

# Changing environments

*Peter Kraftl*

## Resources, interconnectedness and nexus thinking



**Figure 1**

The city of Campos do Jordão is located on the main mountain ridge running through north-eastern São Paulo State. It is the highest city in Brazil, located around 40

kilometres north of Taubaté. It is most noteworthy for being a major tourist resort in the winter months for rich visitors from Rio de Janeiro. However, the city also gained fame for more traumatic reasons: a series of landslides in 2000 that killed at least ten people (Figure 1). The landslides all took place in an area of informal housing that has grown to accommodate the many people working in the tourist industry. Like many such settlements in Brazil and around the world, it experiences a range of intersecting challenges: limited access to electricity supply, often accessed via illegal hook-ups or controlled by local gangs; poor street lighting and transportation; limited access to water and sanitation; and, most evident from Figure 1, vulnerability to the extreme weather events that are occurring in Brazil with increasing regularity and ferocity (especially rainfall) (World Bank, 2011). Indeed, recent research on the landslides in Campos do Jordão has emphasised that their cause was complex and multiple: the siting of houses on a very steep hillslope that contains a number of springs, combined with extreme rainfall in the days running up to the landslide.

In their report about informal settlements in São Paulo and elsewhere, the World Bank (2011) highlights that marginalised groups – and especially children – are particularly vulnerable to the compound and complex challenges facing communities like the settlement in Campos do Jordão. Not only are they most at risk during and after extreme climatic events and disasters like landslides, or to the loss of food, water or energy supplies, when they are often the first to go without (UNICEF, 2019), but when combined with threats like violence, in turn perpetuated by poor public transport and street lighting, they may not be able to access regular schooling or work. What is so important here is that these challenges are multiple, complex and to some extent *intractable*. In other words, it is not always (or ever) easy to identify where to start in either analysing or attempting to ‘solve’ such challenges. Certainly, knowing about children’s mobilities (i.e. where they go in such settlements) might help. Moreover, educating children about sustainable electricity sources, or about climatic changes that are causing heavier rainfall, might be part of the solution. However, as educators in Brazil and elsewhere have recognised, all of this work tends to take place in ‘silos’ that cannot fully broach the sheer complexity of the challenges that face children and their families in these places (Kraftl *et al.*, 2019). Indeed, to an extent, the same can be said

of childhood and youth studies, where – often for good, practical reasons – academics have tended to study children’s interactions with food, water or disasters separately (e.g. Mort *et al.*, 2018).

One response to the above challenges has been to try to reconceptualise phenomena such as food, water or energy not as separate elements but as a *nexus*. The most common nexus – exemplified in microcosm by Murilo’s experiences – is the Water–Energy–Food nexus. Diverting from a consideration of children for a moment, it is worth noting how nexus scholars have attempted to draw out complex connections between these ‘sectors’ (for more details see Leck *et al.*, 2015). They start big: often looking at how national policies manage potential ‘trade-offs’ between different sectors. For instance, sticking with the same region of São Paulo State, one of the key ‘trade-offs’ centres on whether sugar cane – and the water used to grow it – should be used to produce sugar for food or bioethanol for energy. They look at flows: they combine analyses of water, energy and food, converting flows into complex equations or visualisations that show the combined passage of stuff into, through and out of cities. They combine disciplines: analysing such flows requires not only expertise from engineers or computer modellers but social scientists who can ascertain how policies are made and how people actually use these resources. Finally, they see nexuses as both opportunities and threats – water can be a vital resource as much as a key ingredient in a landslide.

However comprehensive these approaches might seem, they pose two problems for childhood studies scholars. One problem is scale: how to link the predominantly micro-scale studies of children’s everyday lives and mobilities (Ansell, 2009) with the overwhelmingly large-scale (city, nation or bigger) analyses of the Water–Energy–Food nexus. The other problem, as I ask elsewhere, is of *where children are, precisely*, in attempts to analyse the nexus (Kraftl, 2020). For, despite attempts to include social scientists in studies of resource nexuses, their largely ‘top-down’ approaches to modelling and visualisation mean that real, fleshy people – aside from selected technical and policy experts – tend to disappear (Leck *et al.*, 2015). Moreover, marginalised groups like children – despite what we know about their heightened vulnerability to nexus threats – are notably absent from any of these analyses.

One answer to both of these problems is, as the final part of the chapter highlights, to perhaps – and not uncontroversially – decentre children from analyses of the changing environmental circumstances in which they live. Another is to attempt to (re)use notions of the nexus in ways that nevertheless enable some kind of a view of the complex ways in which children experience environmental change. Walker’s (2019) analyses of children’s (aged 11–14) environmental concerns in the UK and India is an important starting point. It constitutes one of the first attempts to develop a ‘nexus’ framework for studying the complexities of childhoods–natures while attempting to ‘scale up’ from the local scale. She seeks to ‘explore how children and young people’s everyday lives are both shaped by and have an impact upon multi-scalar processes that evidence uneven material and symbolic power’ (Walker, 2019, p. 2).

Writing from the contexts of families living in the southern Indian states of Telangana and Andhra Pradesh, Walker explores vignettes (stories from children’s everyday lives) relating to domestic intersections of food, water and energy. As in Campos do Jordão, environmental change operated as more than background context: rather, intensification of summer heat, combined with scheduled cuts to water and energy, played a crucial role in children’s lives. In the story of Nageshwar – whose family are relatively affluent – everyday experiences highlight the scarcity of water *and* energy, and their combined effects. He recalled spending an entire day using a handheld fan to keep the house cool. He talked about how electrical load-shedding reduced water to the apartments in his block, since the water supply system operated on a powered pump. This meant, in Nageshwar’s words: ‘two buckets will be filled with water. We’ll manage like that. Washing with the drinking water’ (Walker, 2019, p. 6). This is an example of a nexus ‘trade-off’ that has effects across multiple scales – the coping mechanisms that Nageshwar and his family had to use, but which were vital if the load-shedding were to work (for instance, trying to start the pump or use air conditioning could overload the system, especially if many families tried to do the same thing at the same time).

However, in another example of ‘scale-jumping’, Nageshwar and his family were – thanks to their relative affluence – able to afford privately sourced water supplies. He was well aware of the effects of doing so, since in such conditions of

scarcity buying in water privately could further divert an already scarce resource from wider public supplies and from poorer communities who could not afford to buy water privately.

In the above ways, Walker's (2019) analyses do draw attention to the ways in which children and young people learn and hold knowledges about the environment. Yet – both because of a more complex 'nexus' framework and the context of environmental change in India – the implications of these knowledges are different from the insights of Minority Global North forms of Education for Sustainability. On the one hand, these knowledges are derived informally – in a domestic setting. On the other hand, as Walker (2019) points out, these knowledges do not necessarily lead to 'virtuous' or 'responsible' forms of consumption: when combined with other families' consumption of privately sourced water or energy, Nageshwar's actions could have (and putatively *do* have) profound implications for water–energy trade-offs at the national scale.

Therefore, a nexus framework could be a key tool in developing analyses of the complex ways in which children are positioned in relation to environmental change and environmental resources, across multiple spatial scales (see also Kraftl *et al.*, 2019). As the rest of this chapter notes, it is not the only response to such intractable challenges. Nonetheless, it is an important one, since nexus policy-making and practice is taking hold at an international scale, but all-too-often ignores the voices and experiences of children like Murilo or Nageshwar. Moreover, a nexus framework perhaps operates best not as a stable 'answer' to the kinds of intractable challenges faced by a place like Campos do Jordão. Rather, it offers an opportunity to keep questioning: what are the particular combinations of environmental challenges (and opportunities) that *matter* to children, in any time and place – and where and how are children positioned in relation to them? And – as the next section explores – even if children are particularly vulnerable to environmental change, what kinds of *action* do they take in response?

## References

- Ansell, N. (2009) Childhood and the politics of scale: descaling children's geographies? *Progress in Human Geography*, 33(2), 190–209.
- Kraftl, P. (2020) *After Childhood*. Abingdon: Routledge.
- Kraftl, P., Balestieri, J. A. P., Campos, A. E. M., Coles, B., Hadfield-Hill, S., Horton, J., Soares, P. V., Vilanova, M. R. N., Walker, C. and Zara, C. (2019) (Re) thinking (re) connection: young people, 'natures' and the water–energy–food nexus in São Paulo State, Brazil. *Transactions of the Institute of British Geographers*, 44(2), 299–314.
- Leck, H., Conway, D., Bradshaw, M. and Rees, J. (2015) Tracing the water–energy–food nexus: description, theory and practice. *Geography Compass*, 9(8), 445–460.
- Mort, M., Walker, M., Williams, A. L. and Bingley, A. (2018) From victims to actors: the role of children and young people in flood recovery and resilience. *Environment and Planning C: Politics and Space*, 36(3), 423–442.
- UNICEF (2019) *#Everychild2030: Key Asks and Principles for 2018 National Review Activities*. UNICEF.
- Walker, C. (2019) Nexus thinking and the geographies of children, youth and families: towards an integrated research agenda. *Children's Geographies*, pp. 1–13.
- World Bank (2011) *São Paulo Case Study Overview: Climate Change, Disaster Risk and the Urban Poor: Cities Building Resilience for a Changing World*. Available at [http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1306291319853/CS\\_Sao\\_Paulo.pdf](http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1306291319853/CS_Sao_Paulo.pdf) (accessed 18 October 2019).