Changing environments

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Murilo[1] is a 15-year-old boy who attends High School in Taubaté. He comes from a lower middle-class family. Murilo's school has been heavily involved in a project experimenting with fairly basic, sustainable technologies for developing a school garden that could ultimately provide some food for students. The technologies are a starting point for a range of conversations with Murilo about the environment.

He talks about a 'solar irrigator' – a hand-made device that, using the sun's power, feeds water to the school garden when no one is around at the weekend to water it. The irrigator drip-feeds water to plants so that none is lost unnecessarily. Murilo points out not only the reduction in waste but the interconnection between water, energy and sustainable food cultivation: this system avoids using electricity to power the irrigator, using solar-renewable energy instead. The solar irrigator works alongside other simple devices, such as a biological filter. Importantly, as Murilo put it, 'the school garden was the incentive for the construction of other projects'. In other words, the idea of growing food to supplement that which the school has to buy in for students' lunches has spawned a range of fairly rudimentary – if ingenious – forms of technological experimentation. These experiments draw attention to the importance of apparently banal, *material* stuff in young people's relationships with the environment.

Murilo explains that the project and offshoot experiments have helped him and his classmates acquire a range of knowledges and skills – about energy, water, food and technology. For him, the key underpinning skills were biology (how plants grow) and a knowledge of materials (the properties of recycled plastics, metals and so forth used in constructing the irrigation technologies). The project afforded opportunities to gain information about these and other aspects of sustainable food – but also a place where, as Murilo put it, the students could 'make experience': how they could be involved in youth *action* for the environment.

Yet Murilo also looked beyond the school and the immediate implications of these experiments for knowledge and skill development. He emphasised how the project (and especially a device like the solar irrigator) brings home how resources like food, water and energy are all interconnected as a kind of *nexus* (a centre of connections between several things). Crucially, these interconnections are not separate from but are woven into young people's everyday lives and concerns – for instance, with choosing healthy food. Moreover, Murilo – like many young Brazilians – was keen to highlight how, just because these were everyday concerns, this should not mean that they are solely small-scale matters that are the responsibility of individuals. Rather, he advocated that the government could help with Brazil's ongoing challenges around social and environmental justice by 'investing in cheaper and more ecological technologies to reduce the production costs of both energy and water, and food as well'.

Introduction

One of the most pervasive assumptions in modern Minority Global North[2] contexts is the idea that children have lost their 'connectedness' with 'nature'. Herein, children have been rendered less knowledgeable about their (local) environment, the sources of their food and about environmental issues more generally, while becoming more vulnerable to manifold physiological and psychological illnesses (Louv, 2008). Indeed, this assumption sits at the heart of efforts to somehow 'reconnect' children with their environments – from Forest Schools in the UK to efforts to 'green' schoolyards in the USA, New Zealand and Australia (Freeman and Tranter, 2012). In many ways these are important and valid concerns; and each of these interventions can be tremendously beneficial, not only in terms of children's learning and health but in offering opportunities for socialisation and play (Chawla, 2015).

Nevertheless, with these assumptions in mind, the aim of this chapter is to (gently) question and to decentre these concerns. It does so in two ways, both of which are vital in order to understand the changing environmental conditions with which children are living – particularly, but not only, in relation to climate change, habitat loss and pollution derived from humans' addiction to oil-derived products, such as plastics. First, it highlights how children's relationships with the environment (or, as Kraftl *et al*.

(2019) put it, 'childhoods–natures') are always more *complex* than discourses of nature disconnectedness imply. Second – and with the experiences of Murilo and other children like him in mind – it explores how children's relationships with the environment are also *otherwise* than these discourses suggest. In other words, those relationships – especially outside the Minority Global North – can look different than mainstream debates about childhoods–natures might imply.

Before moving on to discuss these kinds of complexity and otherness in more depth, it is important to understand two further ways in which academics and practitioners have framed the relationship between children and 'the environment'. Both of these relate back in some ways to the idea of nature (dis)connectedness; and both are woven through the rest of this chapter, even if the discussion that follows also offers critiques of these approaches. On the one hand, a key way of thinking about childhoods–natures is in terms of learning: Education for Sustainability (EfS) or Environmental Education. Established over many years, there exist multiple approaches to environmental education, which range from knowledge about local plant or animal species to understanding environmentally relevant behaviours, to critical debates about global environmental change (Corner *et al*., 2015; Walker, 2017). On the other hand – and often well beyond questions of the environment – a considerable body of work has sought to explore children's experiences of, agency in, and movements through, outdoor spaces. Commonly, this strand of scholarship has been concerned with children's (independent) mobilities, and a concomitant assumption that increased levels of mobility are 'good' for children's health, learning and socialisation (Porter and Turner, 2019). Notably, these two strands of work overlap, especially as environmental educators seek to engender 'connections' of various kinds between children and environments. However, childhood scholars have increasingly sought to ask: How *else* do children relate with the environment, and with questions of sustainability (Horton *et al*., 2015)?

Elements of (re)connection, learning and mobility are evident in the experiences of Murilo – the 15-year-old Brazilian boy whose reflections on solar irrigators and other technologies opened this chapter. For instance, Murilo emphasises how the project has spawned several forms of technological experimentation that have led to learning about

resources, the affordances of different (recycled) materials and the small-scale production of food. It is therefore important to emphasise here that although this chapter seeks to add complexity and to look otherwise (and elsewhere) at children's changing environments, this does not mean that issues of (re)connection, learning and mobility are usurped by other issues. Rather, the chapter includes but extends beyond these kinds of concerns to prompt reflection upon what else matters in, and what else is constitutive of, the many ways in which childhoods–natures might relate. Indeed, as the last part of the chapter highlights, this might mean unpicking assumptions that children (and humans more generally) are separate from and therefore 'relate with' the environment.

In light of the above contexts, this chapter outlines three sets of ways for thinking about childhoods–natures. Each is at least implicit in the vignette that began this chapter (where the relevant terms are italicised). First, the chapter explores how it might be possible to consider the complexity of environmental issues through the concept of the *nexus*. The concept of the nexus focuses on ideas, materials or process – in the case of this chapter, resources like food and water – that tend usually to be thought about separately, in silos. Rather, it emphasises connections between those elements. This interconnectedness is at the heart of Murilo's reflections upon how – for instance – solar irrigators combine, at a micro-scale, questions about the interrelationships between food, water and energy. Second, the chapter looks at forms of *action* by children – contrasting forms of (globalised) protest with the apparently banal experimentation that took place at Murilo's school. Finally, it considers what it might mean to 'decentre' children to some extent (Spyrou, 2017): to focus on the non-human *materials* that constitute 'nature' and how understanding those materials is as important as listening to children's voices. Doing so might, for instance, require a closer look at the workings of things like solar irrigators. For, although the vignette at the start of this chapter is short on these kinds of detail, Murilo and his classmates will have spent *hours* deeply concerned with the material details of wires, bottles, pipes and other paraphernalia in order to get their irrigators just right. However, decentring children might also prompt a more radical rethink of what the relationships between children and their changing environments might look like, in ways that might prompt a rethink of the ethics and politics of childhoods–natures (Taylor and Pacini-Ketchabaw, 2018).

Notes

1 Murilo was a participant in my *(Re)Connect the Nexus* research project, which explored young Brazilians' experiences of, and learning about, the food–water–energy nexus (see Kraftl et al., 2019; www.foodwaterenergynexus.com/). Murilo is a pseudonym.

2 Minority Global North and Majority Global South are alternative terms for Global North and Global South, which aim to emphasise the fact that the majority of the world's population lives in the less affluent countries of the Global South.

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