
Intra-active: The Child/Animal in Children's SF

Naarah Sawers

In 1979 Ruth Hubbard asserted that 'science is the most respected legitimator of new realities' (Hubbard et al 1979, p.8-9). Science, however, is quite clearly political, particularly the speed, competition, capital and power which underpins its overarching cultural influence in constructing 'reality', importantly the 'reality' of being human. Science's authority over 'human-ness' is evidenced in contemporary legislation regarding, for example, stem cell research and current Australian parliamentary debates (requiring a 'conscience vote'), which points to the complex ethical and cultural issues that are inherent in the production of new scientific realities. A concurrent institutional and epistemological distinction between the humanities and the sciences renders dialogue between the two problematic, such a dialogue however is critical when, as Bruno Latour notes, somehow, science has 'take[n] all the important decisions' (Latour, cited in Flower 2003, p.104). While this schism remains, it hinders a responsible and accountable public and interdisciplinary engagement with scientific practices. The question that children's literature scholars might ask, and one that I attend to in this paper, concerns a function of children's literature; how does children's SF reflect and mediate these new realities?

In response to this polarised world and so directly speaking to this question, the connections between scientific practices and social practices are being more clearly elucidated in the area of feminist science studies. This growing critical field provides conceptual tools that alert us to the processes and practices, both social and scientific, through which 'reality' becomes sedimented. In this article I employ what Karen Barad (2000) calls 'agential literacy' – that is responsible science which acts or intra-acts between the sciences and the humanities. In Barad's work the term 'intra-act' represents a significant conceptual shift. Unlike the term 'interact' which designates activity *between* independent objects, and thus assumes the prior existence of independent objects, intra-act signifies 'ontologically primitive *relations*' (my emphasis, Barad 2003, p.815). For Barad, there is no such thing as a pre-existing autonomous object; there are only 'phenomena'. Phenomena are embodied concepts that have become meaningful through agential intra-actions. The term 'intra-act' signifies a primary science studies argument; that 'things' that come to be named or known

are always relations. Extending this to notions of literacy, Barad writes that 'If by scientific literacy we simply mean the knowledge of scientific facts and methods, then this seems reasonable. But if our goal is *agential literacy* – knowing how to intra-act responsibly within the world – then we must all share the responsibility for preparing future generations to meet the challenges that lie ahead' (2000 p.246).

Children's literature, particularly that which traverses scientific and fictional discourse, functions as part of the traffic intra-acting in science and the humanities. The anxieties, pleasures and possibilities generated by technoscience are canvassed in many contemporary literary fictions with considerably more attention to socio-cultural ramifications than typically appears in scientific writing. There is a simultaneous disempowerment and freedom inherent in literature being relegated as 'fictive' space, against the 'factual' space of science. Fiction therefore has a significant role in constituting what Catherine Waldby calls the "biomedical imaginary", the site where 'medical ideas [...] derive their impetus from the fictitious, the connotative and from desire' (cited in Squire 2004, p.48). Childhood is a particularly potent material/discursive ground in this discussion. According to Elaine Ostry, children are the specific focus of biotechnologies, evident in their applications; creating "improved" children, designer babies, screening foetuses, and as the material site for the administration of neuropharmaceutical drugs (2004, p.222-223). In addition to, and in tandem with, this broader conceptualization of science and the SF genre, Barad's claims can be productively employed to read anew the figurations of children and animality in texts for children. The cultural implications of the bodily (re)constructions of childhood and animality in children's fiction can explicate directions for agential literacy. Under consideration then are the fictional articulations of technoscientific hybridity which either simply reinscribe humanist ideology, and thus a division between science and the humanities, and those which trace the material/discursive intra-actions, moving towards a more responsible engagement with scientific practices.

Gillian Rubenstein's novel, *Galax Arena* (1992), critiques scientific epistemologies that assume an objective knower



and thus an object of knowledge. This position is established in the narrative through the deconstruction of childhood and animality as interchangeable, consequently it works to elucidate the discourses and representations which do conflate the two in terms of broader scientific and social relations. Having been kidnapped, the children in *Galax Arena* are used in a scientific project which focuses on age extension. They are made to perform circus-style and while doing this their adrenaline is transferred to the spectators, stimulating the adrenaline of the old body (without any of the physical risks associated with performing) and promising cell regeneration. Under the rubric of 'nature', the children, like animals, are discursively positioned as the raw material for scientific purposes. Their bodies are sites of harvest in ways that point to stem-cell debates and the transplant technologies which have increased the traffic of human organs in western medicine.

On the surface the text calls the reality making processes of science into question through the deconstruction of the binarised positions of human/animal, child/adult and nature/culture. The children are lead to believe they are on another planet, and thus the text is initially constructed as SF. The old people are aliens, called the Vexa who seemingly justify their abuse of the children, referred to as the peb, in a clear and definitive species demarcation. As the adult keeper of the children, Hythe, says to one of the captured protagonists, Peter, 'As far as they're concerned you're animals, clever, fascinating animals. Not Vexa. Not people' (p.19). That the Vexa are later exposed as adults speaks to the hierarchical binaries between the child and the adult; the text suggests that the power associated with these binaries effect the scientific production of reality. The construction of the child as opposed to the adult is brought to bear on scientific practices which have children as their focus.

However, the initial narratorial critique of the conflation of child/animal is not sustained and therefore rather than providing the reader with strategies with which to engage in an increasingly scientific world it rejects technoscience outright. The alien world of Vexak is exposed as 'fake' and consequently science and the genre of SF is rendered separate from the 'natural world,' separate that is, from 'reality'. There is a metafictional element to this strategy

whereby child readers have been tricked and manipulated by the narrative, mirroring the way the text's child protagonists are duped by Hythe's explanation of their circumstances. This position of readerly empathy then has broader ramifications encoded in the invitation to child readers to be resentful and consider science as a mode of deception that can be (and, in this context, is) used against children.

Through the administration of technologies and neuropharmaceutical drugs the narrative falls back on very humanist modes of constructing self and reality. To this end, the children are disciplined through drugs, electronic 'buzzing' and by an electronic implant in their wrists. The novel suggests that science and technology work to disrupt a pre-given and natural identity, and the moral agenda is to reject any interruptions to what is considered 'naturally human' – the ability to know the true self through mastery over language and culture. When the protagonist, Joella, is first disciplined by the electrode she says that 'it penetrated right into my brain. It hit the place where language begins, so words became scrambled and thought impossible. The person that was *me*, that made me *Joella*, began to dissolve' (p.23). Language, the mind and identity are close allies defining the (human) self, and according to this representation should not be disrupted. The novel constructs identity as entirely fixed and promotes 'human-ness' as innate; its authority being expressed through language and culture, and thus dichotomising it both materially and discursively from 'animal'.

According to these principles in the novel the production of reality should only be attributed to those enlightened by 'truth'. The text constructs an opposition between truth and performativity attributed respectively to 'human' and 'animal' through the utilization of visual metaphors. Unlike the peb, who are the children kidnapped for their skills at performing, Joella's special skill is her ability to 'see' the truth. This is enabled by her capacity to know what it feels like to be 'other' – throughout the text she 'picks up' bits of other's 'consciousness' from those around her and can visualise their worlds; this includes her adult captor, a south American street child, and her pet dogs. Significantly, Joella's ability to appropriate another's experience, regardless of socio-economic, gendered, or

species difference renders her more fully human than her contemporaries at the Galax Arena.

Enrolling vision as a motif to augment Joella's position of authority in the narrative in effect reproduces the authority and unquestionable position of modern science rather than deconstructing it. The text overtly problematises optical metaphors and thus scientific methodologies of objectivity and representation through the gaze of the Vexa, which is critically linked to the role of science in discursive constructions of childhood. This position is elucidated when Joella is kept as a pet in a glass aquarium cell for the voyeuristic pleasure of her owner. The correlation to science is made clear to the reader when Joella notes that 'They made me feel horrible, like a specimen. I suspected everything about me was being monitored. I thought of all the pictures I'd seen of animal experiments and vivisection' (pp.63-64). However, in the same way that the Vexa are stimulated by observing the pebs' performance, Joella 'sees' rather than 'acts', and this links her to truth and knowledge rather than performativity and instinct. Her enrolment of these visual metaphors, her ability to 'see' the truth, to 'see' as other, naturalizes Joella's power and becomes the narrative justification for her authority and primacy in the plot.

These deployments of optical metaphors are problematised by feminist science studies. They are understood as connected to modern science's foundations in the Enlightenment where vision, optics and light are privileged material/discursive concepts (the very word 'Enlightenment' conjures images of light, optics and superior knowledge). According to Joost van Loon 'modern science employs technologies to render the world visible' (1996, p.235). Ultimately, to enlighten something is to make it 'visible to transparency' and hence the logical extreme is to 'collapse being into nothingness' (van Loon 1996, p.235). Ontological heterogeneity in this case becomes subsumed under the 'technologic of knowing', and as van Loon continues 'everything becomes identical as One because there is no longer any difference' (1996, p.233). Joella's position is predicated on these Enlightenment principles which work to render the world visible through annulling difference. Significantly this reproduces the subject the text sets out to deconstruct; the universal disembodied 'human'

for whom all 'others' have been objectified in a race for self-replication and immortality. Representational practices in this instance, are assumed as value-free objectivity, where the distance between the embodied represented (that which is usually subsumed under the category of nature) is fixed as separate from the purportedly disembodied representor (the unmarked category of White and Human, located firmly in the position of culture). The disembodied representor becomes the knowing subject and in *Galax Arena* this position is deployed to the child-becoming-human rather than the alien-adult-scientist. Joella therefore assumes the role of narratorial agent and qualifies this stating that 'it is right that [she] should end up the storyteller' (p.2). Against this, science studies critiques of scientific practice function to elucidate the differential contingencies that work to bring a 'fact' in to being. Agency in this process is not the purview of One but is instead open to multiple rearticulations and reconceptualisations.

Indeed, Joella's enlightened perspective sets her apart from her colleagues, the peb, who 'act' like animals, or perform animality. Animality in this instance is constructed as intrinsically competitive, individualistic, chaotic and framed through social Darwinism. Joella says that 'there was no meaning, no meaning at all. There was nothing but madness, incoherence, random evil' (p.5). The members of the peb hold onto whatever power they may get in a heightened mode of survival of the fittest. Bro Rabbit, a toy puppet brought into the Galax Arena by one of the peb, is imbued with power and becomes a potent symbol in the novel acting as a storehouse for the pebs' repressed and animalistic desires: energetic, violent, greedy, chaotic and irrational. As a puppet Bro Rabbit is hardwired to perform and this functions to reinforce the distinction between 'animal' and 'human' in terms of instinct and performance, and truth and knowledge. Any access to 'superior' (read, human) knowledge can only occur through the repression of animality based on visual technologies as embedded in enlightenment principles.

In contrast to the reification of enlightenment principles that frame scientific authority producing reality, and thus human-ness, Barad argues that 'human' and 'non-human' are phenomena produced by the intra-actions of science and society. Aligned with this, Peter Dickinson's

1988 dystopian SF novel, *Eva*, is crucially aware of the biotechnological shifts producing human/animal ontologies and the concomitant socio-cultural implications. In this novel the young female protagonist, Eva, becomes a chimp/human hybrid. After a car accident had left Eva in a coma her memories are transferred into the 'empty' brain of a chimp, Kelly. This occurs through a process the text calls 'neurone memory' (p.22). Although this seems to initially set up a simple human/mind animal/body dichotomy – where the animal body is a vat for the human mind - the text constructs identity in a much more complex and post-humanist manner. The metaphors Eva uses to describe her animal body and her human mind are similar and indicate the connections and contingencies between the two. As Eva notes when she realises she has woken in Kelly's body and has gone through the neurone memory process, 'The thing is, you aren't just a lot of complicated molecules bundled together inside a skin – you are that too, but that's not what make you *you*. What *you* are is a pattern, an arrangement, different from any other pattern...' (p.22). Respectively when she first sees her chimp body she describes it as a 'Mess. A giant spider – web [...] and then the mess made sense' (p.18).

Evidently, the idea that Eva's memories will fix her identity as human is not assumed and a liminal position between human/animal has to be constantly negotiated. To quote the text: 'Eva's human neurones might have copied themselves into Kelly's brain, but [...] that left a sort of interface, a borderland where human ended and chimp began' (p.39). Eva has to negotiate her new position as 'other' in the human world and as 'other' in the chimp world. She mourns the loss of Kelly and equally the loss of the old Eva, a normal girl who has blue-eyes and ice-skates, however she also recognises the necessity of self-preservation. To this end, the text doesn't shy away from the abjection involved in Eva's hybrid subjectivity; she eats parasites and eventually mates with many of her chimp group. Even in the closure of the novel, when Eva/Kelly is living with the chimp colony on an island and she is approaching death she is unsure about where the boundaries between the human and nonhuman lie. Having introduced names to the other chimps she suspects they won't use them after her death, she understands individuals not as an essence

but as a presence, 'a shape and smell and touch, a bunch of memories' (p.205). What 'human' knowledge or influence she may have imparted to the chimps and its long term effects is left uncertain and deemed questionable.

Impacting also on identity, the novel explicates the range of bioethical and moral dilemmas that are embedded in scientific practices. Similar to 'actor-network-theory' favoured in science studies, the novel considers what activities, which human and nonhuman bodies, and what capital and resources are enrolled to bring a 'fact' into being (in *Eva*, a human/chimp hybrid). The text highlights a constant tension between the defense of research which uses chimps and the funding necessary to maintain Eva's father's chimp pool. Eva's hybrid body also raises questions of legal ownership, medical costs, and big businesses' stakes in science when the powerful World Fruit conglomerate recruits her to be used in commercials. The text refuses a satisfying resolution of these issues and instead ushers them forward to be negotiated as the contradictions of a modern technoscientific world. The child reader is thus invited to engage with the contingencies that make up reality and this, in turn, generates a more accountable engagement with science. This also concurs with the strategies used in science studies so that what gets to count as 'nature' and what gets to count as 'culture' is a result of historical and ethical processes, not a pre-given binary.

Although the resolution of the novel may be read as somewhat hopeful in that it superficially reiterates the Christian creation myth it nonetheless self-consciously disrupts such a reified closure, and in doing so disrupts definitive binaries. Having found an isolated and fertile island for the chimp colony to live on, Eva dies and the urban human world implodes upon itself. The resolution is hopeful in the sense that it reconstructs Edenic origins, symbolised through the name of Eva Adamson as the beginning of a new race, however the text continues to disturb any fixed or predetermined origins in keeping with its refusal of binary positions. Indeed, Eva was never 'naturally human' she 'had always been one of her Dad's Research Projects', 'she had been making chimp chatter before she said her first human word' (p.21). Eva's identity too is never constructed in oppositional terms instead she

realises she is becoming a 'new pattern, not Eva not Kelly, both but one' (p.38).

The two novels, *Eva* and *Galax Arena*, engage in and articulate positions on biotechnological intervention and the ways in which they are 'dramatically shifting both the shape of a human life and the shape of the stories we tell about it' (Squier 2004, p.20). Stories become more significant in this discussion when they offer the reader a narrative in which the scientific and the social are understood as constituting each other through material/discursive intra-action, rather than reiterating nature as one thing and culture as something else, or the "human" as materially and discursively separate from "non-human". *Eva* persistently challenges traditional concepts of 'natural' in terms of both physical and cultural origins and the narratives evoked in the disciplines which they are respectively associated. This enables an alternative to the reification of traditional boundaries evident in *Galax Arena*, where animality is aligned with nature (as bodily performance and instinct) and humanity is aligned with the cultural: mind, enlightenment, vision and disembodied objectivity.

New science in children's texts is then ideologically laden in ways that work outward to real conditions in the twenty-first century. The animal/human hybrid has recently been a focus of the US bioethics committee where the Chairman, Leon R. Kass observes the associated cultural anxieties and the scientific creations. He notes that,

It is an area of public disquiet for it touches on some rarely articulated, but perhaps not altogether articulable.... I sense that these boundaries between man and the animals should not be breached. Yet the boundaries have long been breached, what with vaccines and drugs that are produced from animal sources, with the use of transplantations from animals, whether heart valves or livers, with the growing transfer of human cells into animal bodies, the movement of genes, et cetera.

(PCBE Transcripts, October 16, 2003: Session 2).

In any attempt to understand the production of reality, whether it be through the transgression or reinscription of ontological borders, representation is critical. As Susan Squire notes, fiction is the 'crucial site of permitted

articulation for the desires driving these new [biomedical] technologies' (2004, p.17). Stories for children that engender a particular set of responses to science and its treatment of bodies call for analysis precisely because it becomes increasingly likely that the young reader will face the quandaries raised by these shifts. These questions play out not only in political discourses but also in material ways because children's bodies are often at the front line of the research that is granted authority in determining new realities. Children's SF is both constitutive of the biotechnological imaginary and produced by it. Indeed, it is through literature, specifically literature that challenges the boundaries of science and fiction that the anxieties and possibilities surrounding the animal/human hybrid are articulated or 'articulable'.



REFERENCES

- Barad, K. (2003) 'Posthumanist Performativity: Toward an Understanding of how Matter comes to Matter', in *Signs: Journal of Women in Culture and Society*, 28, 3:801-831.
- Barad, K. (2000) 'Reconceiving Scientific Literacy as Agential Literacy', in R. Reid, & S. Traweek (eds) *Doing Science + Culture*, Routledge, New York, pp. 221-258.
- Dickinson, P. (1998) *Eva*, Victor Gollancz, London.
- Flower, M. J. (2001) 'Technoscientific Literacy as Civic Engagement', in M. Mayberry, B. Subramaniam & L.H. Weasel (eds) *Feminist Science Studies: A New Generation*. Routledge, London, pp. 63-71.
- Hubbard, R. (1979) 'Have Men only Evolved?', in R. Hubbard, M. Henifen & B. Fried (eds) *Women Look at Biology Looking at Women*, G.K. Hall, Boston.
- Ostry, E. (2004) "'Is He still Human? Are You?" Young Adult Science Fiction in the Posthuman Age', in *The Lion and The Unicorn*, 28, 2:222-246.

Rubenstein, G. (1992) *Galax Arena*, Hyland House, Melbourne.

Squier, S. (2004) *Liminal Lives: Imagining the Human at the Frontiers of Biomedicine*, Duke University Press, London. U.S. Bioethics Committee, 'Towards a Richer Bioethics: Council's Report to the President', PCBE Transcripts (October 16, 2003) Session 2. <http://www.bioethics.gov/transcripts/oct03/session2.html> (Accessed Jan 2, 2007).

van Loon, J. (1996), 'Technological sensibilities and the cyberpolitics of gender: Donna Haraway's postmodern feminism', in *Innovation: The European Journal of Social Sciences*, 9:231-244.

BIOGRAPHICAL NOTE

Naarah Sawers is a PhD candidate at Deakin University. She teaches children's literature and her thesis, in literary studies, focuses on feminist corporeal philosophy and science studies.

