

CRITICAL PLANT STUDIES AND CHILDREN'S LITERATURE

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CRITICAL PLANT STUDIES is based on combinations of biological research with literary, philosophical and cultural enquiry. The terms 'critical plant studies' (Marder 2011), 'human-plant studies' (Ryan 2012) and 'cultural botany' (Ryan 2011) all relate to a branch of ecocriticism that emerged in the first decade of the millennium. It is only secondarily a form of literary analysis. Primarily, critical plant studies is a political movement which argues nothing less than that the survival of the planet is dependent on plant life. The use of critical plant studies within literary analyses highlights this argument and draws attention to works of fiction which concretise human dependence on plants. Its presence in children's literature explains this belief and reflects adult concerns about the environment children born today will inherit.

Ecocriticism, to place it within the history of literary theories, emerged from deconstruction. In *Of Grammatology* (1997), Jacques Derrida introduces the notion of *violent hierarchies*. A hierarchy is deemed to be violent when one part of a binary is consistently granted a higher value than another. Derrida's own example is 'phonocentrism', whereby speech is deemed to be central and the foundation for writing. This, Derrida suggests, is a violent hierarchy as writing is then rendered peripheral. His approach was to reverse the hierarchy. This tactic was embraced by a number of schools of thought which endeavour to reverse a central binary. Notable examples include feminism (male-female), queer theory (straight-queer) and ecocriticism (human-environment). Within the study of children's literature, Maria Nikolajeva has considered the value of reversing the adult-child hierarchy (2010).

Ecocriticism highlights the ways in which human-environment discourse operates, and endeavours to undermine the assumption that humans are more important than the environment they share with other living animals and plants. By pointing out that human life is dependent upon the existence of an ecosystem that provides breathable air and uncontaminated water, for instance, ecocritics endeavour to reverse the violent hierarchy and place the environment centre stage and situate humans as dependents of the environment. Ecocritical children's literature, as Alice Curry's *Environmental Crisis in Young Adult Fiction* (2013) clarifies, is dominated by fantasy and dystopia as authors imagine the consequences of consistently placing human desires before environmental imperatives. Curry combines feminism and ecocriticism to form readings of young adult fiction that challenge the centrality of humans, and instead creates a "poetics of planet" to foreground human dislocation from the earth' (2013: 15; see also Curry's chapter in this volume (Chapter 5)). The works she examines are primarily apocalyptic, and she

uses the notion of planetary alienation to highlight 'tipping points' when the characters recognise the unsustainability of the human-environment hierarchy, and acknowledge how human desires have caused the destruction of all life on the planet. Critical plant studies highlights the centrality of plants in determining the fate of life on the planet.

Although ecocriticism has only existed in its current form since awareness of the environmental crisis posed by greenhouse gases became clear, criticism of the violent hierarchy of human-nature relations can be traced back to the eighteenth century and to criticisms of the Linnaean classification system. *Systema Naturae* (1735) was developed by the Swedish botanist Carl Linnaeus to provide a universal system which could enable people around the world to refer to their lived environment in the same way. It also enabled botanists to establish evolutionary relationships before the emergence of DNA technology. The categories in the Linnaean system are generated from the plants' physical appearance and their means of reproduction without reference to the physical environment in which they grow. As a result, the Linnaean system is deliberately constructed as a context-independent, hierarchical system.

John Ryan demonstrates that prior to Linnaeus's taxonomy 'knowledge of plants was intimately linked to the human body through herbal medicine' (2011: 4). Whilst this might suggest a maintenance of human-plant hierarchy, Ryan notes how works such as Nicholas Culpeper's *The Complete Herbal*, first published in 1653, encourages readers to regard the human body as existing in a reciprocal relationship with the vegetable world. Even when it was first published, Linnaeus's work was questioned by a Swiss naturalist, Albrecht von Haller, who 'argued for the role of geography in understanding flora and that temporal changes over time are as crucial as morphological anatomies fixed in a single synchronic moment of perception' (Ryan 2011: 7). Linnaeus's determination to separate the vegetable world from the very soil in which it flourishes is part and parcel of a larger project of assuming that plants are passive and that humans are always the active partners in determining human-plant relations. Critics working within critical plant studies pose the question of what would happen 'if we were to consider how plants *act upon us*, contributing to the co-generation of our cultural practices, values, perceptions, relations, artifacts, and all else through their volitions in the *unwelt* of which all living things are part?' (Ryan 2012: 104). This formulation suggests intentionality, but can also be understood without requiring consciousness.

The humble tomato illustrates how plants can act upon humans without recourse to intentionality. Tomato seeds are so delicious that we willingly eat them and so ensure that the plants' offspring will germinate in a rich bed of organic substance produced by the human digestive tract. In this case, we do not need to believe that plants have a conscious awareness of the processes by which they design their seeds to suit the digestive tract, any more than humans have a conscious awareness of their own production of differing chemical compounds evident in the formation of products such as faeces or urine. The process is dubbed evolution – the survival of the fittest – and is generally considered to be a passive process. Human capacities to meddle in this process have been causing concern from the development of contraceptives to the recent birth of a child formed from three people's DNA. Vegetable meddling may not be so extreme, but proponents of critical plant studies – such as Stefano Mancuso and Alessandra Viola – claim that 'arguments for denying plants' intelligence rely less on scientific data than on cultural prejudices and influences that have persisted for millennia' (2015: 2). When judged by the criteria used for animal intelligence, plant behaviour reveals sentience.

In *The Botany of Desire* (2001), Michael Pollan identifies four principal human desires which have shaped human-plant relations: sweetness, beauty, intoxication and control, which he discusses in relation to the apple, the tulip, marijuana and the potato. Somewhat curiously, Pollan ignores the medicinal value of plants, touching only briefly on the capacity of marijuana to numb pain and thus serve as a medicine in the treatment of cancer and multiple sclerosis. Nevertheless, the world of pharmaceuticals is almost entirely dependent on plants for producing the raw ingredients. The centrality of plants in providing human sustenance, clean air and shelter is taken for granted. By focusing on desires that are not central for survival, Pollan reveals the active role plants play in human-plant relations. For instance, many plants cannot reproduce without human assistance. Long before genetically modified organisms technology became ubiquitous, humans have been systematically breeding plants to the extent that varieties of many commonly eaten plants, such as apples and potatoes, will not grow true from seed. They are dependent on humans' grafting or cuttings. This allows humans to consider themselves to be active and the plant passive, but for Pollan and others within critical plant studies, this is evidence of how humans are servile to the needs of plants.

Moreover there are areas of plant activity that indicate both sentience and intent (and thus intelligence): movement and signalling. Plants are generally referred to as 'growing' rather than 'moving'. But 'growing' is simply a slow form of movement, and in the case of climbing plants such as beans, hops and vines it can be quite fast. During the growing seasons, these plants move so quickly that gardeners and farmers have to tie the shoots daily, and must follow the plants' wishes. Bean shoots and cucumbers wind themselves around supports clockwise: if a gardener winds them anticlockwise, they will unwind and rewind themselves. Similarly, plants' ability to seek light has revealed intelligent behaviour. Stanisław Karpiński and Magdalena Szeclżyńska-Habda (2010) have investigated plants' perceptions of light and concluded that plants have both memory and intelligence. Their study was published in *Plant Signaling and Behavior* (established 2005), a forum providing cutting-edge scientific evidence on the physiological and neurobiological basis of adaptive behaviour in plants. These studies demonstrate that plants have an impressive array of mechanisms for perceiving and responding to their environment. Mancuso and Viola report on findings that playing music to vines produces bigger grapes which resist insects better and propose that plants are able to hear the sound of roots growing (2015: 74–6). These findings are still deemed provocative since they indicate plant intelligence.

This intimate relationship between plants and humans also opens up new ways of thinking about social history and literature. Elsewhere, I have suggested that examining how plants act upon humans can open up new ways of understanding nationhood (Kokkola 2016). Furthermore, by highlighting the active nature of the vegetable world – not as a metaphor but as a lived reality – authors and critics provide a new way of promoting changes in human behaviour in relation to the lived world. Within children's literature, attempts to express such thinking range from early, overtly didactic ideas in works such as Shel Silverstein's *The Giving Tree* (1964) and Dr. Seuss's *The Lorax* (1971), anthropomorphic trees in C. S. Lewis's *Narnia* series to more a subtle highlighting of human dependency on plants for medicine in Patrick Ness's *A Monster Calls* (2011).

The Giving Tree, like plants in the real world, provides people with all their needs so long as it receives gifts from humans in return. *The Lorax* was Seuss's conscious

attack on the logging industry. Both these early ecocritical picturebooks are most readily interpreted as didactic messages about the need for humans to become better custodians of the earth. Read in this way, the human-plant hierarchy is not challenged: humans still have the upper hand and the power to change the situation. More specifically, a small boy is given the responsibility for healing the world by caring for the trees, an extension of the Romantic thinking that connects the child to the natural world most fully examined in Roni Narov's *The Poetics of Childhood* (2003) and also in Zoe Jaques's discussion of trees in *Children's Literature and the Posthuman* (2015: 111–42). To read these picturebooks through a critical plant studies lens, we would need to reject the idea that humans are guardians of the earth and highlight the dependence of humans on the plants. The resulting behaviours might be similar, but the power relations are decidedly different. Romantic assumptions that children are closer to nature, as evident in Seuss's works, can suggest that they hold the key to saving the earth. Read this way, critical plant studies can be a means of empowering children as they are positioned alongside the powerful plants against the polluting adult world. The image of the young child alone at the end of both works, however, should alert us to the terrible burden that this places on children.

There certainly are texts which easily proffer themselves up to readings in which plants are actors. Plants are less frequently anthropomorphised than animals, but when they are they tend to have very distinct personalities. The plants studied in J. K. Rowling's *Herbology* classes in the *Harry Potter* series (1997–2007) are not merely sentient; they very consciously act upon people. But as Zoe Jaques clarifies in her discussion of Rowling's plants, even very powerful plants, such as the Whomping Willow, are most easily read in terms of the use value they hold for wizards, rather than as autonomous living beings (2015: 132–40). The anthropomorphic trees in Narnia, despite the decidedly hierarchical organisation of the kingdom, are more obviously actors and thus offer easy access points for critical plant studies readings. Narnian trees provide the fruit of knowledge in *The Magician's Nephew* (1955) and it is only when they join the battle in *Prince Caspian* (1951) that the Narnians are able to gain the upper hand. Even more recent works, such as the Swedish novel *Pojkarna* (*The Boys*, 2011), by Jessica Schiefauer, in which a flower enables the female protagonists to change sex and experience life as boys, plant characters determine the course of human events. The problem with reading these texts from a critical plant studies perspective is not identifying vegetable intent (their intentions are part of the plot). The problem is understanding the plants' behaviour as a reflection of *plant* issues: they are more easily interpreted in terms of their contribution to human endeavour.

More recent fiction incorporating human-plant relations suggests that the thinking that underlies critical plant studies is being made accessible to young readers. French author Timothée de Fombelle has created a society of miniature people who inhabit an oak tree and do not believe that life exists beyond its borders. The first novel, *Toby Alone* (2008), ends when Toby is forced to leave the tree and meets the grass dwellers. He returns in *Toby and the Secrets of the Tree* (2010) to rescue Elisha who is half-Grass and half-Tree person. Gradually, Toby learns to appreciate the interconnections between plant and human life. But where de Fombelle highlights human dependency on plants for shelter and sustenance, Frances Hårdinge's eerie novel *The Lie Tree* (2015) presents human-plant relations on an emotional plane. Set in the Victorian era when Darwin's *The Origin of Species* (1859) was causing humans to question their belief in

God, Hardinge's novel suggests that loss of faith served to strengthen belief in human supremacy even as her plant character refutes this possibility. The Lie Tree is a plant that can only flourish in the dark. It feeds upon the lies humans tell. After the mysterious death of her botanist father, Faith realises that the plant holds the key to determining how her father died. She quickly learns how telling the plant lies changes human behaviour and causes the plant to grow, filling the dark cave when it has been hidden. The events come to a head, and Faith recognises the powerful, evil sentence of the Lie Tree. She brings about its destruction by exposing it to the light (just as shedding light on a lie destroys its force). Although the Lie Tree is evil, and although readers are encouraged to align themselves with Faith against the tree, the novel easily lends itself to critical plant studies reading. The comforting lies we tell ourselves about our capacity to control the greenhouse effect – that simply by recycling our plastic shopping bags or replacing them with reusable fabric totes we can continue to drive to the shops and fly around the world – are feeding a malign force. In the end, plants will determine the fate of life on the planet.

More typically, as Zoe Jaques (2015) also observes, plants form part of the setting which, although they may last longer than humans, places them at the lower end of the hierarchy. Their absence is sometimes picked in dystopian fantasies, but novels containing individual plants tend not to be dystopian. The antagonist in Ness's aforementioned *A Monster Calls* is a rare example of a plant that reflects both human and plant issues. The yew tree, which provides ingredients for cancer treatment, forces the young protagonist into admitting that he sometimes wishes his mother were dead. Thus it holds the balance of power over both the mother's life and her son's peace of mind. The intentionality of the plant character is foregrounded in relation to these human issues. A critical plant studies reading would also highlight the long history of human dependence on the yew. Traditionally, yews were grown for their strong, flexible branches from which archers' bows could be formed. They were often grown in churchyards both to protect them from browsing farm animals, and also to protect the animals from the poisonous yew. Yew hedges continue to be grown to form attractive windshields and create privacy. By providing shelter, security, beauty and medicine, the yew has ensured that humans will willingly take cuttings and care for young offspring, keeping them alive in their gardens for as much as six hundred years. Without human intervention, they would die much earlier and produce far fewer offspring. The tree in Ness's novel understands their mutual dependence and is one of the few books to proffer a critical plant perspective as one of its easiest lines of interpretation.

Greta Gaard, an influential critic within feminism and ecocriticism, poses the blunt question 'what in the world are we doing by reading environmental literature?' (2009: 321). Noting the mismatch between reading about environmental concerns and engaging with ecocritical politics in an informed, meaningful manner, Clare Bradford argues that many environmental children's books are 'strong on articulating ecological crises, but weak on promoting political programs or collective action' necessary to address these crises effectively (2003: 116). Gaard suggests that children's literature has an important role to play in developing ecopedagogy. Ecopedagogy clearly differs from traditional environmental education which champions 'sustainable development'. Instead, ecopedagogy places the unsustainability of endless growth and demands a

radical reconsideration of human-nature politics. Understanding that plants – not humans – hold the balance of power over the future of the earth, as critical plant studies promotes, is a key step in this endeavour.

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