurist, and award-winning author" and, in an embodiment of the blurred boundaries of posthumanism, he combines these to entice readers to consider issues of identity and human relationship with technology. In the manner of commercial DVDs, both novels include 'Extras' in which Naam details what he describes as the 'Science' of the novels, stating that "[I]ike *Nexus* before it, *Crux* is a work of fiction, but based as accurately as possible on real science" (2013, loc7222). As a technologist, Naam's undated biography lists the type of work he has done over the past decade and much of his work can be seen to be represented in these two novels. He has worked on "advanced collaboration, communication, and information retrieval", led research on "machine learning, search, massive scale services, and artificial intelligence", and launched a company to develop "software tools to accelerate molecular design". While his practical background provides a foundation for his writing, he also describes the novels as "philosophical science-fiction thrillers [which] look at the impact of an increasingly plausible technology that could link human minds, and the impact such a technology could have on society and on the human condition, for both good and ill", noting that the novels consider the "responsibilities of scientists to society". Such a clear statement of intentionality cannot be ignored as these are issues – both implicit and explicit – permeating many young adult texts concerned with the way technology is, or could be, used by society and the ways it is shaping (post)human identity.

Just as the author blurs boundaries of fiction and reality, *Nexus* and *Crux* also make classification difficult. Naam pushes the chronological boundary of the 'young adult' by making his posthuman characters PhD students in their mid-twenties. I am confident to allow this flexibility, since when considering the cultural construction of the terms "adolescent" and "young adult", Hilton and Nikolajeva describe young adult literature as demonstrating a "profound instability and inexperienced sexuality in the emergent adult" (2012, p1), and they see adolescence as a social rather than age-based category. The protagonist's character is

presented in the same way as the genre frequently presents idealistic adolescents trying to find or create their (post)human identity and having limited degrees of life experience.

In both *Nexus* and *Crux*, Naam's young adult university students develop, test and implement a new version of the Nexus drug – Nexus 5 – which when taken remains 'installed' in their bodies making them, in their own words, posthuman. Naam's use of the term 'posthuman' in a novel is uncommon, and he provides his own definition of the noun in the form of an imagined entry in the 2036 edition of the OED. Despite its fictionality, Naam's definition usefully matches several areas of my own rstanding of the nominal posthuman:

A being which has been so radically transformed by technology that it has gone beyond transhuman status and can no longer be considered human at all.

Any member of a species which succeeds humans, whether having originated from humanity or not.

The next major leap in human evolution. (2012, loc271)

Embedding the Nexus drug allows its users' minds to become connected and for the minds to work together to create a greater, shared consciousness. The developers see their work as a positive development for mankind and they aspire, idealistically, towards their version of Nexus being used throughout the world for good. The government has access to a previous version of Nexus which only enhances its users' abilities temporarily and does not offer the facility to connect minds. However, the human government uses it to allow its agents to control the spread of the Nexus technology, fearing the posthumans under its authority will become too powerful and supersede the non-modified humans. The conflicting attitudes to the use of technology also challenge the more common human/posthuman binary, in line with Haraway's observation that there is "no fundamental, ontological separation in our formal knowledge of machine and organism, or technical and organic" (2006, p144), as both groups justify their use of it as a means to save humankind by protecting its natural state and helping it evolve.

The binary divisions – enhanced/natural, government agents/members of the public – potently demonstrate issues of power and the way it is subverted by the posthuman. Applying Trites' view that in adolescent literature "teenagers are repressed as well as liberated by their own power and by the power of the social forces that surround them" (2000, p7), the source of Naam's young adult posthumans' power within society is their technology which, as an embedded part of them, is their own: as Nexus 5 allows them to create a greater consciousness with other users through their mental networking, the social forces also liberate them. However, it is the technology which makes them what they are which the government figures

want to repress. Of the political discourse of texts, Trites stresses that novels are “historical artifacts of the time period during which they were written” (2000, p31): despite the America of the early 2010s in which the novels were written having seen a continued development of new technologies, and San Francisco, where they are set, having a tradition of technological innovation, there remains a concern both in fiction and reality about how humans use technology, and the way it is used within the human body. The government and posthumans of the novels parallel an adult/child relationship in which the government represents the older generation which has social and economic priority, and the posthumans constitute the new generation with more limited opportunities. There are echoes of the adults’ fear of technology shown through its representation in children’s literature as discussed by Applebaum in 2005 in which she sees the “technological gap existing between parents and their children” at the root of the issue, “as it is often children who bring the technology into the home and explore its potential” and “policy decision regarding internet regulation [...constructs] children as passive victims” (p252). If her ‘adults’ and ‘children’ are replaced by the ‘human government’ and ‘posthuman students’ of the novels, the comparison is clear and a blatant link is made to contemporary non-fictional fears of technology intruding into the physicality of the human body. However, considering Naam’s epitextual statement of intentionality, his portrayal of technology shows it not as something to be feared, but instead as something to be questioned, probed and ultimately understood. As technology continues to play an increasingly important role in real human lives and human bodies, its importance alongside mind and body in creating and shaping (post)human identity is inescapable, both in the real world and in fictional representations.

The question of power inevitably leads to the issue of the ownership of technology, and this is something I have seen in the postchild or, more specifically, the geek. While Naam’s government uses Nexus as a tool, the students have invested themselves in it and made it theirs and are willing to submit their human minds *and* bodies to the control of the technology, internalising the technology they have created. However, even in attempting this distinction there is a blurred boundary as Haraway’s thirty year old comment that “mind, body, and tool are on very intimate terms” (2006, p132) shows.

Unlike the government’s embedding of technology within the self, in making themselves posthuman and embodying Nexus, the students are making a conscious decision to give technology agency within their physical body. When the lead researcher, Kaden (or Kade, to his friends) Lane, is testing their new ‘Don Juan Protocol’ at the start of *Nexus*, his speech and

physiology are wholly controlled by their software. When a girl asks him whether he likes to romp, his physical appearance is subtly changed as “Don Juan molded his body’s responses. A slight smile. Release of oxytocin. Dilation of capillaries in his cheeks” and, his response to the question is also deferred to the software:

Candidate replies flitted through his mind, half-formed on his lips, as the software’s conversational package sifted through possibilities:

[Yeah, I love to dance.]

[Sure, what kind of music do you like?]

[If I’m with a pretty girl like you.]

Signals propagated through the highly modified web of Nexus nodes in his brain. The drug’s nanostructures evaluated data, processed it, transformed it. Don Juan made a choice in milliseconds. Input spiked at Nexus nodes attached to neurons in the speech centers of his frontal and temporal lobes. Nerve impulses raced outward from speech centers to motor cortex, and from there to the muscles of his tongue and jaw, his lips and diaphragm. A fraction of a second after he’d heard the girl speak, those muscles contracted to produce his response.

“Yeah, I love to dance,” Kade heard himself say. (2012, loc67)

While such biological changes are not consciously controlled in humans and Freudian explanations abound for words springing unconsciously to our lips, the narration makes clear that it is the technology, rather than cultural or genetic influence on the body in the limited dualistic approach, which makes these changes in Kaden.

With the exception of the nanotechnology’s evaluation, processing and transformation of data, the description is wholly biological and shows the software using the body as meat. Breaking the thought process down into the individual steps gives the impression of what is usually an unconscious action being a far more technical and programmatically mechanised, or coded, one. However, within the extract, the descriptive language of the biological is poetic as the options “flitted” and remain “half-formed”, and the fraction of a second is made graphically visceral through the detail, such that it is reminiscent of a cinematographic special effect with the viewer travelling with the signals through the character’s brain. Even with the scientific language of the biological process, the human description is contrasted by the technology’s options being presented perfunctorily in square brackets, with the clear incongruity of the human-sounding (and human-programmed) responses being generated by software as posthuman experience is conveyed through human language. The disconcerting linguistic juxtaposition between the poetic description and technically generated options illustrates the division between the different elements of Kaden’s being, despite his unified embodiment. The software’s human name also emphasises its control, as it seems to appear as a character in its own right in the description and, as Kaden replies, the third-person reflexive narration

shows the distance between him as the focaliser and his first-person software. Regardless of having programmed and installed it – and therefore bringing together his technology and his body – Kaden’s mind is not in control of his body’s speech. Kaden’s embodiment of posthuman subjectivity demonstrates the “type of contemporary body” which Kim Toffoletti refers to as “a body that emerges from the eradication of any critical distance between the human subject and information and media systems” (2007, p108).

Despite his submission to technology, the demonstration of the protocol’s ability is made much more human as Kaden subsequently wonders to himself after the software has made his body speak, “Who writes these lame lines?” (2012, loc74). The use of ‘who’ reinforces the fact that the technology is the product of human thought, but also shows Kaden’s acceptance of technology within his body as something human, rather than an object. It is Kaden’s human afterthought and his character – rather than narrative comment – which embody the idea of a posthuman trialism of mind, body and technology, as they create distance between himself and the software’s output. In the three-way split the human mind reflects on the technology (the Don Juan protocol within Nexus) and its control over the human body: all three are unified and interact in Kaden’s being, but can act independently.

Seeing the body as meat through which technology and/or consciousness experiences its existence is a posthuman and cyberpunk perspective on the human form. However, if part of being human is about having emotionally meaningful experiences which make up an individual’s identity, Kaden has willingly submitted himself to his technology, but the question of whether technology can create human experience is raised by Naam. After discovering that the star sign of the girl to whom he is talking is Virgo, Kade – in another clear example of the mind/body/technology division – realises he

had never asked anyone their sign before. He supposed in a way he still hadn’t. The software had done that with his mouth and lungs. Did that count? (2012, loc77)

The technology is controlling the meat of this body, but his human mind remains independent as he is able to understand and challenge the technology but he still chooses to prioritise his technology. As the question about her star sign comes from his technology, he has moved beyond creating human experiences and is creating posthuman experiences as part of his enhanced posthuman identity.

Eventually, technology’s dominance over mind and body appears to be demonstrated as it prevents human frailty when “Kade might have stuttered, might have blushed, but a more

calculating logic was in control” and instead he simply and presumptuously asks “Your place or mine?” (2012, loc103). However, when Kade prioritises his mind, making the consciously human decision to control his technology and switch from the Don Juan protocol to allow an Internet virtual reality “porn bot” that he and his friends have “hacked to send its output to their body-control software”, his “mind filled with an image of what was about to happen” and the software fails, flooding his vision with error messages. While Kade’s human consciousness is aware of the errors being reported by the software, the distinct parts of his being are clear as “neither [the porn bot] nor Kade were in control of his body”. He subsequently has to issue the mental command to stop the whole system five times before he regains control of his body and realises it is orgasming; despite taking five attempts, the human mind is ultimately prioritised over the technology. In a reshaping of the three-way split, the very human physical experience and sensations of his body have proved too much for the technology’s programming to process (and arguably also his human mind as it takes five attempts for him to regain control), and Kade later returns to the solitude and safety of his own bed to debug the code. While immersing himself in solving the problem, “his mind exulted inside the Nexus development environment, tracing the events that had led to the fault”, and it is only “reluctantly he left the world inside his mind and came back to the senses of his body” (2012, loc244). The fluidity of the trialist split is demonstrated as the human consciousness is happy to hand control to the technology, but then his human body is prioritised through its physical reaction to a mental image which cannot be handled by the software. Consequently, his human mind has to be used to fix the software in a technological arena within, but distinct from, the human body.

It is not just the technology-loving creators of Nexus 5 who exemplify posthuman trialism.

When a government agent, Sam, first tries it, she recounts her experience:

I’m inside myself. Inside my mind. I see how the pieces of me fit together. The different concepts. The different kinds of concepts I can hold. And I can see all these scenes from my life. Patterns between them, connections I never noticed. (2012, loc409)

Unlike Kade’s reflections, mediated through third-person past tense narration giving a more objective view of the experience, Sam’s first-person experience is a much more subjective, innocent perspective. Despite the ideas she considers, it sounds like a childish exploration of what seems like a new world to her and her ‘new’ identity through the use of the present tense and minor sentences. Also new to her are the connections which form an important aspect of Nexus 5 and the posthuman opportunities it offers, as it is not just connections within the self that are made but also between users. Nexus allows (advanced) users to “move each others’

bodies [by] sending impulses to each others' motor cortices", but in the proximity of other users even as a new user Sam can "see and feel their individual lines of thought" and "eleven minds touched her at once in eleven parts of her psyche" (2012, loc487) enabling her to share their thoughts, feelings and emotions, but also allowing them access to hers. Beyond the personification of the independence of the technologically enhanced mind, this connectedness again illustrates the three-way split since technology is used by the human consciousness to control a body but, with a greater sense of technology's inherent reciprocity, the human consciousness is also probed by the technology. The networked nature of the technology redefines the notion of the human as a social – but also implicitly predatory – being and reflects the connectedness of people in the reality of the twenty-first century. The use of technology to share human consciousness (in the form of emotions and experiences) resonates with the contemporary use of social media as people shape their public online identities. However, today's externalised technology means that the sharer remains predominantly, but not entirely, in control of what they choose to share, rather than leaving their mind open to others as the novels' characters do. The characters place their idealised faith in the technology only being used for good, much as real-world users of social media have been shown to have misplaced confidence in companies' use of their data.

A networked consciousness is sometimes seen as a key feature of posthumanism, but I do not agree that connectedness is a posthuman requisite. However, a networked posthumanity can still be considered from a trialist perspective as – like a real-world computer network – it has many individual physical nodes which together make the 'body'. The mind is the shared consciousness, and the connectedness is facilitated by the technology. In Naam's novels, the connectedness is facilitated by an aspect of Nexus 5 to create something akin to a wireless connection. Haraway asks

Why should our bodies end at the skin, or include at best other beings encapsulated by skin? From the 17th century till now, machines could be animated – given ghostly souls to make them speak or move or to account for their orderly development and mental capacities. Or organisms could be mechanized – reduced to body understood as resource of mind. (2006, p144)

Despite her writing this of the cyborg, it can also be applied to the greater consciousness described by Naam, whose individual users surrender a degree of their own free will as they become more machine-like. However, the surrendering of free will raises inevitable complications in questions of agency. Hayles suggests that "if 'human essence is freedom from the wills of others', the posthuman is 'post' not because it is necessarily unfree but because there is no *a priori* way to identify a self-will that can be clearly distinguished from

an other-will” (1999, p4). While the posthuman’s freedom can only be postulated in a real-world situation, in fiction it is something which narrative perspective could readily illustrate (although the issue of the reliability of first-person narrators will remain a problem). Sherryl Vint reframes Hayles’s idea more generally by suggesting that the ideal posthuman subject is one in which “self is seen as something that emerges from community rather than as something threatened in its autonomy by others” (2007, p13). She argues that models of the posthuman lack any sense of intersubjectivity and collectivity: based on my corpus, I would agree with her argument as there is frequently more emphasis on individuals coming to terms with their posthumanism in a predominantly human world. However, as the real-world becomes increasingly posthuman, greater collectivity could be seen in posthuman representations as posthumans are obliged to come to terms with their identity in a posthuman world. Nevertheless, at the time of writing, the common treatment of posthumans as ‘other’ reproduces the humanist degradation of women, non-whites, children and working classes and the concomitant (fictional) accounts of them gaining agency and subjectivity.

Beyond the protagonists’ posthuman experiences, the separation of the human mind and technology is also considered and focalised through a posthuman software consciousness living, or at least existing, in a piece of machinery – or ‘body’ – in *Cruz*:

A physical brain was an information processor and nothing more. A mind was the *information* being processed, not the physical brain that did the processing. A *digital* brain, with digital neurons and digital synapses and digital signals passing through it, could process that information just the same, could give rise to a mind just as well.

(2013, loc475)

The body beyond the brain is not considered but, given that it is immaterial whether it is a human form or some type of computer storage device, the split between the mind and the “physical brain” is useful. In the human, the physical brain is the processor (or hardware) and a part of the body, and the mind is the information being processed, or the consciousness. The body (particularly the brain) is controlled by the mind, and consciousness (or the data) is prioritised in a typical cyberpunk manner. However, in the posthuman the digital brain (hardware) remains the processor and a physical part of the ‘body’ and the processing is controlled by the technology (the programming), but technology’s processing of information in the brain *could give rise to a mind*. An implicitly human(-like) – by definition posthuman – consciousness is therefore created through the body (the digital brain) and the technology (the programming). Naam’s own research, and his focalisation of this episode through a previously human consciousness which has been transferred to a digital medium, and has surpassed recognisable human norms in ability, suggest that technology can ultimately *create*

something human. The human programming controlled the hardware and the processing of the inputs *apparently* gave rise to a mind. There is still a three-way division of technology/body/mind in this description, and not until technology learns to program itself by thinking for itself, and thereby remove any aspect of the human consciousness, can we move beyond our current limited posthuman existence. Therefore, as Naam suggests, the singularity – or moment when an artificial intelligence surpasses human intelligence – is further away than its proponents expect (2014, np). However, somewhat ironically, the greatest aspiration for posthuman artificial intelligences seems to be an unquestionable humanness in their thinking and behaviour: even in the technologically-rich twenty-first century the human can be seen to remain dominant and the ultimate miracle of creation.

The current Catechism of the Catholic Faith sees the body and soul as one, but holds that ‘soul’ refers to the “innermost aspect of man, that which is of greatest value in him, that by which he is most especially in God’s image” (Vatican, 2003, para363), and Calvinist Protestant thought links “the soul to the image of God and affirm[s] its immortality” (Helm, 2004, p129). While Descartes does not distinguish between the mind and the soul,¹³ much philosophical and scientific writing focuses on the notion of the mind with its clearer association with processes of the brain, whereas identity can be seen to be situation in what is labelled as the ‘soul’ in the Western Catholic and Protestant religious discourses, and in Hindu concepts of reincarnation alike; the less tangible ideas of the religious soul are, like the mind, seen as distinct from the contingent body. Seeing this in young adult fiction, Flanagan examines the idea – presented in Tanith Lee’s *Metallic Love* (2005) – that it is possible for a soul to emanate from a mechanoid body. She concludes that rather than undermining the representation of posthuman subjectivity, this is allied to the posthuman view of subjectivity as fragmented and plural (2014, p53). In developing her argument with the support of late-Victorian neurological thought which looked towards a mechanical equivalent of consciousness, she sees the potential of the emergence of a soul as reinforcing the posthuman idea which rejects “the idea that consciousness is at the heart of human subjectivity” (2014, p57). Bearing this in mind, I believe that the worlds and language of Naam’s work invite a brief religious reading which supports my trialist model.

While the posthuman downloading of a brain to a technological medium seems to create a digital essence of a human which could be viewed as a soul, religion is rarely considered in

¹³ see Pasnau (2007) for a fuller discussion of the terminology.

connection with young adult posthumans. Rather, when consciousnesses are transferred into a new body the protagonists embark on their personal (re)discovery of self. However, alongside the development of Nexus 5, the fictional North America of Naam's *Nexus* and *Crux* both contain a strong spiritual element with the characters and plot linked to groups of Buddhist monks in the East. Unlike the students, who reverse engineered the government's version of Nexus to allow them to embed the technology permanently to create a link between the mind and the body, the monks integrate the previous version into their minds through meditation. The integrated version then evolves naturally over time allowing them, in the language of Nexus 5, "to merge into something larger and more sentient than they were individually" (2012, loc4747). The hope for natural growth echoes Helena Blavatsky's somewhat Romantic nineteenth century theosophical beliefs that it is possible for the human to evolve to a position of being a united brotherhood,¹⁴ but in the monks' case such evolution occurs through the merging of mind, body and technology.

This use of religion or spirituality is an unusual feature of these texts, but through the act of meditation, the monks have created what technology achieved in my posthuman trialism. In my trialist model of posthumanism, technology can be allied either to spirituality or something – like technology in some users' understanding – beyond human comprehension. As Haraway describes "machine skill" within the cyborg ceasing being a sin and becoming "an aspect of our embodiment" (1985/2006, p146), what she labels as a 'skill' could be seen to be a part of the less tangible spirituality demonstrated by the older monks. The most experienced monk explains that the process of embedding the technology is for anyone, but that it takes hours of daily meditation for months, or even years and therefore, while it is available to anyone, they have to "expend the effort to grasp it", something most people will not do that (2012, loc4937). The technology-based Nexus 5 therefore becomes a shortcut for the effort, and the technology – as in many cases the primary reason for the creation of a technology – simply facilitates a lengthy or repetitive process. When the monks do use the freely available Nexus 5, Kade realises it is the younger ones who pick it up faster than the older ones, and that they "don't need the old ones as teachers" to show them how to meditate and achieve a state of greater consciousness; Kade's technology has, in a typically posthuman way, "undermined their authority [and] inverted the hierarchy" (2013, loc2123). Even when the enhanced abilities are available to all the monks, technology has empowered the younger generation and destabilised the established aetnormativity of the child/adult imbalance as the

¹⁴ see Goodrick-Clarke (2004) for a fuller discussion of the Theosophical movement.

young adult narration shows how the children have taken over. Although a regular feature of young adult literature, technology provides a new means of redrawing power boundaries.

I have previously argued that humanity is an essential part of any posthumanity, and through these two texts, it is clear that both the human mind and/or human body can have different relationships with the technology of the posthuman. Jaques's recent exploration of the posthuman in children's literature concludes that the "various types and forms of agency" seen in the texts she examines provide "a kaleidoscope of the fractured, hybrid, shifting and powerfully unstable identities that pollute the boundaries by which the human and non-human are constructed" (2014, p238). My trialist philosophical approach to the posthuman is not a conclusion, but a beginning: it helps to examine the ways posthuman identity can be constructed as it allows comparisons between different posthuman forms to be drawn, even if the technological strand is vague and obfuscated, or even something supernal. While Naam's fictional representations introduce the issues and exemplify my model, they also fulfil his aim of considering scientists' responsibilities to society, and implicitly also demonstrate authors' responsibilities to their readers. Through both novels, his intention to look at the impact of such technology on society and humans is met: readers who have and use technology as a core aspect of their lives – whether or not it is physically integrated like Nexus – are affirmed in their actions, while also being compelled to consider their identity as seen by those without technology. Conversely, more technophobic readers are given an insight into its potential. While Naam may not seem to offer a reassuring insight, real-world technological developments continue apace and, as he intimates, understanding them, rather than fearing them through ignorance, must be a preferable position for society and the individual. The trialistic split could provide a reassurance to both technophobes and technophiles as it allows both the human and technological aspects of the posthuman's agency and subjectivity to be seen and appreciated from a distinct third perspective.

The approaches to the posthuman outlined and exemplified in this chapter alongside my proposals for the postchild and a posthuman trialism provides the foundations for a framework to deconstruct the nature of any posthuman and to question aspects of its identity and the way its identity is shaped, created or experienced. As Flanagan sees the posthuman "as the means for producing a new understanding of human selfhood and experience – one that emphasises the plurality and fragmentation of posthuman subjectivity" (2014, p3), so my model of posthumanist trialism offers a way to consider the source of both the fragmentation and the plurality of their identity. However, while the strands of the posthuman's mind, body

and technology may be considered separately, for the figure of a fictional (or even real-world) posthuman to survive, to be empowered and to gain agency there remains no doubt that the three strands must be reconciled and unified.

CHAPTER IV: REPRESENTATION

In this chapter, I consider the different body types I identified in Chapters I and II in separate sections. I start with the modified body, or cyborg, as the most familiar posthuman to readers of science fiction. *Mila 2.0* and *Cinder* demonstrate ideas of discrimination, might and agency which are applicable to all the posthumans, and provide a baseline for the other posthuman bodies. From here I move to consider the cyberbody, whose provenance is purely fictional, but which develops questions of what it means to be human. I start with two texts which use technology to transfer human consciousnesses to chimpanzees, which demonstrates human concerns without the complications of technology. To illustrate that Eva and Rachel's searches for identity are not caused by their new animal bodies, I also include *Airhead*, in which a consciousness is transferred to another human body, in this section. The nature of the cyberbody helpfully probes the question of what it is to be posthuman and, as embodiment is a clearly defined factor in the cyberbody, I have broken it down still further. *Eva, Rachel in Love*, and *Airhead* all show consciousness transferred to an existing organic body and introduce more complex issues of implicit respect for another living being; however, in *The Adoration of Jenna Fox*, Jenna's consciousness is transferred to a wholly manufactured body which means attitudes towards the body are different and more allied to the representations of the modified body. Human consciousness is transferred to a new body in the cyberbody, and in the next section I consider *iBoy* in which technology is transferred into the human body. Tom's experiences as *iBoy* touch on aspects I identify in the modified body and cyberbody and complete the set of Peters's body types.

Although the first four sections of this chapter use the idea of the postchild to consider the posthuman characters, the final two sections focus specifically on exemplifications of the postchild. I start by looking at the figure of the geek, in which technological ability is embedded (unlike the technology itself in *iBoy*) as something recognisable in the real world. From here I move to the millennial body in *Hex*. I finish with *Hex* as it is set in the distant future and suggests what the millennial body might look like in two hundred years' time, rather than considering the representation of any wholly recognisable technology-using adolescent in the world today.

THE MODIFIED BODY, OR CYBORG: *MILA 2.0* AND *CINDER*

While the process of maturation, or move from the solipsistic to intersubjective, of many young adult novels is frequently examined (McCallum, 1999; Trites, 2000; Bradford *et al.*, 2008; Pinsent, 2016; Flanagan, 2017), the eponymous protagonists of *Mila 2.0* and *Cinder* are already fully functioning members of their societies. However, they are obliged to reassess their identities and subjectivity, as Mila discovers she is a cyborg and Cinder is forced to confront the fact that she is “36.28% not human” (Meyer, 2012, p82). Bakhtin’s essay *Discourse in the Novel* takes the assumption that “verbal discourse is a social phenomenon – social throughout its entire range” (1981, p259), seeing language to be “conceived as ideologically saturated” (1981, p271) as its starting point. His idea that language is dialogic, always being interrelated to all the strands of which it comprises, provides the foundation for exploring the dialogic creation of subjectivity as “[c]oncepts of personal identity and selfhood are formed in dialogue with society, with language and with other people” (McCallum, 1999, p3). However, the interrelationship can be seen not only to be with others, but within the self between the three strands of the triallistic posthuman. The distinction of voice within a single character exemplifies McCallum’s description of adolescent fiction’s “subtle and deeply inlaid models of selfhood [...] which are not expressed overtly by means of philosophical, moral or sociological discourses” (1999, p260). In both *Mila* and *Cinder* trying to come to terms with their cyborg identities, there is a clear internal three-way conversation between what they believe their minds to be, their bodies (whether biological or technological) and the technologies which controls their mind and/or body.

Despite the technological title *Mila 2.0*, reminiscent of a software upgrade, the reader is immediately introduced to a recognisable twenty-first century Midwestern US world narrated by Mila. She recollects fragments of a memory in which she was injured while riding a horse and her father was killed in a fire. Reflecting on her memories, she wonders why some “played so vividly behind my eyes, like DVDs complete with sounds and smells” (Driza, 2013, loc85), and when faced with a horse riding jump, her “hands lashed out, quicker than I even knew I could move” to control the horse (loc111). As she lands successfully she acknowledges that even though she “hadn’t conjured up the past”, she did feel “more alive than I had in weeks, like the whole world had burst into high definition” (*ibid.*). Within the context of the narrative, these examples are explained as being heightened responses to the trauma of the fire and emotional exhilaration; however, in isolation, the use of the technology-based imagery of the high definition DVD and description of her reactions illustrate an

unconscious self-awareness of her posthuman nature. Her embedded technology presents the memories to her consciousness and facilitates her physical actions, illustrating her posthuman trialism. However, the understanding of her self-awareness is only available to the reader and to her when she learns she is a cyborg and she has to reassess her identity.

Having been presented with the very human Mila through her own experiences, the reader shares the reformation of her notion of self and her identity within her world when she is thrown out of a moving van and her two friends see a cut on her arm. Immediately, the three of them “stared at my arm. And stared. And stared.” (loc918): the use of the minor sentences and repetition highlight the tension between the human and the technological which Kim Toffoletti describes as being “indicative of the posthuman [...because it...] disrupts traditional understandings of selfhood, identity, the body and reality” challenging “an established set of values based on dialectical thought” (2007, p4). As Mila’s narrative explains

My arm wasn’t bleeding at all. There was a huge, gaping tear in my skin, but no blood. No blood. No blood because instead of blood, a thin film of red had ruptured, allowing some disgusting milky-white liquid to leach from the wound and trickle down to my elbow. And it got worse. Inside the cut, inside me, was this transparent tube with a minuscule jagged fissure shaped like a row of clamped teeth. And inside that? Something that looked like wires. Tiny silver wires, twisted like the double helixes we studied in biology (2013, loc928).

Beyond the script-disrupting cognitive estrangement of the reader’s – and Mila’s – expectation to see blood, Mila’s *need* to see blood indicates a fundamental assumption of being human to be that humans bleed. Flanagan describes posthumanism’s “ability to subvert and destabilise dominant ideological paradigms of human subjectivity and existence” to be one of its most “appealing aspects” (2014, p37), and this instant disrupts the traditional understanding of what it is to be human for both Mila and the reader. The simile used to describe the wires looking like the double helixes conjures up the images of DNA strands and is a cruel comment on Mila’s need to see something human within her technology as she attempts to accept something being non-human about herself. In the same way, her use of two similes involving human characteristics to try to explain an unfamiliar concept to the reader – and implicitly herself – emphasises her human/non-human uncertainty as she sees “the alien parts protruding” (loc980) from her arm. The unified subject is unceremoniously divided into its constituent parts with the mind’s understanding of who Mila is at odds with her body’s physical appearance of what it is. However, unlike the ideas based in traditional dualistic thought that the mind is where identity is situated and subsequently controls the body, with the

body not contributing to the formation of subjectivity (Flanagan, 2014, p100), Mila's body's otherness is central to redefining her selfhood, and demonstrates Pramod Nayar's view on posthuman embodiment as being "essential to the construction of the environment (the world is what we perceive through our senses) in which any organic system (the human body is such a system) exists" (2014, p9). Although Mila no longer knows *who* she is, the embodiment of technology – the third aspect of her posthumanity, literally laid bare – is beginning to construct and shape her new identity, sense of self and understanding of *what* she is.

While the reader shares Mila's experience through the first-person narration, at this early stage of the novel they are unable to judge the narrator's reliability; through the factual recount, the reader is likely to adopt Mila's subject position and share in her confusion about her body. Flanagan argues that first-person narration limits a text's ability to "destabilise in a radical fashion the humanist concept of a unified and autonomous self", but her emphasis is placed on the "role of the body in the reconstruction of [...] subjectivity" (2014, p114) in Robin Wasserman's *Skinned* (2009) and Mary E Pearson's *The Adoration of Jenna Fox* (2010). Rather than limiting the potential for the text to *destabilise* the unified humanist self, I see allying the reader with the narrator as a narratological means by which the reader is challenged to consider the *ready acceptance* of the unified humanist self. Flanagan's reading sees the emphasis on the role of the body coming about through the deep sense of loss her characters experience when they realise that their human bodies have been replaced by synthetic ones. However, in Mila's case the sense of loss comes about as she discovers what she believed was her human body is a manufactured body. Although this is a subtle difference, considering the effect on the fictional body by the aesthetic appeal to the reader to empathise with Mila's changing subject position is more powerful than Flanagan's reliance on descriptions themselves.

Beyond her internalised understanding of self, at the same moment at which her human identity and understanding of selfhood is shattered, her social identity is also fragmented: Mila's friends' reaction show she has become othered and she is moved outside their typical teenage human society with its concerns over school and boyfriends. On discovering her otherness, Mila returns to what she hopes is the safety and security of home but seeing her injured – or damaged – state, Mila's mother gives her an iPod to listen to which "explains everything" (loc1021). Driza's choice of an iconic piece of technology, one which revolutionised the western world's listening habits, as the medium through which Mila learns about her own new technology, rather than a face-to-face conversational exchange, makes her

mother seem mechanically detached from Mila. However, the decision to use the recording is not because her mother is unaware or does not understand what Mila is, as she repairs the technology of Mila's arm while Mila is listening to the explanation. Although Mila is learning about herself dialogically in relation to others, she is doing so asynchronously through the recording. The fragmented nature of the asynchronous recording means that – as with the uncertainty which disrupted her identity when she was injured – she is again obliged to question her selfhood and who she is: her posthuman identity is being dictated to her, rather than experienced or lived. Through this, Mila realises that she loses the subjectivity which she had as a human, and now has a new position in her society.

From the recording, she also learns that Mila is an acronym – rather than a combination of the two human names 'Mia' and 'Lana' as she understood – standing for "Mobile Intel Lifelike Android", and that she is an "experiment in artificial intelligence [...] to produce a supercovert robot spy" (loc1036). Making reference to "the MILA 2.0", Mila's own narrative interrupts the recording, "The! THE! Like I was an object, a thing" (loc1043): along with her self-defined apparent loss of subjectivity, her distress at the use of the definite article resonates with feminist accusations of objectification. This is also seen later in the novel when a soldier who captures her describes her appearance as "pretty girl-like" and, as he touches her, "feel[ing] girl-like too. All soft and stuff" (loc3045). Mila's powerlessness is typical of a child in adult/child relationships and frequently found in texts in which adults choose to make children posthuman, and it is also apparent through her being given her identity by a figure of authority, and not being in a position to challenge it or shape it for herself. As she listens to the iPod, she learns that apart from her superhuman physical and mental abilities, her technology can "evoke appropriate emotions, based on environmental stimuli" and she shows her emotional responses are another aspect of what she believes it is to be human, commenting: "Of course my emotions were real. I felt things all the time" (loc1051). In a satisfying twenty-first century parallel to Descartes's *cogito ergo sum*, Mila's declaration suggests a sense of *sentio ergo sum* as her embodied experiences are all real to her and therefore make her human. Her refusal to accept her experiences could be programmed responses prioritising her mind to be what makes her human over what she is being forced to accept as her posthuman body. Flanagan suggests that "agency" – particularly in female subjects – "can also be achieved through embodiment" (2014, p5), but because Mila's response is programmed, it additionally exemplifies the notion of a posthuman trialism via the separate strands of her programming, her physical body and her (human) conscious ability to reflect on both of them. Interestingly, as Flanagan observes of *Pretties*, the word

'programmed' is applied to a human character to describe the cultural evolution of people to make physiognomical judgements about others (2014, p111) which also implicitly suggests the potential to use my three-way division to consider humanist models, while demonstrating the necessary linguistic flexibility and fluidity in which a technological word is used to describe a human process in a posthuman blurring of boundaries.

While I maintain that the technological stand of my trialistic approach must be considered, the emphasis on the material body aligns with current posthuman scholars. Flanagan describes such scholars as "active campaigners for a form of posthumanism that embraces embodiment", since the material body also allows for the "destabilisation of the historically privileged humanist subject" (2014, p102). The boundary-challenging figure of the posthuman destabilises the human subject by its mere existence, and I contend that in examining the figure of the posthuman there is more to be foregrounded than its embodiment.

Along with the need to have blood in her veins and to feel, memories are also an important part of what Mila feels it is to be human and have a human identity. As she learns that "MILA 2.0 was physically indistinguishable from a sixteen-year old girl", she realises that she had been 'born' – her use of quotation marks mocks the biological connotations of the word – as she is at present, which makes lies of all of her memories of being younger (loc1060). As Nikolajeva notes, with contemporary authors addressing the issue of adolescents' unstable identity, "individual and collective memories play a significant role" in trying to "understand one's place in the world" (2014, p155). Mila divides what she thought was her humanness from her new posthuman reality as she considers "[m]y entire past, everything I'd understood to be true about my life, my family, what had formed me as a person. Stripped away with one simple word. Programmed." (loc1111). However, she refuses to accept the loss of her past, protesting "I was human. I *was*." (loc1060; original emphasis); despite her insistence, the use of the past tense could suggest the incipient acceptance that she is no longer human. The understanding that she has not been born, but created as a posthuman seems to be the most difficult aspect of her posthumanism to reconcile within herself, despite her 'human' understanding and emotions having been manufactured.

Having heard the recording, Mila then has the opportunity to question her mother, Nicole, who reassures Mila that she is "real" (loc1094): realness is thus made synonymous with being human, and is proposed as the motivation behind Nicole's theft of Mila in the first place. She assures Mila that she is not "just a weapon [because] you're too human for that" and "[you]

deserved more than what the army had to offer” (loc1103). What made her “too human” is not made explicit, but left to the reader to infer from their own understanding of what it is to be human. However, Nicole’s description ultimately does little to clarify Mila’s humanness, for not only does the very fact of the theft mark Mila as property, but Nicole also describes herself as “the bioengineer who helped create you”. Mila’s struggle to accept either who or what she is, when the identity of the person she has considered to be her biological mother but is her manufacturer is unstable, is therefore quite understandable. That this exchange alters the relationship between them has is dramatised when Mila narrates that “Mom – no, Nicole – sighed” (loc1111). For Nicole’s part, despite her knowledge of Mila, she cannot determine whether her ‘daughter’ is an object or a person, and the distinction between the two – and their roles in their creation of her identity – is consequently blurred. The posthuman confusion of boundaries is therefore not only seen in Mila’s character, but also in her mother/creator’s and in the relationship between the two of them. As none of these tensions are resolved, the posthuman challenge to humanist notions of identity is – ironically – embodied in the text.

Flanagan observes that narratives which interrogate humanist concepts of subjectivity are often “focalised from the perspective of a non-human character, and it is the immediate ‘otherness’ of this perspective that allows for the deconstruction of a coherent and autonomous sense of self” (2014, p20). While Mila’s experiences are narrated by a non-human character, the narration starts from a human perspective and the shift from human to non-human (while made constantly from Mila’s character’s perspective) early in the novel, rather than being a revelation at the closure of the narrative (2014, p59), demonstrates Suvin’s cognitive estrangement through offering “an imaginative framework alternative to the author’s empirical environment” (1979, p8). Although the shift implicitly indicates the author’s and reader’s empirical environments are the same, in *Mila 2.0* the estrangement is amplified as the narrator is also cognitively estranged and the reader therefore shares the sense of bewilderment and confusion that Mila as subject/narrator endures. Flanagan sees the apparent focalisation of a non-human from a human perspective as a limitation because, via this technique, “readers are prevented from accessing the interiority of these posthuman characters in a manner that might comprehensively explore key issues associated with posthumanism” (2014, p59). However, if key issues of posthumanism are seen to be different cognitive processes, agency within a posthuman world, embodiment, and the notion of selfhood, the reader is forced to confront them in the process of learning about Mila’s posthuman identity with her in the course of the narrative. I see Driza’s defamiliarisation of the reader as both intentional and a necessary technique through which to confront these

concerns. Nikolajeva discusses the differences between identification and empathy and argues that the sophisticated reader should be able to “think thoughts that they do not believe in and thus empathise even with profoundly alien characters”, suggesting that the detachment from the “mind you are reading” will also allow the reader to develop the desirable social skill of empathy more successfully (2014, p86).

Mila’s need to discover her identity could reflect the concerns of the typical young adult reader who Patrick Hogan sees as developing empathy while reading, “based on some tacit comparison of experience” (2003, p144). Hogan believes that the reader’s memories and experiences are immediately mapped onto the characters in such a way that it is possible for the reader to identify their perspective in the memory with the character’s perspective (*ibid.*). However, as he continues, if Mila’s experience is so far removed from the reader’s that the potential to map memories and experiences is blocked, the reader can still find themselves feeling “compassion for those who are ‘more sinned against than sinning’” (*ibid.*). Through the accounts of Mila’s treatment at the hands of her mother and the government, the reader is encouraged to empathise with her as the ‘out-group’ within her society. As the narration anticipates the reader’s engagement, so it builds on a teenage reader’s likelihood of engaging “with an in-group subject, an adolescent character whose goals they at least partially share” (Nikolajeva, 2018, p88), presumably – or perhaps especially – if they are posthuman. As Flanagan notes, this is a “frequent strategy” to “interrogate conventional assumptions about ‘humanity’ and the conditions used to include or exclude subjects from this category of being” (2017, p31). The reader is likely to perceive themselves as the in-group, but the book’s societal construction sites them, allied with Mila, as the out-group: they are therefore forced to identify against themselves, and put themselves in the posthuman position of otherness.

As Mila begins to come to terms with her new posthuman identity, she endeavours to continue living her ‘normal’ human teenage girl life acknowledging that “[o]ne minute I was a normal girl, the next... a monster” (loc1140), repeating “I was some kind of monster. Part living cells, mostly hardware. All freak.” (loc1123). She applies the same label to herself that Dr Frankenstein uses of his creation, and which is used by the monster itself in a great display of self-awareness, in a reflection of the continuing ideological abhorrence of combinations of the technological and biological. However, unlike Frankenstein’s monster – who wants a monstrous female partner to confirm its otherness in their solidarity– Mila’s apparent humanness reverts to the magical groom motif instilled through tellings of fairytales. She sees the prospect of a human boyfriend restoring her human identity in what she calls a “twisted

version of *Sleeping Beauty* [...as...] Hunter's kiss would make me human" (loc1319).

Despite implicitly knowing that her emotional response to Hunter is manufactured, Mila's posthuman programming paradoxically makes her feel more human. The three-way division between her body, mental processes (or programming), and less clearly defined ability to feel her humanness is clear. Although a typical intertextual feature of dystopian novels, the reference to fairy tales in this instance shows that they were included in Mila's programmed memories, and that the possession of such cultural capital is fundamentally important to passing as a human. The meta-textual appeal to the reader's knowledge of *Sleeping Beauty* also offers a wry ideological comment on the importance of knowing traditional fairy tales in a world of multimedia retellings of classic stories.

Playing on the site of tension between human and machine, Mila's attempts at reconciling what she is are undermined when she is recaptured by her military creators: the leader of the programme attacks Mila's greatest insecurity by countering Nicole's assurance of her realness, telling her "no matter what [Nicole] told you – you're not human. You never will be." (loc3125). Even though neither Mila nor the reader learns why Nicole sees her as "too human", the reader can infer that it is connected to her behaviour and emotional responses. In contrast to Nicole's empathetic response, the man mockingly referred to as Mila's 'father' remains emotionally detached, seeing – and describing – her as nothing more than a machine: while this makes it easier for him to subject her to inhumane training programmes, it further reinforces Mila's yearning to be human. Mila self-created desire for the technology she embodies to be as human as possible reflects contemporaneous real-world developments, such as the aspirations of programmers and developers to create intelligences which cannot be distinguished from their human counterparts, and to create machines which provide human-like care and companionship for people. The shift in focus from the human aspects of Mila's existence to her technology is a key characteristic of posthuman trialism, as all the strands are crucial, but can be prioritised both internally and externally at different times.

At the military facility, Mila is obliged to confront her technology with her human mentality and understanding, but she initially seems to be more concerned with her body image: describing learning about her technological capabilities, she says "the more I learn to use them, the less human – the more ugly – I feel" (loc3612), conflating appearance and humanness. When she sees an image of her body projected on a screen she initially sees a human body, but continues, "No, not a human body, I realized with mounting horror. My body" (loc3647). The importance of posthuman embodiment is here illustrated again, and as

her human-programmed posthumanity considers her body, Mila sees the “parts layered underneath the surface that spoke of things that weren’t alive; my ugliness, all spelled out and irrefutable” (*ibid.*). Both the revulsion caused by her own body, and Mila’s inability to accept either what or who she is, echoes the very human issue of body insecurity suffered by real-world (often female) teenagers, an issue perpetuated and exacerbated through traditional and social media.

When Mila is confronted by the upgraded version of herself – Mila 3.0, or Three – she is put in a unique position of literal self-reflection: they share the same appearance, but Three is “without [Mila’s] overreactive emotional garbage” (loc3175). In this description her ‘father’, Holland, encapsulates Mila’s military disadvantage and the elements of her being that made Nicole see her as ‘human’. Mila’s first-person narrative, and her depersonalising references to Three as a number rather than a name combine to present Three as non-human, an effect reinforced in the description of her as a “gruesome thing” (loc3201), complete with its connotation of monstrosity. However, facing Three, Mila is obliged to address her own identity because seeing Three makes it “harder for me to cling to the hope that I was real” (*ibid.*), a formulation which once again renders real-ness synonymous with being human. In her responses to seeing Three, Mila’s revised notions of self as posthuman are confirmed. The importance of embodiment is seen as Mila’s physical appearance is shown to be a key feature of judging what Mila is when Three, as a cyborg accepting its own identity, tells Mila that “You can’t tell by looking at you that you’re flawed” (loc3288). Three’s comments exemplify my tripartite division of the posthuman Mila, as her ‘flaw’ – presumably the ‘emotional garbage’ – is beyond her embodiment and therefore part of what is understood to be her (human) mind, a mind which has, in turn, been created by her programming.

At the military installation, Mila’s hope of clinging to what she believes makes her human wanes as she is forced to fight herself – both literally and metaphorically – in a fist fight with her double, Three. She acknowledges that with every punch she throws she becomes “less of the girl Mom had risked everything to save and more of the monster Holland desperately hoped for” (loc4066). Inverting Dr Frankenstein’s hopes of his creation, Mila’s becoming monstrous mirrors the technophobic views of H. Joseph Schwarcz on children reading “machine books”. He believed that while a few “will not hurt the child. Many will”, as there are “still so many stories written that offer the child more wholesome objects for identification” (1967, p95). Although such views might seem to be outdated today, Applebaum’s 2010 study on technology in science-fiction sees recent children’s literature as

resolutely technophobic with “adults’ reluctance to embrace the changing face of childhood” meaning that books written for young people are a “a socialisation agent serving adults’ agenda”. However, she does acknowledge that the real-world readers “may be well aware of, and even resent, this manipulation” (p160). If real-world readers are empowered, technologically-able postchildren, this manipulation will be both apparent and abhorrent.

Ironically, it is ultimately Three’s technology which – acting in a human and empathetic manner – is able to pinpoint the problem of Mila’s identity as it realises, or calculates, the difference between them: “I’m content with what I am and you’re...not” as “there’s nothing wrong with being an android [...] unless at one time you thought you were human” (loc4531). Three’s insightful comment prioritises human over both posthuman and machine, suggesting a ‘natural’ hierarchy in which humankind is still dominant through its creation and programming of the posthumans. As Jaques writes that “stories offer potentially radical destabilizations of hierarchies of being which can be read in the light of posthumanism’s interest in ontological mutability, while at the same time often containing that very subversion in ways that reinforce hegemonic codes of human dominion” (2015, p5), so *Mila* can be seen to conform to McCallum’s argument that “adolescent fiction is, on the whole, dominated by humanist conceptions of the individual, the self and the child” (1999, p257). Even in a posthuman world, humankind’s dominance is paramount, and remains the *status quo* which both humans and posthumans accept and perpetuate in fiction. It is only when posthumans develop, create or give birth to posthumans or postchildren that this fundamental belief can ultimately be challenged.

Mila is described by Holland as “nothing more than an extremely accomplished mimic” who cannot tell the different between being a human girl and a replica (loc4803). However, in the same way that Jaques sees posthuman agency through the materiality of the puppet Pinocchio as not only mimicking but also parodying the human form (2014, p217), seeing Mila dismissively as a series of algorithms designed to learn and imitate human behaviour and human consciousness leads to philosophical questions of the very nature of consciousness. These remain debated questions with recent contributors to the discussion ranging from Thomas Nagel’s 1974 influential essay arguing that subjective experience and consciousness cannot be understood from a simply physical perspective, to Harari’s 2016 explanation of what consciousness is when humans and animals and machines are compared (p123ff). As Mila considers Holland’s comment and tries to understand who and what she is, in an embodiment of *cogito ergo sum* the act of thinking about the questions of consciousness

leaves her identity as variable as any real-world human. Her attempt to understand is developed as her Mom explains that “No two people ever view the world from exactly the same perspective, understand things the same way, human or not” (loc5287). Her Mom’s understanding of this reinforces the difficulty of creating a stable identity and is in keeping with Haraway’s idea that binary oppositions and dualisms are challenged and destroyed in the figure of the cyborg (2006, p143). Mila’s continual changing of labels used to identify her mother also shows how she continues to try to define herself in relation to people around her, and this adds to the confusion of her unstable identity.

Reflecting on events at the end of the novel, Mila concludes the one thing she has learnt from her experience is that “fighting the reality of my capabilities did me no good [and] it was better to just accept them” (loc5445). As I see in other representations of posthumans, it is only when posthuman figures are able to unite their technology with the humanness within themselves that they are able to become fully functioning posthuman members of a posthuman world, regardless of whether such a world accepts them. Considering the body image issues raised here, Flanagan also refers to this need for unification in her exploration of Cory Doctorow’s human protagonist Anda of *Anda’s Game*, a frequent player of online computer games (and in my postchild labels, a geek) concluding that “Anda can only achieve intersubjective agency when she is able to unite the two disparate elements of her subjectivity (the virtual and the real)” (2014, p119).

In contrast to Mila’s discovery that she is not the human she believed herself to be, Cinder knows that she is not human and her stepmother (in accordance with the fairy tale) and society constantly remind her of this. Regardless of Cinder’s human emotions and sarcasm, when she describes her retinal display as “helpfully” telling her she was losing communication with her foot as she replaces it (Meyer, 2012, p6), her self-awareness that she is not human and the concomitant need to hide her cyborg nature from the world means that she too has to reconcile her identity. Unlike Mila who is only presented as a functioning member of her human society, Cinder – as a cyborg – is already a functioning member of her society proud of being the best mechanic in New Beijing. However, it is only when she fully understands and is able to reveal the truth about her identity that she is able to fulfil her potential: as Casey Cothran writes, “the female hero can save or transform her world only by revealing a truth that she believes will make her an object of public contempt” (2014, p131). Cothran argues that to do this the hero must cultivate a self-confidence and put herself ahead

of others, and she considers the reader wondering whether contemporary authors are “responding to real-life anxieties of twenty-first century women” (*ibid.*).

Mila has to unite the strands of her identity to accept her own otherness in a human world, whereas in Cinder’s society the onus is on humans to accept the cyborgs’ otherness, and accept their own place as humans in a posthuman world. The humans fail to do this, and their implicit problem is the recurring fear of new technology or “[p]erceptions of technology as a corrupting force” (Applebaum, 2010, p1). However, as Haraway argues, the figure of the cyborg can cause society to embrace the “skilful task of restructuring the boundaries of daily life” (2006, p147). Cinder’s self-confidence in who – or what – she is is the first step in defining and asserting her posthuman role in her posthuman world, an assertion which helps to challenge society’s prejudices. Through Cinder’s challenge, Nayar’s idea of the importance of posthuman embodiment in the construction of the world perceived through our senses is furthered: firstly, as the posthuman helps to construct the world through the way people understand and interpret what they perceive, and secondly as the posthuman self needs to be defined in relation to the environment – or ‘posthuman world’, as Featherstone and Burrows describe it (1995, p2) – in which it lives.

In experience and language redolent of discrimination throughout history, Cinder explains that the bakery “didn’t serve cyborgs” (p19), that cyborgs are told to believe that they had been “given a second chance at life by the generous hand of the [human] scientists” (p28), and she is dismissively referred to by her stepmother as “your kind” (p63). In these descriptions, the prejudice – and prioritisation of humans – can be seen to be paralleled to intersectional discrimination based on race, gender, sexuality, and traditional ideologies of power associated with both colonialism and parent/child relationships. In the cyborg, the power tension is the same as tensions that have permeated the real world for centuries. To her society, Cinder is an outsider as she is not human, and as “[l]egally, Cinder belonged to Adri [...] and so too did her money, her few possessions, even the new foot she’d just attached” (p24). She, and even her body, are simply objects. Mila has to learn that she is an object, but Cinder already knows this, and part of her identity is made up by continual reminders of her powerless position in society, subservient to the prioritised human ruling elite. Jennifer Mitchell takes another approach to this arguing that Cinder should be read as queer, because “such a reading acknowledges the importance of non-normative narratives in terms of their bodies, selves, romances and, ultimately, activism.” (p54). While a queer reading could be justified in terms of the non-normative ideology, it is less convincing when Mitchell’s list of features are

considered, since they apply to any disenfranchised out-groups. From her list, bodies and selves are aspects which are applicable to the posthuman and a posthuman reading of a text through the posthuman's embodied physical differences and concomitant othering. Similarly, activism cannot be the preserve of a queer reading, as the posthuman characters' actions – especially Mila's militant rebellion – demonstrate a clear agenda to effect a social change as part of their understanding of self.

Flanagan hopes to define posthumanism “in relation to humanism rather than situating it in opposition to humanism” (2014, p14), but I see representations of posthumans determining the relationship through opposition. One example can be read as two different oppositions: while I read Cinder's society's attitude towards her being based on her ontological posthuman otherness, Cothran implies the prejudice is just down to her “different body” (2014, p143), and that as a result of this Cinder has internalised their criticism. Although Cothran's view gives rise to convincing ideas about issues of body image – resonating with concerns for and about real-world teenagers – Cinder sees herself as “A girl. A machine. A freak” (p126), which echoes ideological concerns visible in all the posthuman body types in terms of the unnatural combining of technology and the body. Cinder separates the human and technological aspects of herself, and it is only when they are put together that she is a freak, and her identity is confirmed. Cothran argues that it is society's attitudes to her which have “influenced [her] psyche” (2014, p144), but Cinder's focalisation – seeing her hands and feet as “metal monstrosities” (p32), describing herself as “looking at a machine” not a girl in a mirror (p78) and learning that she was “36.28 per cent not human” as she discovers pieces of her skeleton are also synthetic (p82) – stress her posthuman technology beyond the superficial appearance of her body. Unlike Mila – who was created as a posthuman, programmed technologically and led to believe through the human care afforded her that she was human – Cinder was born human and then *made* posthuman and her new identity “comes from what others have put onto and into her body, once again destabilising any notion of fixed coherence” (Mitchell, 2014, p55). The process of accepting their posthuman identities and their technology is very different but the outcome nevertheless needs to be the same, if they are to gain agency and subjectivity.

In the same way that Mila is forced to assess her identity when she is confronted with Three, the relationship Cinder has with, and the comments she makes about, Prince Kai's android (who she is repairing), and her own android companion, Iko, help her create her own identity. It is impossible here to ignore Jennifer Gonzalez's observation that any body “that is both its

own agent and subject to the power of other agencies” can be considered a cyborg body (1996, p268). The higher social ranking of humans is shown when a simile is used to show Cinder to be a possession belonging to her stepmother “as much as the household android” (p24). However, there seems to be more to Iko’s character as Cinder later explains – using humanly gendered personal pronouns – that “Iko’s been practising her sarcasm” (p36). Although the desire to be human is a common aspiration for technology, sarcasm and irony are higher functions of human communication and Cinder’s simultaneous understanding of Iko’s behaviour and desire to be more human enforces Cinder’s own humanness. Similarly, when discussing Iko’s quirky personality with Prince Kai, Cinder allies herself with humanity not technology through the dismissive comment that she “suspects a programming error” (p12), an effect amplified by her chuckled observation that “[a]ndroid reasoning could be so simplistic” (p31). Despite her public position, privately she acknowledges that Prince Kai’s android’s personality chip “had probably developed into something quite complicated after twenty years of service” (p195), and the way she treats Iko as her confidante shows her acceptance of and sympathy for technology. Although the android’s technology is not as sophisticated as Cinder’s, the body, the mind – or programming – and the more nebulous third strand of its personality (seemingly synonymous with self-awareness in the android), which makes it more human-like through its learning, are still apparent. Even though the androids are wholly technological creations, the three aspects of their selfhood point towards a tripartite identity and the flexibility of trialism as it can be applied to what might be dubbed ‘posttechnology’ too. Nevertheless, when Iko dresses up and applies makeup to herself to imagine going to the Prince’s Ball (from which androids are discriminatorily prohibited), the cherry lipstick creates a “horrible imitation of lips” (p193) ensuring that the perception of her having human characteristics remain checked and the established hierarchy of human – cyborg – android is not transgressed.

Although the Androids generally make Cinder appear more human, the relationship is inverted by Iko’s teenage girl-like excitement at Cinder’s invitation to the ball. In response to the news, Iko’s “fan was whirring like mad as if her processor could barely keep up with these revelations” (p136), and her technology offers a seemingly emotional reaction. The android’s emotional reaction highlights the decision taken by the scientists to make Cinder’s ‘brain’ monitor her blood flow to prevent her from blushing (p117): Cinder is rendered incapable of demonstrating a human emotion or, in Mila’s terms, weakness. Flanagan’s observation that “technological interference with the natural human body results in the diminishing of subjective agency, as individuality is all but erased” (p112) is true of Cinder, and she is

consequently made an outsider by the human scientists' operation. Ironically, in neither Mila nor Cinder are the humans' actions a form of punishment or control, as frequently seen in the actions of a powerful elite in technological dystopia, but rather an action based in self-interest or self-preservation. Making them both posthuman is a choice made, ultimately, for the humans' benefit to create a better ruler in Cinder and a more efficient weapon in Mila. Looking to technology for a solution, and treating Cinder and Mila as non-human tools, affirms the humans' hierarchical superiority which is compounded by having the experiences focalised through Cinder and Mila as their societies' outsiders. Hayles suggests that "if 'human essence is the freedom from the wills of others', the posthuman is 'post' not because it is necessarily unfree but because there is no *a priori* way to identify a self-will that can be clearly distinguished from another-will" (1999, p4). Despite Cinder's human elements and Mila's belief in her humanness, their posthumanity not only makes them subservient to humans, but confirms a technophobic bias as their technology takes away their human essence. Their isolation sets them apart as posthuman in a human world, a vision at odds with the view of posthumans as a part of a greater connectedness. Both Mila and Cinder have been made posthuman by their societies for their societies' benefit, even though technology offers the potential to empower the individual. In manufactured posthumans there is clearly a different set of challenges faced to establish their identity, in contrast to natural postchildren or posthumans who initiate their own enhancements. However, as Mila and Cinder gain subjectivity through understanding and accepting who and what they are, they are ultimately empowered.

Despite society's treatment of Cinder, a royal scientist acts as a guide – as in typical quest narratives – to her to help her understand who she is. However, learning about her heritage only complicates her identity further and, as she becomes an object of ever-greater public contempt, initially prevents her from fulfilling her purpose of saving the world. Cinder learns that not only does she have to accept the cyborg aspects of her identity, but also the fact that she originates from Luna – the moon colony – which separates her from the Earth and its humanity. Cothran reads *Cinder* as being about the need for the female hero to disregard her perception of "her culture's view of 'acceptable', 'normal', or 'good' in favor of an intrinsic, organic personal sense of identity" (p146). Cinder achieves a sense of personal identity despite the public contempt created by her cyborg body and Luna heritage, demonstrating the intelligence, courage, good breeding, and common sense which Perrault gives as the second

moral¹⁵ of the *Cinderella* fairy tale. Her achievement also reflects the challenges faced by real-world teenage girls in the twenty-first century, and offers a nod to the importance of fairy tales as cultural artefacts.

Regardless of her cyborg body and Luna heritage, Cinder wants to be human and she demonstrates her ability to feel, her desire to help, and her identification with humans throughout the novel. However, to succeed she needs not only to “embrace her intrinsic humanity, her intrinsic beauty, rather than using cultural standards as tools to determine self-worth” (Cothran, 2014, p146) but, like Mila, also to accept the technological elements of who and what she is. In the division of Cinder’s being into ‘beauty’ and ‘humanity’, Cothran implicitly sees a tripartite division, as there is more to Cinder than her technology-incorporating body. Although Cinder has the added complication that she is ‘postluna’, rather than just posthuman, the process of development and need for unification and acceptance is the same, and the representation of the posthuman fragmented subjectivity in both Mila and Cinder illustrates the focus of the narratives as being “on the process of becoming (rather than being)” (Flanagan, 2014, p127).

Ostry suggests that for a character to “succeed” they “have to come to an understanding of just where their self resides” (2004, p231), but in the characters of both Mila and Cinder the flexibility of the boundaries of posthuman trialism means that their self can be seen in their physical embodiment, their programming and/or technology, and their human(-like) understanding and behaviour. In the posthuman, the self cannot be pinpointed and this constant variability and flexibility is, by necessity, an inherent part of Cinder and Mila’s cyborg identities as technologically enhanced posthumans. Despite the characters’ difficulties in understanding their identities, the reader can tell which characters should be read as human(e) and which should be seen as inhuman(e). Even though the texts can be considered to be technophobic, it is the female (in a historically male genre) cyborgs who are the revered figures: their decisions (whether made biologically or technologically) and behaviour (whether or not their actions are technologically directed) which show real-world readers the importance of the individual, and their beliefs in a posthuman world surrounded by posthuman bodies. The widely held fear of technologically enhanced posthumans could

¹⁵ “Without doubt it is a great advantage to have intelligence, courage, good breeding, and common sense. These, and similar talents come only from heaven, and it is good to have them. However, even these may fail to bring you success, without the blessing of a godfather or a godmother.” from ‘Cinderella; or, The Little Glass Slipper’ by Charles Perrault collected from the online collection of folktexts, edited by D L Ashliman, University of Pittsburgh; retrieved from <http://www.pitt.edu/~dash/perrault06.html>

therefore be seen to be a fear of posthuman embodiment. It is possibly because the human body and its biological process have been explained and copied by science, that the use of technology within it seems to be a transgression. Therefore, when neuroscientists have a complete understanding of how the entire brain works and have been able to model it successfully, artificial intelligences may no longer be viewed as a remarkable programming feat, but as technology's interference with the brain and become something repulsive rather than exciting to researchers and threatening to technophobes.

The modified body presents discomfoting perspectives on the alteration of the human body and the ultimate othering of the subject. However, in the cyberbody, these perspectives are amplified and the segregation of the posthuman subjects from dominant human norms is increasingly explicit. The segregation can be attributed to the ways in which the posthumans are created, and therefore the powerlessness of the posthuman subjects. Both Mila and Cinder represent older, more technophobic views as the posthumans are not naturally posthuman – like the postchild – and technology is not the default starting point for their empowerment. Nevertheless, both learn how to use their technology having accepted it is a part of their body. The texts both demonstrate the fluidity of trialism and its usefulness to deconstruct a posthuman subject, and they also show how trialism can be used to examine non-human characters.

THE ORGANICALLY EMBODIED CYBERBODY: *EVA*, *RACHEL IN LOVE*, AND *AIRHEAD*

While the cyborg – as a modified body – is increasingly expanding outside the realms of science-fiction into the real world, the transfer of consciousness from a human body to a new medium – the cyberbody – remains the stuff of science-fiction. Even though the figure of the cyborg explores the indeterminate boundaries between biology and technology, the transfer of consciousness between bodies forces readers to consider the question of what it is to be both human and posthuman in its most discrete form. In no other posthuman is the Cartesian mind/body split so clearly exemplified, and moving the mind into a new body considers the question of the extent to which identity is tied to the body. In examples where a mind is transferred from one body to another, the definition of ‘posthuman’ as a noun is rendered less clear than is the case in other types of posthuman bodies, as the can be any one of an existing organic body, enhanced organic body or manufactured synthetic body. The technology is central to the process, but may not be a part of the resultant cyberbody, even though Peters’s views the technology as internalised. In exploring the cyberbody, I consider two novels – *Eva* (1988) by Peter Dickinson and *Airhead* (2008) by Meg Cabot – and a short story – *Rachel in Love* (1986) by Pat Murphy. All three texts deal with the transfer of a teenage girl’s mind to a new body following a life-threatening accident. I have chosen a range of texts to illustrate different concerns, as the cyberbody focuses attention on questions of embodiment in differing organic bodies.

In both *Eva* and *Rachel in Love*, the eponymous protagonists’ minds are transferred to a chimpanzee’s body, and *Airhead* sees the bookish Emerson’s brain transplanted into the supermodel Nikki’s body. Although illustrating cyberbodies, *Eva* and *Rachel in Love* may appear to diverge from the technological enhanced posthumans my research considers; however, they offer a concrete way to consider issues of identity and what it means to be human to contrast to other posthuman representations. *In general, they show how the figure of the postchild and trialism can be applied more widely.* As the texts date from before the existence of a publicly available Internet and the integration of technology in people’s lives, the posthuman concerns of identity are shown without technology being a complicating aspect of their identities.

Despite twenty-two years of technological progress since *Eva*’s publication in 1988, it is notable that *Airhead* sees Emerson’s brain being physically transferred, whereas *Eva*’s ‘neurone memory’ is transferred into an ‘empty’ brain (Dickinson, 1988, p21ff), and a copy of

a recording of Rachel's 'Electric Mind' (Murphy, 1986, loc57) is 'imposed [...] onto the brain of another animal' (*ibid.*, loc63). Although not a central part of my research, it is also noteworthy that the protagonists are all female. The notion of coming to terms with their new bodies once again resonates with real-world teenagers' issues of body insecurity and the media's alignment of female identity with female bodies. Judith Butler discusses body insecurity and identity in terms of the "materiality of the body [and] performativity of gender" (1993, p1) and *Airhead* demonstrates the public perception of female bodies and societal expectations clearly.

Haraway describes the reduction of living organisms to objects of knowledge as a strategy which transforms the line between humans and animals into a faint ideological struggle. The common contemporary concerns arising from this boundary's transgression are the philosophical and ethical questions of xenotransplantation (Nayar, 2014, p78). Flanagan describes the "discourse of animal rights, attuning readers to the ethical problems raised by the continued privileging of human subjectivity over all other life forms (2017, p37), and *Eva* demonstrates and challenges the privileging of humans over animals. As humans are frequently privileged over posthumans, *Eva* provides a way to explore the paralleled relationship and questions of identity. *Eva* inverts the 'usual' direction of xenotransplantation, as a human mind is transferred into a chimpanzee's body, and the transfer means that issues of posthumanism are also carried across to the chimpanzee. Haraway describes the cyborg appearing "in myth precisely where the boundary between human and animal is transgressed" (1985/2006, p120), and this is true of *Eva*'s posthuman representation. Seeing the cyborg as appearing at the point of transgression, and thereby being neither human nor animal, marks it out as other. Similarly, the posthuman is seen as a figure appearing at the boundary between human and technological, and it is also marked as other.

Aliona Yarova and Lydia Kokkola consider *Eva* to be a cyborg, but argue that, as she is not "empowered by extraordinary non-human qualities, [she] loses her identity, the inviolability of her body and her ability to communicate" (2015, p49ff), and that she is a *failed* cyborg. They thus prioritise the reactionary human perspective embodying fears of technology and its effects which is frequently found in older young adult texts and criticism. In her new body, *Eva* is no longer perceived to be human. Her recognisably animal body and behaviours mean that she cannot be judged in human terms, and she therefore has to be judged from a more contemporary posthuman perspective. Yarova and Kokkola acknowledge that *Eva*'s rebellion as a chimp disturbs the universe, and her failure to become the cyborg success story which is

endorsed by the adult figures in the novel show her refusal to conform and become an ‘adult’. Eva’s refusal demonstrates her natural postchild-like might and the power with which her teenage humanness imbues the chimp body, but they feel that seeing Eva’s story as a “success for her as an individual and for the chimp community” is to “trivialise the significance of her failures” (p50). From a posthuman perspective, her failures are trivial, as the human has been supplanted. Her failures are human failures, and the move to become posthuman is a move forward to replace the failing human: the failings are not trivialised, but they are part of an outmoded idea and thus Eva cannot be judged from a wholly human point of view.

Eva’s conscious rejection of her human instincts in preference for those inured by the chimpanzee body could be seen to make her ‘postchimp’, rather than posthuman. Extending the posthuman parallel, ‘postchimpanzeeism’ could see her chimp body enhanced and made ‘superchimp’ by human knowledge and abilities. Deconstructing the postchimp in a tripartite manner, Kelly’s mind and body would remain, with her mind being dominated by the human replacement, and the ‘technological’ strand would be Eva’s human behaviour, understanding and abilities. Posthumanism thereby prioritises, or at least attempts to prioritise, the human over the rest of its identity – regardless of the posthuman being seen to be a successor to the human.

Despite Rachel’s apparent unification of mind and body in *Rachel in Love*, her identity ultimately appears to be in flux. Although she allows a male chimp – Johnson – to mate with her, thereby accepting her chimp form, at the end of the story she takes Johnson back to her family home where she and her father had lived as chimp and human until his death at the start of the story. Rachel and Johnson’s escape from the chimp research centre sparked media interest and during their time on the run Rachel had communicated through written messages demonstrating ‘superchimp’ abilities through her human intelligence, knowing that her return home would be to a media circus. As her body spent much of its life as a chimp living in a human environment, what might initially be seen as a foolishly human decision to return becomes understandable. Despite her inner-chimp dreams of living in the wilderness, the human dominance suggested by the fact her mind was ‘imposed’ on the chimp’s brain wins. Nevertheless, unlike *Eva*, the way Rachel ultimately chooses to live – and possibly raise children – is beyond the book, and the ‘happy ending’ of which Yarova and Kokkola are critical is absent. Rachel is a clearer example of what they see as a posthuman and a postchimp failure, for neither her non-human nor non-chimp qualities have empowered her and by the end of the story she does not have a stable identity. While unfixed identities are

often seen to be a feature of posthumanism (as I have shown repeatedly), it is only when identities are reconciled that posthumans can gain subjectivity. The conflict between human and chimp identity is reinforced in Murphy's ultimate uncertainty shown in the plot detail that Rachel's father's will, unbeknownst to her on her return to her family home, is found, bequeathing "all his possessions—including his house and surrounding land—to 'Rachel, the chimp I acknowledge as my daughter'" (1986, loc559). Lawyers are engaged, presumably to resolve whether Rachel can inherit, and thereby implicitly determine whether she is human or not, something which in 1986 may well have been an inconceivable notion.¹⁶ However, as the outcome is unknown, the reader is challenged to confront the decision themselves, and the same issues of prioritisation of mind and body remain.

Meg Cabot's *Airhead* is a much less complex text as a whole but it does stress the failings Yarova and Kokkola see in Eva and her society's reaction to her. The premise of the two novels is similar as the intelligent and bookish teenage Emerson is mortally injured, but circumstances mean there is the opportunity for her brain to be transferred into the body of a similarly aged supermodel, Nikki. Emerson has to come to terms with her new body and its foibles: she now finds exercise rewarding, suffers from acid reflux and therefore enjoys different foods. She further learns that the social power that comes with the notion of beauty perpetuated by the media offers her preferential treatment and a wholly different lifestyle. Emerson has to accept that her supermodel body is a commodity, and – to use Yarova and Kokkola's words – she "loses her identity, the inviolability of her body" (2015, p50). While she does not lose the ability to communicate, she does lose the ability to communicate freely, as she now is contractually obliged *not* to let people know that she is no longer entirely Nikki. The new world to which Emerson has become accustomed teaches her that modelling is a difficult and tiring experience, and that Nikki's body was never really her own before the transplant. Emerson/Nikki gets little opportunity to unify Emerson's brain and Nikki's body, as she has to step into Nikki's celebrity lifestyle and eschew her formerly geeky existence. Although Emerson/Nikki tries to bring them together by returning to Emerson's school and trying to find the boy who Emerson's brain realises was her boyfriend, Nikki's body is out of place and – despite the attention from the physically glamorous girls – Emerson is forced to accept the differences between their previous lives. The novel ends with Emerson/Nikki and her celebrity flatmate Lulu, visiting Emerson's parents and where Lulu, seeing their apartment

¹⁶ An ongoing case in America to establish legal 'personhood' for animals to challenge their captivity, argues that chimpanzees have an understanding of self and are capable of abstract thought:
http://www.huffingtonpost.com/entry/steve-wise-chimps-legal-rights_us_575ad58be4b0ced23ca7d03f

and non-celebrity appearance, asks ‘How do you even know these people?’. Although this is Emerson’s attempt to unify her brain and body, the social forces portrayed in the novel make this an impossible task.

While Emerson/Nikki demonstrates the failure of the cyborgisation, it also offers both a criticism and affirmation of celebrity culture within society and the stereotypes associated with it. However, Emerson and Emerson/Nikki’s first-person narration reflects the confusion to which she is subjected as she tries to discover her new identity. Her narration is similar to Mila’s narration in its challenging Flanagan’s belief that the use of the first person limits the text’s ability to destabilise [...] the humanist concept of a unified [...] self” (2014, p114). Having Emerson’s mind and Nikki’s body behind the narration means the narrating self is anything but unified, although this is what Emerson/Nikki hopes for. Through the conflated narrator, the reader is obliged to try to ally the two stereotyped images of diametrically opposed girls in terms of their social status amongst their peers and their natures. Although the narration means that the reader is encouraged to empathise with Emerson’s experience as an outsider finding herself uncomfortably forced into the in-group, her reliability must be questioned, despite her credentials having been established as the academic bookish character. The first novel in the trilogy demonstrates Emerson’s social capital being enhanced by her new body, but does not consider Nikki’s body’s implicit enhancement with Emerson’s brain. While Cabot could be reinforcing the importance of body image perpetuated by society, it could also be a less overt means to show supermodels as more than the attractive, but unintelligent women that society often perceives them to be. Nevertheless, however it is read, beyond Emerson’s brain and Nikki’s body being saved from death, this is a clear demonstration of the cyborg failure, as the separation between mind and body is reinforced. The failures maybe a result of Nikki’s brain being corporeally replaced by Emerson’s rather than Eva’s brain’s contents (or mind) being transferred to Kelly’s physical brain, or of Rachel’s mind being overlaid on the chimp’s: there is nothing being ‘added’ to the cyborg, and Emerson/Nikki cannot be seen through a trialist lens as she is wholly human (or at least organic) rather than being technologically modified or enhanced.

Despite the differences between the three texts, in all three the choice of the protagonists’ names and the narrative perspectives directs the readers’ sympathies. Both Eva and Rachel retain their human names throughout the third-person narration, and while Eva’s chimp-body’s name is known, she is the only person who keeps using it as she comes to terms with her new body. Rachel’s physical form is shown as ‘normal’ from the outset from her and her

father's perspective, but to other humans, she is simply a chimp (or, as a policeman mistakenly identifies her, a gorilla (1986, loc123), which shows a dismissively prejudiced ignorance to something apparently non-human). In both Eva and Rachel, the superiority of the human – regardless of its body, or actions – over non-human animal is retained, and a typical sense of power is demonstrated through this aspect of human identity. However, in both cases, the human names are loaded with significance: Eva, deriving from the Hebrew, alludes to the first female human, or mother of life, as she gives birth to a new race of chimps. Similarly, Rachel has Old Testament connections: not only is her father called Aaron, but after initially being infertile, she gives birth to Joseph who prepares the way for the Messiah (Genesis 29-30). While the short story does not look beyond Rachel and Johnson's escape, the sense of their returning to Rachel's home as a couple after the physical consummation of their relationship hints at a similar hope for a new race of chimpanzees. Both Eva's and Rachel's beings are capable of reproduction which makes the postchimp closer to the postchild, and beyond the limitations of the posthuman existing at only one time.

In the first-person narration of *Airhead*, meanwhile, Emerson's name is established in the opening words of the book as it is called in a class register, and within just four paragraphs the importance of physical appearance as part of identity is introduced as she comments on the 'long, tanned legs' (2008, loc43) of one of her classmates sitting near her. Within the context of considering posthuman identity and the role of the body throughout the novel, the early inclusion of this description is important, even if it reflects a more glamorous and sexualised perspective on the physical form than the rest of my corpus. While Emerson's consciousness as narrator remains the same throughout the novel, the transplantation of her brain into Nikki's body disrupts it and highlights the question of naming. After the transplant, the narrator's experiences become those of Nikki, but they are still focalised through Emerson, shaped by her perspective (albeit a changing perspective) on the model's life. Initially her doctors and family refer to her as Emerson, but her physical appearance means that she attempts to assert what she believes to be her true identity and reject the 'Nikki' label. Emerson's attempts to affirm her identity and distance herself from Nikki recur throughout the novel in conversations with a range of characters:

'I don't know what the two of you are talking about, but I think there's been some kind of misunderstanding. My name is Emerson Watts. My parents – who are going to be very upset when they find out I'm missing from my hospital room, by the way – are Daniel Watts and Karen Rosenthal-Watts. I don't know why you guys seem to think I'm Nikki – Howard, I presume. Because I'm not.' (loc888)

‘I told you people,’ I said, still addressing the limo driver. ‘My name is Emerson Watts. I’m not Nikki Howard.’ (loc909)

‘But that’s what I’m trying to tell you!’ I cried. ‘I’m not Nikki Howard! I’m Emerson Watts – honest, I really am.’ (loc1086)

‘Uh,’ I said. ‘I told you. I’m not Nikki. I’m Emerson Watts—’ (loc1094)

‘I’m not Nikki,’ I reminded her. ‘I’m Emerson Watts. I’m the one who got hit by the plasma screen.’ (loc1119; original emphasis)

‘Emerson Watts won’t be going back to school,’ Mr Phillips said. ‘Because Emerson Watts no longer exists.’

‘What do you mean, I no longer exist?’ I asked. ‘I’m sitting right here.’ (loc1710)

However, after the following explanation by the doctor, Emerson’s name is only mentioned four more times in the remaining third of the novel:

‘[...] thirty-four days ago, Emerson Watts – according to the current definition of the word as mandated by the laws of the state of New York – died.’

I did not like the sound of this. I did not like the sound of this one bit.

‘Wait,’ I said. ‘So according to the state of New York, I’m dead?’

‘*Emerson Watts* is dead,’ he corrected me.

‘But... *I’m* Emerson Watts,’ I cried.

‘Are you?’ he asked with a little smile.

(2008, loc1751; original emphases)

Beyond the legal complications, her physical appearance, behaviour and the company she keeps means that she has become Nikki to the other characters. From the narrator’s and reader’s perspective she remains a hybrid of Emerson’s human brain and Nikki’s human body. While Emerson/Nikki is increasingly seen as Nikki, the narration makes it impossible to discount Emerson and, unlike the perpetuation of Eva and Rachel’s human identities, both mind and body are left in the balance in Emerson/Nikki. The first-person narration which makes the constant mind/body battle uncomfortable for the empathetic reader, as the narrating Emerson’s experiences of dissatisfaction and unhappiness with her new physical identity are made explicit throughout the text. In contrast to this, it is easy to gloss over the moments when Eva and Rachel have flashbacks to their bodies’ previous lives as a part of the more detached third-person narration.

A last consideration of the names comes through the three texts’ titles: Eva and Rachel are both the human names of the eponymous protagonists and it seems to be the only way they can be understood by both the characters surrounding them and the texts’ human readers. By contrast, *Airhead* is less determinable. While it seems to refer to Nikki through its meaning as a ‘foolish, unintelligent or frivolous person’ (OED, 2018a) as she is identified by her body,

the derogatory nature of the name is at odds with the narrating Emerson/Nikki character. Beyond the title, it is only used once in the book – and then only adjectivally – in a moment of self-reflection when Emerson/Nikki realises she has just been ignored “As if I was just...just...An airhead model” (2008, loc2405). However, as Emerson/Nikki begins to accept her new body by the end of the novel, the focus on the dominance of the body could be read as an implicit criticism of today’s body obsessed culture. As Emerson/Nikki remarks to Nikki’s friend in the closing pages of the novel, “‘My insides,’ I said, ‘are already messed up. The truth is, they’re never going to match my outsides. [...] But you know what? I’m starting to think nobody’s insides do’” (loc3439). A moral of the story is thus laid bare, even if it is narrated by Emerson’s brain within Nikki’s body.

Eva also introduces issues about the ways nature and/or nurture shape identity, as Eva is told by the lead scientist that the only reason the transfer of her human consciousness into a chimp body was successful was “thanks to your father’s decision to bring you up in such close contact with the Pool, you may well have learnt to think of yourself as actually being a chimpanzee as well as human, and that deep in your subconscious mind you still do” (p150). But despite her nurturing, Eva tells the scientist that she made herself want Kelly: it is when Eva realises the animal instinct of Kelly – the chimpanzee whose life, or at least mind, was sacrificed to save Eva’s – remains in the body, she knows that she has to respect the new aspects of what she now is in order for her to survive. When the experiment is replicated with two other people and two other chimps, the outcome is not successful and Stefan cannot communicate “either with the animal’s body or through it with the outside world” (p148) even though the process was technically successful. Having seen him, Eva is able to explain that this is because “‘They’re both there. They don’t want each other’” (p150). She is able to show understanding of both the human and the chimp aspects of Stefan’s being and the importance of both the humanness and chimp-ness over the detached precision and accuracy of science as she tries to comfort him. The demonstrable need to bring together chimp body, human mind and science reflects posthuman trialism and the flexibility of its application.

Despite Eva’s acceptance of her new body, the unification of her human mind and chimp body is the focus of the first section of the novel entitled ‘Waking’; however, unlike many similar texts, the narration is not first person. Eva’s experiences and understanding of events are prioritised, and the narrative starts with fragments of sentences in indirect discourse showing her being on the cusp of sleep and wakefulness, as she tries to recapture a dream about trees before she is fully consciousness and trying to work out where she is. The

potential and the beauty of the new life before her is shown in her thought that “[s]he felt a sudden surge of happiness, of content to have woken on such a perfect morning. It was like being born again. A morning like the first morning in the world” (p7). Ironically, the reflection can also be read as a new dawning for the world as the division between human and animal has been transgressed. As the opening section’s chronology reaches the second month of Eva’s new life, the fragments of her dreams move away from the natural world to illustrate an understanding of the way she too will have to move from the natural world to fit in with humans. The shift is further shown through increasingly personal use of elliptical present tense free direct discourse: “Falling into the world, people, people, people... Have to move among them, to begin to live...” (p49). The sense of obligation to find a place in the world is a common trope in young adult fiction, and Dickinson has described Eva’s discovery of her new nature as being a metaphor “to do with adolescence and the discovery of oneself as an adult” (1993, p163). Eva’s challenge is exacerbated because of the juxtaposition of her body and mind in society’s eyes. Even though she is perceived to have some sort of celebrity status, she is constantly aware of her difference, knowing that other chimps will see her as a “stranger” (p100) and that humans see her as “other, different, unwanted” (p147).

While Eva’s father who works with the chimps seems to accept Eva’s posthuman otherness with few questions, her mother is more reticent to accept her. Shortly after Eva first awakes in her chimp body, her mother comments plaintively ““If only I could feel she was happy””, and the scientist’s solution is to give Eva a shot of endorphins to reassure her of her happiness (p8). Although Eva has not seemed unhappy, her mother’s inability to see this leads to her ultimately enforcing human control over what she can only accept as an animal, and traditional hierarchies of both parent/child and human/animal are reinforced. While the human reaction to artificial bodies is often similar, Eva’s lack of human form illustrates the problem she, like Dr Frankenstein’s creation, faces in finding her place within society.

The humans’ perception of Eva’s need to retain her humanness despite her embodiment is shown throughout the book, as she is given a specially designed keyboard to communicate with humans. The keyboard may be seen as a symbol of her humanness, as it creates a sensory link to her human body because it speaks with her real voice, but it is in itself a hybrid: her voice has been “taken from old homeshaper discs and sorted into all its possible sounds and stored in a memory to be used any way she wanted” (p11). Her previously whole experiences and utterances have – like her – been divided into their constituent parts and reformed. However, Eva discovers early on that she can make more chimp-like sounds with the

keyboard and uses these to express her feelings. From Eva's perspective, there is a clear sense that the humans she encounters want the keyboard to be a symbol of her humanness as it facilitates her communication with them; however, her use of it to 'speak' the chimpanzee grunts is both an act of rebellion and demonstration of the need for others to accept her new identity as she is doing. As Eva has a greater understanding of what she is than her human adult creators, she could be allied to the postchild again whose knowledge goes beyond what adults can grasp.

As Emerson/Nikki shows, identity is shaped by the body people see, regardless of the mind. However, while identity is shaped in relation to others, self-recognition is an essential aspect of gaining subjectivity. Identity is shaped in the brain or mind by the recognition of a new physical body and when faced with a new form of their body, the adolescent protagonists are able to explore the moment of recognition. As Emerson comments when she is trying to make sense of what has happened, "I, Emerson Watts, was looking out of Nikki Howard's sapphire blue eyes, instead of my own muddy brown ones" (loc1255). She sets a clear distinction between what she believes herself to be through her image of her previous body with its brown eyes and the detached view of Nikki's jewel-like eyes. However, she also sees herself as being trapped inside Nikki's body, rather than accepting it as hers.

Eva's moment of self-recognition comes when her mind comprehends a non-human body. As her body is nearly wholly paralysed, her reaction can only be mental rather than physical:

For an instant all she seemed to see was a nightmare. Mess. A giant spider-web, broken and tangled on the pillows with the furry black body of the spider dead in the middle of it. And then the mess made sense.

She closed her right eye and watched the brown left eye in the mirror close as she did so. The web – it wasn't broken – was tubes and sensor-wires connecting the machines around the bed to the pink-and-black thing in the centre. She stared. Her mind wouldn't work. She couldn't think, only feel – feel Mum's tension. Mum's grief, as much as her own amazement.

[...]

Eva stared at the face in the mirror. She'd recognized it at once, but couldn't give it a name. Then it came. Carefully she pressed the keys. She used the tone control to sound cheerful.

'Hi, Kelly,' said her voice.

Kelly was – had been – a young female chimpanzee. (p17)

Although the narration acknowledges the fact that the mess made sense as she proves to herself what she already understands by her seeing herself winking, there is a detachment between her eye and its reflection. The detachment is emphasised by the use of the left/right

distinction, the personal pronoun and determiner, and the inclusion of the adjective brown (as an implicit difference) which shows self-awareness about her mind/body dislocation. Despite her body being physically paralysed, the shock initially appears to be mentally paralysing too with only her feelings responding. However, the detachment from herself is further emphasised as the feelings of tension and grief are not hers, but her mother's. Despite the mess having made sense and knowing she has to use the tone control to sound cheerful, when Eva greets her reflection as Kelly – the chimp she knew previously – there is a disconnect between her mind and body. It is only after a break for a flashback to Eva's childhood and her spending time with chimps, that Eva returns to consider her situation and knows that she has to accept her new body:

Eva lay looking at the face in the mirror. Me, she thought. Not Kelly,
me. Goodbye, blue eyes, goodbye soft pale skin, goodbye nose.
Perhaps Kelly had always been pretty – pretty to another chimp.”
(p23)

As Emerson saw her original brown eyes as muddy in comparison to the more beautiful human Nikki's blue eyes, so too Eva's human blue eyes are a loss to her chimp brown eyes. While a small detail, echoes of the Nazi misapplication of Aryan physical attributes to denote the *Übermensch* are unavoidable and the unsatisfactory nature of Eva's new body can be seen as she reflects that “Kelly's body wasn't just something she had to get used to, it was something she had to learn to be happy about” (p33). Despite knowing her previous body, Eva is accepting of her new body, challenging the mind/body question as she realises, “you aren't a mind *in* a body, you're a mind *and* a body, and they're both *you*” (39). While she demonstrates the unification so frequently true of posthuman characters as they gain subjectivity, the notion of identity is not so easily reconciled for those around the posthuman, and the posthuman again becomes an othered figure in contrast to the human norms of those who took the decision to transfer Eva's consciousness to a chimp. Dickinson implicitly shows Eva's power as he considers the power and action within the text as “her parents and doctors impose an outer shape on her, not realizing that her inner shape will learn to conform to it” (1993, p162). He acknowledges that the ending appears to be happy, but presents ambiguities at much deeper levels. While Eva does succeed in unifying her mind and body, her new being does not offer the unification that the humans around her expected.

While my discussion of the texts is wholly theoretical, the discomfort witnessed in real-world readers offers a brief aside to support my reading of Eva as being othered. Betty Carter writes that *Eva* includes a detail which she found repulsed adult (female) readers. She acknowledges that these readers may not be the intended readers, but her findings came during a teaching

session for teachers and librarians. When Eva unthinkingly starts to groom her mother, her mother is physically uncomfortable in response to Eva's intimate touch, and when she then tries to groom Eva reciprocally, there is a "flumbliness" (p43) about her actions, but Eva still finds the touch comforting. Carter's readers "adopt[ed]" (2001, p544) the story and these details "prompted visceral shudders" (p543) as readers empathised with Eva's mother's loss of a child. Based on her experience, Carter's concern is that such literary gatekeepers could prevent teenage readers encountering books like *Eva* through their prejudices and personal responses. As she concludes, such books offer their intended readers the opportunity to 'make knowledge', and this opportunity is something which can be seen to underlie the discomfiting representations of all the posthumans in my corpus.

Despite removing explicit technologies from the posthuman body, Eva and Rachel are helpfully considered from a trialistic perspective. The explicit exclusion of technologies means that readers are forced to consider what it means to be human through the comparison to animals. If Eva and Rachel are considered to be 'postchimp', trialism further offers a way in which to consider their non-human identity and shows the way in which concerns about identity centre around the body, self-perception and the perception of it by others.

THE SYNTHETIC CYBERBODY: *THE ADORATION OF JENNA FOX*

Eva, Rachel and Emerson/Nikki demonstrate examples of human consciousnesses being transferred into new organic bodies. The use of organic rather than synthetic bodies is significant as they are more recognisable to their subjects (and readers). The *cyberbody*, however, is yet further removed from a shared understanding of humanness than the modified body, and the use of a synthetic body – however accurately reproduced it may be – distances the cyberbody still more from any perception of what it is to be human. Mary Pearson's *The Adoration of Jenna Fox* (2010) combines aspects of both cyborg and cyberbody when, following a near fatal car accident, ten percent of Jenna's brain – the pons – is saved and transferred to a wholly synthetic body along with the results of a scan of her entire brain. The three component parts of her new posthuman existence are immediately clear: the biological pons, the digital brain scan and the synthetic replacement body. Her technology is dominant both internally as the results of the scan and externally as her new body, but supported by the small remaining section of her brainstem. However, an essential difference between Jenna and the replacement organic bodies of Eva, Rachel and Emerson is that Jenna's mind – or consciousness – is digitally backed up and has the potential to be restored to another synthetic human body should her new one fail. Although Rachel's 'electric mind' is a computer copy, the implication in the text is that, because her father died, it cannot be restored again, so her posthuman experience is limited to the single life as are Eva's and Nikki's.

In terms of Peters's body types, Jenna shows aspects of three: the *modified body* with the technology being necessary for her survival; the *enhanced body* as the technology 'improves' her natural abilities; and the *cyberbody*, as her physical body is – scientifically – irrelevant once her brain's data is transferred into the synthetic body. However, this conflation of body types is more confusing than helpful, and the preponderance of technology in Jenna, along with the fact that the fragment of the biological human might be seen to enhance, or animate, the technology, enables the label of 'posttechnology' to be more satisfactorily used. Precisely as posthumanism blurs human/technology boundaries, so attempts at definition and categorisation are difficult because of the fluidity of both the human body and technology. My trialist approach goes some way to compensate for this multiplicity, and if Jenna is seen as posttechnology, it can still be used to consider the different aspects of her identity.

Jenna's primary concern, like all the other posthumans I have considered, is the understanding and acceptance of a new identity. Although the organically embodied posthumans indicate

that identity is tied to appearance, Pearson couples Jenna's introspective first-person narration with her relationships with her parents and grandmother to consider explicitly where identity can be situated. Pearson also introduces the question of what it means to be human, as Jenna learns about how she – or what might be seen as her human 'Jenna-ness' – has been saved. The cover of the 2010 edition of the novel includes the line 'betrayed by her own flesh and blood': assuming the elliptical subject of this minor sentence to be Jenna, her 'flesh and blood' can be read as both her family and her physical embodiment as betraying her and who she is.

Flanagan suggests that when Jenna wakes, she has to depend "on her body to help reconstruct her identity" because, having lost her memories, she has "no basis on which to form her sense of self" (2014, p119). However, in making this suggestion, Flanagan overlooks the opening of the text which acknowledges both Jenna's previous and current identities and the difference between them, and in which there is a clear sense of self, even if it is limited by her lack of memories. From the outset of Pearson's text, understanding Jenna's self-identity is a clear concern, but Jenna's self-focalising narration in her opening comments portray her as being defined by an initially undetermined 'they' in relation to what she *had* been, a formulation which makes it clear that no-one is sure who she *is*:

I used to be someone.
Someone named Jenna Fox.
That's what they tell me. But I am more than a name. More than
they tell me. More than the facts and statistics they fill me with. More
than the video clips they make me watch. More.
But I'm not sure what. (2010, loc27)

Although naming confers a human identity, not being sure *what* else she is hints at her being a *something* implicitly not human, rather than *someone*. Philipp Schmerheim agrees, interpreting this moment as Jenna questioning "whether her organic modifications turn her from 'someone' into 'something'" as part of her "personal identity quest" (2016, p65) from the outset of the novel. However, while the uncertainty is true in her retrospective narration, the present tense and subsequent chronological charting of her development, and the epilogue set nearly three centuries later, suggest that Jenna does not know about her modifications at the outset of her narration, and is in a position from which she is considering her identity in relation to those around her, and how it is shaped by those around her. Her changed relationships with the people around her also show a move away from the intimate cosiness of family names, as her grandmother prefers Jenna to call her Lily rather than Nana (loc42): as well as demonstrating a reformed relationship, this also creates an emotional distance between them.

The distance established between Jenna, her family and her humanness is reinforced as she recounts waking and hearing Lily telling her mother that her cries frightened her as “[i]t sounds like an animal” (loc56), with both pronoun and simile denying Jenna her humanness. As Jenna regains consciousness over the first week (her father leaves her bedside to return to work on the eighth day, echoing the seven days of the biblical creation story) her improvement is not gradual, as human recuperation is, but is instead what might be described as digital:

One day I couldn’t walk. The next day I could. One day my right eyelid drooped. The next it didn’t. One day my tongue lay like a lump of meat in my mouth, the next day it was articulating words that hadn’t been spoken in over a year. (loc59)

The walking, her eyelid and tongue are abilities and imperfections which are upgraded and corrected in the manner of an engineering project or software program with Jenna’s parallel sentences reflecting the precision of digital switching. The biblical motif is then repeated when, on the fifth day, her mother describes Jenna’s walking as a “miracle” (loc60), although Lily simply highlights that it is not natural. While Lily’s comment appears to refer to Jenna’s walking, it in fact reflects her feelings towards her granddaughter for much of the novel. Unlike the frequently cited generational fear and scepticism of new technologies, the unnaturalness here forms a more emotive reaction to what Jenna has become, and eventually seems to be tied up with Lily’s faith:

‘Lily,’ I say to stop her, ‘did my grandfather—Did you—Was I baptized?’
 ‘When she was two weeks old,’ she says as she walks out the door.
 ‘We were her godparents.’ (loc471)

The use of the third-person pronouns to refer to the ‘original’ Jenna demonstrate the new distance between Lily and Jenna but, within the context of the conversation, to Lily, losing a granddaughter and goddaughter to a synthetic replacement suggests that there is something spiritual missing; an absence which means Lily cannot – or will not – see Jenna as human. Her overtly religious reaction to the posthuman is not something seen in the other texts in my corpus, although the idea of something spirit-like being a part of what it is to exist does fall into my consideration of trialism. However, characters’ reluctance to accept posthumans which have had aspects of what might be seen as a spirit or soul replaced by technology could be a part of the implicit reluctance for posthumans to be embraced by their human counterparts. Pearson explains in an interview that Lily’s Catholicism acts as a touchstone to allow her to “raise the issue of the soul” and to explore changing, or changed, ethical concerns in an imagined future society (Corbett, 2008, np). The inclusion of religious concerns adds

another dimension to any consideration of the posthuman, and although it is implied in all examples through the transgression of the human body, choosing to highlight it in this manner risks excluding readers living in an increasingly secular society as the narratives already offer the challenge of engaging with non-human characters.

Lily's view of Jenna as being unnatural is taken by Flanagan to put the female body "centre stage" through its dysfunction. She suggests that Jenna's practising movements to make them appear similar to other, implicitly human, bodies is an illustration of non-representational theory (2014, p124), writing that "embodied expression and affect are central to the construction of Jenna's subjectivity", but her narration and representation of these actions are "strange and unconventional" (*ibid.*). Flanagan sees Jenna's physical actions as an enabling force, allowing her to assert her autonomy and demonstrate emotion, despite her "inexpert" grasp of language. However, the actions remain focalised through and narrated by Jenna, regardless of their arguable strangeness or unconventionality. Because of this narrative perspective, I find it difficult to prioritise Jenna's embodiment over language, but that is not to discount her physicality. Language and embodiment – possibly paralleling mind and body – need to be complementary, with their individual awkwardnesses and failings illustrating the struggles she faces as her 'essence' balances them to help her discover her identity. The first-person narration, which inevitably encourages the reader's alignment with Jenna's struggles, also reinforces real-world issues experienced by teenage girls with changing bodies, and their exploration and use of language to describe new emotions and experiences. Jenna's experiences are not the preserve of the posthuman, but a part of human identity formation.

It is not only through her words and actions that Jenna begins to discover her place in the world: she also learns of it from others' physical actions through a nascent understanding of non-verbal communication. Her realisation that "[facial] expressions that have blended together since I came out of my coma are beginning to emerge into patterns [and m]ost of it centers in the eyes" and that "[w]ithout words, the [eye]lids shape sounds. They speak different things just by the faintest of angles" (loc284), cruelly puts the emphasis on the (human) body as a crucial part of social interaction. Similarly, when Jenna starts at her new school – in itself a strange decision, considering she has had the curriculum's content uploaded into her brain, making it more a test of the 'normality' of her embodiment – she sees that "The others stand awkwardly. I can see I've upset the balance. Do they have to include the new girl who walks funny in their break plans? Do they have to redefine boundaries?" (loc961). The others' awkwardness seems to be a result of her own unnatural walk, so at this

point in the text, her greater self-awareness in relation to others is more apparent. Jenna's discomfort highlights issues of embodiment, but her narrative voice demonstrates her awareness of the need for something indeterminably human to exist within her to enable her to interact successfully with other human. As she wonders "How can eyes speak so much?" (loc284), and notices the wordlessness of the eyelids, there is clearly more to passing as human than her manufactured body and her uploaded knowledge.

Jenna continuously determines her identity in relation to her mother and grandmother, but she is also able to do it in relation to her (former) self as she has hours of videos of her taken throughout her life to watch. Even though she knows that she is watching videos of herself, there is a clear detachment between her view of her current self and the image she is watching. She pauses a clip of her three year old self, narrating, "I scan the smile. The face. She has something. Something I don't see in my own face, but I don't know what it is. Maybe just a word I have lost? Maybe more." (loc104). Jenna's description of her third-person self as missing something so apparent in the biologically whole Jenna is clear in response to another criticism from Lily:

'I don't hate you, Jenna,' she finally says. 'I simply don't have room for you.' Harsh words, but her voice is tender and the contradiction is a stony reminder that I am missing something vital. I know the old Jenna Fox would have understood (loc423).

The use of 'vital' describes Jenna's appreciation that she is literally missing something fundamental to life. Coupled with her opening sense of being more than simply a physical presence filled with information, her vitality is something more essence-like, possibly spiritual, which transcends the physical. Although it remains undefined, Jenna recognises it as an aspect of who or what she was, and who she is made to feel she should be. While Jenna appears to see her current self as missing something, a more human-centred reading could suggest that the teenage Jenna sees something of the nineteenth-century notion of the childish innocence of the Romantic child in her three year old self which has been lost as she has grown closer to adulthood in the car accident.

In contrast to the idea of losing her innocence, when Lily comes to accept the 'new' Jenna having recognised aspects of the 'original' Jenna through her rebellious actions, she does so through her religious convictions. She takes the opportunity to dip her hand in holy water and makes the sign of the cross on Jenna when they are in church together (loc3585). Lily tells Jenna that "[s]ome things aren't meant to be known. Only believed" (*ibid.*), displaying an unprovable and human characteristic of religious faith. Lily's act of faith in the ten per cent of

Jenna's brain shows the importance of the human aspect of her posthumanity: she now accepts the new Jenna, even if her blessing is the only acknowledgement of something biological in Jenna's synthetic body. To Jenna, the drop of water which she describes as being hardly enough to feel, is – in a slight modification of the cleansing of original sin – “[w]ashing away the old, believing in the new” (*ibid.*).

Lily's fundamentally spiritual objection to Jenna's new existence is clear throughout the novel. It stands in contrast to her parents' insistence that Jenna is still the same person, and therefore implicitly human, even if she is not the same physical person and has technological imperfections. Jenna's father's role is that of the Dr Frankenstein-like creator and his science is prioritised, as the narration notes, over his parenting role. In response to his intellectual insistence that Jenna is entirely human, Jenna challenges him:

What about a soul, Father? When you were so busy implanting all your neural chips, did you think about that? Did you snip my soul from my old body, too? Where did you put it? Show me! Where? Where in all this groundbreaking technology did you insert my soul?
(loc1733)

While she does not wait for an answer, her humanly-based spiritual emptiness and her view of religion's incompatibility with science and technology is apparent. Jenna's implicit contrast between the soul and the 'groundbreaking technology' makes technology seem superficial and favoured by progressive thinking over the naturalness and fundamental vitality of a soul to make her human-like. Her ironic treatment of the soul as a tangible commodity – which her mind and body have become – makes a mockery of the science that has made her who or what she is, and asserts her need for an indeterminate and indeterminable something which betokens humanness. Exemplifying posthuman trialism, Jenna's conscious frustration at being incomplete in her technologically advanced body embodies the warning to humankind that Harari sees across human cultures – in biblical stories and mythology from the Tower of Babel to the story of Icarus – that “any attempt to go beyond human limitations would inevitably lead to disappointment and disaster” (2014, p294).

Before Lily's blessing, Jenna's introspection sees her trying to make sense of her identity through the world around her as she considers her bedroom:

The polished-wood floor reflects the pieces of furniture. It is a cold room. Not in temperature, but in temperament. It reflects nothing of the person who inhabits it. Or maybe it does. (loc165)

Her sense of incompleteness is clear, but the parallel with her environment conveys the incompleteness not just in human terms, but also through her isolated position within the

world. The furniture's reflection in the polished floor shows her mirror-like self-inspection, and acknowledging it demonstrates the distance between what she is and what she knows she was, or should be, through the lack of homeliness in her bedroom.

In her attempt to understand what is missing, Jenna considers that she might just have lost the word to label it from her vocabulary. From the early days of her new life, she realises that there are many words which she has lost, for instance: not knowing what time is (loc72), the definitions of simple words such as 'jump', 'hot' and 'apple' (loc74), what it is to be curious (loc120), or what the insult 'dickhead' means (loc1011). While she is pleased to be able to look these up and gain the fundamental knowledge, learning that the subtleties of meanings (such as understanding 'curious' to mean both 'unusual' and 'inquisitive') derive from their contexts becomes important to her understanding her world. She is subsequently able to use this ambiguity humorously or ironically – either of which indicates a greater sense of a human self than a programmed intelligence – when she wryly acknowledges that her grandmother thinks she is “curious” (loc226).

The importance of language as a means by which to make sense of the world is shown through the course of the novel with the inclusion of several dictionary definitions of words. Mimicking children's language development in a reflection of her development in her new self, the two words she initially defines are adjectives which modify herself, and she then goes on to consider both a more complex emotional response and abstract concepts. While the multiple meanings serve to show aspects of Jenna's confusion about her identity and demonstrate the ambiguity of who she is, the list of words reflects Jenna's character and her developing perception of her identity over the course of the novel. Although it is not explicitly stated that she looks all the words up, the first-person narration – rather than another narratorial voice – indicates that it is part of her trying to understand her identity. The sequence of words collated from the whole text and finishing before the epilogue – notionally written 260 years later when she has accepted her identity – can be read as her dissatisfaction with who she is:

curious *adj.* (loc83)
 lost *adj.* (loc199)
 hate *v.* (loc545)
 empty *adj.* (loc1312)
 human *n.* and *adj.* (loc1798)
 identity *n.* (loc2568)
 Jenna *n.* (loc2890)
 forever *adv.* (loc3212)

In the penultimate entry, Jenna reduces herself not to a name but, as part of the sequence, to a word. The definitions she ironically offers for ‘Jenna’, reinforce her continued unhappiness with and uncertainty about herself, her relationship to others and her place in the world:

“Jenna n. 1. Coward. 2. Possibly human. 3. Maybe not. 4. Definitely illegal” (loc2890).

As Jenna learns to accept her new body, and as her confidence in using it increases, so does her confidence in understanding the way in which language can be shaped. Twice she notes that the definition of ‘identity’ is given as being “separate and distinct”, but realises that “[identity] feels like it is so wrapped up in others” (loc2575; loc3034). Her second reflection considers the identities of the downloads of her friends who were also involved in the car accidents, accepting that “sometimes [...] maybe [identities] can even be shared” (loc3035). While the notion of shared identities may support the idea of posthumanity being a networked identity, I believe it remains inessential for posthuman existence, as Jenna’s expression of her feelings is a far more human comment on interpersonal relationships: the ten per cent of her brain that has survived seems to be weighted more heavily in her overall constitution.

Although Jenna ultimately accepts her new body and mind, part of the process of acceptance is akin to the other embodiments I have seen: the posthuman has to be viewed by others and/or themselves as a freak. Jenna knows “I am not normal” (loc295) and that “I am a different kind of miracle. The artificial freak kind” (loc1767). Although it is her embodiment which she sees as being freakish, her flexibility with her use of language to express this through the ambiguity of ‘miracle’ indicates her strengthening use of language to understand who she is. Similarly, a little later, it is her body which remains ‘freakish’ as she defaults to the description given to and associated with Dr Frankenstein’s creation to describe herself: “I look at my hands. Clasp them and unclasp them. Perfect. Monster. Hands.” (loc2094). The juxtapositioning of ‘perfect’ and ‘monster’ is incongruous and reveals her mental attitude: her body has been built to be flawless, but her hands illustrate the visible monstrosity through their artificiality.

In Jenna’s case – like Cinder, Eva and Rachel – becoming posthuman is a result of her parents’ desperation to save their daughter. In the transfer to a wholly synthetic body, there is the potential to improve the body’s physical capabilities, and Eva’s transfer to the chimpanzee’s body is the only instance in which any of the parents discussed prioritise ‘saving’ their daughter without concern for upgrading the body: Cinder’s organic body is improved through her cyborgisation and Rachel’s physical appearance is ‘upgraded’ through

the transfer of her consciousness to a model's organic body. Although not immediately apparent to Jenna or the reader, her synthetic body offers her parents opportunities to enhance her abilities. While the early physical changes seem to correct what in technological terms might be labelled 'bugs', it becomes clear to the reader – but not Jenna – that she has superhuman traits. An early rhetorical question about her high level of sensitivity to sound when she is still simply trying out her new body (loc114), is answered later in the novel when she understands her technology and aims to listen to a conversation at a distance:

I concentrate, trying to decipher the whispered words. I detect a rush within me, an ache, and then a stillness, like the words are being whispered right into my ear. Like every available neurochip has been called to task. And they have. I have billions of available neurochips.
(loc3224)

At this point in the text, Jenna has seemingly accepted her new embodiment and the number of her linguistic uncertainties has decreased, indicating the unification of mind and body. The description shows her natural, human experiences, indicated by the 'rush', 'ache' and 'stillness', combined with her prolific neurochip technology to empower her. An earlier indication of her processing power is not readdressed, and when she sits staring out of the window and notes "[t]hree days of rain and 4,287 cold beads of water beating against my windowpanes", her glib comment, "I'm good at math after all" (loc572), demonstrates another aspect of her enhanced abilities. However, she believes she is discovering who she is in relation to who she was. In contrast to this, later in the text she shows her understanding of her technology: firstly, in terms of her appreciation of its functionality, as she comments "I don't need to look at my clock. My neurochips know to the second how much time has passed", (loc3448), and secondly, to illustrate her frustration at her technology's perpetuation of her human weakness from her unconscious control as she narrates "My breaths come in gulps, and in an instant I curse and cherish neurochips that remember and mimic too much" (loc3448).

Posthumanism frequently considers the fragmented nature of identity, which I have shown in the characters' need to reconcile different aspects of their identity. In Jenna's case, a recurring fragmentation is that between her current and her former self: from early on, the narrating and focalising Jenna comments "Jenna Fox is inside me after all. Just when I was ready to move on without her, she surfaces. Don't forget me, she says" (loc343). Although the fragmentation may be seen as a representation of the conflict between the body of the new Jenna and the mind of the original, this would forget the narrating aspect of the new Jenna, which recognises the difference between itself and the original. The recognition of the difference shows the start

of an acceptance and a move towards reconciliation. The fragmentation demonstrates the tripartite division within her: her synthetic body, her programmed and uploaded consciousness and the ten per cent of her organic brain which has been preserved.

For Jenna, the fragmentation between her former self and her current self is a result of the car accident. She sees the accident metaphorically as “A stop sign. A wall. It separates me from who I was and who I will be” (loc406). The imagery is physical, but rather than communicating a sudden change, the look to the past and the future indicates a liminality to her current position. As Waller sees adolescence as a liminal time, other to both adulthood and childhood “onto which a distinct dichotomy of desires or fears cannot easily be projected” (2009, p6), the Janus-like position is compounded for Jenna because she is aware of her search for identity. Her self-awareness of her task means that the quest becomes more than just a trope, as her experience is consciously reflective. As Jenna learns more about her recent personal history, she also sees herself as having changed as a person over a matter of days as a “lifetime has passed since [then...] I am a different person now. Maybe a different thing” (loc1927). In her search to understand who she is, she is consciously and continuously being forced to reshape her view of her new self.

Jenna’s sense of certainty in whom she was before the accident is undermined by Lily when she is told “You’ve always been two people. The Jenna who wants to please and the Jenna who secretly resents it” (loc3175). The fragmentation or duality of human nature is emphasised in Lily’s description, and it is set against the typically divided nature of the posthuman which demonstrates the need for self-acceptance and unification of the self in both human and posthuman. While self-acceptance is something that humans are able to begin to achieve as they grow older and find their place in the world, it is not necessarily something achieved by the time they reach legal adulthood. The fictional young adult representations of teenage posthumans match representations of teenage humans who need to complete their identity quest by the final pages of the text, but the burden placed on posthumans is greater, although through the similarities, the greater burden may be a reflection of the problems and issues faced by today’s real-world teenagers.

While I have considered Jenna’s sense of spirit and grasp of language as things which contribute to her humanness, memory, as Nikolajeva asserts as she considers how it affects identity, “is ostensibly another unique characteristic of human beings” (2016, p138ff). Despite the dualistic world-view seeing memory as immaterial, Nikolajeva argues that “memory is

embodied; it is just as substantial and material as sight or hearing” which then leads her to ask whether “a body with limited or false memory [is] still a person” (*ibid.*). Over the course of *Jenna Fox* – although frustratingly unable to recall details of the accident itself – Jenna demonstrates two different forms of memory. Firstly, the historical facts and details of literature that she is able to recall which, it transpires, is not because she was an exceptional student, but because her parents uploaded three years’ worth of the state’s school curriculum to her new brain (loc2084); even those these might be perceived as semantic memories, the nature of their acquisition makes them false memories. Secondly, she recounts memories of real life experiences and sensations which the human Jenna has had, or her episodic memory; however, she is able to remember details of her time in her mother’s womb (loc2447), so while these are real memories, they are unnatural and suggest a posthuman super-memory.

The two forms of memory both help Jenna to understand who she is, but even in her memories her identity is shaped in relation to other people. In the false memories, when she is considering her historical knowledge, she sees it as “curious” that she “remember[s] the details of the French Revolution, but [she] can’t remember if [she] even had a best friend” (loc129). Even early in the novel, she is looking to (re-)establish relationships with people who should be important in her life, prioritising human concerns over data. However, the data offers her a way to establish an identity: when she is talking to her neighbour, he comments that she is a “history buff” (loc257) and after considering whether she was, she takes her ability to regurgitate historical details to indicate that she is, thereby accepting and applying a label to herself to fit in. Similarly, when she returns to school, her encyclopaedic knowledge of the text of Thoreau’s *Walden* provides a link with her new classmates and allows relationships to develop between them.

Her unnatural, but real, posthuman memories also provide her with a link with the human Jenna’s experiences and physicality as she remembers

The sound I heard in her womb. The whoosh, the beat, the flow that punctuated my beginnings in another dark place. I had no words for those sounds then, just feelings. Now I have both. I can remember it as clearly as I remember yesterday. (loc2447)

As well as establishing her bond with her mother, her recollection shows language being used in conjunction with memories to understand her being. The ambiguity of the ‘dark place’ – literally in the womb, and for the new Jenna the metaphorical darkness of what she sees as an incomplete existence – illustrates her understanding of the challenge she faces in shaping her new identity. However, the memory is also made more real for the new Jenna as she now has

the language to describe her foetal experiences. She subsequently comments that her unnatural memories “frightened me at first, but now, somehow [they] comfort me” (loc2490). It is as though the memory, although artificially enhanced, provides a more tangible link with the past and thereby offers Jenna some stability. However, she sees the enhanced memory as not only strengthening the link, but making her more of a person because now “I have every bit of who I was, maybe even more than the Jenna I used to be ever had. Maybe it makes up for what I’ve lost” (loc2490). Her convoluted logic suggests that as her memories make her more than the implicitly ‘normal’ human, her physical unnaturalness is compensated for, a compensation which makes her feel more human. Again, the three-way division of her posthuman existence as mind, the technological blue gel working with her mind to allow her to access her memories, and her body co-exist to provide a way for her to try to understand who she has become and what it is to be posthuman.

As it is often the choice of others to make a subject posthuman, Jenna’s identity is also tied into her parents’ decision to save her. While the ethical concerns of their choice could be defended by their wishing to save a young life, Jenna learns her parents’ decision is more controversial, not because of the illegality of the process in the novel’s world, but in the impact on Jenna herself. Where I have frequently seen technology as empowering the posthuman subjects, even when it was not their choice to become posthuman, in Jenna’s case – and possibly in keeping with the greater difference of a synthetic body – while it empowers her in terms of her superhuman abilities, a key disempowering consequence of her parents’ decision to make her amortal is the removal of Jenna’s own agency.

Although Jenna’s relationship with her mother is strained from the outset, Jenna finds herself wondering “Why am I compelled to do as Mother says even when I have a desperate need to do something else?” (2010, loc518). It is not until later in the novel that Lily tells Jenna about an incident before the accident when, following an argument, her mother ordered her to go to her room but she just stomped out of the house. As Lily has recognised characteristics of the original Jenna, she guides Jenna to realise that after the argument she had defied her mother, and Jenna’s realisation echoes her earlier confusion:

Go to your room, Jenna. And I did. Compelled... even when I had a desperate need to do something else. Go to your room, Jenna. And I did. Claire commands and it happens. (loc1997)

The immediate impression her description gives is that her parents have removed her free will as part of saving her. Such an ethically repellent dehumanisation contradicts the idea of her parents wanting to save their daughter, replacing her instead with a controllable object.

Having realised that she succumbs to her parents' instructions, Jenna contrives a situation which leads to her mother commanding her to go to her room, but

I close my eyes. I struggle. I concentrate on every twitch within me.
Every joint that wants to sweep me up the stairs. I concentrate on every
word I have practiced since yesterday. Don't go, Jenna. Don't go.
Don't go. I open my eyes. I remain in place. I have not gone anywhere.
I am drained from the effort. (loc2035)

Jenna attempts – and succeeds – to exert her human control over her posthuman body. Her father blithely points out – when challenged to explain what Jenna sees as their “dirty secret” (*ibid.*) – her presence in the room demonstrates that she is not programmed to obey their commands, and he duly explains that they “planted a strong suggestion” (loc2050) which he likens to a subliminal message. A subliminal suggestion is a part of human psychology, but Jenna learns that the suggestion has been uploaded (loc2075) which shifts the focus away from the human brain to a computer-like piece of technology. Her parents' justification is that it gives them a means by which to protect Jenna if necessary. However, even though Jenna's action shows she ultimately has some agency, the exertion required to control her technology-dominated body still leaves her parents exercising a control over her: as she speculated about her mother earlier in the text, “[m]aybe she just plain owns me” (loc823). Like Eva, the question of ownership, because of the technology, removes the individuals' humanity, and as Jenna's father tells her to sit down so he can talk to her, when she does, she wonders whether she is doing it against her own free will, and ultimately is forced to conclude that she is not sure (loc2035). Whether going to her room is the only suggestion embedded or not is immaterial, as the potential for it to be done means that, although Jenna can resist the instruction with effort, she cannot know her decisions are her own; there is a sense of predestination in her new life which is seemingly at her parents' whim. The mere knowledge of this possibility removes Jenna's subjectivity and makes her search for her own identity increasingly difficult; as she comments of her relationship with her mother, “[i]t is like we are both fighting for control of Jenna Fox” (loc843). Unlike Eva's financial arguments with her mother, Jenna's situation is far more emotive and leaves the reader embroiled in the dispute.

Through Lily's guidance (loc1556), Jenna also learns that her new body is two inches shorter than her original organic body, which she had been told was both a little too tall to be the perfect height for a dancer and a source of annoyance to her slightly shorter mother. It is again left to her father, in his calm scientific way, to explain that the decision was made “based on mechanics, ratio, and the limitations of balance” and that a “few inches shorter would have

been even better, but two was the perfect compromise.” (loc1855). Her parents’ decision to create a perfect Jenna means that she loses more of her own sense of humanness. Lily’s religious beliefs, which underlie her relationship with Jenna, bring the biblical idea of the impossibility of God’s perfect creation in the Garden of Eden to mind: it is only as a result of sin and their moral imperfections that Adam and Eve become human in their mortality and understanding of the notions of shame and evil.

Schmerheim comments that Pearson does not shy away from exploring the ethics of Jenna’s situation (2016, p64), and in terms of the technological-enhanced posthuman she does so more explicitly than the other texts in my corpus, although *Eva* raises similarly explicit concerns in terms of animal rights and transplantations. While Lily’s role offers a judgement on Jenna’s parents’ decisions, her changing relationship with Jenna suggests a need for a more flexible approach to the ethics of the situation. Lily is presented as the cliché of wise grandparent providing a counterbalance to parental revolt. One of the new Jenna’s friends, Allys, has already lost her limbs as the result of an infection. In the course of the novel, and her friendship with Jenna, she has the software in her prosthetics upgraded to make them more responsive to her human body’s control. Allys is also posthuman, although all her technology is external, but she is supportive of the Federal Science Ethics Board which manages medical research and procedures. The Board allows a maximum of 49% of a human body to be replaced to ensure that it remains predominantly human, as “[w]e don’t want a lot of half-human lab pets crawling all around the world” (loc1274). Through her, Jenna discovers the illegality of her creation, but the subject positioning and narration obliges the reader – like Jenna – to reassess posthumans’ status in the world. Jenna’s search to understand her identity is complicated again as she learns, even in the novel’s fictional world, she should not exist in her current form.

However, where *Eva* shows other people and chimpanzees being subjected to the same transfer of consciousness as Eva, it is only something mentioned in passing. Pearson looks at the possibility of such extensively technological bodies being used to save humans in the future, and when Allys falls ill, her parents approach Jenna’s parents to ask for their help in saving their daughter, even though Allys’s personal ethical code would have refused this. Although their response is not explicit, in the concluding chapter, two hundred and sixty years later, Jenna describes Allys as the “only person on the planet whom I can now truly call a peer” (loc3591). Before Allys is saved, Lily acknowledges that technological changes can cause minds to change too, and reveals that in the intervening years, other people have also

been saved. However, the BioGel has been altered to ensure that people do not become amortal and cannot live beyond an “acceptable and appropriate” age (loc3605), as Jenna and Allys have lived beyond the initial expectations of BioGel’s shelf life. The Jenna Standard – of 10% – being the minimum amount that can be saved is also in place, although Jenna muses that she is certain this will change since Lily had originally thought that with only 10% to save, they should have let Jenna die (loc1565). Although Jenna is a posthuman, her existence and the technology from which she benefits suggests a postchild-like hope for the future. The fictional changing attitudes to technology that Pearson indicates reflect real-world changes as technology becomes more widespread and integrated into people’s lives. Although there seems to be a general reluctance to accept technology embedded into the human body in the early twenty-first century, this attitude will not be sustained: as people continue to adopt wearable technology – a shift from the physical computer or smartphone towards embodiment – implants for all cannot be too far away, whether funded by the individual, or by corporations intent on acquiring increasing quantities of personal information.

The reader is coerced not only into engaging with the ethical issues Pearson presents throughout the novel, but also into and reassessing their attitudes to what constitutes a human, the extent to which humanity should be preserved by technology, and the issues of power demonstrated by Jenna’s parents in their decision not just to save, but to ‘edit’ her. Although it is the posthuman Jenna who is the narrator, the ethical issues are often presented through her parents or Allys: the effect of avoiding this is to ensure they are considered from a liberal humanist perspective. However, when Jenna discovers that a backup of her original scan remains on a computer – what in terms of the posthuman body types would be labelled the cyberbody – her own perspective is clear. She wonders which is the “real” her: her embodied, narrating form, or the backup on the computer (loc2672), and she distances herself from the “uploaded thing that is me” (loc2068). Her father’s human perspective is that it is only through embodiment that subjectivity is achieved, and the digital scan of her brain is just information, not her mind which he sees as being “the energy that the brain produces” (loc1642). In the extended explanation he offers, the information has to be kept in an environment which allows it to keep ‘spinning’ – or thinking – to give rise to the mind:

Think of a glass ball twirling on your fingertip. If it falls, it shatters into a million pieces. All the parts of a ball are still there, but it will never twirl with that force on your fingertip again. The brain is the same way. Illegal brain scans have been going on for years. Nanobots the size of blood cells are injected, sometimes even without a person’s knowledge since it’s all wireless transfer. Bits of information are extracted. But the mind, *the mind* could never be transferred. It’s an

entirely different thing from bits of information. We found that it's like a spinning glass ball. You have to keep it spinning or it falls and shatters. So we upload those bits of information into an environment that allows that energy to keep spinning, so to speak.'

'To keep *thinking*.' (loc1642; original emphases)

The backup in this case is a posthuman cyberbody, and the description demonstrates the three strands of trialism: the body (computer), the brain (the stored data), and the third strand (the mind, or process of keeping the data spinning). However, Jenna's perspective of the embodiment is that it "was my hell. My black void I didn't understand. My endless vacuum where I suffocated, screamed, cried, but no one came to help me" (loc1660). Her frustration at the isolation of a life without external stimulus is also exemplified in the downloaded consciousness in Naam's *Crux* (2013, loc475), and through both examples the importance of a human form for embodiment is shown, as Jenna's backed up brain and the mind it generated suffered in a claustrophobic and isolated situation. The need for social interaction facilitated by physical communality is implied, and Jenna's father suggests that without the sensory input – implicitly from a body – the information may be a mind, but it is "limbo or a dreamworld" (2010, loc2714). If the religious undercurrent of this book is considered, the implication that by being in limbo the backed up brain is an unbaptised infant or on the border of Hell is emphasised by Lily's baptismal act of acceptance of Jenna.

Alongside Jenna's father's insistence on the necessity of embodiment, Jenna's posthuman reaction to the environment also shows the need for a physical means by which to express herself and to interact with others. This human(e) perspective echoes Hayles's view of humans "regarded solely as informational patterns" as having something to lose, as the "resistant materiality [of the body] has marked our experiences of living as embodied creatures" (1999, p29). Inevitably, our human experiences in our human form shape our reactions to embodiment and the same is paralleled in posthuman representations. Jenna demonstrates a human reaction, but her mind's experience – enabled by technology before it was transferred into her new body and now 'living' in the BioGel – make her posthuman reactions here as valid as others shown throughout the text. However, as the embodied posthuman, she is also able to give a voice to the backups of her friends Kara and Locke whose scanned information is backed up separately on another two computers. Talking about her backed up brain and those of Kara and Locke, she tells her father that "There's those three people in the closet, too. The ones in the black boxes? Now that's what I call a disability" (loc2685). By referring to the backups as "people", she confirms her posthuman view that embodiment is essential for subjectivity, but *not* for living. However, Pearson makes an

explicit link between the posthuman and disability, rather than it just being a theoretical connection in approaches to the texts. The implication of Jenna's remark is that without a (posthuman) body, the brains and minds are simply not able to feel or communicate, but their difference, isolation and treatment reflect the stereotypical representations of disabled human bodies. Patricia Dunn sees such representations as a potential problem with young adult fiction (2015, p3), with scholars focusing on "constructed social barriers that exclude [...] people with disabilities (p19). However, as Kathryn Allen notes, science-fiction "narratives involving people with disabilities inevitably also feature technology as either curing or attempting to contain their unruly bodies" (2013, p2) which indicates a more positive perspective moving the focus to the use of technology, rather than the body itself, although this ignores the ethical concerns of cure versus acceptance within disability studies.

A recurring aspect of theoretical commentary on posthumanism is the posthuman's networked, connected and 'hive mind'-like nature. However, the posthuman's networked nature is not something I have seen convincingly within my corpus. While the importance of social interaction and desire to fit in – as Frankenstein's monster first hoped in 1818 – is apparent, the posthumans I have considered in my analysis are not connected, and they maintain a liberal posthumanist position. However, Jenna's embodied form somehow seems to be aware of the cries for help from Kara and Locke's backups, although her father rationally dismisses this as her dreaming (loc3050). The reader is shown the appeals to Jenna at the start of the chapter through the different voice of an italicised first-person plural speaker asking for her help. Although the appeals may still be imagined, as it is Jenna's narration and she is merely embodying her frustration through their digital existence, her subsequent actions demonstrate a typically posthuman desire to be human as she destroys both her and their backups. Their digital existence in the BioGel may have conferred a posthuman networked consciousness upon them, but I cannot accept this as convincing, given the focus on the human throughout the text. Whether or not Jenna is merely embodying her frustration, her awareness of their cries for help demonstrates a humanly empathetic response. In destroying the backups, she sees herself as saving them by letting them go (loc3191); her actions have their own ethical issues as she has taken on the power over life and death like her parents, but she is arguably righting the unnatural decision taken by her parents as she believes that "[n]othing of their humanity was left" (loc3488). Her parents' lack of humanity could also have made her choice easier, as without a form of human embodiment their stored consciousness can be seen as an inanimate computer. While she literally frees them, or – continuing with the religious undertones – releases their souls from limbo, she sees the

destruction of her backup as making her human as, she “can’t ever be really alive if [she] can’t die” (loc3191).

Jenna’s actions intimate a desire to be human and a desperation for agency, as in destroying her backup she crosses “an invisible boundary from immortal to mortal” (loc3488). However, even though she is mortal, the properties of the BioGel and its reaction to the temperature mean she retains a posthuman advantage: she can decide when to end her embodied life as ‘naturally’ as possible by moving to a colder region. In the epilogue, her humanness is still clear as she demonstrates compassion for her human daughter (born centuries later thanks to the preservation of one of Jenna’s ovaries before she was made posthuman and of sperm from her long-term human partner before he died), explaining that when her daughter is of an age she will not, as a parent, outlive her child (loc3591). Where Harari makes a clear distinction between immortality as the ability to live forever and amortality as being unable to die (and therefore never having been alive) thanks to scientific developments of the twenty-first century (2015, p25), Jenna’s posthuman existence is able to blur this boundary. By having a child, Jenna defies the biological limitations placed on posthumans, but her inability to bear a child naturally and the need for BioGel to save humans in future, means that her existence moves towards aspects of the postchild, but falls somewhere in the gap between it and the posthuman. Although Pearson offers conceivable visions of the future, her posthuman demonstrates the great distance that needs to be travelled before humans are entirely supplanted.

While Pearson presents many of the issues about posthuman bodies and identity that I have considered in other texts, her inclusion of a wider range of ethical concerns make nagging worries in the other texts explicitly clear in terms of what it means to be both human and posthuman. Posthuman characters have a role to educate the human characters as to what it means to be posthuman and how they should be a part of society and not othered. The relationship between humanness and technology is shown through her use of the Jenna Standard (loc3600), meaning that a minimum of ten per cent of the posthuman must be human organic material. Although imbalanced, it illustrates the importance of humanness within the posthuman and, through Jenna’s behaviour and beliefs, the ten per cent has a greater significance in the posthuman body than the other ninety per cent technology and cyberpunk ‘meat’ of existence. However, through Jenna, Pearson indicates that the ten per cent will decrease in future, implicitly as people continue to become happy with technology’s presence

and uses; nevertheless, the timescale of 260 years offers a hidden warning that these ethical debates should not be rushed.

Pearson's focus on the process of creating the posthuman Jenna also highlights the importance of embodiment for the posthuman: Jenna's revulsion at the idea of being immortal and her view of her friends' backups show the need for a body, and ideally one with a human appearance. However, while Jenna's synthetic and physically altered body brings with it additional complications for her as a posthuman, the issues and concerns from identity to acceptance, associated with it, are similar to those with the organic body. Regardless of the form of embodiment, Jenna illustrates the importance, and undeniability of the human aspect of any posthuman. As Flanagan also observes, it is impossible for the novel to "abrogate the liberal humanist concept of selfhood entirely" due to Jenna's subjectivity being constructed through the first-person narration which means it is represented "purely through language" (2014, p125). While constructing subjectivity may be true of any fictional representation, Pearson offers more ideological and philosophical concerns which contribute to ensuring that liberal humanist ideas are inescapable in the figure of the posthuman.

In both the organic and synthetic cyberbodies, the need for the subjects to consolidate their posthuman identities remains apparent, but the increased distance from humanness in the synthetic body is also apparent. Although the bodies, like contemporary real-world technology, mimic the human body, there is something about their perfection which makes it more difficult for the human consciousness to accept. In Jenna's case, this is coupled with the modifications which the manufacture of a synthetic body permits, as these move her body further beyond her attempts to reconcile herself with her new identity. The difficulty in reconciling the synthetic body with human identity is also shown in Robin Wasserman's *Skinned* trilogy which has a similar pretext to Jenna's experience. However, Pearson's representation of Jenna's synthetic body brings with it a range of ethical issues which, while also relevant to organic bodies, are not expressed so explicitly in other texts I have encountered; this could be as the synthetic body offers a greater detachment from the more emotive concerns of an organic body. Similarly, the religious aspects which Jenna's rebirth generates could be considered in other texts, but they are perhaps more pertinent to the synthetic body, as it crosses a threshold in human acceptance and the inherently religious beliefs in the sanctity of the body.

THE ENHANCED BODY: *iBOY*

From a posthuman perspective, the focus of the cyborg is its body, as its technology is externalised (what Peters refers to as the modified body) and is visible. In contrast to this, the enhanced body has its technology internalised. This posthuman, who avoids becoming a *Terminator*-style figure to be feared thanks to the non-alteration of their external appearance – even after an accident or implant imbues them with supernatural power – is possibly the type most commonly presented in popular media. In Kevin Brooks’s *iBoy* the male teenage protagonist, Tom Harvey, has an iPhone thrown at him which fractures his skull. It transpires that bits of the phone become irretrievably embedded in his brain and allows him to “hear phone calls, [...] read emails and texts, [...] hack into databases, [...] access *everything* (2010, p40; original emphasis¹⁷). While the description could convey the potential of any phone-using human, Tom is able to interface himself directly with the phone; alongside the technical abilities, he also develops non-human physical abilities.

Each chapter of *iBoy* starts with a brief epigraph, primarily in the form of a philosophical quotation or definition from a variety of sources, reflecting the gamut of information freely available online today. The first of these provides the algebraic formula for calculating the velocity of a falling object before the chapter then opens with Tom’s first-person narration of the technical specifications of the phone that “shattered my skull” (p1). However, the technical and mathematical details are juxtaposed with the more prosaic detail that the only thing Tom was aware of was “a small black object hurtling down through the afternoon sky towards me” before it hits him. Immediately, technology and human are set in opposition: as he recounts the moments before the phone hits him, his narration is interspersed with a countdown starting, in his words, with “thirty-five seconds of normality left” (p2). The chapter ends as the countdown reaches zero and “[t]he end of normality” (p2). From the outset, the difference between the detailed technical knowledge and normal human awareness of events is shown, a difference which creates the framework for considering what Tom becomes after his enhancement, and the way he vacillates in the course of the novel between accepting and rejecting his new self and new identity.

As the implicitly technologically-savvy teenage reader is invited to share Tom’s experience, the second chapter is disorientingly numbered 10. However, the chapter’s epigraph then provides a definition of the binary number system used by computers; the definition indicates that the chapters of *iBoy* are conventionally numbered sequentially using binary notation, thereby setting technology and human norms alongside each other. As Tom is confused while

¹⁷ Italicisation and emphases in subsequent quotations from *iBoy* are all original.

regaining consciousness and tries to reorient himself, so the reader's experience is disrupted by the seemingly incongruous numbering. It does not disturb the narrative, but forces the reader to adjust their perception of the account they are reading. The reader's perception of events is challenged again as Tom narrates, "The next thing I knew (or, at least, the next thing I *consciously* knew), I was opening my eyes" (p6). A trialist division of his trying to make sense of the world is highlighted by the use of italics, with the difference between his embodied self trying to reconcile his consciousness and the ability to know things through another means. As he wakes up, he realises that he is experiencing a new physical sensation within his head and endeavours to explain it in a chatty, personal way, addressing the reader directly. The description starts as a metaphor exhorting the reader to imagine the sight and sound of a billion bees, but then suggests that the reader should imagine the "*sense* of a billion bees" (p8); the reader is invited to experience the same uncertainty and confusion that Tom experiences as they try to comprehend what this means. The description immediately demands that the reader imagine the bees as data, in order to get a sense of Tom's experience; but as the description continues even this is insufficient, the bees becoming "somehow just the things that *represent* [data...] symbols of the stuff that things are" (p9). Human language and imagery are proven incapable of describing Tom's experience, and even the implicitly technology-using reader is left uncertain as to what Tom is going through. Tom's final question to the reader – "Can you imagine that?" (p9) – is rendered rhetorical. The description demonstrates Suvin's notion of cognitive estrangement (1979) despite Brooks's anticipated reader's understanding of, and engagement with, their own technologies.

Regardless of the intellectual discomfort that understanding his enhancement causes, Tom seems very accepting of his new technology: when his doctor asks whether he has a mobile phone, Tom "tapped the side of [his] head" and told him, "Yeah, I got a mobile phone." (p14ff). In this brief exchange, the dual address also gives an indication of Tom's own identity becoming fractured. To the doctor this is a light-hearted reference to the remaining pieces of the phone lodged in his brain, even though it does not answer his question; however, to the reader, the grin indicates Tom's knowledge of his new embedded communications abilities. As Tom's internalised intellectual uncertainty conflicts with his outward expression, so his description of himself looking in a mirror shows an ambiguous reaction:

my face now had a strangely haunted, almost skeletal look to it. My eyes had sunk into their sockets, and my skin was dull and kind of plasticky-looking [...] my once longish dirty blond hair had gone, shaved off for the operation, and in its place I had an embarrassingly soft and babyish No. 1 crop. I looked like Skeletor with a piece of blond felt on his head. (p15)

Beyond the ironic plastic look, his physical appearance suggests something other-wordly and not quite knowable, casting him as an outsider. The embarrassing newly-grown hair is

juxtaposed against the comparison to the cartoon character He-Man's similarly skeletal nemesis; the image does not only offer a mental picture of Tom but, as the reader is expected to recognise the popular culture reference to Skeletor's unconventional appearance, it also demonstrates the awkwardness of someone who does not conform to societal expectation and is outside societal norms. Despite the opening incongruous descriptions of both his mind and body, Tom remains confident that "[w]hatever else the head injury had done to me, it hadn't caused any short- or long-term memory loss. I knew who I was" (p18). In his certainty, Tom allies his sense of identity with his memory (particularly his human memories), even though his embodiment shows that he is aware that something about him is no longer human.

As Tom tries to recall the events of the accident, he describes the kids of Crow Town who all wear black clothes: "[i]t's not like it's a uniform or anything, it's just that if they all wear the same kind of clothes it makes it harder for them to be identified individually" (p18). Although Tom is one of the kids, his detachment from them, as he comments about them in the third person, rather than inclusive first person, suggests an otherness. However, as the description is from his pre-iPhone human memory, there is something about his character or behaviour which separates him from the crowd, like the posthuman Tom, or the figure of the geek. In her research, Flanagan finds young adult novels demonstrating "an ideological alignment with posthumanism, which strives to deprivilege humanist conceptualisations of the self through an examination of the different ways in which technology produces alternative formulations of the subject" (2014, p186ff). To her this means that posthuman subjectivity is "defined by its collective rather than individualistic nature, its fragmentation and plurality, and its emphasis on embodiment" (2014, p187). The description of the hooded humans is therefore an ironic comment on human behaviour (and shatters this human/posthuman division) on the estate, as it is the humans who are choosing to lose their individual identity. The division is then developed further as the teenage humans are all acting for the good of the others in the gang, rather than – as is more often associated with human teenagers and nascent posthuman behaviour – solipsistically.

Even when Tom has fallen asleep, his present tense narration shows that he is still consciously aware of there being something undeterminably different about him. The use of the present tense would be to ignore because of its ongoing use throughout the novel. However, as Tom is asleep in this section, the reader is forced to conclude that he has a second voices which enables his continuing narration (an effect stressed typographically through italicisation). In the new voice, Tom reflects on his being different:

It's not a dream, I know it's not a dream...it's something real...something happening inside me. Inside my head. Tingling, racing...reaching out in electric silence...reaching out at the speed of

light into an infinite invisibility of absolutely everything...everything...everything. I see it all, I hear it all, I know it all – pictures and words and voices and numbers and digits and symbols and zeroes and ones and zeroes and ones and letters and dates and places and times and sounds and faces and music and books and films and worlds and wars and terrible things and everything everything everything all at once...

I know it.

I know it all.

I know where it is.

I am connected.

Wires, waves, networks, webs...a billion billion humming filaments, singing inside my head.

I know it all.

I don't know how I know it, I don't know where it is, I don't know how it works. It's just there, inside me, doing what it does...showing me answers to questions I'm not even aware of asking. (p19ff)

Combined with the narratorial repetitions, the tri-partite fragmentation of his body (head), mind (the understanding of something happening) and the technology (the data) illustrate Tom's confusion about what is happening to him. There is a sense that the technology is acting of its own accord within him, not just because his voice continues to 'speak' while sleeping, but also through the bewilderment described in the final paragraph. Unlike the more resentful use of external enhancements in Peters's modified body, Tom appears happy to let the technology access his human thoughts and subconscious, much as today's real-world Internet users willingly submit personal information about themselves to online advertising services by using free software, and the fictional Nexus users submit themselves to their software. They and we, like Tom, feel empowered by their access to information, although Tom's clear statements of his connectedness demonstrate his own feeling (or knowledge) of a god-like omniscience through his access to everything. Tom could be seen to be conforming to the notion of the networked posthuman even though he is not connected directly to other (post)human minds as a shared consciousness. In Tom's case it is his access to the information, albeit directly through his brain rather than screens and keyboards, which empowers him as an individual. The fact that Tom's ability has come about as the result of an accident – rather than by a conscious choice by the individual to enhance themselves or having to conform to society's rules – contrasts with the different representations of posthumans in my other primary texts.

As Tom returns to the sleeping state, the separation between the technology (still 'it') and his brain/mind, along with its insinuation into his thoughts, is reiterated as

it knows what I'm thinking about, this presence inside my head...it knows my concerns, my thoughts, my feelings, and it soaks them up and takes them to a place that shows me what I'm scared of, what I unconsciously know, but don't want to face up to (p20).

The technology can be seen to be working to ‘improve’ him as a human, as it helps him to access information which allows him to face up the realities of his situation and punish the rapists of the girl he was about to visit when he was hit with the phone. Technology has empowered Tom to be able to adopt the role of judge, jury and executioner, as “he has full agency to explore both his powers and implications of using them” (Kimberley, 2016, p135). Giving him power and the potential to consider the morality of the power could be read as an illustration of technology’s ability to help humanity, but from a technophobic perspective Tom’s realisation that his connectedness “was changing all the time – becoming clearer, but at the same time more complex, as it was somehow evolving” (p27) means the power held by technology and the posthuman is terrifying. Real world concerns about the rise of technology are grounded in the fear of the singularity, or technology overtaking human abilities and understanding: if Tom’s embedded technology is living and evolving, its use of his body shifts the site of control away from the human and towards technology. Just as in *Nexus*, the fluidity of posthuman trialism is shown. Although Tom’s narration seems to promote a human perspective, his body becomes the cyberpunk ‘meat’ for the developing technological consciousness and he is, therefore, no longer an enhanced body posthuman. The accident has created a cyberbody in which it is the *unification* of the technology and the human mind – in a recognisably human body – which creates subjectivity. In the same way *Eva* could illustrate the figure of the postchimp, so technology’s dominance would make iBoy a posttechnology as opposed to a posthuman.

If a posttechnology perspective is borne in mind while considering other aspects of Tom’s representation, it is possible to explore the prioritisation of technology from a more technophobic angle. Despite the projected adolescent reader, the subtle ideological positioning encoded within *iBody* reinforces older views of technology and enhancement. Having been born in 1959, Kevin Brooks did not grown up with the technology he describes, and his writing duly conforms to the idea – which I previously proposed in my Masters’ research (2011, p54) – that when writing about ideas rooted in technology, author’s intentionality is dependant on their age.

Although Tom’s (posthuman) first-person narration and focalisation show both his confusion about, and his coming to terms with, his embedded technology, it is only during a human interaction that he accepts a label with which to identify himself. While being bullied by his contemporaries, the parting insult is to call him *iBoy*. However, his reaction is to grin, and say to his gran, “that’s actually pretty good, isn’t it?” (p33). While he accepts the label, which brings together the implicit technology of Apple’s ubiquitous iMac, iPod, iPhone, and iPad and the human, Tom subsequently finds himself keeping his posthuman *iBoy* identity and his

human identity separate in relation to his actions and those people around him. While the separation may be another demonstration of a posthuman fragmented identity, it could also be read as the posttechnology cyberbody being set against the human mind in the single body.

Despite repeatedly appearing to accept his posthuman identity, the mutability of trialism is more evident in another subtle shift of the narrative voice, this time between *iBoy* and Tom, whose human thinking continues to try to make sense of the effects of his internal bodily enhancement. In his direct address to the reader, he reflects on how he is able to use his embedded technology through a challenge to consider how the human brain works:

Just search your memory, try to remember something...and when you've done it, try to imagine *how* you did it. How did you find what you were looking for? What did you search with? Where exactly in your brain did you search? How did you know where to look, and how did you recognize what you were looking for?" (p39)

Although neuroscience continues to try to answer such questions, the ignorant reader is forced to accept their *own* lack of understanding of natural brain functions and what it means to be human. The reader is constantly reminded that Tom – like any real-world teenager – is trying to make sense of who he is, but his posthuman experiences have complicated this for him. As Kimberley observes, *iBoy* offers a different perspective on “living a posthuman life [...] more relevant to contemporary young adults living in an emerging posthuman world” (2015, p126). However, although his experience with additional physical capabilities is an extreme example, real-world teenagers are empowered by their ease of access to a similar wealth of information. Teenagers find that understanding how to use the access and the information to their advantage becomes a part of developing their identity, and Waller describes his “cyborgised mind [...] as] represent[ing] the essence of what might be considered contemporary youth’s determined desire for information and consumption, *now*” (2012, p98; original emphasis). Tom appears able to use information and control his use of it naturally (possibly in the same way as the figure of the geek), whereas many real-world users do not understand how to use their access to information to their best advantage.

Tom knows his sense of self has been changed by the accident, but his (human) narration still sees his (enhanced) identity as being rooted in his brain:

it was *my* head, *my* brain, it made me what I was...but now there was something else in there, something that had somehow become part of me, and *it* was doing what *it* did. (p40)

The consideration of what is happening to him is another example of posthuman trialism: his mind is interacting with technology and the resultant combined consciousness is controlling his body. However, he discovers that his enhancement also affects his body when he notices “[t]he skin around the wound was shimmering, vibrating almost, as if it was alive. It was

radiating, glowing with countless colours, shapes, words, symbols...all of them constantly changing, merging into each other, floating and drifting, sinking and rising, pulsating like minute shoals of multicoloured fish” (p41), and then sees his reflection in which “[t]he face – my face – was pulsating, floating, radiating with colours, shapes, words, symbols...my skin was alive. My face was a million different things all at once. (p64). Both the use of imagery to try and convey his appearance and the detachment expressed before he admits the reflected face is his, raise issues of embodiment concerned with body image which I have seen more frequently in representations of female posthumans. While Tom is an exception, gender remains a binary division which young adult texts – despite Haraway’s assertions of boundaries being destroyed – continue to perpetuate. Tom’s appearance also marks him out as other in comparison to humans and, like many other posthumans, he later accepts the label of “freak” (p241). If my alternative technophobic cyberbody reading is continued, his appearance shows the continuing evolution of the technology, and it becomes an outward sign of the physical domination of the human body since both Tom’s mind and body are affected by what he sees as the indefinable ‘it’. Whichever way it is read, Tom ultimately sees identity both as being tied up with his both body, and with the way he is compared to and perceived by others, reflecting “Goodbye normality. It was nice knowing you” (p42). Through Tom’s valediction, Brooks stresses a human/posthuman binary as human normality is implicitly set against posthuman abnormality, or other, when considered in terms of Hollindale’s warnings of implicit hidden values which reinforce existing social norms (1988, p19).

Tom’s otherness is further developed by the vivacity of his skin being cruelly set against the appearance of Lucy – the girl who was raped – who he sees looking “pale” and “dull” in the aftermath of the attack. While the contrast widens the difference between human and the posthuman, a parallel between them and their experiences (which only stresses the gulf between the potential of the posthuman and the depravity of humankind) is made as Tom notes “I could *see* that she’d been through the worst thing imaginable. It was *in* her, it had become part of her” (p50). In the same way that his identity has been altered and he has been physically changed by his enforced enhancement with the remnants of the iPhone in his brain, so her enforced sexual experience has become a part of her identity and altered her physically and mentally. In both cases, the change is brought about by human actions, and they are both uncertain about what they have become. Nevertheless, the technology is empowering, despite Tom’s initial reticence to accept it, whereas the wholly human act of rape is destructive.

The physical changes which Tom experiences also change his earlier belief that identity is rooted in the brain, as he now sees it being constructed through mind and body, both independently and in conjunction with each other. But within his identity there also remains

the third, less tangible, technology strand. Tom reflects on what he is and considers “[m]y iBrain, my iSelf” before embracing “[m]y i” (p74). As Steve Jobs was credited with bringing something unique to Apple, both in terms of technology and design, when he returned and launched the iMac in 1997/8, so Tom’s lower case “i” embodies a whole raft of technical innovation and abilities with which his enhancement has equipped him for the twenty-first century.

Tom therefore seems to accept his i-based posthuman identity, but as he discovers the extent of his enhancements (both his access to information and ability to manipulate it, and his ability to control an inherent electrical energy to use it as a weapon and a defence), he is forced to question his identity once again. Although posthuman identity is often described as fluid, the other posthumans I have considered do eventually reach a state of stable subjectivity and selfhood once the technology’s presence as part of the human body has been accepted. Although the posthuman Tom accepts and uses the technology, he struggles to reconcile it with his humanness. In contrast to the other posthumans discovering a stable sense of their identity, I see Tom’s delay resulting from the fact that his enhancement was neither intentional nor expected.

Initially, Tom leaves his human identity behind and adopts his new iBoy persona with its concomitant abilities. However, the responsibility (or sense of responsibility) that he feels accompanies this is burdensome to him:

I wasn't the normal Tom Harvey any more. I was iBoy. I had the ability to do things that I couldn't do before, and there was something inside me – a part of me that I wasn't even sure I liked – that made me feel that it was my duty, my obligation, to make the most of those abilities and try to do something useful with them. (p107)

Unlike the oft-quoted idea that it is not a weapon or technology that is good or evil, it is the person who puts it to use who makes the moral decision, Tom’s technology is making the moral judgement for him to do good. While the ‘part of me’ may be an aspect of his humanness, the fact that he did not like it and has eschewed his conventional name for ‘iBoy’ indicates that it is a part of the technology. In contrast to the technology making the morally responsible decisions for him, when he has used his skills to steal £15,000 to free his Gran from debt (a human and compassionate choice), he acknowledges that stealing and fraud was wrong, but he “didn’t feel *bad* about it” (p111), demonstrating the “internalised ethical wrangling” which Waller describes as taking up much of the book (2012, p100). Although his technology is trying to guide him towards morally responsible behaviour, there is still a degree of human control and, as he falls asleep because “morality and algorithms are *really* tiring” (*ibid.*), there appears to be more of a balance between the technology and the human as he comes to an understanding of the extent of his powers.

Tom's posthumanity divides him from the non-enhanced humans in the text, but the antagonism is not just from the human perspective. When Tom is talking to a former friend and current gang member who has been unquestioningly associating himself with illegal and immoral behaviour, Tom comments to him, "You used to be all right, Davey, I mean, you used to have a mind of your own" (p94). In the context, Tom's ironic observation addresses the common fear of humans becoming slaves to their technology: while Tom's theft demonstrates that he can make human decisions which conflict with his technology (either for good or bad), Davey's human nature makes him want to be a part of a very human network and it is only questioned by the non-human Tom. As Tom's iBoy persona develops and he is empowered by his technology to fight the drug dealing members of the gangs on the estate, Davey describes the man controlling the criminal world as "the Devil", a "really bad guy" (p100). The name invokes a biblical sense of the most traditional 'good versus evil' debate, which puts the technologically enhanced Tom in the morally superior position, despite his morally questionable use of his technology. Kimberley relates Tom's ethical dilemmas as iBoy to the real world:

Tom, as iBoy, must work through these issues as best he can, the same as any teenager struggling with the seesawing ride between childhood and adulthood that marks adolescent years (2016, p136)

but the implication here is that the technology equips him to make decisions as an adult, rather than a child. This suggests traditional power roles and the maintenance of the *status quo*, whereas the seesawing could be more precisely seen to be between human and posthuman with Tom attempting to find the fine balance between his inevitably emotional humanness and the more logical technology. Although he is posthuman, the way in which Tom is able to challenge established power hierarchies suggests a postchild-like potential, even though his abilities are not natural. His enhancement was forced upon him, but he is making the most of the situation as he uses his human experience to attempt to make sense of it, and he uses the technology to exercise his might, even though the technology was not innately his.

It is unclear whether Tom is always wholly in control of his iPowers. He describes himself ambiguously at one point as being "in state of controlled brutality again – in control of being out of control" (p151), but there *is* a connection between his human emotional state and the manifestation of his powers. When he sees the group of rapists spray painting insults on the door of Lucy's flat, rage takes over and he takes physical retribution for their actions. His anger leads him to be about to push one of the attackers out of a thirtieth floor window, but disturbed by the noise, Lucy sees this going on and stops iBoy. The change in the implied first-person narrator from Tom to iBoy is seamless, reflecting the uncertainty of whether he is

control of his iPowers or not. Lucy's voice causes the "coldness, the brutality of [his] rage" to fade, and he "really didn't know who or what [he] was" (p118). He then cannot understand why she would not want him to kill them, as she had said she wanted her attackers hurt and killed. Unlike the morality of his actions with the money, Tom's confusion seems to be rooted in his technically literal interpretation of her words, which prevents him seeing her desire to kill them as a human figure of speech. His confusion demonstrates a technophobic attitude, but if the technology taking over was as a result of his human concern for her, his actions are an illustration of human behaviour which has been enhanced by technology. As I have shown technology taking over in the figure of the cyborg to preserve the human, so this shows technology serving the human, even if its digital decisions indicate a less ambiguous posthuman (rather than human) system of morality.

Tom's enhanced abilities place him higher in the power and moral hierarchies of the text, but his narration and focalisation reiterate his fractured identity when he returns to see Lucy as Tom rather than iBoy, and he realises "as far as Lucy was concerned, I didn't know anything about [the visit from the gang members]" (p124). He has to listen to her describing the "weird-looking kid with multicoloured skin" squaring up to her rapists (*ibid.*). In contrast to the more selfless motivations of his i, as Tom is listening to Lucy he expresses his human jealousy as "she was so excited, so thrilled, so curious about this mysterious stranger who'd come galloping to her rescue... and I wanted her to know that I was me. I wanted her to be excited about *me*, not iBoy" (p125).

Although Tom's humanness remains separated from his posthumanness, the independence of his technology is clear as Tom is surprised not to find himself walking in the direction he intended, and admitting that he "didn't consciously know what [he] was doing", but that "there must have been *something* inside me that knew what I was doing" (p133). The three-way division is apparent as his human mind knows his technology is using his body for its own purposes, but as his technology takes him towards the roof it becomes conflated in the narration with his humanness. When Tom reaches a locked gate: "I hacked into the council's database" to find a code for the keypad, but then "I climbed the ladder, iUnlocked the padlock" (p134). He controls his technology to do the hacking to find the code, but then the climbing is a corporeal action: the first-person posthuman narrator is in control of both his technology and his body independently. The verb "iUnlocked" suggests a more cohesive bringing together of technology and body and the form of 'iUnlocked', like iPhone or iBoy, indicates a technological dominance and makes the action a part of his enhanced abilities. However, aurally the sentence can be read conventionally with the pronoun 'I', connoting something human, followed by the regular verb 'unlocked'. This unique example of linguistic

ambiguity in the text illustrates a more unconscious coming together of human and technology from Tom's position, as he uses his abilities unthinkingly within the course of his actions.

In the same way as Tom did not feel bad for stealing the money to free his gran from debt, after he continues to act as a vigilante and physically attacks a den of drug dealers before calling the police, he knows that he

ought to be feeling *some* degree of shame or remorse or guilt or something...

But there was nothing there.

No feelings at all.

Just me and the darkness...

And iBoy.

Us.

Me.

And i.

We lay there in the silence and thought about ourselves. (p163)

His uncertainty about who he is remains as he separates himself from iBoy – the person he is perceived to have become and is increasingly forcing himself to become – and also separates himself from his powers. Despite the two separations, he uses first-person plural pronouns suggesting his wholeness, but in thinking about “ourselves” his divided personality appears to persist, as there remains an incongruity between the way his posthuman self is acting and the way his human morality knows he should be acting. Tom later explains that “[t]he application in my iBrain doesn't care who they are or what they're doing – it targets them all” and “doesn't give a shit” about other circumstances because it is just “looking for criminal behaviour” (165ff) to punish. The mention of an app also indicates the continued developing intelligence of his technology: previously he just saw himself as connected, but now he has an app with a specific purpose which he is using yet which is simultaneously using his body. However, the app's intelligence is limited by its algorithms, which produce the most efficient outcome, but ignore ethical concerns. Nevertheless, the reciprocal way in which he consciously uses the app, and the app uses his body shows the fluidity of his identity and the trialistic division of mind, body and technology.

After the most violent of his vigilante attacks, the immediacy of Tom's narration is changed. It becomes more reflective and distances himself from the events. He narrates, “I know exactly what I did, and at the time I was perfectly aware of what I was doing. I was there. It was me. I was myself. I knew *exactly* what I was doing and why”. But when he tries to recall the events without the aid of his iMemories, all he can remember are bits of things that don't seem to belong to him. (p164). As he can still access his iMemories he has not lost his abilities, but there is a sense of him having changed – again – as he looks back on the events:

he knows he was physically there, but does not believe he was fully in control of what he was doing. The chapter's epigraph provides a definition of a fugue state as an "altered state of consciousness" and a disassociation from aspects of everyday life such as "personal identity and personal history", sometimes accompanied by the "establishment of a new identity" (*ibid.*). The inclusion of this psychological detail distances the reader from Tom's experience as it offers a detached – and possibly rational – explanation for his behaviour. The detachment is mirrored in the chapter itself as Tom relates some of his disconnected memories. His recollections are preceded and followed by ellipses to give a sense of fragmentation, but the inclusion of the precise times of events indicates computerised memories – unlike the earlier narration. The first fragments of his memories are written in the first person, but the detachment of his narrating self from his iMemories is illustrated as he recounts a memory in which he is looking at himself and describing the scene in the third person, as if it is iBoy looking at his human embodiment: "...Sunday 11 April, 19:47:51. Tom Harvey is sitting on a bench at the kids' playground thinking about Lucy." (p167). The narrating Tom realises, "It's a god, seeing everything, hearing everything. // It's not me." (p165). But in his observation, the fracture in his identity does not, in fact, seem to be between Tom and iBoy, but between Tom and the technology; it is as if it has outgrown his body and the physical limitations of iBoy, and is something beyond posthuman – let alone human – understanding. The heteroglossic nature of the narration demonstrates the multiplicity of identities with which Tom/iBoy is living: the reader also experiences the shift between empathising with the first-person narrator and feeling the distance from iBoy's human and third person experiences.

Tom's detached third-person narrated iMemories blame iBoy for him not seeing Lucy, as iBoy has been in touch online with her regularly so there is no need for the human meetings. However, rather than this emphasising the division between his two selves, it is explained as a consequence of Tom continually "forgetting that *he's* not iBoy, that *he's* not talking to Lucy all the time" (p167). Tom is now using his i abilities selfishly to keep his access to Lucy: as she does not know that they are the same person, she will think that Tom is ignoring her and failing to offer her his human friendship and support. The third-person iMemory narration also shows what Tom's first-person narration has demonstrated throughout the novel: firstly that "[i]t's really confusing for Tom, flipping from iBoy to himself all the time, trying to remember who he is and what he's supposed to be" (p167), and secondly the difference in perception between himself as a person and as a thing. Tom's previous descriptions of the vigilantism have shown iBoy as the actor, but in the third-person iMemories it is Tom who initially sees that a situation needs to be averted, and "Tom's iSkin [which] is now on" (p172), but it is "iBoy [who] is running as fast as he can" (p173) and who saves the girls. The fluidity of Tom/iBoy's identity is a posthuman feature of his presentation, but his earlier

comparisons of himself to the fictional superhero Spider-Man (p78ff) undermine the fluidity, as the description shows a ‘normal’ person donning a different outfit to become a clichéd cartoon book superhero. Contrasting the description with the psychological definition at the start of the chapter embodies the variations and variety seen in a posthuman, but also caricatures the figure of the posthuman and any attempt for the readers to engage with the issues of the use of technology and the moral and ethical questions which artificial intelligences would raise. A subsequent conversation Tom has with Lucy about Spider-Man’s human *alter ego* considers the actor playing the role of Peter Parker/Spider-Man in the real-world series of films made from 2002 onwards. Even though the boundaries between the actor (Tobey Maguire) and human character (Peter Parker) he plays are clear, the aspects of the actor’s physical appearance that make the fictional character attractive are discussed: in a novel so concerned with identity, the blurring of boundaries (both in terms of the actor/character and the real-world film versus the fictional world discussion about the film) and inability to make neat distinctions offer a more tangibly confused way in which Tom’s iBoy identity should be viewed, as the reader considers whether the ‘real’ Spider-Man is Tobey Macguire or Peter Parker.

After Tom’s third-person recollection of his iMemories to describe iBoy’s vigilantism, the narrative returns to the first person as the consequences of his actions unfold. However, his fractured identity remains clear as, reflecting on the gangs’ actions, he realises “We naturally form ourselves into groups. We find safety and status and purpose in a group” (p198), but then in separate paragraphs he notes “It’s what humans do. // How could I possible hope to change that?” (*ibid.*). He sees himself as human, but then sets himself apart from the humans by labelling them explicitly and presenting himself as othered and returning to the first-person single pronoun to consider his actions towards the humans. His use of the first-person pronoun conforms to Tze-Wan Kwan’s observation that “only the first and second person exhibit true personhood, the third person is doomed to be reifiable, as a thing or to be ‘depersonalised’ as a ‘non-person’ (2010, p266). His otherness is shown again when thinking about Lucy: “I wanted to be normal with Lucy too. I wanted to be Tom Harvey with her. Not iBoy, just Tom” (p199). And when Lucy sends an electronic message to iBoy, Tom shows his attempt to control his technology as “iBoy didn’t reply. // I wouldn’t let him. // I was Tom...”, but he finishes, “I was losing my mind” (p200). His human reflection sees his loss of control of his self as losing his mind, thereby returning to his initial ideas of siting human identity in the mind. As the iPhone is embedded in his brain, technology’s literal dominance over his mind and its use of Tom’s body is clear. However, the motivation for iBoy’s behaviour remains rooted in Tom’s human care for Lucy, and his revulsion at the gang members’ actions. Tom’s identity confusion comes here from the relationship between mind and body

being disrupted by the technology alternately being controlled by his mind and taking control of his body.

As Tom reflects on his actions, he continues to vacillate between seeing iBoy as distinct from him and seeing the technology as a part of him. He considers “[w]hat iBoy had been doing. // What *we’d* been doing” (p200) and that “I’d done a lot. // *We’d* done a lot.” (p201). In the first pairing, he moves from seeing iBoy as a third person to uniting them which suggests the human and the posthuman are side-by-side, but in the second pairing he shifts from seeing himself as the perpetrator of Tom/iBoy’s actions and separates the human and the posthuman again. From a posthuman perspective, Tom’s confusion arises from the human/technology conflict within himself and how he sees himself in comparison to non-enhanced humans. As Tom’s human care for Lucy provides the impetus for iBoy’s vigilante actions, so Tom’s human need for the development of his and Lucy’s nascent relationship is a means of tempering iBoy, because iBoy “could never dream” and “could never make a wish come true”, but “Tom Harvey could” (p231). As the human, he can experience conscious feelings and emotions, but when the technology dominates, the algorithms control his body intelligently in a mechanical way, but without feeling. The separation shows the trade off between the power offered by technology and the human cost of using technology which Jean Twenge has recently seen in the real world, describing today’s smartphone-using adolescents as being physically safer as they choose to spend their time online, but “on the brink of a mental health crisis” (2017, np). Tom’s understanding of his two sides, leads him to the conclusion that iBoy had to go as it was “the only way I could get back to being Tom Harvey again, and being Tom Harvey was the only way I was ever going to be with Lucy. And that was my dream” (p231). While the physical remains of the iPhone which cannot be removed from Tom’s body have to stay, he is attempting to control the three facets of his posthuman identity and prioritise the human mind over his body to control the technology.

Despite his decision to prioritise the human, when Ellman – the criminal behind the gangs’ activities – finds Tom at home in the middle of the night, the narration of events starts with the precise time, a device which shows the technology unconsciously taking control of both events and the narrative. With Lucy at gunpoint, Tom/iBoy is taken to a warehouse where there is no mobile phone signal, an absence which, it transpires, deprives him of his iPowers. However, knowing that as a human he can neither escape nor save Lucy in his human form, he knows that he “*had* to be iBoy”. His conscious acknowledgement of his need to be iBoy immediately means that “I was iBoy, and we weren’t there. We were deep down inside ourselves, reaching out, stretching... stretching... stretching up into the sky” to find a mobile signal (p266). Although the first-person singular pronoun shows Tom’s acceptance of who he

has to be, the first-person plural then offers a confused version of his acceptance of his embedded technology as it seems to perpetuate the separation of his technological enhancements from his human self. His confusion continues as both his human and technological aspects act together but, as suggested by grammar, independently. The actions of reaching out and stretching are similarly human, but it is the technology which needs to make the connection, so the two are also confusingly conflated. When Tom (or his technology) does find a connection, it turns out to be insufficient as Lucy is threatened by Ellman. In an instant, Tom's acceptance of the need for the technology and his humanness to be unified is clear as "I had to look deep inside myself and use *everything* I had – my iSenses, my iKnowledge, my iPowers, my *self* (p271). The separation of his sense of self in the list indicates it is something more nebulous, but nevertheless is it the thing which makes him human, and its position – listed beyond his technological abilities – suggests that an emphasis on his human characteristics which will allow him to succeed. Although the unified Tom and iBoy enables him to have "all the phone calls ready" (p273) in his ultimate moment of danger, the detached narrating and human Tom knows "I had to close my eyes for the last time [...] and rejoin iBoy" (p274) to execute his plan.

Tom's plan is ultimately successful, but his actions result in the deaths of some of the gang, and he is aware he does not feel remorse for murdering them. While his conscience may be clear because he knows he acted morally, it is his technological abilities which allowed him to act in this way in the first place, and knowing this, Tom fears that he has lost his mind and that his heart has grown cold (p284ff). He knows that he can never rid himself of iBoy, and can therefore never be Tom Harvey again, concluding that "[h]e was me and I was him" (p285). Waller sees such narrative moments as a key shaper of Tom's adolescent identity, moments which rely on "internal contemplation and moments of iPhone-free epiphany" (2012, p100). Although still split into two identities sharing a single physical body, Tom has reached an understanding and acceptance of his new self. In a strange anthropomorphic description, his acceptance is illustrated in the moment where Tom, standing on the roof of the block of flats, recalls the inciting iPhone incident but in doing so, "[m]y perspective suddenly changed, and instead of picturing myself as me, looking up at the iPhone, I was picturing myself as the iPhone tumbling down through the sky towards the other me" (p286). Unlike the data coursing through him which he could not understand, the technology is now made human through his narration as it plummets towards the ambiguous "other me". This shift either sets the posthuman Tom/iBoy against the human Tom, or shows the human embodiment side of the identity-accepting posthuman. The 'memory' of the iPhone falling towards Tom obviously comes from before it was embedded in him, and can therefore be read as the posttechnology having accepted the human and allowed Tom access to its memory.

When technology and human are unified, seeing his existence as a posttechnology is more convincing than claiming Tom is simply able to imagine the phone's perspective, as Tom initially described memories as being part of what created his identity. Tom sees himself falling for a second time, but "this time I wasn't the iPhone, I was myself... I was Tom Harvey, I was iBoy... I was both of us" (p286). His sense of self is made up of both his Tom Harvey-ness and his iBoy-ness but, as Lucy interrupts him and they lay looking up at the stars together, it is ultimately his human character which dominates his new identity.

In comparison to my other texts, *iBoy* stands apart for three reasons: firstly, although the power that technology offers is shown by the older, male Brooks, he seems to be warning his readers about the dangers of technology far more explicitly than my predominantly female other authors whose writing presents the moral and ethical concerns and gives the reader greater autonomy in reaching their own assessment of the risks. Secondly, because Tom's technological change comes about as an accident rather by design; and thirdly, although the focus of the enhancement is internalised technology, the protagonist's body itself is less important than the technology. Tom's body is not ignored, but he sees himself in his third-person iMemories as "some kind of fluorescent mutant in a hood" (p172), and in his first-person narration he describes himself both as a freak (p241, p284), and as an object when he asks Lucy *what* she thinks iBoy is (p212). The focus is not on his embodiment, but his coming to terms with his identity as somebody who has become different within a society in which conforming and being a part of a gang is essential. Compared to the rest of my corpus, *iBoy* is a far more old-fashioned story of attempting to find one's place within society, rather than the more introspective examination of one's self that my other posthuman characters have shown. The lack of attention given to his embodiment also contrasts with the other examples of posthumans with technologically modified bodies I have explored, and this may be because all their protagonists are female and reflect gendered real-world concerns.

Tom's technology is embedded, and in young adult texts enhancement frequently occurs because of society's expectations, either through the desire of the subject's parents – or those with responsibility in society – to demonstrate their power by forcing the enhancement on the subject, or the subject's own decision to enhance their abilities with the technology, thereby exhibiting their might. However, in Tom's case society neither demanded the implant, nor did he choose it. His situation as an unwilling posthuman subject is different to the others who became posthuman, but the representation of his posthumanity is familiar, and similar ideas and techniques are used to set him apart from himself and from human society throughout the text. The similarity may be a result of Tom's enhancement still being forced on to him by the societal conditions in which he finds himself. The accident itself was a result of the violence

rife within his society which, in turn, is a result of the estate's poverty. The cause of the accident reveals an ironic inversion: the enhancement being a result of poverty, rather than the wealth – usually implicitly, if not explicitly, connected to the protagonist's social status – which is frequently necessary for the enhancement to be carried out.

THE GEEK: *BRAINJACK* AND *LITTLE BROTHER*

brainjack (2009) and *Little Brother* (2008) are useful exemplars of fictional representations of a social reality: the geek. The technical capabilities of their protagonists – Sam and Marcus, respectively – allow both characters to use technology to both their own and their societies’ benefits, as they challenge existing structures of power imposed by government and society. These types of ‘realistic’ texts are less prevalent than fantastical science-fiction cyborg/posthuman texts, and this could be explained by Applebaum’s observation that adults’ anxiety about young people’s use of technology is “born of the Romantic perception of childhood as innocent combined with the fear of being left behind in the technological race” (2010, p154). As adults exert what power they can to try to keep children away from the technology which has the potential to empower them – either to protect themselves, or in the belief they are acting in the children’s interests – there are resonances of the fictional dystopian societies in which technology is used by adults to maintain hegemonic power structures.

Although Sam and Marcus set themselves apart from others in terms of their impressive technical abilities, common tropes about childhood can still be seen in their characters. In the course of *Little Brother*, Marcus uses multiple identities, including Winston (a clear allusion to the surveillance-rich dystopian world of George Orwell’s *Nineteen Eighty-four*) and Mikey, although they are both frequently written in leet¹⁸ as w1n5t0n and M1k3y. While the sense of trying to find and establish an identity for one’s self is not uncommon, the use of leet blurs this in a posthuman manner as they are both offline and online identities. Social psychologists – including Turkle and Krotoski who describe the Internet as a “significant social laboratory for experimenting with the constructions and reconstructions of self” (Turkle, 1995, p180) and the “ultimate identity laboratory [...] where we can redefine who we are, who we were, and who we might become” (Krotoski, 2013, loc117) – have examined the way people create identities in the virtual world which vary from reality. Turkle parallels people’s use of the Internet to explore identity with teenagers’ search for identity by asking rhetorically whether it is “an expression of an identity crisis of the sort we traditionally associate with adolescence” (1995, p180). Although her study was carried out in the early 1990s when access to connected technology was less common than it is today, the importance of its role in

¹⁸ Leet is a variant of written English used online since the 1980s in which letters are replaced with numbers or symbols, such as 3 for E or alternating slashes, √√, for W. It was originally recognised as being used by those who were knowledgeable about computer use, or ‘elite’, but has lost such currency today as it is used to little avail by people trying to intimate their technical prowess online.

the development of adolescents' identity in today's real world cannot be ignored. Whether the twenty-first century postchild of the real world is more adept at unifying their multiple online and offline identities than previous generations is not something I have found any social science to be concerned with, but such a trait would be in keeping with posthuman blurring and provide a key to understanding children's greater confidence with, and acceptance of, technology.

Maintaining multiple identities – whether one or many online identities alongside one or more real-world identities – challenges the mind/body duality in two ways. Firstly, a respondent in Turkle's research described the way “the body is the mind” in online communities (1995, p253) demonstrating the blurring of mind/body boundaries needed to create a ‘successful’ virtual persona able to interact with others. Secondly, as identity is fractured when people create Krotoski's “idealised me” online (2011a, np),¹⁹ it suggests a more fluid sense of self, which Turkle feels “allows a greater capacity for acknowledging diversity [...in which...] we do not feel compelled to exclude what does not fit” (1995, p261ff). Such fluidity of movement between identities allows virtual personæ to influence the real self, and blurs the mind/body duality.

These ideas are explored by Bradford *et al.* who see online identity as “shifting, fragmentary, a construction”, reiterating their postmodern perspective on the posthuman, but to this list they append “potentially, a deception” (2008, p172). As they only consider fictional worlds, describing online identity as ‘a deception’ does not consider the massive growth in social media over the past decade. Nevertheless, technophobic takes on the use of online communities brought about by the ambiguous nature of cyber-identity are clear. However, Bradford *et al.* go on to develop the question of the ambiguity in terms of subjectivity, arguing that “the subject that can occupy or intersect with the cyberspace of contemporary existence can figure both a dystopian dissolution of disembodiment of the subject with the virtual, the death of the subject and a utopian vision of the self as distributed cognition, a new subjectivity” (2008, p172). Their description of the subject raises the same issues I have considered in the creation of online identities which are managed offline.

¹⁹ In contrast to this, the founder of Facebook, Mark Zuckerberg, is quoted as saying that “[h]aving two identities for yourself is an example of a lack of integrity” as “the level of transparency the world has now won't support having two identities for a person” (Kirkpatrick 2010: 199).

Beyond the identities which the fictional teenagers create for themselves, the extraordinary abilities of Sam and Marcus are presented as wholly believable in an age where technically proficient teenagers are common. From the outset, Marcus “cracks [...the...] snitchy” technology of his school-issued laptop (2008, p6) and can get “through the school firewalls like Kleenex, spoof the gait-recognition software and nuke the snitch chips they track [the students] with” (2008, p2). However, he does so with a group of like-minded friends playing “Harajuku Fun Madness”, an international alternate reality game which, unlike the virtual reality of cyberspace, “provides the participant with a second-order reality in which to play with or practice upon the first order” (Poster 1999, p42).²⁰ Similarly, in Marcus’s life even computer programming becomes a social, two-person, task: he watches over his coding friend’s shoulder because, simply, “[t]wo people are much better at spotting bugs than one” (2008, p147). While this might be a choice made for practical, rather than friendship, reasons, a stereotypically geeky activity becomes a social activity.

Similar to the early posthuman examples, the actions of postchild geeks Sam and Marcus are initially egocentric, but circumstances change them and they put their abilities to the service of striving for the societies in which they believe. Although their technical prowess means they must be seen as postchildren, their actions still demonstrate human characteristics. Dudek and Johnson (2011) cite Johnson’s 2009 research which found that through acts such as illegally sharing digital copies of music online, young people are subverting authority and thereby performing what Pierre Bourdieu sees as being ‘acts of resistance’ (1998) as they challenge society’s rules. Sam and Marcus’s hacking activities are acts of resistance, but these are made possible through their postchild-technical ability motivated entirely by their sense of belonging to a shared humanity. Bourdieu (2000) also suggests that through an understanding of the way society works – something which both Sam and Marcus learn during their experiences – teenagers are able to effect change through their acts of resistance. In turn, this creates a ‘new’ society of which the technologically skilled postchildren are part and through which there is a clearer sense of development than offered by posthumans which are created for a particular reason at a particular time.

The humanity of a postchild is not only seen in their acts of resistance. If human nature is accepted to encompass irrationality as Tversky and Kahneman (1974) show and Harari (2018,

²⁰ Alternate reality games (ARG) have a story based in the real world and it is the (post)human participants’ choices that control the game’s direction, and technology is just one of many possible media to deliver and share the multi-faceted potential of an ARG.

loc1193) accepts, Sam and Marcus's thoughtless risk-taking, or choice of 'gut instinct' over logical options, demonstrates a clear sense of their human (or child) nature. Similarly, by seeing free will as a human trait, Sam's decision to risk his life by allowing his brain to connect to the technological 'higher-being' to try and control it, and Marcus's self-sacrifice to the power of government authorities before his actions stop their abusive use of data, illustrate their respective humanness. In the final pages of each text, the characters' human nature is shown to have survived through their understanding – not mere use – of technology and the ways it can be put to use by others. Thus, in terms of power hierarchy, the geek is put in a position of political power over the adults through their understanding, rather than just knowledge, of the way technology works and seeing the technology itself as neutral, but the human motivation behind its use as the element which has to be challenged. While money, which gives access to new technologies, is a means by which adults can continue to exert authority over children, the geek remains able to outperform the adult, either by manipulating their own technology to work against them, or using freely available technology as Marcus does. Marcus appropriates free technology to enlist the help of other geeks to pool resources in a world where digital collaboration is common, again showing the importantly human and social element of the geek. Marcus summarises what being a geek means to him as he says, "My technology was working for me, serving me, protecting me. It wasn't spying on me. This is why I loved technology: if you used it right, it could give you power and privacy" (2008, p80). Doctorow's creation of the geek wholly subverts Trites's observation that

[t]he study of textual narrative authority shows how pervasive authority and control are in teaching adolescent reader to accept power/repression relationships as inevitable, for they convey a construction of an ideologically positioned implied reader often displaces adolescent readers' potential for empowerment. (2000, p55)

Doctorow's ideology is clear as he positions the teenage reader to believe they should use technology to empower themselves, rather than accepting their repressed position. Extending this more subtly with Beauvais's idea of might, she sees the child as remaining to the adult an "ambiguous mixture of threat and hope" in an indeterminate future (2015, p206). The reader is left in a position from which they see what could be achieved in the future and the hope that the geek offers to improve the world, but they are also able to see the threat posed by someone with such technical prowess. While the geek proves Trites wrong in terms of empowerment, her understanding that "[a]dolescents have power that becomes institutional power as they (necessarily) engage in the social forces that simultaneously empower and repress them" (2000, p52) means the change of institutional power cannot be guaranteed to have improved the situation for less technically-savvy humans.

In considering this shift of power, the geeks have, in Trites's words, learnt to "negotiate the levels of power that exist in the myriad social institutions within which they must function" (2000, p3) as they have understood the structures which restrict and control them, and in doing so have been able to use their own technological power to master them. However, this contradicts her own view that

[w]hen ideologies in YA novels focus specifically on government, they tend to convey to adolescents that they are better served by accepting than by rejecting the social institutions with which they must live. In that sense, the underlying agenda of many YA novels is to indoctrinate adolescents into a measure of social acceptance.
(2000, p27)

The underlying agenda of the texts cannot be seen to be encouraging an acceptance of their social institutions. Not only have the geeks have rejected society's strictures, they have reshaped them for their own purposes. While adult power can be seen in the texts, it is presented as morally reprehensible and ultimately criminal. As the adult perpetrators of the teenagers' torture are prosecuted, the geeks' actions do not just demonstrate Beauvais's might as they "own" the future (2015, p57), but also their power as they own the 'now' too. Even though *Little Brother* is open-ended, there is a clear sense that the protagonists do not "gradually accept the adult normativity [...] leaving adolescence behind and entering adulthood [...] ready to exercise the same oppression that [they] have been subjected" (2010, p7) which Nikolajeva suggests is the usual treatment of rebellious characters if they are not killed off.

Despite the fear of the geek's power or might being likely to originate from (adult) humans, *it is ironic that through its desperation for human feelings the geek's posthuman achievement is an embodiment of humanist ideals. Ultimately, it is the geeks' innate human skill which is the most important both to them and their success, rather than the technology itself.* If the greatest demonstration of the geek's posthumanness comes when they are exhibiting their humanness, the need to use 'posthuman' as a label to differentiate the posthuman from 'human' could be seen to be unnecessary as we are, implicitly, all posthuman now.

While the postchild's combination of the best features of human conscience and technological ability might seem to be presented as a positive development for humanity, there are still didactic warnings about the new society in both *brainjack* and *Little Brother*. In *brainjack*, Sam's closest friend, Fargas, chooses the virtual world offered him by the neuro-headset over reality. He makes this choice because it is a place where he is a ruler with subjects, it is free of

“real-world problems” and “the worst thing that could happen is that you might die and have to start over” (2009, p162). However, he “[j]ust plugged in one day and played the game till he...took him a week. Never ate. Never unplugged.” (2009, p332). Fargas’s death asserts the need for the real and social – or human – aspects of the user of technology to be remembered, rather than surrendering consciousness to the fantasy of the virtual world. Such an occurrence is not restricted to the fictional world of the postchild: there are many reported instances of people around the real world described as being addicted to computer games who either fail to meet their real-world responsibilities or die while playing, as Fargas does.²¹ As it is the human characteristics of the posthuman which can make it successful, it is also the human characteristics of addiction and escapism which cause problems: through their constant mental absorption in the fiction of computer games, people have lost awareness of their own physical bodily needs. The reinforcement of the mind/body split shows that unless people can unify their consciousness and physicality by accepting the possibilities and limitations of each, neither the posthuman nor postchild can move beyond their own existence at any one time.

Haraway says of cyborg writing that it “is about the power to survive, not on the basis of original innocence, but on the basis of seizing the tools to mark the world that marked them as other” (1991, p175). In the postchild the definition is less clear. From a starting point of original innocence, the natural desire to learn provides a solid foundation for the postchild and it is their humanness which helps them to be successful. However, they are not seizing tools: rather they are accepting the tools which society offers them, and they can see how they can be put to use not just for their own benefit but for a wider social benefit. Through this they are connecting the technological tools available to them with what makes them human, and in doing so they move themselves from the ostracised position of the geek to a position of social and political power within their, and our, worlds. As a figure of young adult literature, the

²¹ Local, national and international news websites report a variety of stories involving extensive computer gaming sessions linked to deaths:

‘Jacksonville mom who killed baby while playing FarmVille gets 50 years’

(<http://jacksonville.com/news/crime/2011-02-01/story/jacksonville-mom-who-killed-baby-while-playing-farmville-gets-50-years> February, 2011)

‘Taiwan teenager died after playing computer game non-stop for 40 hours’

(<http://www.telegraph.co.uk/news/worldnews/asia/taiwan/9411062/Taiwan-teenager-died-after-playing-computer-game-non-stop-for-40-hours.html> , July 2012).

‘South Korean Man Let Baby Son Starve to Death Due to Internet Gaming Addiction’

(<http://www.ibtimes.co.uk/south-korean-man-let-baby-son-starve-death-due-internet-gaming-addiction-1444903>, April, 2014)

‘Gamers Are Dying in Taiwan’s Internet Cafes’ (https://www.vice.com/en_au/article/gamers-are-dying-in-taiwans-internet-cafes-456, January 2015).

‘Tragedy as computer gamer dies after 19-hour session playing World of Warcraft’

(<http://www.mirror.co.uk/news/world-news/tragedy-computer-gamer-dies-after-5263046> , March 2015).

‘Tragic teen gamer dies after “playing computer for 22 days in a row”’

(<http://www.mirror.co.uk/news/world-news/tragic-teen-gamer-dies-after-6373887>, September 2015).

postchild – and certainly the geek – shows that it might be necessary to revisit theories developed both for literature more generally (as Beauvais has done), and also older theoretical work based on young adult literature – such as Trites’s study of power and repression – to reconsider what has become accepted intelligence. The power of the posthuman to make people question what it is to be human is also reflected, but maybe it is not just a question of what it means to be human, but what it is to live in a world in which new relationships between humankind and technology are, and will continue to need to be, forged.

As I use fictional literary representations of the postchild to examine its characteristics, so the authors’ use of non-fiction peritextual material in both *brainjack* and *Little Brother* blur the boundaries between fiction and reality in a more positive way than people getting lost in the virtual world of a computer game. Falkner chooses to fictionalise accounts of the teenagers’ online activities in *brainjack*, commenting in a simple concluding author’s note that the book is “not intended as a manual for hackers” (2011, p441), but Doctorow includes two lengthier non-fiction afterwords. While older technological novels from the early 1990s when technology was less ubiquitous sometimes contains supplementary information to explain technical terminology and the acronyms and slang used, the inclusion of the peritextual material in *Little Brother* is far beyond this. The afterwords are by the then Chief Security Technology Officer at BT, Bruce Schneier, and the Xbox hacker Andrew Huang, to whom Doctorow refers in the novel (in itself a posthuman metanarrative blurring of fiction and reality), and both exhort the reader to question the world around them. Having the same idea repeated from two opposing ideological perspectives – the hacker and guard – emphasises the importance of understanding technology and its possibilities, and adds veracity to Doctorow’s implicit warnings throughout the text. The exhortation to do further research is supported by an annotated bibliography which provides a brief explanation of why each text might (and should) appeal to the technologically-savvy teenage reader. Beyond obliging the reader to reassess their world, Doctorow sees *Little Brother* as an “old-fashioned book because it assumes that the reader would love to have explicit information about some of the secret stuff going on that explains how the world works” (Bernick, Steele & Bernick, 2010, p436). His description matches Farah Mendlesohn’s findings from a survey of nine hundred science-fiction readers who were “interested in what they could learn from science-fiction [...] they wanted knowledge, they wanted problem solving, they wanted ideas” (2007, p216). Such connections between the representation of postchildren, the use of non-fiction peritexts and the real world indicate how fiction texts have the potential to trigger philosophical thinking in children and teenagers trying to establish their real identity in an increasingly virtual world.

From real-world experiences and my two textual examples, it is clear that in both its being and its behaviour the postchild challenges and blurs traditional Western dichotomies of self and other, mind and body, culture and nature, adult and child, civilised and primitive, man and machine, and has the potential to question others. The postchild provides scope for the replication and transmission of posthuman characteristics as it destroys the previous ‘generational’ restriction of embedded or embodied technology, and indicates the shifting nature of humanity in a twenty-first century world in which society’s use of, and reliance on, technology evolves. Of equal importance is the fact that the postchild is equipped and empowered to succeed in such a society, a society which has given the postchild the tools to challenge traditional hegemonic power structures and authority figures. However, beyond the technology, it is the human nature and might of the child and their understanding of technology which sets them apart from those who are fearful of technology or reluctant to engage with it, and (current) artificial intelligences which are governed by rules and logical processes.

Regardless of an individual’s comfort and confidence with the technology of their real world, the future – like the past – is a different country, and they will do things differently there. Developments and trends in technology suggest that the *real* postchild will be a part of that future, but that its most important quality will be its humanity. In the human child, humanness – or what must, by logical extension, be called childness – is not far below the veneer of someone living a ‘postchildhood’ today. For today’s children, technology could be seen to be offering an upgrade to Rousseau’s figure of the Romantic child, a concept whose own establishment in the nineteenth century ‘upgraded’ the status of the child from something with economic value in an industrial world to something with innocence and purity that should be a model to all men. As Alan Richardson implies, the social progressiveness which celebrated innocence and purity in the nineteenth century was strange – and even more marked – at a time when “children’s labor was becoming more, rather than less, economically valuable” (1999, p170). In the twenty-first century the notion of the innocent child will struggle to survive because of contemporary media and technology, and this might result in the need for a new definition of the child; the blurred boundaries of the postchild could offer such a definition of the child for the future.

Although I use the word ‘childness’ to identify childhood characteristics in the same way I have used ‘humanness’ to identify human characteristics in contrast to technological or digital

behaviour, it also has resonances with Hollindale's use of 'childness' to label the "distinguishing property of a text in children's literature, setting it apart from other literature as a genre [and] the property that the child brings to the reading of a text" (1997, p47). The empowered, mighty, technologically-able postchild is a significant feature of young adult fiction and, as Hollindale continues to consider the nature of the encounter between the reader and the childness of the text, the fictional postchild embodies the real-world postchild. Hollindale sees the encounter as being potentially dynamic, because "the childness of the text can change the childness of the child" (1997, p47), and this is what Doctorow hopes for with his inclusion of peritextual material, equipping the real-world postchild with the facilities to question assumptions and ideologies of their world. However, Hollindale also sees the reading encounter as being potentially "only a mirroring, conservative and confirmatory", by which he means "the child finds in the text a childness which largely reflects and duplicates his own" (1997, p47). He continues by acknowledging the need for such a reassurance, so the 'only' seems out of place, but this property of the texts is a vital ideological detail at a time when the might of a real-world geek remains something both admired and feared by adults. Demonstrating to readers that being what is sometimes seen as an outsider (both in fictional representations and in the real world) is not only acceptable but also empowering moves the texts beyond simply being "conservative and confirmatory", to give rise to typical criticisms of the didactic nature of children's literature as it can encourage children to behave in a certain way, although its challenging of authority is a more interesting ideological approach which supports Beauvais's idea of the mighty child.

Technological developments will continue to present humanity with cultural and philosophical challenges, and people's relationships with technology will help to shape future developments. The types of human relationships with technology discussed in this section offer a further liminal dimension to the already liminal space of adolescence, showing the importance of examining and questioning real-world technological progress. However, alongside this, fiction texts – whether novels, films or computer games – offer a different perspective on the way such progress can affect the human and these also need to continue to be critically probed as the boundaries between science-fiction and social reality become increasingly indistinct.

THE MILLENNIAL BODY: *HEX*²²

All of the texts I have used to explore the figure of the posthuman have conformed to my updated version of Peter's list of body types as posthuman classifications. Unlike the rest of my corpus, which is set in recognisably late twentieth/early twenty-first century alternative realities of contemporary Western societies, Rhiannon Lassiter's *Hex* (1998) is set in a twenty-third century England which means that it is rife with anachronistic visions of some aspects of technology. Nevertheless, the teenage posthuman hexes combine aspects of the other individual posthuman body types I have examined: the hex is a result of genetic experimentation towards the end of the twenty-first century to imbue people with greater technological abilities. They are therefore 'naturally' posthuman, since the genes have been passed on biologically, rather than the technology having been implanted or being an adjunct to the human. The hexes could be seen to be allied to my notion of the postchild as the progeny of geeky parents, but their abilities exceed the practical competence in using technology that I have noted, as they are able to interface with external technologies using their minds in a way which I have only seen where technology has been embedded, such as in *iBoy*, or appended to the human as in the Cinder or Mila-like cyborg.

It is made clear from the outset of *Hex* that having inherent technological ability is a threat, with the cover of the 1999 edition pronouncing 'Human Computers – too dangerous to live'. Being a hex could get someone killed (1999, p2) since extermination laws for "mutated humans" were passed in 2098 after the "rush to create more advanced technology [...and...] mutated genes were drafted on to human DNA" in an attempt to make the human race "more efficient and adaptable" (p66). The hexes are referred to, and refer to each other, throughout the novel as mutants which position themselves outside society, like Frankenstein's monster, and something to be feared. Despite being a result of human experimentation two hundred years ago, they are still outsiders, and Raven – the most prolific Hex – is very matter-of-fact in describing the extermination laws as "sanctioning the murder of a whole sub-strain of mutated human", hypothesising that the government "guessed that a Hex could become the ultimate hacker" (*ibid.*) and therefore something to be feared by the less technically proficient. Presenting the hacker as a threat is a reflection of late-1990s attitudes, with technological prowess not seen as a desirable attribute; as Gabriella Coleman and Alex Golub comment,

²² *Hex*, first published in 1998 demonstrates the application of the millennial body to an older text, but aspects of James Dashner's *Mortality Doctrine* trilogy (2013-2015) would allow an exploration of the contemporary representation of the millennial body. However, Dashner's trilogy strays too far into the use of virtual worlds which are beyond the scope of my current research and would stand alone from the rest of my corpus.

“hackers are portrayed as young men whose pathological addiction to the internet leads to elaborate deceptions, obsessional quests for knowledge and bold tournaments of sinister computer break-ins” (2008, p256). While it is not explained where the epithet ‘hex’ comes from, its connotations, like ‘hacker’, are immediately negative, suggesting witchcraft and curses; however, it could also suggest a sixth more nebulous – possibly a form of spiritual – sense beyond the standard human five in keeping with my trialist readings of texts. As ‘hex’ is also used as an abbreviation for ‘hexadecimal’,²³ it could simultaneously offer a wry nod to their computing abilities.

Raven and her siblings are orphaned before the start of the novel, and are transferred to an asylum, where regular scans for hexes are carried out (p18) to ensure they can be exterminated. Their social position as outsiders is illustrated when Ali, a hex of lesser abilities, is introduced and her focalised thoughts show the difference between society’s expectations and the hexes’ situation:

None of her friends could possibly image that she could be a Hex. She was pretty, popular and rich. And she was a member of the largest clique in school because her father was a well-known media magnate and could afford an apartment in the Belgravia Complex where the rest of the clique lived. (p26)

Retaining the familiarity of a high school setting, typical tropes of appearance, popularity²⁴ and wealth are implicitly still disassociated from hex abilities and technological prowess in the twenty-third century. The implicit characteristics of hexes, like Raven’s initial physical description and the fact that she prefers to work in seclusion (p146), conform to dated stereotypes of hackers, but Raven is financially independent because of her skills. Coupled with her technological might, they have provided her with the resources and independence to be able to find her lost sister. Although technology empowers Raven, Lassiter hints that this may not be a positive thing because her existence puts her on the wrong side of the law and “she’s never cared very much for conventional morality” (p46), which suggests her rebelliousness is problematic. In contrast to Raven’s empowered but socially excluded situation, Ali’s socially secure and accepted position does not give her the agency to be able to exist outside the confines and conventions of her society.

Raven is first introduced through her appearance on a display on a control panel of a flitter (a flying vehicle) which her brother Wraith is driving. Raven’s technical ability is demonstrated

²³ ‘hexadecimal’ refers to base-16, a mathematical counting system used in aspects of computer programming.

²⁴ It is later confirmed that “Not even Caitlin [Ali’s best friend] would suffer the social stigma of acknowledging a Hex as a friend” (1999, p97).

immediately as she has been able to repurpose the control panel to allow her to communicate with Wraith through it. Her feat confuses Wraith, who asks how she is projecting her image as the panel can only show images from the craft. As part of their conversation, Raven's interaction with the machinery of the flitter is shown and Wraith hears her voice from the craft's speakers, rather than through the transceiver intended for communication he has surgically implanted in his ear. Her evasive explanation of how she took control of the flitter's technology as being by "ways and means", said "enigmatically" (p2), sets her apart, both in terms of their interpersonal relationship and her use of technology. Raven is controlling the technology for her own purposes, and the image that Wraith sees is the one that Raven chooses to represent herself. As technology allows today's real-world social media users to curate the image they present online, so the image Raven chooses to use "was schematic", immediately connoting technology and engineering. Within the "basic and two-dimensional" image, particular physical characteristics are still apparent and "[h]er dark eyes stared out of the screen, framed by a mass of tangled black elf locks" (p2), with the darkness and black sharing the same negative connotations of 'hex' and hacker stereotypes. The folkloric idea that her matted hair has been knotted by elves in her sleep adds another facet to the manner of her presentation through the subtle suggestion that even in the dystopian urban world of the twenty-third century, she has been touched by something otherworldly and magical.

Her first appearance shows her rebellious relationship with technology, and also hints at her abilities. When she is flying the flitter remotely, Wraith suggests that "it would be easier if you detached yourself from the circuitry and piloted this thing for real" (p3). His suggestion sounds like a metaphorical description of her use of technology, but when she reveals that she is not on the other side of the videocom channel (p13) because she needs to be in the net to do her investigation, there is a sense of her – or an essence of her – being inside the machine itself. She is described as being a "ghost in the machine" (p14), an image which calls to mind the 'Mechanical Turk' – a fraudulent eighteenth-century chess playing machine – which, far from being an automaton as it appeared, was in fact controlled by a human inside the model.

Having established her unconventional relationship with technology, the narration focalised through Raven explains that

She was wary about being observed in the symbiotic connection she had with computers. No one could mistake Raven for an ordinary hacker when she was working for real. She could, if she chose, act like an ordinary user, her fingertips flying soundlessly across the keypad to perform the necessary operations. But she found it a tedious and

distasteful method. Now she let her hands rest lightly on the keypad and closed her eyes as her consciousness entered the computer. (p22)

Calling the relationship “symbiotic” indicates something natural and biological which sets her apart from ordinary humans and skilful computer users. Describing the ‘meat’ of her body as a “tedious and distasteful” means of interfacing with the computer suggests the connection that her mind has with the technology is something purer, even though not accepted by her society. The purity of the connection and the way she “relaxed, sinking into a semi-aware state, feeling her sphere of influence extending all around her” (p55) when inside a government system, conveys a sense of the nirvanic mental state reached by Naam’s Nexus-using monks who achieved their connection with technology through meditation, and also of Tom’s excitement as he considered the potential of his connectedness in *iBoy*, because their bodies are not a cyberpunk encumbrance. Although Raven’s posthumanity does not forego the body, her positive view of her human/technology connection and dislike of the body is reminiscent of representations of the modified and enhanced bodies.

As in *iBoy*, the imagery used to convey the posthuman interaction between brain and technology is unsatisfying and “[h]er perception of the net was not something she could describe, the way the circuitry resolved itself in her mind into shapes and colours, tastes, textures, sounds and smells” (p22). Like the fictional interface between so many examples of the posthuman and their technology, “[e]very sense was wrapped up in the experience so that she could not explain how she knew something, only that she knew it” (p22ff), leaving the reader with an inadequate metaphor from which to try to make sense of the experience. Despite Raven seeing her body as an inconvenience to her technical abilities, the descriptions of her time in the net have a physicality about them, as she “sank into the computer like a swimmer into the sea, immersing herself in the electronic labyrinth” (p54) and she “dived through the net [with] information whirling above and beneath her” (p56). Not only are her technological actions personified, but the data is made tangible. Similarly, when her “search took her on a roller coaster ride though the net [...after which she finally...] crashed through four secured nodes in a row before coming to rest at the main entrance to the central system of the CPS” (p56), her digital activities are embodied, and the CPS’s private network is imbued with the sense of an official building. As embodiment is an essential aspect of the posthuman, Lassiter’s descriptions make the need for embodiment true of technology too. There is a reflection of the need for technology to be more human as Turkle (2011) describes, possibly to make it appear more ‘real’ to its users.

Alongside the physicality of the descriptions of her actions, when Raven is searching for a reference to her sister Rachel in the net, “she extended the tendrils of her consciousness in all directions” (p22): the “tendrils” of the natural world are combined with her human consciousness and the technology of the net to give a clearer sense of her symbiotic connection with technology. In the imagery of the symbiosis the divisions remain unclear, and even Raven’s focalised account obfuscates details as she does not know whether a command she issues – typographically separated in the text in bold and printed to resemble the command line interfaces of computers in the late 1990s – is issued in words or thoughts (p23). While showing Raven’s uncertainty of how her abilities work, the description also reflects contemporary cognitive and philosophical questions of the way the human brain works. The particular command she issues is to tell an inexperienced hex she encounters to relax, and her consideration of whether the command is given as a word or a thought reflects a more personal and human concern. She is not just dealing with data or mechanical technology but with a person, albeit one with a different level of technical prowess.

When Raven has accessed the CPS’s network, “she paused a little and allowed fragments of her consciousness to snake out in all directions, searching according to parameters she had already set” (p55): this short description shows the trialism of Raven’s posthuman self. Her actions are embodied through the dynamic verbs “paused” and “allowed” which describe how she controls her mind (or “fragments of her consciousness”), but her actions are programmed to search and use “parameters”. While fragmentation is associated with posthuman identity, the division and subsequent embodiment of her consciousness – all the other fragments of her consciousness “raced” to meet the fragment that had found something (*ibid.*) – shows the flexibility and adaptability of the posthuman, both as a whole and within its constituent elements. Both when the consciousness becomes whole again having achieved its aim, and when she finishes accessing the government’s computer, Raven detaches herself from the system, (metaphorically) races back through the net and “reach[es] her own terminal [where] she rejoined her body in an instant” (p59): her programmed consciousness which has traversed the net is united with her physical body.

Like her human(e) dealing with the other hex she encountered, when Raven is breaking into the government’s system and dealing with a computer, she treats it as a human, even though it is following a programmed routine:

It was easier to fool this system than she had anticipated. It was designed to catch out an illegal access attempt by requesting certain responses. But Raven, deep in the heart of the net, need only tell the

circuitry that she had provided the correct answers for it to believe her.
(p56)

Her interface and relationship with the technology is natural, and as the technology believes her unquestioningly she has an indeterminate but innate authority over it, like parent and child. Her authority demonstrates her might as well as the postchild's inversion of traditional power structures.

Raven's brother has to remind her that the lives she has created for them through her control of the technology are fictitious. While the reader may acknowledge the irony that the characters only exist as they are created in the book, Wraith insists that they only exist "because [Raven has] fooled the computer network into believing they do" (p29). Although they have a corporeal presence in the text, Raven sees identity as being reduced to data asserting that "[i]f the network says we exist, we exist" (*ibid.*). Unlike her humanness in communicating with the other hex, Raven's reliance on identity being acknowledged by the network suggests a detachment from her physical self and a surrendering of self to the technology. Confirming the stereotypical view of the geek as an outsider, Wraith tells his sister that she "can't relate to other people at all, just machinery" (p42). While his view does not correspond to the representation of Raven that the reader acquires from her focalisation, it does embody the technophobic view – prevalent in the 1990s and perpetuated by some older critics – which has more recently softened with the proliferation of technology in the real world. However, whether defensive (as a competent female user of technology) or arrogant (seeing her abilities as more advanced than others), Raven disregards the fear of being caught, telling her brother, "I know what I can do [...] and there is no longer any possibility of the CPS or anyone else catching me" (p30ff). Countering the negative connotations of Raven's view of herself, Lassiter offers another outsider's perspective on Raven when Kez tells her that "No one can do that. It's like magic" (p14; p65), and as he watches her hacking he describes "her fingers flying over the keyboard faster than he would have thought possible as information scrolled up the screen" (p33ff). Although Kez comments embarrassedly that if it is not magic it could be "aliens, something like that" (p65), Raven's technological abilities are seen as positive, if mystical (both as intellectually unknowable and hinted at through her physical appearance with elf-tousled hair), and something of which to be proud.

While Lassiter presents a relatively ambivalent view of Raven through the other characters, she offers a more didactic comment on society's use of technology from her futuristic narratorial position when Raven is describing the music to which she chooses to listen:

It's *fin de siècle* music [...] it's got realism [...] the technological age [...] the loss of history in the march of progress. How do you think the genetics experiments came about? Throughout the whole of the 21st century scientists tried to improve people to bring them into line with the new technology. Science took over the world. (p38)

Despite Lassiter being 21 years old (and of the same generation as Cory Doctorow and his positive portrayal of technology) when *Hex* was first published,²⁵ Raven's description distills the technophobic fears which Applebaum summarised in 2005 as "representations of computers and the Internet [...] characterized and burdened by confusion and fear" because of the "technological gap between adult authors and their constantly evolving young readers" (p261). Although *Hex* reflects the fear of technology of its time, Lassiter's knowledge of technology allows her to demonstrate the risks to society that come with a refusal to embrace technology's prevalence and power. Raven goes further than demonstrating the fear of the technology and its use – possibly as a result of the well-publicised work of Professor Kevin Warwick in the late 1990s²⁶ – in her fears about science trying to improve humans. From the twenty-third century perspective, the views offer greater authority, and nearly twenty years after the book's publication, the idea of embedding technology within the body remains a taboo topic, both in theory and practice. The 2013 English National Curriculum²⁷ stipulates computer coding to be a skill taught to primary school pupils, but Raven's description of the purpose of the hex gene as being "to increase computer literacy [...as...] they were trying to improve programming skills" (p66) suggests a warning about the insistence on using technology in the late twentieth and early twenty-first centuries. Ostry describes the government in *Hex* creating the gene as a "perceived social need" (2004, p227), much as today's computing curriculum responds to the perceived demands of society. The intention of the genetic modification was to "make the human race more efficient and adaptable" (*ibid.*), much as smartphone and wearable technology manufacturers hope that providing ubiquitous access to technology will fulfil a human need, even if it is a need that technology and its creators has manufactured.

While Raven is viewed ambivalently by those around her, the reader is encouraged to acknowledge Lassiter's warnings about technology's proliferation through Raven's perception of her own abilities. When she is in the net, she sees it as "a maze to which only

²⁵ <http://www.rhiannonlassiter.com/author.html>

²⁶ Kevin Warwick became a recognisable public figure in the late 1990s because of his experiments with embedding technology into his own body in the hope of becoming a cyborg and something more than human (<http://www.wired.com/2000/02/warwick/>)

²⁷ <https://www.gov.uk/government/publications/national-curriculum-in-england-computing-programmes-of-study/national-curriculum-in-england-computing-programmes-of-study>

she had the key” (p54); her position of power is heightened as “she moved through it like a goddess, contemptuous of the pathetic attempts of human users to fathom its fascinating complexities” (*ibid.*). Having control of data is therefore seen as a means of power, but describing herself as a “goddess” in contrast to the “pathetic” humans distances herself from unenhanced people; Ostry comments that “[Raven] revels in her power, and lords over everyone else” (2004, p225). Raven sees herself to be above other users of technology as, when faced with technical obstacles, she feels that “[a]ny other hacker would have been shaken off long ago” (p56). Possibly as a product of its time, Raven confers the outsider’s subject position on herself. Towards the end of the text, there is an acknowledgement from Ali, the less experienced hex, that even though Raven is operating like a machine, she “could hardly be surprised if Raven proved herself human and succumbed to a human weakness like falling asleep” (p157). Ali’s cyberpunk view of the body as an encumbrance to technology is confirmed in the final pages of the text, as Raven realises that “[s]he had never engaged in so many complex computer operations at once. Now her body was finally feeling the strain and she knew that she was reaching her tolerance levels” (p196). Even as an empowered postchild with the three aspects of her posthumanity working together, unlike her attitude (mind) and abilities (technology), her body cannot live up to her expectations. The human weakness identified by Ali is implied from Raven’s perspective in her view of the limitations of “pathetic” humans. Embodiment is essential to the posthuman, but the natural human body is too weak and the manufactured body is an unacceptable alternative. Through the limitations of embodiment the posthuman becomes an irresolvable problem, as the posthuman is something tangible existing in a variety of forms in both fictional and real worlds, but something which cannot exist without some form of body.

When Raven is physically inside the CPS she is able to infiltrate the internal network; however, the physical breach of the site’s security activates an electronic virus which the CPS staff is confident will protect the data from a hacker’s actions (p179). As the word ‘virus’ itself was borrowed from medicine to describe a piece of self-propagating computer code in the 1970s, so the virus described here crosses back from the computer network to Raven. Initially, she realises that the system is slowing down and not responding to her commands, and as she tries to work out what is wrong she “found it hard to focus”, “[h]er mind, wrapped around the circuitry, was subjected to the same blight as the computers” (p180). She tries to react by retracting her consciousness’s tendrils, but “the system was exercising a stranglehold on her, dragging her down into the depth of its own dementia” (*ibid.*). The fluidity of the description, with the system seen in human terms as being demented, demonstrates the

irrevocable connectedness of human and technology. The viral infection of the posthuman can be seen in trialist terms: when the virus crosses from the technology to her mind and moves to her body she “groaned, one hand slipping from the keypad as her eyes rolled back in her head. She was white, her brows drawn together in pain” (*ibid.*). The physical effects associated with human illness have been created by the technology, which exemplifies potential and existing real-world fears of technology – whether embedded or not – damaging the human body.

Despite the viral infection, Raven’s human-controlled technical abilities are shown to be dominant when she is furious with herself for not considering the possibility of this type of defence within the network. It is the human emotion of anger which leads to the “million strands of her awareness snak[ing] through the system, this time binding themselves to it, battling insanity with reason. Raven knitted the ravaged data streams back together, forcing them to mesh and become whole again” and, as she controlled the system, “[h]er conviction made it true” (p183). Regardless of the emotionally fuelled response, her human actions embody reason in contrast to technology’s “insanity”: as the virus affected her, so she reorders the data making it “become whole” and thereby satisfying a posthuman need. The data is made increasingly human through her interaction with it. The inversion of the expected sources of insanity and reason ridicule human irrationality and calculating machine, showing the posthuman embodying the range of attitudes as it embodies both the biological and technological, and demonstrates the indeterminate boundaries between the two. A real-world example of similar blurring of boundaries can be seen in Turkle’s *Alone Together* which explores the emotional support that different types of robots are able to provide for vulnerable humans through various case studies. Ironically, she concludes that “[r]obots, which enchant us into [an] increasingly intense relationship with the inanimate, are proposed as a cure for our too intense immersion in digital connectivity” (2011, p147). Unlike Raven’s human restoration of order to technology, as our real-world relationships with technology – both in itself and as a mediator between humans – become increasingly obsessive, so technology is able to offer a salve to return our humanity to us.

The biologically engineered changes to the hexes’ DNA mean that their enhancement has been made a natural part of them. Having had her hex abilities passed on genetically from twenty-first century experiments may stop it being possible to view hexes’ abilities as an enhancement, as they have become a part of their organic self. However, both in their treatment as outsiders to be feared and in their abilities beyond human understanding and acceptance, their nature still demonstrates posthuman concerns, and their being can still

clearly be read in trialistic terms. As postchildren, the nature of hexes' abilities is unique, with a clear sense of innate development, rather than as a skill which is learnt. Raven acknowledges that the hexes' natural ability means their unknowable power is something to be feared and, considering the nature of the threat they pose, she concludes that the CPS "must have guessed that a Hex could become the ultimate hacker" (p66). This unnatural relationship – or confusion of boundaries – which hexes can develop with technology is the root of the fear and, as Raven comments of herself, "I'm more than just a hacker" (*ibid.*). In 1999, with the notion of a hacker being negative, she uses her biological nature to put herself further beyond the bounds of society, rather than being exiled by society. She exercises her own agency, even though detrimentally, to put herself in a more powerful position. Her self-assuredness as a 15-year old is repeated as she considers the time that has allowed – and will continue to allow – her skills to develop and the power it will give her:

I may be barely an adult as far as the CPS and you are concerned, but I've been active as a Hex for a long time. I don't think I've reached the height of my abilities, but they certainly extend far further than those of the novices the CPS like to experiment on. I'm much too dangerous to them. (p76)

Raven chooses to reinforce her place outside society, and her abilities provide a means of avoiding being exterminated as "at nine years old she had forced people to respect her in order to survive" (p79). However, her decision to put herself outside society means that she also refuses to acknowledge other hexes, seeing Ali hiding her abilities to live as part of society as being beneath her contempt both as a person and Hex (*ibid.*). Raven's decision is an acceptance of who she is, and her choice to place herself further beyond society's expectations demonstrates a supreme confidence in her might and her own identity, alongside a human sense of self-preservation.

Unlike a simple enhancement to give additional abilities to a human, the hexes' nature means that it is not just the time taken to develop skills that dictates their abilities but as Raven speculates

If all Hexes have the innate capacity to improve their skills then yes [Ali could be headed straight for extermination] [...] but if there are different levels of ability, it's highly probable that I just have more abilities than Ali (p100).

Beyond her self-defensive arrogance, the natural status of her technical abilities is unique in my corpus, and the reader's awareness of this heightened from a trialist perspective. Lassister hints at the possible evolutionary development of technically proficient users of technology in today's world as technical abilities become valued alongside innate skills such as language,

emotional awareness and numeracy, rather than just knowing Gradgrindian facts. Raven is a postchild, meaning that unlike *iBoy*'s warning about an individual's engagement with technology, *Hex* warns members of society about ostracising those with natural technical prowess and painting technology as inherently bad.

CONCLUSIONS

The technology of the twenty-first century is disrupting human life more intrusively than technological developments have done in the whole previous history of the human, and nowhere is this truer than in the relationship between technology and the human body. In this thesis, I have shown that the figure of the technologically-enhanced posthuman offers a means through which to examine the ways in which technology is shaping what it is to be human in the twenty-first century. As the range of different posthuman I have considered in my study illustrates, the posthuman should be considered as a real figure, rather than an abstract philosophical construct. By employing a trialist analysis, I have demonstrated a powerful tool by which to examine posthuman identities, and how their posthumanity contributes to the nuances of the each text. Further, since I do not believe that the posthuman is restricted to fictional representations or that fiction and reality can be considered separately, my work connects fiction and reality through the tangible links I have made between them and the figure of the postchild.

Accepting the posthuman as a figure of social reality means that its embodiment is a crucial part of its ontological existence. I have demonstrated how the posthuman's embodiment shapes its identity and contributes to the ways its relationships with other posthumans and humans are created and developed. The way in which I have extended Peters's tabulation of posthuman body types provides a structured way through which to examine the posthuman and keeps embodiment as the focus. By using technology and/or technological ability as the focus for defining the posthuman, I have set my work apart from other studies of the posthuman. Although my analysis of posthuman characters in my corpus reveals overlaps between different body types, my extended tabulation provides a solid starting point from which to establish the ways, through the relative dominance of technology or the organic within each posthuman subject, identity is shaped

I acknowledge that the identification of different body types also reinforces binaries which, from the outset, the figure of the posthuman blurs through its transgression of boundaries, as Rosi Braidotti has argued of the posthuman, "we all have bodies, but not all bodies are equal: some matter more than others; some are, quite frankly, disposable" (1996, p136). Considering the posthuman in isolation, this irony may seem risible, but neither the posthumans of fictional texts nor the posthumans of the real world exist in isolation. Fictional and real-world

posthumans exist in relation to other people, and as humankind's humanity is defined in relation to others, so posthumankind will always have to be defined in relation to others.

The posthuman is, by its nature (or lack thereof), set antagonistically against the human, and different posthumans will also exist in opposition to each other. I believe that the figure of the posthuman will evolve both as humankind's relationship with technology continues to develop, and as the acceptance of the transgressions of and within the human body increases; in turn, this will lead to the development of posthuman power hierarchies which may mirror those seen throughout human history, or may develop in currently unpredictable directions. Although technology can empower the disenfranchised, the question of power hierarchies comes with a caveat about technology and/or augmentation often only being available to the wealthy within societies, despite the increasing ubiquity of technology in the real world today.

The issue of empowerment in representations of adolescent posthumans led me to develop the notion of the postchild. The might afforded the postchild by their understanding of, and engagement with, technology sets them apart from existing ideas of the posthuman. The postchild provides a new way in which to look at the posthuman and, throughout my corpus, it provides a precise way to understand characters which may previously have just been described generically as 'geeks'. As a recognisable figure of the twenty-first century, the postchild is applicable beyond literary representations and could offer a greater critical understanding of characteristics associated with millennials and today's teenagers. The postchild protagonist of *Hex* hints at ways in which it is important for other members of society to understand the postchild's technical ability and – as the contemporary *Little Brother* and *brainjack* demonstrate – the need for the postchild to contribute to decisions about the future.

The postchild is technologically capable, and their abilities empower them and subvert traditional power structures. More importantly, the postchild's power is genuine and not merely a token gesture towards the child or a carnivalesque device. Their natural ability better prepares them for what looks like the imminent future of the real world, and if they understand the way algorithms can control the world, they will be better placed to shape technology rather than be shaped by it. The postchild challenges Trites's ideas of power and, in textual representations, it disregards established adult authority and moves beyond her work on young adult fiction. The might of the postchild sites it with the more contemporary

work of Beauvais, but I have narrowed her approach to allow me to focus on the might offered by their technological ability, and to consider the postchild beyond the page.

The postchild understands its environment better than less technologically-able children and gives it an advantage over its peers. Consequently, I have tentatively used ‘postchimp’ and ‘posttechnology’ to show the examples of a chimpanzee and embodied technologies making greater sense of their own worlds because of their *human* ‘enhancement’. In doing so, I have attempted to demonstrate how the ideas behind the postchild can be developed beyond my research, and that the postchild is not simply a conceit suited to my corpus.

A certain humanness is often portrayed as a prerequisite element in the success of the posthuman, but the posthuman is nevertheless presented as being superior to the human in evolutionary terms: it either knows more, or is more capable, or both. Similarly, the postchild’s might and ability to procreate give it an evolutionary advantage over the posthuman, and it therefore offers a hope for the future. Just as the posthuman has raised questions of what it is to be human, so the postchild challenges the notion of the posthuman as a technologically-enhanced being stuck in time, while also building on established ideas of posthumanism.

Posthuman trialism works alongside existing criticism and theory, but also provides scope for it to be developed in new directions. By deconstructing the figure of the posthuman, the features of its humanity, its technology, and the third element of its existence can all be approached separately using existing critical theories in order to see how the posthuman is presented as a whole. Fittingly, the third strand’s nebulosity is in keeping with the irony of science’s inability to find answers to everything, including science’s inability to understand fully how the human brain and consciousness work, or how spirituality can be an essential component to someone’s life. Maybe when these aspects of humanity are determined, it will be possible to define the third strand explicitly. In its most straightforward form, the third strand is something liminal between biological and technological: it could be seen as being innately human – such as an irrational emotional response which defies logic – or as the product of technology where a machine or algorithm behaves in an unexpected way. A real-world example of technology defying expectations is the Go-playing software developed by Google which rapidly taught *itself* to become the best Go player in the world. As the software was not given anything beyond the game’s rules to learn strategy, it was freed from the “constraints of human knowledge” (Vincent, 2017, np). Through the application of the model

of trialism to the fictional characters of my corpus, I have been able to consider more creatively what it means to be posthuman, because the third strand allows more flexible, detailed and precise readings of the posthuman subject. Just as I have applied the model to the postchimp and to posttechnology within my work, so it is applicable beyond literary representations, and opens up new ways in which any posthuman subject can be read through the critical evaluation of its constituent parts.

REFLECTIONS ON POWER

Although the posthuman is nothing new, the current rate of technological change does mean that the technologically-enhanced posthuman is – by necessity – constantly being redefined. I have already alluded to a posthuman hierarchy, and this can be exemplified by existing real-world technologies, with the difference between the technology employed by an automatic coffee machine and Google’s self-learning algorithms demonstrating one possible criterion for such a ‘power’ hierarchy to emerge. As with one element of power in human power hierarchies, it is based on skills, ability and knowledge. But it is also based on potential: the coffee machine – without an external agent repurposing it – will never be able to do anything apart from make coffee, and while the self-learning algorithm may initially only seek to improve its efficiency, the final extent to which it might ultimately improve remains unknown. Might, or potential, is the posthuman’s strength, and whether this is rooted in their humanness or their technology is immaterial. It is their ability to unify the aspects of their new identity which is important.

My research indicates that it is useful to reconsider the dynamics of the power relationship between human and posthuman, a relationship which parallels the more conventional and oft-explored power relationship between adults and children. As adults are the established authority figures and children are those with the potential to challenge them, so humans – in the human/posthuman relationship – are the established figures as a result of their historical longevity, and posthumans are the pretenders. However, while Trites found “adolescent literature [to be] an institutional discourse that participates in the power and repression dynamic that socializes adolescents into their cultural positions” (2000, p54), I have seen the (youthful) posthuman, or postchild, protagonists in my corpus challenging this and, ultimately, reshaping the established hegemony. Beauvais’s notion of the mighty child in children’s literature facilitating the shift from “past-bound power” (or authority) to “future-bound power” (or might) (2015, p6) applies well to this parallel. Despite the increasing prevalence of technology in the real world, the embodiment of technology is still something

discomforting, and people currently seem more comfortable accepting external enhancements. Technological transgressions of the physical human form corrupt established human identities, as Jenna's grandmother's reaction to her posthuman granddaughter demonstrated. The posthuman, like the child, is lowest in the power hierarchy: human authority figures might continue to have short-term success in their attempts to control and repress the posthuman, but this will only pertain until the posthuman understands its own potential and is able to demonstrate its might, often to the disquiet of the humans. Where Beauvais sees the shift as "ambiguous and painful [as] it is an acknowledgement of failure and incompleteness on the part of the adult authority" (2015, p6), I suggest the shift is, in fact, a greater acknowledgement of the completeness of the posthuman. By 'completeness' I do not just mean in the practical and physical sense that their embodiment includes technology where the human is lacking it, but in the sense of their emotional completeness as they *understand* both who and what they are in relation to others. Their completeness is therefore also seen in the subjectivity and agency gained by the posthumans in the course of the narratives discussed in this study. The realisation of the posthumans' might is not always seen in the narratives, but the reader – whether posthuman or not – is still presented with the *possibility*, and is thereby given a greater understanding of what it might mean to be posthuman in the twenty-first century. Or, to borrow from Flanagan's findings, they offer "alternative and more expansive understandings of what it means to be a human in the posthuman era" (2014, p190), especially if 'posthuman' is the new 'human', as Flanagan explains occurring "through a reconceptualisation of selfhood and social relations that fit more readily with human experience in the digital age" (2014, p187).

Flanagan also argues that humanist constructions of the subject exclude women, with female subjectivity closely allied to the cultural significance of the physical body (2014, p101). However, the sense of the posthuman completeness that I have seen indicates that gender is a binary which the posthuman – despite my focus on embodiment – negates. In many of my texts, the protagonists are female, and although they are either obliged to accept their posthuman body or do so willingly, their acceptance is not arrived at in terms of the patriarchal discourses of femininity that Flanagan describes. Rather, it is in terms of accepting the unification of technological and biological to gain a more personal sense of subjectivity, whether or not the ability to unify technology and biology is one implied by patriarchal discourses. My more generalised approach embodies Ferrando's conclusion that, "it might be unnecessary to think in terms of 'post' when referring to the future of humanity, if concepts such as 'technology' and 'tools' are symbiotic to the biological manifestation of the human

itself, blurring the traditional divide between nature/culture” (2014, p159), if humans are able to accept the body in such an abstract way, and without the traditional associations reinforced over millennia.

FINDING THE HUMAN

Sherryl Vint argues that “The human body, like the human subject, is a product of both culture and nature” (2007, p17) and I have shown that this concept can be extended to the posthuman. Where it is culture and nature that shape the human body, both the posthuman body and the posthuman subject are – in another tripartite division – a product of culture, nature and technology. The Greek *τέχνη* (or art and craft) of ‘technology’ indicates a more controlled shaping of the posthuman body and subjectivity, but, as I have demonstrated, this does not come at the expense of the natural, or Romantic, aspects of the human. Ultimately, it is only the liberal humanist ideologies propounded by posthumans and their actions which allow them to gain agency and subjectivity. As Flanagan concludes, “[posthuman narratives] do not entirely forsake the humanist traditions that have become so integral to the representation of subjectivity with the domain of children’s fiction. Agency, a concept that is essential to humanist understandings of selfhood, also plays a significant role in the posthuman narratives” (2014, p188). As I have seen repeatedly, it is when human sensibilities (or irrationality) are allowed to influence the posthuman that the posthuman is most likely to gain both subjectivity and agency.

Another key feature of Flanagan’s research is the othering of the posthuman and the way its position as an outsider allows the ideas of humanism to be challenged. However, she claims that story and theme are insufficient to represent such a shift in dominant ideological paradigms and a range of narrative techniques are used to reflect this (2014, p188). I challenge her claim through my analysis and suggest that the narrative techniques employed are simply another way to represent the posthuman as the stories – often conforming to established representations of quest or identity formation narratives – are the essential means by which the arena for challenging dominant ideologies is opened up to readers. Bradford *et al.* see narratives about robotics and AI scrutinising what it is to be human through “hypothetical position[s] of otherness” (2008, p160), which I have seen to be a common feature of all the posthuman body types, as they are othered in contrast to both humans and other posthumans. An effect of this is that the human reader is “consistently asked to identify against itself” (2008, p163): to avoid criticisms of readers identifying with fictional characters, it is more helpful to argue that the implicitly human – or posthuman – reader is

consistently asked to view themselves with a critical detachment. If this is seen to place too great a demand on the reader, Nikolajeva argues that having an inhuman protagonist creates alienation, thereby preventing an expert reader identifying with the character while still allowing them to empathise (2014, p87). Empathising with the posthuman's experience as the outsider thus forces the implied reader to see the in-group – and potentially themselves, through their own sense of identity – differently. As Hume argues, any meaning-making in literature is a “myth of our consciousness”, but one that allows us to “find relationships between the I and the not-I” (1984/2014, p27ff). Bradford *et al.* suggest that having a robot figure as the focaliser “destabilise[s] boundaries between self, other, and world”, raising questions about “‘humanness’ and human subjectivity” (2008, p163). Throughout the posthumans' experiences within my corpus, their successes are the result of their human characteristics, and of their desire to be more human, more humane, and to display more humanity than machines. While this is a feature of fictional texts, it is something I have also seen in the real-world use of technology through Turkle and Christian's work, and something celebrated in real-world technological developments. The titles of five of the primary texts in my corpus are, or include, human names, with a further four – *iBoy*, *Airhead*, *brainjack* and *Little Brother* – having human connotations. The remaining three – *Nexus*, *Crux* and *Hex* – are the only ones with greater technological associations and it is these which have allowed me to think more creatively and develop my concept of trialism.

To the embodied (post)human reader, the bedrock of embodiment should not be a surprise, but – as posthuman experiences are expressed in, and limited by, human language – the posthuman will always be restricted by its demand for embodiment. Flanagan argues that “downplaying the significance of the body in favour of an abstract view of selfhood [...] has become a critical issue for posthumanism” (2017, p33), but I have not seen this in my research into the posthumans themselves; rather, the *importance* of embodiment is a concern that has become apparent. In the vitality of the human body, the aversion to the transgression of its boundaries could be traced back to the Christian underpinnings of the Western world with its fundamental belief in the sanctity of the human and its body made in God's own image. It is notable that the proximity of religion to various aspects of the posthuman has surfaced through Jenna Fox and in *Nexus* and *Crux*. As I argued when proposing a posthuman trialism, it might be that posthumans cannot have a single identity, but they can have separate physical, mental and technological identities. This may be a possible reflection of real-world identities which both complement and conflict with online identities through the idealised

'me', despite Facebook's founder, Mark Zuckerberg, championing of the "authentic self" online (Hogan, 2013, p292).

The desire of and for posthumans to be (more) human is a clear posthuman trait. From a human perspective this is perhaps both reassuring and unsurprising. However, from a posthuman perspective, this negates the need for both posthumanism and the concept of the posthuman as the successor species, as human traits are seen as necessary, if not superior. When it is remembered that posthumans are created by humans, this may not be surprising: just as the expression of posthuman experience is limited by human language, so its existence is (currently) limited by humans. We are therefore either all posthuman, as Hayles has suggested, and successfully passing for humans, or we are all human and our evolution continues to be shaped by technology, as it has since the earliest tools were created. Neither outlook suggests a technophobic future for the texts' readers, but a future in which relationships with, and understanding of, technological enhancements can be understood. Death is also a part of living, and in the representations of posthumans I have seen which address death, the need to die is important: amortalism is offered to (fictional) posthumans, but they are shown to need to be able to die and not just to be restored from a backup after a pseudo-death. While they might have more control over their time and nature of death than humans – although legal and scientific changes keep altering this in the real world – their preference for mortality positions them as equal, not superior, to humans. The posthuman both occupies and offers a liminal position between human and technology, possibly indicating a theoretical gamut of humanness.

There remains, however, a problem which the posthumans that I have considered cannot resolve: the posthuman demands embodiment, but the human body is too weak, and the manufactured body is not an acceptable solution. While this irresolvable position is going to continue to present future generations with difficulties in accepting the posthuman, it remains clear that the posthuman does not betoken the end of humanity, and if the potential of the posthuman is understood, so humanity can be enriched. Although shown as both empowering and a threat to the human, technology's power is so often reliant on humankind's choices. It is only when the posthuman and its technology is dismissed out of hand that humanity puts itself in a position in which technophobia is the only response.

THE FUTURE

Although I exhort an understanding of technology as an appropriate response to portrayals of the posthuman in the real world, there is another side to this. In the same manner that critical approaches to literature have seen a move towards understanding cognitive approaches to reading (*qv.* Coats, 2013; Nikolajeva, 2014; Willingham, 2017; Trites, 2017), I see my work – especially trialism – being furthered by a neuroscientific understanding of human consciousness and self-awareness. While I have approached the posthuman with an understanding of its technology and the way it is used within the body, a complementary study could approach this from a basis more soundly situated in an understanding of the biological and cognitive. The posthumans I have examined are all conscious, but their subjectivity and agency are only gained through their self-awareness, or recognition of their consciousness, as they come to terms with their posthuman form. I have touched on aspects of memory in my posthumans' identity, and this is an element of neuroscientific consideration which could be extended. Despite fiction not having to comply with the science of the real world, my posthumans demonstrate clear parallels with human identity formation and, as a child becomes self-aware, so a posthuman's understanding of their identity is a coming to self-awareness, or awakening of the self, in a non-human form. With the exception of Raven, all my posthuman characters see their body change in the course of the text, and their acceptance of their new identity, or gaining self-awareness, shows that consciousness changes as the body changes, thereby stressing the parallel cognitive connection with embodiment which I have shown through the use of technology.

The social, moral and ethical concerns demonstrated through the representations I have explored are concerns which need to be addressed by those in positions of responsibility, whether at a domestic, national or international level, and whether socially, legally or politically. But, as I have seen, those in positions of responsibility have a duty to consider the potential of those under their care, and teenagers should not be discounted from these discussions. Such a reshaping of boundaries is an area which will continue to present authors, readers, scholars and decision-makers with a fruitful space in which to explore the human in all its forms – as well as our infinitely mutable relationships with technology – both as technology develops and as our understanding of what it is to be human in neurological terms increases. Looking ahead, I believe that other scholars will see the need to consider the figure of the posthuman in its own right in the future, and the might of the postchild and potential of

my posthuman trialism provide new ways to explore the posthuman subject in its multitudinous forms.

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APPENDIX: YOUNG ADULT TECHNOLOGY AND POSTHUMAN READING LIST

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