Insect and Human Flourishing in Early Childhood Education: Learning and Crawling Together

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Abstract

Insects and children cohabit common worlds, both subjects of their own lives and active agents. Their encounters may be characterized by mutual curiosity, indifference, or fear and can lead to multiple outcomes. Some children will be bitten or stung while others will be unhurt; some insects will not survive an encounter while others will be cared for as friends. The literature on insect/human relations indicates that many people have negative perceptions of most insects, which can have profound material consequences; consider the many challenges insects face at the individual, population, and species level due to human activity. Insects feature in various ways in early years and elementary education, from highly anthropomorphized charismatic microfauna in children’s media and literature to pinned collections of dead bodies, from captives in classroom terrariums and in insectariums to encounters inside and outside the classroom both planned and serendipitous. Drawing on our own teaching experiences and writing in critical animal studies, environmental and interspecies education that focuses on our
relationships with other animals, and common world pedagogies, we question the anthropocentric nature of many of these encounters and ask how we might offer young children opportunities to develop ethical and caring relationships with insects, including those who are commonly feared, disliked, or simply overlooked. We argue that intersubjective learning that goes beyond the human and that recognizes the messiness and complexity of insect/human relations holds promise for multispecies flourishing.

**Keywords**

Insects · Insect/human relations · Early childhood education · Common world pedagogy · Interspecies education · Environmental education · Critical animal studies

**Introduction**

Insects are reminders that we are ecologically entangled in ways we often only dimly perceive and are impacting the environment and other species in damaging ways we frequently ignore. (Loo & Sellbach, 2015, p. 80)

Why do some children stomp on insects while others treat them as friends or pets? How might attending to young children’s lived experiences with, and perceptions of, insects help us better understand the common worlds that humans and insects share so that we can offer children opportunities to develop respect and care not only for charismatic insects like butterflies but also those who more typically evoke fear or disgust? How might an early childhood educator make the most of chance encounters with insects? What are the pedagogical and ethical implications of going outside to purposely seek out insects, taking a field trip to an insectarium, keeping captive insects in the classroom, or displaying dead insect bodies? In what ways might these various pedagogical interventions contribute to protecting ecologically vulnerable insect species as well as other creatures facing extinction, extirpation, or harm? To help us explore these questions, we draw on writing on human/insect relations, common world pedagogies, and environmental and interspecies education to argue that attending to and encouraging young children’s relationships with other animals, particularly the “creeping crawling critters disdained by others” (Haraway, 2016, p. 151) and the overlooked ones “deemed unworthy of consideration” (Bell & Russell, 1999, p. 74), holds much potential.

We also are drawing on our professional experiences in Canada. Elizabeth has worked as a preschool teacher, instructed preservice early childhood education courses at the community college level, and for 3 years was a scientific interpreter at the Montreal Insectarium. Constance has been involved in environmental and interspecies education for close to 30 years, working with children and adults in both formal and informal learning environments, some of which has included pedagogical explorations of insect/human relations. In all our work, we seek to help create
conditions for humans, other life, and the land to thrive, that is, for multispecies flourishing (Ginn, Beisel, & Barua, 2014; Haraway, 2016).

In this chapter, we begin by offering a rationale for the inclusion of insects in early childhood environmental education then turn our attention to research on insect/human relations to provide some context. We then review the growing literature on insect encounters in education before wrapping up with a call for educators to work towards both insect and human flourishing.

**Why Insects?**

First and foremost, insects matter intrinsically. They are subjects of their own lives, and as with all members of the more-than-human world, their existence need not be justified on human terms (Bell & Russell, 1999, 2000). Alas, we live in profoundly anthropocentric times, so regular reminders that humans are not the center of the universe nor inherently superior to and entitled to dominate other life appear to be necessary. Insects appeared approximately 400 million years ago. Their long history of adaptation on earth in almost every terrestrial ecosystem makes them a hugely diverse group of animals today. There are more than 925,000 named species, although there could be five to ten times more species that have yet to be scientifically observed (Bourassa, 2011). Indeed, the majority of species yet to be identified are probably insects (Bernhardt, n.d.).

Insects are greatly affected by human activity such as “destruction of both wintering and breeding habitats, heavy use of pesticides, shortage of natural insect and plant food, and artificial light pollution causing errors in migratory navigation” (Wilson, 2016, p. 60), leading many species to extinction. Cardoso, Erwin, Borges, and New (2011) note that “when corrected for knowledge bias, data from invertebrates show even higher extinction rates and proportions of threatened species than those of well-known taxa such as birds and mammals” (p. 2648). Insects are disappearing before our eyes, and it feels like a race against time to build sufficient knowledge about how we might help them, especially given underfunding of research on insects and other invertebrates (Cardoso et al., 2011) and limited attention to human relationships with most insects (Lemelin, 2013; Lloro-Bidart, in press; Loo & Sellbach, 2015), especially the “unloved others” (Beisel, Kelly, & Tousignant, 2013, p. 114). Even though more attention is being paid to insects than in previous decades, there is still a long way to go in understanding insect distribution, abundance, ways of life, and sensitivity to habitat changes (Stewart, 2012). In Canada, for example, of the 1001 species currently found on the official wildlife species at risk list, there are about twice as many birds (131 species) and mammals (144 species) as there are arthropods (68 species) (Environment Canada, 2017) despite the fact that arthropods outnumber other species significantly (Biological Survey of Canada, 2014).

Essential to sustaining ecosystem balance vital to the survival of other life, including humans, insects make contributions as pollinators, decomposers, prey, and predators. Without the “service” of insects and other arthropods, it is highly
likely that major food webs on earth would collapse (Wagler & Wagler, 2014). Insects have also been considered important as a source of food and medicine, a focus of scientific and leisure interest, and an inspiration for art and music (Kellert, 1993; Lemelin, 2013; Wagler & Wagler, 2014).

Insects also can play a significant role in the lives of young children. They can be observed with curiosity or as subjects of study, cared for as pets, feared, or simply ignored as insignificant creatures. Conversely, children also can play a major role in insects’ lives as they have the power to kill or protect these small creatures. Given the many challenges insects face at an individual, population, and species level at the hands (or feet) of humans and given that the tenor of insect/human relations is thought to be established early, we argue that it would benefit insects if children developed respect for and a desire to protect them. Or, at the least, in recognition that some insects do bite or sting or threaten other life and that there are no innocent moves in multispecies flourishing (Haraway, 2016), to not despise and wish to eradicate them entirely.

Since insects and young children encounter each other daily, both indoors and outdoors, how they affect each other merits examining and a number of early childhood educational researchers, notably those interested in common world pedagogies, have done so. Indeed, besides companion animals, insects appear to be the most commonly researched animals other than humans in common world pedagogies (e.g., Atkinson, 2015; Blaise, Hamm, & Iorio, 2017; Nxumalo & Pacini-Ketchabaw, 2017; Taylor & Pacini-Ketchabaw, 2015), and they also feature in other writing on environmental education with younger children (e.g., Bell & Russell, 1999; Blenkinsop, Piersol, & De Danann Sitka-Sage, In press; Edwards, Moore, & Cutter-Mackenzie, 2012; Guyton & Connington, 2013; Lyman, 2014). That insects are often readily available to young children as well as to the researchers observing them partially explains their presence in this work, but some educators offer other rationales for their inclusion that we consider even more compelling.

Bell and Russell (1999), for example, are concerned about creatures who seem to rarely merit consideration and who find themselves facing “another form of discrimination – a sort of intolerance by omission” (p. 74), a phenomenon they argue has implications far beyond insect/human relations. We also think there is much to be learned by “considering how multispecies flourishing works when the creatures are awkward, when togetherness is difficult, when vulnerability is in the making, and death is at hand” (Ginn et al., p. 114). As Ginn et al. (2014) observe, “Many nonhumans we consider unpleasant or disgusting are our companions—consider for instance ant colonies in our kitchen, water bugs in the shower, or slugs in the vegetable patch” (pp. 115–116). Such insects and other invertebrates are typically labeled pests and vermin, which can “set fatal contours to our relationships with creatures so designated” (Bell & Russell, 1999, p. 73). Mayo (2016) asserts that “our relationships with animals or any kind of vermin need not be pleasant in order to be ethical. Indeed, ethical relationships that happen to be pleasant, we know, are the easiest sort” (p. 191). We agree with Haraway (2016) who suggests that we must learn how to “stay with the naturalcultural multispecies trouble on earth” (p. 40) that insect/human relationships can so powerfully evoke.
Insect/Human Relations

It is argued that one of the main challenges facing insect conservation is that many people do not appreciate insects. Early research conducted by Kellert (1993) on perceptions of invertebrates suggested that adults generally have a “negativistic attitude” (i.e., fear, dislike, indifference) towards them and that the “most infrequently encountered attitudes toward invertebrates included affection, ethical concern, or scientific curiosity” (p. 850). In the same vein, Davey (1994) found that invertebrates evoked fear responses more than other types of animals. Lockwood (2013) suggests that humans tend to fear insects due to their quick unpredictable movements, their ability to invade what we consider to be our space, and that some insects bite or sting us. They also can be perceived as disgusting because some are vectors of infection and disease, contaminants in our food, or are found in garbage dumps and sewage as well as on carcasses (Lockwood, 2013). Some researchers rationalize such negative reactions to insects on the grounds of “biological preparedness,” arguing that humans are prone to an aversion of insects and other invertebrates such as spiders because these are potentially hazardous to human survival (Breuer, Schlegel, Kauf, & Rupf, 2015; Gerdes, Uhl, & Alpers, 2009). Others assert that insects cannot cross the “neoteny barrier,” referring to the characteristics that some mammals share with human youngsters, like large eyes, a small nose, a round body shape, and short appendages (Borgi & Cirulli, 2015; Estren, 2012), implying that few insects invoke human empathy simply through their morphology.

Lemelin (2013), however, questions much of the research on insect/human relations, asserting that it “has tended to support a human–animal binary of humans vs. animals, pest vs. friend, biophilia (the love of living things) vs. biophobia (the fear of living things), entomophilia (the love of insects) vs. entomophobia (the fear of insects)” (p. 155). He criticizes such research for being simplistic as well as for reinforcing speciesism and entomophobia. Instead, he has found that ethnographic studies have offered more nuanced understandings, revealing that “the fear of insects is not universal, nor does it always result in disgust and the fright response. Indeed, some of these encounters are met with indifference and apathy while others can actually result in awe, jouissance, and epiphanies” (p. 157). The universalizing discourse about generalized humans in much of the research on insect/human relations is indeed problematic and would benefit from engagement with writing that seeks to decolonize animal studies (e.g., Lloro-Bidart, 2017) as well as with multispecies ethnographies that feature insects and other critters alongside humans (e.g., Atkinson, 2015; Lloro-Bidart, in press; Nxumalo & Pacini-Ketchabaw, 2017; Taylor & Pacini-Ketchabaw, 2015).

A common refrain in studies of insect/human relations is that our perceptions of insects are formed early (e.g., Borgi & Cirulli, 2015; Schlegel, Breuer, & Rupf, 2015). As an example, Elizabeth shares this recent encounter with one of her nephews, aged 4:

Working on a craft project, he cut out animal pictures from National Geographic magazines, carefully categorizing them and gluing them on a large cardboard to create a visual
representation of his views of animals. He had a section for what he called the “cutest” and the “not cute” which he then subdivided into “ugly” and “scary” (although it should be noted that he said that he did not find many of them scary himself but was imagining which animals other people would find scary). According to him, “cute” animals are those who look like babies and that are small like mice, rats, frogs, birds, and his current favourite, tapirs. Viewing his final creation, I noticed a brightly coloured butterfly in the “cutest” section. All other invertebrates (scorpion, mantis, centipede) were seen to be ugly or scary.

Indeed, butterflies seem to be an exception to the generally negative perception of insects. Often adored as a symbol of beauty and grace and more easily tolerated because of their perceived harmlessness to humans, butterflies have been collected since the nineteenth century and their popularity continues as demonstrated by the recent growth in butterfly gardens and monarch conservation efforts (Lemelin, 2013). It was clear to Elizabeth from her experience working at the Insectarium that, for many of the visitors, butterflies are not really considered insects.

Few other insects appear to be as generally well liked in Western society as butterflies, but even they elicit mixed responses. For example, Elizabeth recalls from her time working in the Insectarium that some children, mainly young girls, became suddenly terrified upon entering the live butterfly exhibit. The only way to calm their panic was to escort them out of the exhibit and attempt to talk to them out of their fear, illustrating an important role educators can play in helping children (re)interpret their experiences. In short, then, responses to insects are complex and a number of factors are in play. Lemelin, Harper, Dampier, Bowles, and Balika (2016) list direct experiences in childhood as an important influence on insect/human relations. For example, wasp and bee stings can be quite painful and may even be life threatening in the case of allergic reactions. Therefore, getting stung can be “individual conditioning experiences” (Davey, 1994, p. 553) that might lead someone to associate those insects with pain and develop phobias (King, Ollendick, Murphy, & Muris, 2000).

Still, it is important to remember that not all children react in fear towards insects that bite or sting. Consider this observation from Taylor and Pacini-Ketchabaw (2015) of children interacting with ants:

Sometimes, ants run up the children’s legs or into their clothing and bite them. This is usually a form of retaliation against the children’s provocations, or when the children simply do not notice that they are standing in the middle of a swarming ant nest. There have been some highly charged moments when frenzied ants scurry and bite and panicked children scream and squash. These fight and flight, life and death moments are marked by the rush of alarm pheromones and adrenaline and by the smell of formic acid. But the children who calmly observe the ants rarely get bitten. (p. 524)

It is not only direct experiences such as these that influence future insect-human relations. Lemelin et al. (2016) suggest that the portrayal of insects in popular culture, media, and scientific discourse also has an impact. In a study by Snaddon and Turner (2007), children were asked to draw a picture of their favorite insect and these correlated with the insect’s general popularity rather than the local abundance of a particular insect.
Timmerman and Ostertag (2011) point out that from the time they are newborns, children encounter representations of animals in books, toys, and wooden puzzles, and on clothing and bedsheets. Idealized charismatic megafauna and farm animals dominate whereas local invertebrates rarely feature, or when they do, barely resemble any creature actually in existence. Research by Claessen (2015) found that the portrayal of five invertebrates (ants, beetles, spiders, wasps, worms) in children’s fiction, nonfiction, and comics were generally highly anthropomorphized. As Lemelin (2013) puts it, “even when we do incorporate insects into our popular culture (Bugs Life, Fern Gully, Bee Movie), we anthropomorphise these creatures into human-like protagonists, thereby reinforcing the notion that we can only admire those creatures most like us” (p. 157). While we share these authors’ concerns, we also recognize that anthropomorphizing is not necessarily always a bad thing. Rautio (2013) suggests that it can open up imaginative encounters that can lead to befriending of other animals. Fawcett (2014), who conducted research on 5- and 10-year old children’s perceptions of bats (who, like insects, are often feared and reviled), shared:

One of the more startling results was that the younger children thought of the animals as their friends and were rarely afraid of them. . . . The kindergarten children’s stories contained the acknowledgement of difference, alongside elements of reciprocity, playfulness, empathy, and imagination between human beings and other animals. In their stories, the younger children described the animals as other subjects, both like and unlike themselves. (p. 265)

Describing what she called a “kinship ontology,” she found that the “children’s storied experiences transgress in authentic and irreverent ways the boundaries between humans and other animals, and productively play with Western ideas about friendship, kinship, and anthropomorphism” (p. 262).

Given the sheer numbers of insects and the fact that many of them co-occupy ground-level territory with children who are small, children and insects have the opportunity to share many moments together. Melson (2001) posits that “each creature presents a new vitality, a distinct form of aliveness, for the child to consider” (p. 82). For some, as Lemelin (2013) notes, this includes “the appeal of the negative sublime (the attraction of ‘creepy-crawlers’ and the ‘yuck’ factor)” (p. 157). While some young children may be content to merely observe the fascinating comings and goings of insects, many want to engage more actively. Some do so in caring ways. For example, Askerlund and Almers (2016) note that in their research on young children’s relationships with nature in a forest garden, “the most prominent feature of the children’s descriptions of the relationships was how they cared for the organisms in the forest garden, not least the insects” (p. 195). Still, as Atkinson (2015) observed in her research, one day children might be found caring for a slug and another day be killing ants. Indeed, many young children have stomped on bugs, pulled wings off insects, or roughly handled a small animal (Melson, 2001).

Melson, in her chapter on children’s cruelty to other animals, suggests a variety of reasons for this behavior, including children struggling with aggressive urges or replicating family violence. Further, she argues that there is an important power
dynamic at play since small animals might be the first living creatures children feel power over: “when those in power are inexperienced, with uncertain dominion over their own rages, and carrying the history of their own utter dependency ... the probability of cruelty, casual mistreatment, and neglect increases” (p. 162). Although Melson’s chapter focuses more on children’s relationship with pets, this power discrepancy is also evident with insects. A young child can easily crush an insect and feel a rush of power in deciding which creatures will live or die. A haunting example of this dynamic can be found in Loo and Sellbach’s (2015) analysis of a story from Le Clezio’s novel, *Terra Amata*. In the original story, a young boy examines a group of potato bugs, first observing them with curiosity. The tone of the encounter soon changes, however. Naming himself the potato bug god, he imposes order by containing them in small individual enclosures. When one refuses to stay put, the boy pulls off the legs of one of his “subjects” as punishment and eventually crushes it to death.

Developmentally, young children are exploring their environment, engaging with all their senses, and testing out their predictions of how the world functions. Children pulling legs off an insect may not always realize that they are causing the ants to suffer (Carruthers, 2007), but sometimes they are very much aware of what they are doing and stories of deadly encounters litter the literature on insect-child interactions. For example, Blaise et al. (2017) describe a young boy stomping on a wasp while shouting, “I don’t like bugs!” (p. 41). And Blenkinsop et al. (2017) share a powerful anecdote of a young boy squashing two ants in direct response to another boy and a female teacher showing interest in and affection for ants in an act of what they call “splash violence” (p. 2). Wondering if the boy doing the killing is testing boundaries of power or showing “the beginnings of an estranged relationship with the other” (p. 5), they state that:

> Our intention here is not to convict David for being a malicious child – that would go beyond the evidence, the developmental realities of a six year-old, and the whole truth of the matter – but simply to situate David’s behaviour as what is considered perfectly innocuous and “normal” in modern Western culture for a “boy.” So normal, in fact, that such violence is all too quickly and easily dismissed as just “boys being boys.” (p. 5)

Several studies on children and insects show that there can be a marked gender differences. For example, Snaddon and Turner (2007) found that boys indicated a greater preference for beetles and spiders whereas girls preferred butterflies and ladybirds. Borgi and Cirulli (2015) found that “in comparison with girls of the same age, boys show a higher appreciation of animals which evoke fear, such as alligators, snakes, and sharks, and biting and stinging invertebrates (e.g. scorpion, spider, beetle, bee)” (p. 55). These findings are echoed in Schlegel et al.’s (2015) study that found girls were less favorably inclined towards invertebrate species that they perceived as threatening. The reasons for these gender differences are not yet well researched, but gender seems to play a role in insect-child relations and, in line with calls for greater attention to gender in environmental education research (Gough, Russell, & Whitehouse, 2017), merit further attention.
Cruel behavior towards insects is usually reprimanded by adults (Carruthers, 2007). Still, a child may get scolded for crushing an ant on the sidewalk but not in the house, may watch adults running from bees outside but then be read books about cute honeybees, and be encouraged to catch and release butterflies with a small net but learn to be disgusted by tent caterpillars busy defoliating a tree. Children receive ambiguous and conflicting messages, and it is no doubt a challenging task for them to determine what “appropriate” relationships with insects might look like. Some educators have attempted to influence these relationships to which we turn our attention next.

**Insect Encounters in Education**

Insects are not uncommon presences in young children’s early years and elementary education. Some insects live in terrariums in classrooms while others are ghosts, their dead bodies pinned to display collections. Still others are encountered inside and outside the classroom in both planned and unexpected ways.

A most disturbing way young children can learn about insects is through constructing pinned collections. Writing in *Green Teacher*, Guyton and Connington (2013) advise teachers that they can help children develop their motor skills and become “young scientists” by capturing, freezing, and mounting or pinning insects. We argue that the hidden curriculum of such practices is not unlike that of dissection in higher grades, which as Oakley (2009) suggests, positions them as mere resources for human use and fosters “a decreased sensitivity to other life” (p. 61). At the Montreal Insectarium, exhibits of pinned scientific collections are shared with visitors with the goal of promoting appreciation for insect biodiversity, adaptation, and conservation, but private collecting is discouraged, given these do not contribute to scientific research. Several alternatives exist to needless insect killing, such as digital photography and observing and then releasing insects. The irony of promoting conservation through the display of dead bodies appears to be lost in most museums (Pedersen, 2010). Indeed, in many edutainment venues where dead or captive animals are on display, it appears that, “There is very little attention to them as individual subjects of their own lives; rather, they act as representatives of their kin or their ecosystems, martyred in the name of conservation” (Lloro-Bidart & Russell, 2017, p. 48).

Keeping live insects in the classroom is recommended by some researchers and practitioners. Wagler and Wagler (2014), for example, argue that using living arthropods (e.g., insects, spiders) in the elementary classroom can be an effective way of decreasing fear and disgust and can promote support for their conservation. Insects are, in fact, quite popular classroom pets in North America with ants, crickets, cockroaches, praying mantises, and walking sticks/stick insects recommended to teachers seeking “low maintenance” pets. But as Nxumalo and Pacini-Ketchabaw’s (2017) research illustrates, caring for animal others of any sort is not as straightforward as some suggest. They offer a sophisticated analysis of teachers’ and children’s experiences with Vietnamese walking stick insects that
had been part of an early childhood education center for years until they became so “unmanageable” (p. 1) that they were given to children’s families to take home, donated to an entomology lab, or killed. Noting the anthropocentric, colonizing, and racializing dimensions of the ethical and pedagogical issues that arose (e.g., keeping the insects in captivity, the impact of the globalized pet trade on the species, the fear of the insects becoming invasive species, the need to control the insects’ reproduction, culling), they observed the teacher’s affective struggles: “They questioned who these acts of caring benefitted – the children? the stick insects? themselves?” (p. 10).

There are alternatives to keeping insects captive in the classroom, of course, although these too can raise ethical issues and the specter of death. Lyman’s (2014) experience with a spider who became “an excellent team teacher” (p. 48) in her economically, racially, and linguistically diverse grade 3 classroom is illustrative (even if spiders are not insects but arachnids). One of her students found the spider in the bushes outside the classroom, brought her in, and Lyman placed the spider on a bookcase. The next morning, Lyman and the students arrived to find that the spider had stayed put, built a web, and soon they were watching her eat a grasshopper she had caught: “‘Awesome!’ soon overtook ‘ewwww!’ as the students watched the spider feast” (p. 48). The spider was named Charlotte and the students treated her as an individual with particular needs and likes. When Charlotte laid an egg sac, the class discussed the best way to proceed, settling on donating the sac to a local nature center they had visited on a field trip. As anticipated given what they knew about the life cycle of this spider, not long after laying her egg sac, students witnessed Charlotte dying, held a funeral service, and buried her under the bushes where she was found.

Lyman (2014) felt the opportunity to witness, talk, and write about Charlotte’s death opened up an important pedagogical opportunity, which resonates well with Russell’s (2017) research on animal death and pedagogies of remembrance. Similarly, Taylor and Pacini-Ketchabaw (2015) share a story of a worm who was inadvertently broken in two by a child attempting to rescue it, concluding that: “No easy response exists for either the earthworm or the children in these ordinary encounters. This is a case of learning to live with each other for survival and to always be mindful of each other’s vulnerabilities” (p. 520). Such is the case for all early childhood educators whose charges interact with insects outside, whether in planned or serendipitous encounters. The writing on common world pedagogies abound with stories of young children learning with insects in myriad ways and with diverse outcomes (e.g., Atkinson, 2015; Blaise et al., 2017; Nxumalo & Pacini-Ketchabaw, 2017; Taylor & Pacini-Ketchabaw, 2015).

Searching for insects and other invertebrates outside and small conservation projects such as butterfly gardens and building insect hotels can provide opportunities for children to attend to local insect species. Given research that indicates that many children lack knowledge of local insect species and that children who can name insects have been found to have a higher affinity towards them (Schlegel et al., 2015), engaging in natural history practices with children may be an effective strategy. This may be particularly so for disliked or demonized insects (Bell & Russell, 1999; Lemelin, 2013) as well as the common and familiar (Fawcett, 2014),
the mundane and ordinary (Atkinson, 2015; Taylor & Pacini-Ketchabaw, 2015). That is not to say that the practice of natural history is some sort of magic solution for improving insect-human relations. As Russell (1999) argued, the easy linearity often implied in much of the outdoor education literature is simplistic; nature experience does not automatically lead to knowledge and then to caring and then to action, and we educators need to be more humble and more cognizant of the complexity of these encounters.

There are encouraging signs in recent literature that indicates more careful attention is being paid to the complexity of pedagogical efforts to facilitate multi-species flourishing, including with insects. For example, in a recent research project with early childhood educators (Edwards et al., 2012), some activities were found to be more useful than other in terms of educating young children about the biodiversity around their center. Although child-initiated play is commonly accepted as an important part of an early years curriculum, offering children the opportunity to dig in the soil and look for insects and other invertebrates does not result in as much learning as when the teacher guides children towards an understanding of these creatures and how to respectfully observe them. One educator in the study noted how her students went from screaming, pretending to be scared, or wanting to kill insects to being more curious following what the authors call a *purposefully framed play* session (Edwards et al., 2012). Similarly, Askerlund and Almers (2016) reported the positive impacts of teachers framing the experience of children learning in a forest garden in nonanthropocentric terms: “Rather than asking what these organisms can do for me/us, they pose the question: What can I/we do for the bugs/plants/bees?” (p. 187). And Atkinson (2015) shares an anecdote about young children initially reacting with squealing at finding a wasp nest and how the educator, Cara, responds calmly and quietly: “She asks the children to move slowly, to closely watch how the wasps move, to use quiet voices. The children are calmed by her voice, her stillness. They watch as the wasps disperse. No one is stung” (p. 70). As Atkinson observes, “In this moment Cara shifted away from conventional notions of protecting children from wasps, in which wasps are identified as dangerous creatures to be feared. Instead Cara recognized mutual vulnerabilities, that both wasps and children were affected” (p. 71).

Not all educators, however, are quite so skilled in negotiating insect-child interactions. Even in well-meaning educators, fear or disgust may send a stronger message than any activity they facilitate. Writing about spiders, Lemelin and Yen (2015) suggest:

> Educators can have a significant influence on children, but there is a problem if the teachers are scared of spiders themselves. Researchers have noted that educators and naturalists can be in a tenuous position if they possess the same negativity toward invertebrates as the general public but have been employed to teach their students about the very invertebrates they dislike. (p. 222)

Teacher education therefore is important, but there has been very little written on this topic related to insects. An exception is Wagler and Wagler (2011) who provided
preservice elementary teachers with “frequent direct contact with Madagascar hissing cockroaches” (p. 243) and found that their attitude towards these insects changed from extremely negative to positive and that they were more willing to consider including these insects in their future teaching. This newfound interest did not extend to any other type of insect, however.

It is clear that early childhood education for insect and human flourishing is challenging, yet it is also clear that we must try. Urging environmental educators to incorporate “interspecies articulation” into our work, Rautio (2013) argues that we need to acknowledge “how humans and nonhuman animals continually create the conditions for each other’s existence” (pp. 446–447). Intersubjective learning that goes beyond the human holds promise for diverse outcomes (Bell & Russell, 2000; Lloro-Bidart, in press). As Taylor and Pacini-Ketchabaw (2015) write,

It seems the children are on a number of different routes towards responding to the risks and vulnerabilities they share when they bodily engage with these small creatures. Their actions portend different kinds of learnings. The children who goad ants might learn that there are consequences to their actions and that even small creatures can become formidable foes. Those children whose feet inadvertently get in the way might learn the consequences of not paying attention to the lifeworlds of smaller creatures. Those who carefully seek intimacy with the ants might learn about the precarity of life through (literally) holding the responsibility for another life, and at the same time, through risking making themselves vulnerable to another species. (pp. 524–555)

Conclusion: Towards Insect and Human Flourishing

In concluding this chapter, we do not intend to offer pedagogical recipes or tidy solutions to the problems currently facing insects, humans, and other life. We have pointed to a few promising approaches above that warrant further attention. As well, Bell and Russell (1999) offer a number of general pedagogical suggestions that may help educators strengthen “life ties”:

- Call into question the us/them, human/nature divide
- Work from and convey an understanding of the ways the oppressions are connected
- Draw attention to the ways that words shape our understandings and experiences
- Help students to recognize and move beyond stereotypes [about both people and other animals]
- Acknowledge diverse cultural perspectives and the fact that all cultures have not interacted with nature in the same way
- Anticipate and try to mitigate the trauma that children may experience as they delve into [these] issues
- Work from and convey an understanding of others as experiencing subjects of a life, in some ways similar to and in some ways different from us
- Encourage students to remember their deep-seated connections with other life
- Bring more fully embodied, sensual experiences into the … curriculum (pp. 75–81)
Further, like Rautio (2013), we also want to “embrace the thought that teachers – those who invite, guide, support, and steer us – can also be other than human beings” (p. 454). We end this chapter, then, with a reminder that children are not the only actors in pedagogical encounters with insects. Just as children react, so too do the insects who may approach, flee, hide, squirm, sting, or sit calmly. Atkinson (2015) wonders in reflecting on an encounter between a boy and a bee:

We often notice children playing with small creatures, carrying worms, poking at ants. But what might emerge if we were to consider this moment differently? What if we put aside the notion of playing and consider that Carter is relating to the bee and the bee is responding to Carter? What if we think of Carter as learning, along with the bee, how to be together? Why did the bee land on Carter? Was there a mutual curiosity? (p. 74)

Atkinson reminds us that, like us, insects learn about the world through sensory experiences and they are materially impacted by insect-human encounters encouraged in the name of educating humans. The following final vignette attempts to capture the experience of a walking stick living in captivity at the Insectarium when Elizabeth worked there:

The walking stick is disturbed from her rest – they are nocturnal animals – when the museum interpreter removes her from the vivarium and places her on a plant on a cart. She takes a few bites of the newfound leaf then rests upside down, hanging from a branch in camouflage. Wheeled out to the museum floor for an opportunity to “meet” visitors, the educator gently coaxes the walking stick onto her fingers to demonstrate how harmless the creature is despite her spiky appearance. Disturbed once again, the insect starts to walk, searching for a branch and a chance to rest. As the fingers, hands, and arms of various humans are encountered, she senses different temperatures, scents, and textures, which takes energy to process. After walking for what seems like ages, she is finally placed back on a branch in the cart and wheeled back behind the scenes, gently placed back in her vivarium. Despite what her name might imply, she is not a stick, but a living creature with needs and preferences that she finds her captors sometimes ignore in their efforts to education humans about the plight of her kin. She returns to her rest until next time.

These walking sticks, like the other insects described in the preceding pages, have found themselves enrolled in educational activities of one sort or another. Let us not forget that they too are subjects of their own lives. And let us continue to seek ways to flourish together in this complex, messy world.

Cross-References

▶ Children and the Future of Sustainability
▶ Children in the Anthropocene: How They Are Implicated
▶ Common World Re theorizations
▶ On Child/Animal Vulnerability and an Embodied Pedagogy of Conviviality
▶ Postcolonial Childhoodnature Animal Relations
▶ Reexamining the Human-Nonhuman Animal Relationship Through Humane Education
▶ Rethinking Children’s Connections with Other Animals: A Childhoodnature Perspective
▶ Unearthing Withlings: Negotiating Everyday Life Child-Animal Relations in an Early Education Context

References


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