



Analysing Plant Representation in Children's Literature: The Phyto-Analysis Map

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Abstract

Recent biological research (Trewavas, 2003; Mancuso & Viola, 2013; Gagliano, 2018) has (re)demonstrated the variety and complexity of the adaptive behaviour of plants. In parallel with these findings, and in acknowledgement of the important role played by plants in the biosphere and climate of the planet, the representation of plants in philosophy, arts and literature has become an object of study within the environmental humanities. In response to the rapidly developing field of critical plant studies, the representation of plants in literatures for children and young adults are now accumulating. Even as the number of studies is increasing, there is as yet no cohesive framework for the analysis of plant representation in children's literature. This article addresses this gap. Inspired by the Nature-in-Culture Matrix, an analytical figure that provides an overarching schema for ecocritical analysis of children's texts and cultures (see Goga et al., 2018), this article presents an analytical framework for plant-oriented analysis, the Phyto-Analysis Map. This map has been developed with reference to central concepts from the field of critical plant studies, and its usefulness is elucidated through literary examples. Developed with children's fiction in mind, the map also has potential application with children's non-fiction, which often employs fictional textual techniques.

Keywords Critical plant studies · Children's literature · Young adult literature · Ecocriticism · Literary analysis · Phyto-analysis

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The individuals of the vegetable world may be considered as inferior or less perfect animals; a tree is a congeries of many living buds, and in this respect resembles the branches of coralline, which are a congeries of a multitude of animals. (...) That the vegetable world possesses some degree of voluntary powers, appears from their necessity to sleep, which we have shewn in Sect. XVIII to consist in the temporary abolition of voluntary power. (...) The associations of fibrous motions are observable in the vegetable world, as well as in the animal. (Darwin, E., 1796)

These observations by Erasmus Darwin from 1796, as well as his grandson Charles Darwin's argument nearly a hundred years later that plant roots function akin to a brain (1880), resemble the conclusions of more recent research, which has confirmed that plants have highly developed senses, not least an acute sensitivity to different qualities of light (Mancuso and Viola, 2013, p. 47). A vocal defender of plant capabilities and a pioneer within the field of plant neurobiology, Stefano Mancuso holds that plants' tendency to grow towards the light, and to increase the speed of growth to outgrow neighbouring rivals, demonstrate their ability to make plans and use resources to bring about future ends (Mancuso and Viola, 2013, p. 49). With reference to Charles Darwin, Mancuso also discusses how plant roots seem able to "taste" mineral deposits in the earth and extend their roots precisely towards such resources (2013, pp. 57–58), testifying to a form of discerning intelligence on the part of plants.

In tandem with a renewed botanical and philosophical interest in plants (see Hall, 2011; 2019; Marder, 2013, 2015; Irigaray and Marder, 2016; Nealon, 2016), combined with an emphasis on the significance of plants to the global climate (Schramski et al., 2015), intensified engagement with plants is evident in the humanities, coalescing in the field of critical plant studies, concerned with cataloguing, analysing, and discussing the role and representation of plants in local and global literatures, arts and cultures.

From a theoretical vantage point, this upsurge of interest in plants, plant sensing and plant rights, characteristic of critical plant studies, is supported by thinking developed within the fields of ecocriticism, animal studies and critical and feminist posthumanism. All these fields have furthered persistent critiques of the modern capitalist exploitation of both the environment and other species by calling for a revision of the anthropocentric world view characteristic of current Western culture. Since ecocriticism was influentially defined by Cheryl Glotfelty in 1996 as "the study of the relationship between literature and the physical world" (xviii), the complexity of this relationship has meant that ecocriticism, from the very beginning, has developed through dynamic exchanges between scholarship from the natural sciences and the humanist tradition. This entanglement is evident already in one of the founding texts of the field, the environmental "fable" *Silent Spring* (1962), by American zoologist and biologist Rachel Carson.

Greg Garrard's later definition from 2012 of ecocriticism as "the study of the relationship of the human and the non-human, throughout human cultural history and entailing critical analysis of the term 'human' itself" (p. 5) signals how arguments for animal rights (Singer 1975; Derrida, 2002; Wolfe, 2003) as well as

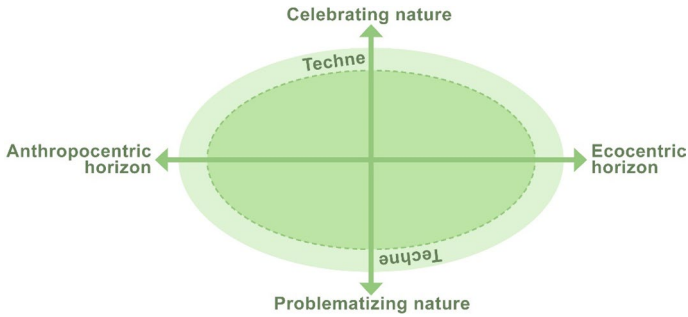


Fig. 1 The Nature-in-Culture Matrix (Goga et al., 2018, p. 12), rendered with permission

posthuman interrogation of species boundaries (Haraway, 1991, 2008; Braidotti, 2013) have been subsumed under the banner of ecocriticism. Critical plant studies further expand such thinking to encompass plants, tapping into earlier traditions of botanical research.

Most studies of the representation of plants in literatures for children and young adults are recent but accumulating (see Hines, 2004; Jaques, 2015; Kokkola, 2016, 2017; Goga, 2017; 2019; Guanio-Uluru, 2019a; Duckworth and Guanio-Uluru, 2021). Yet, even as the number of studies is increasing, there is no cohesive framework for the analysis of plant representation in children's literature. With reference to the expanding field of critical plant studies, this article addresses the need for such an analytical framework. The article consequently presents the Phyto-Analysis Map, which is based on concepts drawn from critical plant studies and aims to be an aid for those wishing to analyse plant representation in children's and young adult (YA) literature by providing an overview of relevant analytical perspectives.

The Phyto-Analysis Map might be considered a possible specification of the ecocentric position of the Nature-in-Culture Matrix (Goga et al., 2018, p. 12); an ecocritical analytical figure that is presented and briefly discussed in the following section, before the article moves on to a detailing of the Map itself.

Ecocritical Positions: A Schematic View

The Nature in Culture Matrix (see Fig. 1) is an analytical figure developed by the NaChiLitCul research group, based at the Western Norway University of Applied Sciences, to aid ecocritical analysis, comparison and discussion of children's and young adults' texts and practices (Goga et al. 2018, p. 12).

The matrix schematically depicts central ecocritical positions commonly found in children's texts and cultures along two axes: a horizontal continuum ranging from an anthropocentric to an ecocentric horizon and a vertical continuum ranging from a celebratory attitude to the relationship between children/humans and nature, to a problematizing of this relationship. The problematizing stance is increasingly common in more recent texts, especially those oriented towards the representation of human Anthropocene impact. The celebrating position "implies the idea of the 'pure

child' or 'child of nature' as a key figure in the cultural and pedagogical tradition, based primarily on Rousseau" (Goga et al., 2018, pp. 12–13).

The different views of nature depicted in the coordinate system "is dependent on how humans position themselves in nature" (Goga et al., 2018, pp. 12–13). While this is not specified, the axis connecting the positions "celebrating nature" and "problematizing nature" may additionally be read as a schematic representation of the development of the field of ecocritical theory: From a "first wave" (Buell, 2005) emphasis on non-fictional nature writing and Romantic poetry characterised by "celebratory" views of nature, the field has expanded to include multiple genres, urban landscapes and local literatures (Slovic, 2010), and even to incorporate self-reflexive or "problematizing" criticism of the scholarly field itself.

The anthropocentric position in the matrix is understood as "human-centered," or as conferring intrinsic value only to humans, while the ecocentric position is defined as "ecosystem or ecosphere-centered" (Goga et al., 2018, p. 13), regarding humans as parts of interrelated ecological systems. The axis between the "anthropocentric" and "ecocentric" horizons thus suggests that the preferable value-orientation, from an ecocritical perspective, involves a movement along this axis from left to right. Read in this way, both axes entail a movement towards an increasing complexity in perspective(s).

The dimension of *techne* that circumscribes the matrix has its roots in rhetorical theory and signals the art of shaping and manufacturing; a reminder that children's texts and cultures are mediated, or crafted expressions, positioning the reader or participant in a specific relationship to (the represented) nature. Additionally, the term calls attention to the (more invasive) "crafting" represented by biotechnology (Goga et al., 2018, p. 13), thus engaging with posthuman debates.

The edited volume in which the matrix appears, *Ecocritical Perspectives on Children's Texts and Cultures: Nordic Dialogues*,¹ includes a section on the "Vegetal," comprising a chapter on the trope of the forest in recent visual children's poetry (Skyggebjerg, 2018) and one exploring plant-human hybridity in a series of picture-books (Guanio-Uluru, 2018). Additionally, it contains sixteen examples where the matrix is put to analytical use on a variety of children's texts and cultures, including YA literature, eco fantasy, a children's TV-series, digital apps, and children's own statements about nature on a field trip, suggesting the wide applicability of the matrix. Several of the contributors to the volume find that the texts or practices analysed are not *either* celebratory or problematising, nor *either* anthropocentric or ecocentric, but that different aspects of the texts or practices rather pulsate along these continuums in their individual configurations. Some contributions suggest additions or modifications to the matrix: Hallås and Heggen (2018) argue that factual statements about nature represent the matrix' centre point, while Kerry Mallan (2018, p. 227) adds additional categories to the matrix in her analysis of the figure of "The Wild Child" to pinpoint more specific positions relative to the broader categories of the original matrix.

¹ For an overview of ecocritical studies within the fields of children's and YA literary research, see the volume's introduction.

When applied to specific literary texts, the use of the matrix in educational settings has suggested that such conceptual elaboration is helpful, given that students initially tend to struggle to comprehend the matrix' overarching categories, which only fully make sense against a backdrop of broader theoretical and textual knowledge. The employment of ecocritical reading roles (Guanio-Uluru, 2019b) asking readers to pay particular attention to the role of plants and animals in literary texts has proved useful steppingstones for ecocritical discussions that may progress towards an application of the matrix. In such discussions, students may themselves come up with additional matrix categories and modifications. Given that literary representations usually display some degree of indeterminacy, literary works tend to be hard to "pin down" in any of the various quadrants of the matrix; something that is a viable starting point for dialogue, reflection, and discussion, given that there are no obvious "right answers" in the application of the matrix to particular texts.

The Nat-Cul matrix is a useful way of orienting an analysis of children's texts and cultures in relation to the now expansive field of ecocriticism. The Phyto-Analysis Map presented here may be regarded as one possible elaboration of the ecocentric horizon of the matrix and aims, as mentioned, to provide a systematized starting point for plant-oriented analysis in particular.

The Phyto-Analysis Map: A Conceptual Figure

While the phytocentric analytical figure outlined in this article is inspired by work with the Nature in-Culture matrix, the Phyto-Analysis Map is formulated independently of the matrix. A main reason for this is the organic orientation of the Phyto-Analysis Map, which is better expressed through the figure of a flower than in terms of the polar tensions suggested by the Nature in-Culture matrix. Additionally, the Phyto-Analysis Map is aimed more specifically towards the analysis of literary texts. The map has been developed with children's fiction in mind, but has potential application also with children's non-fiction, which often employs fictional textual techniques (see Goga et al., 2021).

Drawing on critical plant studies as well as on previous analyses of literary representations of plants, the following section presents and explains the theoretical and analytical underpinnings of the Phyto-Analysis Map (see Fig. 2).² This aims to show how the Map's various petals refer to concepts from plant theory as well as to earlier research in children's literature, while illustrating the applicability of the various concepts with specific literary examples taken from children's and YA literature.

The Phyto-Analysis Map is shaped like a six petalled flower, with a "stem" and "root-system" (7), comprising a variety of relevant intertexts from science, art, philosophy, literature, religion, global myth, and indigenous traditions that may present differing views on, and attitudes towards, plants. The concepts clustered in each petal are linked to theoretical observations made in previous literary and

² With thanks to Lisbeth Thomassen Larsen for technical assistance in the digital rendering of the MAP figure.

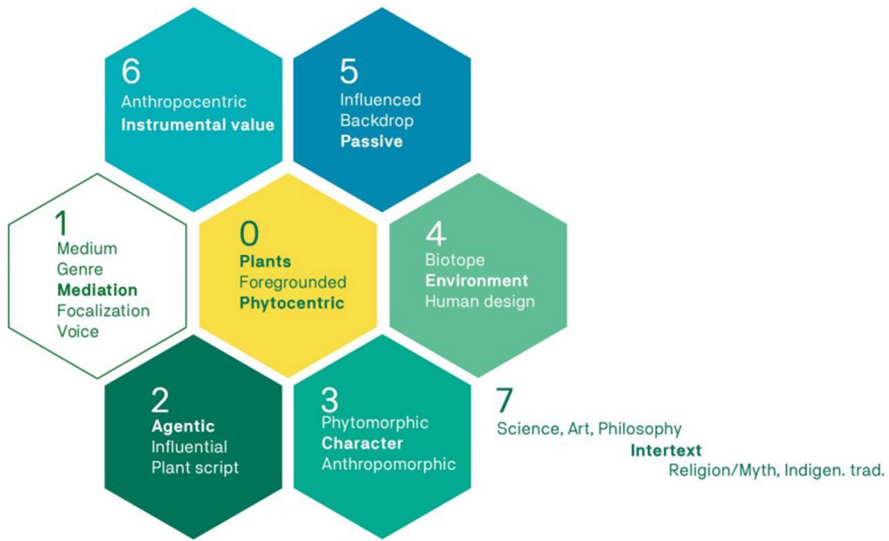


Fig. 2 The Phyto-Analysis Map

philosophical analyses of plant representation. The Map suggests a phytocentric approach as a point of departure (0, or the centre of the flower), that is, an analytical practice where plants are foregrounded as the objects of analysis.

This initial analytical position runs counter to a general tendency in Western culture to disregard plants—a condition known as “plant blindness” (Wandersee and Schussler, 1999), characterized by an inability to see or recognize the plants in one’s environment or inability to appreciate the characteristics of plants and their importance in the biosphere and in human affairs (Wandersee and Clary, 2006). Through its phytocentric orientation, the Phyto-Analysis Map presents itself as an antidote to plant blindness—a condition that Matthew Hall has argued “is largely a cultural-philosophical attitude” (2011, p. 6) and consequently possible to remedy. To the extent that the Map’s zero position is based in natural science, it is aligned with biological research suggesting that plants have a wide range of adaptive capabilities (Darwin, 1880; Mancuso and Viola, 2013).

While the petals in the Map are numbered to suggest a potential analytical progression and to structure the presentation of the various clusters of concepts, a different pattern of movement between the petals might be more appropriate to the analysis of individual plant representations and may be freely undertaken. There are numerous potential links between the various petals, something that will become evident during this article.

Petal 1, Mediation (*medium, genre, focalization, voice*)

In the Map, the ground zero position of a phytocentric attitude is followed by the concept of Mediation, which indicates that a useful initial step in phyto-analysis is to take the medium, the genre and the focalization and “voice” of the telling into

consideration.³ Relative to the medium of representation, picturebooks, cartoons and illustrated novels have numerous ways of configuring the relationship between verbal and visual representation, which may work together or in counterpoint (Nikolaeva and Scott, 2006, pp. 24–26); a factor potentially complicating the rhetorical role played by plants in any given text.

Digital multi-media representations, such as picturebook applications or video-games, add sound, movement and interactive options to their representative modalities, while their organisation as ergodic texts (Aarseth, 1997) that require the user's active execution, further contributes to the complexity of their nature representation (Guanio-Uluru, 2019c); something that should be taken into consideration. While plants, in the form of paper, have long been the carriers of literature, this material connection is severed in digital representation. The representative consequences of this breach have yet to be explored from a phyto-analytical perspective. Do plants become *more* visible when they are *not* the medium of representation, or less? Or does the medium make little difference to the treatment of plants in children's narratives?

Also pertaining to petal 1, voice and focalisation are salient features when discussing plant representation, and Mike Bal's (2006) distinction between the subject and the object of the focalization, or the focalizer and the focalized, may be useful: Are we as readers seeing, hearing or sensing *with* plants (plants as subjects of the focalisation), or are we simply seeing or hearing about plants (plants as objects of the focalisation) and if so: who is doing the seeing and the framing? Both Maud Hines (2004) and Zoe Jaques (2015) have discussed the significance of plant voice in children's literature; Hines notes that by giving a plant a voice in a story, it gains subject status (p. 21); a point made also by Jaques, who notes that granting plants a narrative voice tends to trouble a story's anthropocentric value argument (2015).

The problematizing aspects of plant focalization have historical antecedents (petal 7) and is known, for instance, from Old English poetry, such as the eighth century *The Dream of the Rood*, the second part of which tells the story of the crucifixion of Christ from the viewpoint of the tree that was cut down to fashion the cross. In a similar manner, the Elder Edda (Sturluson, 2005) gives voice to the Yggdrasil tree, the axis mundi of Old Norse mythology, which complains of being mauled by other creatures. The perspectival change of Christianity relative to the figure of the tree is notable: The Tree of Knowledge in the garden of Eden is voiceless (see Guanio-Uluru, 2015, pp.47–49). And, as Matthew Hall has observed, when Noah saved two of every species of "living being" for his Arc, he collected no plants (Hall, 2011, p. 59); a rather dubious strategy, ecologically speaking. The Edenic myth places man, rather than the world tree, centre stage as the organizer of life on earth and the admonition in Genesis that Adam and Eve ought not to eat from the Tree of Knowledge is symbolic of this shift: In the creation stories of Old Norse mythology, man is fashioned from a species of tree (Sturluson, 2005, p. 18). The command to disregard

³ Consequently, petal 1 has parallels to the dimension of *techné*, or how representations are crafted, in the Nature-in-Culture matrix but specifies aspects of *techné* with particular relevance for phyto-analysis.

“tree knowledge” might be read as an attempt to denounce earlier tree worshipping traditions, once common across most of Europe (Frazer, 2009, pp. 83–85).

Varying ethical orientations towards plants are found in indigenous, pagan, and pre-scientific traditions, many of which conceive of plants as kin, as do for instance the Maori (Hall, 2011, p. 103) and Australian Aborigine traditions (p. 107). The exemption of plants from the category of the living (bios), displayed by Noah's lack of concern for plants, has persisted in the Western philosophical tradition, where the issue of vegetal life has been consistently sidestepped since Aristotle, including in biopolitical theory (Nealon, 2016). This evasive attitude is not just a Western tendency, however: Hall also notes that “Plants are conspicuously absent from the wheel of sentient life” in Tibetan Buddhism (2011, p. 87). In contrast, plants *are* considered part of the web of life in (some) Hindu traditions (Hall, 2011, p. 81) and as worthy of ethical consideration in the Janist tradition (p. 80), which pays the most consistent attention to plants' rights. Thus, different relationships to, and attitudes towards plants have long co-existed, and traces of such differing attitudes may also present themselves in children's literary texts and be signalled, not least, through the teller's employment of the narrative techniques of focalisation and voice.

In terms of genres, poetry, which predominantly makes symbolic use of plant motifs, and fantasy literature, as the carrier of a diverse mythological heritage (see Pringle, 2006), more often foreground plants.⁴ In fairy tales,⁵ fantasy literature and speculative fiction,⁶ the force of plants tends to take on magical or monstrous properties, often representing plants as active and agentic, with prototypical cases in point being J. R. R. Tolkien's Ents and the ferocious Hourns in *The Lord of the Rings* (1954–55/2005) or John Wyndham's (1951) menacing triffids.

Petal 2, Agentic (*influential, plant script*)

The concepts of agentic and influential plants are inspired by Ryan's (2016) distinction between the *intrinsic* and *extrinsic* capacities of plants: While the intrinsic capacities of plants are “those internal attributes generated actively by plants in relation to their surroundings”, their extrinsic capacities “involve environmental elements or other living beings exerting *their* forces upon plants (Ryan, 2016, p. 41). This distinction prompts another set of analytical questions: Are the plants represented as exerting their forces on their surroundings? What forces are being exerted upon them in turn? Notably, the positioning of plants as victims of animal and human use and predation may co-exist with a representation of agentic plants within the same narrative—as is the case, for instance, in *The Lord of the Rings*, where trees are represented as both agentic beings *and* as inanimate material in the form of artefacts and utilities, such as boats and firewood.

⁴ This tendency is a result of the fact that prescientific cultures, the mythical motifs of which have migrated into fantasy literature, tended towards more animistic perspectives. In children's non-fiction, botanies stand out as a phyto-oriented genre.

⁵ For a discussion of fairy tale plants, see Aholainen (2021).

⁶ For a thorough discussion of plants in speculative fiction, see Meeker and Szabari (2020).

Another pertinent question in relation to plant agency in the analysis of children's literature is what kinds of actions the plants perform: Is their agency genuinely reflective of the actions and influences exercised by real life plants, or are they human actions performed by the plant as a stand-in? In other words: Do the narratives engage in *plant script*, that is, do they pay attention to “the nonverbal forms of expression specific to vegetal life and comprising, for instance, pheromonal transmission, electrical signal, acoustic signatures, and corporeal articulations,” such as the curling of tendrils or bifurcation (Ryan, 2020, p. 103)?

The most subtle influence of plants on literature is exerted through actual landscapes that, according to Sarah Maitland, structure the narrative telling itself. Maitland has argued that “the land, the scenery, and the climate shape and inform the imaginations of the people” and thus that “the great stretches of forest in northern Europe (...) created the themes and ethics of the fairy tales we know best” (2012, p. 8). To Yuval Noah Harari, plant influence is even more pervasive: based on the current domination of wheat as a species, Harari has argued that “We did not domesticate wheat. It domesticated us” (2011, p. 91).⁷ It did so, suggests Harari, “by manipulating *Homo sapiens* to its advantage” (p. 90)—an agential influence the scale of which is hardly perceptible to the individual human except in hindsight. In a related, evolutionary vein, the very instruments with which we perform the writing of literary texts owe their form to plants since “the shape of our hands and fingers are reverse-molds of millions of years of tree branches” (Laist, 2013, p. 9). Such perspectives on plants' subtle influence so far rarely inform the analysis of children's literature: Even as plants often feature in literary texts as analogies, visual metaphors or landscape description, their significant contributions to the story world are often hard to spot without an adjustment in one's analytical gaze, such as the one facilitated by the Phyto Analysis Map.

Petal 3, Character (*phytomorphic, anthropomorphic*)

In contrast to the silent and imperceptible plant influences suggested by Maitland, Harari and Laist, the plants most easily recognizable as agentic in children's literature are plant characters, commonly represented as an amalgam of phytomorphic (plant-like), and anthropomorphic (human-like) characteristics, thus paralleling the representation of anthropomorphic animals often found in children's literature, while being representative of a posthuman bent towards the troubling of species boundaries (see Haraway, 2008, 2016). A survey of plant characters in recent children's picturebooks (Guanio-Uluru, 2021a) shows that the illustrations of plant characters frequently depict plants with a phyto-realistic body, with added arms, legs, and a face. This amalgam of phyto-realistic detail and anthropomorphic features is common in children's botanics, where a joint pedagogical aim is that the child reader learns to recognize and identify the plant, and to identify *with* the plant character. Thus, they exemplify what Alexa Weik von Mossner (2017) has termed “strategic

⁷ A similar argument was furthered by Michal Pollan in *The Botany of Desire: A Plant's Eye View of the World* (2001).



Fig. 3 Vegetables. From Elsa Beskow's *The Flowers' Festival* (1914), rendered with permission

anthropomorphism,” applied as a means to engender empathy for other-than-human narrative subjects (as ref. in Ryan, 2020, p. 104).

Cicely Mary Barker's famous flower fairies, for example, take the forms of human children, their “host plant” recognizable through the winged “fairy” child's proximity to, and adornment with, a specimen of the associated plant.⁸ The same principle is applied in the illustrations of Elsa Beskow's well-known *The Flowers' Festival* (1914), but here, phytomorphism is accentuated: In several of the illustrations, the plants' bodies too resemble the represented species, for instance in the cucumber man (see Fig. 3). In addition, Beskow actively uses plant parts as head dresses to connote different species, thus emphasizing phyto-features in her plant characters, a strategy also occasionally adopted by Barker. Such cross-species feature-collages seem the visual norm for plant characters in children's literature, with the face as the single most common anthropomorphic denominator.

In Beskow's picturebook, the verbal narration is initially focalised through a human girl, Lisa, who attends the flowers' festival, but different species of plants are also given voices in the story, as for instance a group of weeds, all of whom complain of the treatment they are subject to from both fingers and scissors. Thus, while in the illustrations Beskow's flowers are invariably the objects of the focalization, in the verbal narration they are occasionally subjects granted a narrative voice. At the same time, the weeds fulfil a symbolic function in the story as representatives of those situated at the bottom of the social hierarchy, who are banished from the festival for not accepting their place outside the fence. This symbolic function accords

⁸ For a more in-depth comparative analysis of Barker's and Beskow's illustrations, see Doughty (2021).

Fig. 4 The cover of Rørvik and Aalbu's *Purriot og skimysteriet* (2015), redere'd with permission



with Gagliano, Ryan and Vieira's observation that literary discourse predominantly renders the lives of plants as symbolic or figurative, and as "organic referents for [human] animal meaning" (2017, p. xi).

While real plants are characterised by a sessile or stationary lifestyle, living their lives rooted to one spot, there seem to be few plant characters in children's literature with roots, presumably a consequence of the prevailing tendency to provide plant characters with legs—a tradition including, for instance, Pinocchio (who replicates Old Norse creation myths in his transformation from wood to human),⁹ as well as Beskow's two-legged plant characters. Shel Silverstein's controversial *The Giving Tree* (1964) presents a notable, rooted, exception to this pattern (even as the tree gives itself up to the point of becoming a stump).

Petal 4, Environment: (biotope, human design)

Like human characters, plant characters are indirectly characterized by their environment. A pertinent question in relation to the environment of plants represented in children's literature concern the extent to which they are featured in their natural environment and hence as part of multi-species assemblages: Are the plant characters parts of a biotope, or are they located in human-made or managed environments?

⁹ For a posthuman reading of Pinocchio's movement from tree via animal to human, see Goga (2017).

As is the case in Beskow's *The Flowers' Festival*, plant characters may feature as "organic referents for human meaning," even when they are surrounded by plant peers and appear in the natural environment of their species.

However, the function of plant characters as referents for human meaning is even more pronounced in narratives that completely lack a vegetal context, as does, for instance, the Norwegian detective series by Bjørn Rørvik, illustrated by Ragnar Aalbu, about a leek named "Purriot." The name of the series and its protagonist is a phonetical play on Agatha Christie's famous detective Poirot, but with a vegetal reference: In Norwegian, the word for leek is "purre," and the pronunciation of "Purriot" sounds similar to "Poirot." Aalbu's illustrations highlight the link to Christie's character in drawings of a neatly cropped leek with a soigné moustache reminiscent of the one referred to by Christie and worn by David Suchet in the British ITV-series of Christie films (see Fig. 4).

All the characters in Rørvik's and Aalbu's detective series are drawn with vegetable features, usually with the heads and/or bodies of vegetables but with the common anthropomorphic traits of faces, arms, and legs. The verbal narration in the series presents regular detective mysteries, taking place in human settings. Apart from the illustrations—and the names of the characters, which are puns and plays on different vegetables and plant species—plants or the lives of plants have no significance in the stories and the foregrounding of the vegetables function above all as a humorous device. While the series conveys little information about real plants, it manages to call attention to normally inconspicuous vegetables by casting them as significant characters and as active stand-ins in what are otherwise human dramas, simultaneously putting a humorous spin on the detective genre.

A comparative casting of vegetables as characters in a detective story occurs in the fourth instalment of Andy Griffiths and Terry Denton's best-selling Treehouse-series, *The 52-Storey Treehouse* (2014). In this book, protagonists Andy and Terry travel to the "Vegetable Kingdom," discovering their missing publisher, Mr. Big Nose, who has been kidnapped by vegetables as a punishment for publishing the book *Fun with Vegetables*, authored by the violent but aptly named Vegetable Patty. In her book-within-the book, Patty, armed with a battery of knives, violently assaults a range of produce: "Boil them! Oil them! Salt and broil them! Crunch them! Munch them! Knock-out punch them!" (pp. 88–91). While most of Patty's actions represent common human ways of treating vegetables, a phyto-perspective is established in the story, not least in the illustrations, in which the hard put-upon vegetables are drawn with scared and horrified facial expressions. The vegetables thus emerge as characters, even as they are the objects of the visual focalization.

Unlike the vegetables cast as "odd" characters in a regular human story in the series about the leek detective "Purriot," *The 52-Storey Treehouse* thematises but also problematizes plant-human relationships by pitting vegetable and human characters against each other in the same narrative, thematising their unequal power relationship. Later in the story, this relationship is subject to a carnivalesque reversal when Andy and Terry are trapped by armed and angry vegetables and nearly become "human soup" (see Guanio-Uluru, 2021b). In both the series about Purriot and in *The 52-Storey Treehouse*, the vegetables are used for comic effect. Both examples also present the vegetable characters visually as a mix of phytomorphic

and anthropomorphic features (the usual arms, legs and faces). The humorous effect in these narratives depend not least on the fact that the depicted plants are extracted from their natural milieu and placed in environments of human design, where they appear as anomalies.

While plants occasionally are foregrounded as characters, they more frequently form part of common landscape topoi. In her discussion of *Landscapes in Children's Literature* (2014), which is based in cultural geography, Jane Suzanne Carroll notes that “The interaction between geography and human culture transforms land into landscape”, since “[h]uman experience of territory—be it inhabited, viewed, remembered, or imagined—focalises and changes the nature of the site” (2014, p. 2). Consequently, the geographical influence works both ways: while human culture responds to geographical conditions, humans arrange and thus perceive geographical landscapes as cultural sites that, over time, congeal into topoi, or habitual literary formulas structuring landscape narration. Such traditional landscape figures tend to cast plants as the backdrops for anthropocentric narratives, where plants become “the correlatives of human emotions” that are used to reflect “human states of mind” (Gagliano et al., 2017, p. x).

From a phyto-perspective, the most significant of the four topoi discussed by Carroll is the green topos, comprising the garden, the farm, and the wilderness, where the garden, delimited by boundaries, is conceived of as “an exclusive zone of privilege and concealment, a private pleasure where the emphasis lies (...) on careful cultivation and choice” (Carroll, 2014, p. 52). As environments of human design, both the garden and the farm are anthropocentric milieus—after all, they exist not least as cultivating sites priming plants for decoration and human consumption, a fact jarring the idyllic connotations of healing and paradisaical innocence commonly associated with the topos of the garden (a healing influence which depends, not least, on the human perception of plant pheromones). However, cultivation, when involving care, might conceivably be a desired situation for a plant, if pursuing the vein of Harari’s argument.

As real-life practices, both farming and gardening depend on the favouring of selected species over others. Harari promotes the view that a few species of plant, mostly grasses, benefitted more than humanity from the agricultural revolution, which left us with “a more miserable existence” (2011, p. 91)—an echo of the farming topos as it emerged in medieval representations to connote ‘a place of constant struggle against vermin, weeds, weather, and disease’ that is ‘threatened by the entire universe’ (Carroll, 2014, p. 60), thus highlighting the considerable effort with which such spaces are bounded off from the surrounding environment. From a phyto-perspective, farming and gardening introduce a class hierarchy among plants, suggesting that some plants are worthier of care than others—a figure exemplified in Beskow’s *The Flowers’ Festival*, where the inferior weeds are cast out.

The topos of wilderness, construed as “nature in a state uncontaminated by civilisation,” is a potent figure of American environmentalism (Garrard, 2012, p. 66)—a trope that “fits the settler experience in the New Worlds—particularly the United States, Canada and Australia—with their apparently untamed landscapes and the sharp distinction between the forces of culture and nature” (p. 67). Thus conceived, the trope exists in opposition to the cultivated spaces of the farm and

garden but also represents a perspective that masks the earlier presence of indigenous populations, who were already entertaining other kinds of nature-culture relationships in these “new” worlds. Garrard notes that “wilderness” is derived from the Anglo-Saxon “*wilddeoren*,” an expression that originally designated a place replete with “untamed beasts” (2012, p. 67), thus signalling a zoo-centric conception of wilderness itself—which nonetheless, by necessity, must include a wide range of “untamed” but unnamed plants.

Petal 5, Silent Backdrop (*influenced, passive*)

Since plants are often cast as passive, static, or silent backdrops to human dramas (Gagliano et al., 2017, p. x), it is no surprise that they frequently feature as backdrops in children's and YA literature as well, whether as parts of landscape topoi, like the garden, jungle or forest, or as nondescript parts of the scenery. In a study where students were asked to pay particular attention to the role of plants and animals in a reading of Suzanne Collins' *The Hunger Games* (2008), they were surprised to discover the significance of plants to Katniss' success in the games, since the role of plants and vegetation is not emphasized in the narration and so requires analytical attention to uncover (see Guanio-Uluru, 2019b). A re-reading from the perspective of plants of what to most of the students was a familiar narrative consequently gave them a new and surprising view of the text. The example demonstrates that the analytical foregrounding of plants may provide new readings of already familiar narratives, where the roles of plants are often rendered imperceptible as they are backgrounded by the narration, even as they may be significant to the unfolding story or to the projects of main characters. In general, when plants are backgrounded in a narrative, they tend to be represented as passive, and as acted upon by others rather than as active and agential.

Petal 6, Instrumental Value (*anthropocentric*)

In most literary tales, plants have at best instrumental value, that is: They are used *by* someone or *for* something (including by the author) rather than being represented as ends in themselves. As a result, plants feature most prominently as scenery, material resources or foodstuffs, or as symbols of human emotional states or ideological positions. In Scott Westerfield's *Uglies* (2011), for instance, a (fictive) genetically modified species of orchid, the *phragmipedium panthera* or white tiger orchid, is used to symbolise the dangers of tampering with biotechnology as, once rare, it multiplies to the detriment of local species and becomes invasive: “The ultimate weed. What we call a monoculture” (2011, p. 173). While using the fictive flower symbolically, Westerfield's story also problematizes the human use of plants for decorative purposes (that fictively is out of hand), signalling environmentalist concern. The flower thus becomes an emblem of a wider environmental problem and, while “innocent” of its own proliferation, which is caused by human genetic tempering, the orchid is cast as an unwanted “villain,” to be exterminated by (heroic) human

environmentalists—a thoroughly anthropocentric outlook, revolving around human rather than plant agency.

In a related vein, a quantitative analysis of plants in YA climate fiction found that the most frequent reference to plants or plant-derived materials in a selection of such cli-fi stories was to paper and paper documents, which were used to symbolise enduring and reliable knowledge. This figure took precedence over the representation of living plants, despite the significance of plants to the global climate (Guanio-Uluru, 2019a).

Petal 7, Intertexts (plant science, philosophy, religious views on plants, plants in myth, traditional and indigenous views, the arts)

As has already been noted, plant analysis may draw on a range of intertexts, not least scientific research on plants, as well as on relevant works across the arts, and on literary and philosophical texts. Phytocentric intertexts from the history of painting may be works like Giuseppe Arcimboldo's "Vertumnus" (1591) and Vincent van Gogh's sunflower series (1880s), which may appear as motifs in children's texts, as in Laurence Anholt's *van Gogh and the Sunflowers* (2007).

While plants may be celebrated for their decorative features, there exists a rich tradition for depicting the vegetal as threatening. The trope of the plant as villain occurs for instance in *The 52-Storey Treehouse*, where Andy and Terry, in a play on the missionary-in-the-pot-motif, risk becoming "human soup".¹⁰ The carnivorous or monster plant is the prototypical plant villain, and T. S. Miller suggests that "the monster plant may point to a deep unease about the boundary between taxonomic kingdoms that even recent work done in animal studies can have some difficulty navigating" (2012, p. 461). Linking this unease to the evolutionist perspective advanced by Charles Darwin, Miller argues that there is a "continuity of evolutionary fears projected onto plants," not least in speculative fiction, where "the overturning of hierarchies that the monster plant can effect, strikes at the root of humanity's instrumentalist domination of plants, because being forced to recognize kinship with plants will inevitably alter how we think about our use of them" (2012, p. 462). Working with the Phyto-Analysis Map is one way of confronting such evolutionary fears.

Concluding Remarks

Hopefully, the Map, along with the textual and analytical examples collected here, may be of use and inspiration to those seeking to continue the currently ongoing phyto-analytic investigation of children's and YA literature, which has extended to multiple regional literatures with the publication of the first international anthology devoted to the topic (see Duckworth and Guanio-Uluru, 2021). As noted, the

¹⁰ For elaboration on the relationship between colonial discourse and botany, see Schiebinger and Swan (2005).

Phyto-Analysis Map is intended to function as an analytical starting point for an ecocentric approach to literary works and may be an aid to revealing the plants “hidden” in those works. Working with plant representation using the Phyto-Analysis Map may thus be considered an eco-pedagogical strategy and may be an engaging way of contributing to the environmental awareness called for in UNESCO’s programme Education for Sustainable Development (ESD), which seeks to “empower learners to take informed decisions and responsible actions for environmental integrity” (UNESCO, 2021). Arguably, improved understanding of the ways in which literary and cultural representations of plants inform and reflect our ways of thinking may be conducive to reflection on what such “informed decisions and responsible actions” with regard to our environments actually entail.

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