

Geographies of food beyond food: transfiguring nexus-thinking through encounters with young people in Brazil

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Cristiana Zara^{a*}, Benjamin Coles^b, Sophie Hadfield-Hill^c, John Horton^d and Peter Kraftl^e

^aSchool of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, United Kingdom; ^bDepartment of Geography, University of Leicester, Leicester, United Kingdom; ^cSchool of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, United Kingdom; ^dCentre for Children and Youth, University of Northampton, Northampton, United Kingdom; ^eSchool of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, United Kingdom;.

*corresponding author Cristiana Zara, School of Geography, Earth and Environmental Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, United Kingdom; c.zara@bham.ac.uk ; cristiana.zara.2007@live.rhul.ac.uk; ORCID <https://orcid.org/0000-0003-0129-324X>

Authors' details

Cristiana Zara, School of Geography, Earth and Environmental Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, United Kingdom; c.zara@bham.ac.uk; ORCID <https://orcid.org/0000-0003-0129-324X>

Benjamin Coles, Department of Geography, University of Leicester, University Road, Leicester, LE1 7RH, United Kingdom; bfc2@le.ac.uk ; ORCID 0000-0002-2973-0467

Sophie Hadfield-Hill, School of Geography, Earth and Environmental Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, United Kingdom; s.a.hadfield-hill@bham.ac.uk; ORCID 0000-0001-5127-013X

John Horton, Centre for Children and Youth, University of Northampton, Park Campus, Northampton, NN2 7AL; john.horton@northampton.ac.uk; ORCID <https://orcid.org/0000-0002-2956-2264>

Peter Kraftl, School of Geography, Earth and Environmental Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, United Kingdom; p.kraftl@bham.ac.uk; ORCID 0000-0002-7915-4808; Twitter [@peterkraftl](https://twitter.com/peterkraftl)

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Geographies of food-beyond-food: transfiguring nexus-thinking through encounters with young people in Brazil

Engaging contemporary forms of nexus-thinking with interdisciplinary food scholarship and childhood and youth studies, this paper explores the social, cultural and political implications of young people's entangled connections with – and beyond – food. The paper draws on a large-scale research project investigating young Brazilians' relationships with and understandings of the water-energy-food nexus. Based upon ethnographic, mixed-methods research, we attend to young people's everyday, material experiences of water-energy-food, and call for a *transfigured* nexus-thinking, alive with the lives, cares, relationalities and politics at the heart of 'the nexus'. Through examples ranging from participants' routines, rhythms and mobilities to experiences of food insecurity, we show how young people express a range of social-political sensibilities that articulate with food and expand nexus-thinking in several interconnected ways. First, by exposing the multi-scalar and multi-temporal processes underlying their everyday 'nexuses'. Second, by destabilizing the water-energy-food nexus to include ever-new elements emerging from lived experiences of resource access. Third, by showing the embeddedness of resources in the cultures, politics and social fabric of communities. Fourth by uncovering the workings of social difference in articulating nexus dis/connections. It is through these encounters with youths in Brazil that we propose a (re)politicisation and critical transfiguration of nexus thinking.

Keywords: geographies of food; nexus-thinking; young people; Brazil; water-energy-food nexus; childhood and youth studies.

Introduction

In a context of global anthropogenic threats to Earth's physical-biological-human systems, the United Nations Sustainable Development Goals provide an important framework for thinking and enacting social-environmental sustainabilities. Among the Goals, water, energy and food figure as fundamental resource sectors to be radically rethought, towards more equitable and sustainable geographies. Researchers, activists, NGOs and policy-makers working in this context have increasingly conceptualized interdependences of water-energy-food (W-E-F), prompting new forms of 'nexus-thinking' (Leck, Conway, Bradshaw, & Rees, 2015) and nexus-oriented policymaking (Bazilian et al., 2011).

The development of nexus-thinking has been important in affording many notable political-technological achievements in diverse contexts (Food and Agriculture Organisation [FAO], 2019) and constituting interdisciplinary/cross-sector collaborations around contemporary global challenges. Extending critiques of the typically weak theoretical and empirical bases of nexus-thinking (Kraftl et al., 2019), however, in this paper we make three major interventions to develop new forms of nexus-thinking. First, empirically, we highlight the problematic absence of children and young people (and, by extension, other forms of social-geographical difference) from mainstream nexus-thinking. Second, conceptually, we argue that attending to everyday, material and emotional details with/in young people's narratives of water-energy-food requires us to profoundly *rethink nexus-thinking*. Third, we emphasise how, recursively, such revised forms of nexus thinking might better enable analyses of the complex workings of intersecting 'resources' (and especially food) in everyday lives. Thus, the paper's conclusion outlines a set of key considerations for such analyses.

Drawing upon a major, interdisciplinary programme of ethnographic, mixed-methods research with young people in Brazil, we call for a *transfigured* nexus-thinking, alive with the lives, cares, relationalities and politics at the heart of ‘the nexus’. As a starting point for this intervention, we foreground young people’s engagements with *food* (although, as will become clear, these engagements are always already interconnected with water-energy-politics-mobilities-exclusions-friendships-homes-and-much-else). Our focus on food is in contrast with the way in which, thus far, scholarship on the W-E-F nexus tends to centre water (e.g. Leck et al., 2015), overlooking manifold, everyday ways in which *food* constitutes and is constituted relationally with/in other nexus components. A central contribution of the paper is, therefore, to use an expanded form of nexus-thinking to make linkages between young people’s engagements with food and what we term ‘food-beyond-food’ – how young people express social-political sensibilities that articulate *with* food. This is a demand for a *transfigured* nexus-thinking, recognising how the ‘W-E-F nexus’ looks and feels so substantially different in light of young people’s accounts of how food is embedded in, and constitutive of mobilities, rhythms, emotions and inequalities. More broadly, this requires us to argue for, and exemplify, a fuller conversation between nexus-thinking and extant geographical scholarship about food, childhood and youth.

Rethinking nexus-thinking: three major concerns

In this section, our call to rethink nexus-thinking is developed through three arguments. First, we call for greater attention to nascent critical (re)theorisations of the ‘water-energy-food nexus’, which we seek to develop in this paper. Second, we question the often-limited engagement between nexus-thinking and multidisciplinary food studies, arguing that longstanding theorisations of embodied, interconnected geographies of

food suggest some important lacunae within much nexus-thinking. Third, drawing upon multidisciplinary studies of children and young people's food practices, we problematize the limited attention to childhood and youth within most nexus-thinking.

Expanding the 'water-energy-food' nexus

Over the past decade, international academic and policy discourses around sustainable development have focused increasingly upon resource interdependence (Allouche, Middleton, & Gyawali, 2015). Amongst an array of languages for describing and analysing the relational constitution of resources – their flows, materialities and entangled threats – forms of 'nexus-thinking' have gained considerable traction (Leck et al., 2015). Nexus-thinking and nexus-policymaking purportedly offer forms of analysis and intervention that overcome silo-ing of resources, by delineating complex interdependencies, feedbacks and trade-offs that occur between sectors (Bazilian et al., 2011; Hoff, 2011). Born of rising concerns for global environmental change, such an approach affords an integrated view of social and natural processes involved in earth system changes, thus challenging the scope and disciplinary boundaries of social and natural sciences (Leck et al., 2015). Fostering a development perspective based on knowledge integration, interdisciplinary dialogue and cross-sectoral governance, the nexus approach contributes to innovative framings of the social and ecological as interconnected, multiscale socio-ecological systems. Calls for interdisciplinary research and integrated resource management are nothing new in development debates, particularly in geography (Rees, 2015). Nonetheless, nexus advocates see in the nexus a renovated tool for expanding system thinking, which is key to tackle global challenges, calling for greater research and policy attention to the interlinkages across resource insecurities at various scales (Leck et al., 2015). Following the adoption of nexus

approaches by international organisations (e.g. World Economic Forum, 2011; FAO, 2019), nexus-thinking has become increasingly mainstreamed in sustainable development contexts – including Brazil (Mercure et al., 2019).

The *water-energy-food* nexus has come to dominate nexus-thinking in both academic and policy circles. Work mobilising this concept has led to advances in interdisciplinary resource modelling, with important attempts to combine (for instance) engineering and social-scientific methodologies (e.g. Bazilian et al., 2011). Moreover, it has offered scholars another language for witnessing the complexity and intractability of sustainable development challenges. Thus nexus-thinking has become an important point of articulation for a wide range of large-scale (sometimes global, sometimes national, sometimes city-scale) analyses of entangled challenges (Allouche et al., 2015).

However, nexus-thinking has latterly been subject to inter-related critiques: that it promotes a problematically technocentric, anthropocentric approach to sustainability (Cairns & Krzywoszynska, 2016); that it is commonly focused upon large-scale, ‘top-down’ analyses (and interventions) that efface details of everyday, community and household lives (Leck et al., 2015); that, consequently, it ignores gendered, aged, and other social differences (Foden, Browne, Evans, Sharp, & Watson, 2019); that – via its imposition by (inter)national agencies, often originating in the Minority Global North – nexus-thinking and policy-making is underscored by a questionable politics that has been left largely unscrutinized (Schwanen, 2018); and, thus, that nexus-‘thinking’ is, ironically, often *theoretically* vacuous (Leck et al., 2015). Importantly, Allouche et al. (2015) point out that the ostensibly neutral-technocentrism of nexus-thinking ‘masks a bigger debate, which lies around resource inequality and access that contribute to social instability’ (p. 622), thus calling upon the nexus to be framed around the politics of resource insecurities rather than on their technical solution. As a result, a range of critical

approaches has emerged, which attempt to theorize nexuses with, alongside and against other modes of relational thinking (e.g. assemblage, ANT and topology) (Müller & Schurr, 2016; Schwanen, 2018), and by adopting a critical political economy perspective (Allouche et al., 2015). For instance, Schwanen (2018) suggests that ‘slow’ modes of interdisciplinary collaboration provide opportunities for geographers to (re)theorize the articulation of sustainability transitions with/through greater attention to power relations inherent in experiences and governance of W-E-F sectors. Likewise, notions of resource nexus have also been productively engaged with by recent work on infrastructure geographies, particularly in relation to urban sustainability. This scholarship interrogates questions of scale (Williams, Bouzarovski, & Swyngedouw, 2019), vulnerability (Browne, Petrova, & Brockett, 2018) and intersectoral infrastructure integration, from the city (Monstadt & Coutard, 2019) to the household (Rohracher & Köhler, 2019) and the rural-urban fringe (Browne et al., 2018), in the light of a ‘politicised nexus thinking’ (Moss & Hüesker, 2019) which calls for a critical rethinking of the urban nexus’ politics and spatialities in processes of infrastructural and urban change.

Extending these emergent critiques in several ways, this paper focuses on everyday experiences of the water-energy-food nexus to provide one of the first empirically-grounded, ethnographic studies of the W-E-F nexus (Kraftl et al., 2019; Leck et al., 2015). As a result, it *starts from* (but does not necessarily end up at) a smaller geographical scale, affording a different sense of the nexus as configured by/from materials, bodies and sites of governance, raising questions of identity and social justice orientated towards the national scale (Ansell, 2009). Moreover, it emerges from research undertaken in a Majority Global South context (Brazil) where largely Minority World policy imperatives around nexus-thinking have taken hold in the formulation of recent sustainable development policies. Thus, we seek to develop nexus-thinking, recognising

its political purchase and distinctive value, while insisting that it should be radically transfigured to acknowledge everyday details, materialities, socialities and narratives (Horton and Kraftl, 2018). We claim that the concept of nexus provides a useful lens for tracing resource geographies – revealing the intersecting scales, socio-materialities and human-environment interactions mobilised in resource use and governance – and related socio-ecological impacts. Additionally, because notions of nexus are already deployed within policy discourses, we suggest that they already highlight particular, politically important configurations of materials and resources. However, a more critical nexus thinking can tease out the broader social-spatial entanglements that these configurations invariably bring. Moving from the lived experience of resource relationalities, we therefore endeavour to think critically with the nexus to interrogate questions of everyday resource access, (in)security and inequality. Given their prevalence, we argue that there is an urgent need for social scientists to critically engage with the now-widespread formulation of nexus-thinking and radically transform their predominant technocraticity, apoliticality and neutrality through encounters with political, relational, everyday geographies. Specifically, this paper’s critical transfiguration of nexus-thinking emerges from our concern at its limited engagement with interdisciplinary food studies and young people’s everyday lives.

Engaging nexus-thinking with interdisciplinary food studies

It seems ironic and problematic that theorisations of the *W-E-F* nexus so rarely acknowledge or engage longstanding interdisciplinary food studies. In this section, we identify two important contributions made by work on geographies of food, which seem to be problematically underexamined in most models of the *W-E-F* nexus. First, we suggest that most models of the *W-E-F* nexus could be deepened and extended via

engagement with multi-sited ethnographies of interconnected geographies of food. Such accounts are typically concerned with the always-interconnected materialities and unjust ethico-politics of contemporary food provision (Cook, 2004; Cook & Harrison, 2003), and the ways in which the often-hidden interconnected politics and geographies of food can also be traced through. Notable examples include Mintz's (1985) work on the (post)colonial organisation of the global sugar trade, or theorisations of food networks and politics in terms of enduring postcolonial power relations (Cook & Harrison, 2003), feminist visceral politics (Hayes-Conroy & Hayes-Conroy, 2008), affinitive practices (Coles, 2016), or moral economies (Clarke, Cloke, Barnett, & Malpass, 2008; Coveney, 2000; Jackson, Ward, & Russell, 2009). In addition to underscoring the persistence of unjust food politics, these lines of work highlight the complex plurality of everyday food nexuses that destabilise any neater sense of 'a' or even 'the' water-energy-food nexus (Allouche et al., 2015). However, to date, very few formulations of the W-E-F nexus have engaged these theorisations of politicized interconnectedness.

Second, we are surprised that many versions of the W-E-F nexus say little about everyday food practices and their importance in (re)constituting identities, inclusions and exclusions. This is despite a significant recent wave of studies explicitly theorising everyday practices of/with/around foods (Abbots, 2017; Warde, 2016), as well as longer-standing scholarship foregrounding the important role of food in constituting social lives in diverse contexts (Bell & Valentine, 1997). This major body of work has mapped some of the ways in which everyday food practices are fundamental to identities (Cook & Crang, 1996), not least through their centrality to discourses of national identity and nationalism (Appadurai, 1988; DeSoucey, 2010), their symbolic value as markers of social status (Fielding-Singh, 2017), their mobilisation in material-cultural processes of ethnic and religious identities (Nukaga, 2008) and discourses of place/culture

‘authenticity’ (Coles & Crang, 2011; DeSoucey, 2010), or their constitution of globalized spatio-temporal phenomena like ‘convenience food’ (Jackson et al., 2018).

Certainly, nexus-thinking could be productively complicated, deepened and extended via greater engagement with such critical, empirical studies of food (and, perhaps, vice versa). However, we also want to argue that *both* nexus-thinking and food studies might be radically unsettled – and conceptually *transfigured* – via greater engagement with the still widely overlooked experiences and narratives of children and young people. This paper has emerged from a sense that work on the materialities, everyday practices, identities and ethico-political sensibilities articulated with/in food are profoundly important to, and challenging for, nexus-thinking. And, it has developed from a sense that within qualitative and ethnographic research with young people such relationalities come to the fore powerfully as a matter of course. As we explore more extensively in the first part of our analysis, these relationalities question and enliven debates about young people’s practices and the entanglements of food with/in the purported ‘speed’ of contemporary life (Jackson et al., 2018; Warde & Yates, 2017). Thus, this paper foregrounds young people’s own narratives of eating as constituted relationally through entangled socio-materialities of food. These narratives illuminate the complex webs of matters, resources, spaces, rhythms and movements through which food is constituted, as well as their potential to articulate wider questions of politics and social justice in relation to food security, resource access and sustainability.

Critically, however, this paper illustrates that the complexity highlighted within these same narratives also expose the myriad ways and mechanisms by which many young people are unable to access W-E-F resources and thus become vulnerable to their insecurities. Unpacking the intersections of W-E-F nexus with social difference – particularly the relationships between poverty, social inequality and resource (in)security

– brings resource (in)securities to the fore and enables their imbalances to be framed through a ‘web of lacks’. Rather than connectivity, this ‘web’ articulates the disconnections from resources visible within young people’s representations of their everyday (non)engagement with water-energy-food. The implication of such a framing is that although W-E-F nexus thinking typically endeavours to highlight complex resource interconnectivities, it also reveals the points at which interconnectivities are broken, or simply non-existent.

Transfiguring nexus-thinking through encounters with young people

Children and young people are rarely a focal concern, and rarely research participants within nexus-thinking (see also Kraftl et al., 2019). This is especially problematic given the significant array of empirical work from children’s geographies and interdisciplinary childhood/youth studies highlighting the importance of food and other ‘resources’ to young people’s everyday lives. In particular, we highlight four key areas of scholarship that could inform – and perhaps *transform* – nexus-thinking.

First, we suggest that the absence of young people from nexus-thinking overlooks the importance of young people’s spatialities of food. A wide range of work in this context has illustrated that young people have very distinctive food practices and constitutive roles in relation to food, spatializing it in unique ways (Punch, McIntosh, & Emond, 2010). For example, recent work has explored children’s everyday geographies in/of politics of childhood nutrition (Pike, 2008), obesity (Evans, 2010), school catering (Gibson & Dempsey, 2015), food pedagogies (Pike & Leahy, 2012), and family eating practices (Wills, Backett-Milburn, Gregory, & Lawton, 2008). These studies highlight young people’s distinctive positionalities within family practices and power relations;

their regulation by age-related institutional and policy contexts, and their disproportionate subjection to multiple forms of deprivation.

Second, work in this context is important in mapping how food practices often enable or delimit social relationships. For example, with a focus on social relations emergent from everyday, habitual eating practices (Wills et al., 2008) and ‘formal and informal codes and social mores’ (McIntosh, Emond, & Punch, 2010, p. 289) we suggest that nexus-thinking could productively engage with work on teenagers’ foodscapes. Similarly, ethnographic accounts of young people’s power-related food socialities offer empirical bases for rethinking the everyday socialities at the heart of W-E-F nexuses in practice (see for example Nukaga, 2008).

Third, we highlight the potential value of empirical accounts of diverse forms of ‘family’ and ‘home’ in grounding nexus-thinking. A wide range of studies have explored how food is an important nodal point in maintaining, negotiating and ‘doing’ family-lives (Jackson, 2009; Punch et al., 2010). Across diverse contexts, these highlight the routine food practices that constitute senses of familial identities (Wills et al., 2008), care and belonging (Kohli, Connolly, & Warman, 2010), gendered domestic labour (Bell & Valentine, 1997), and classed inequalities (Fairbrother & Ellis, 2016; Wills et al., 2008).

Fourth, regarding this latter concern, we suggest that the extensive literature on the regulation and control of children and young people’s diets provides important insights about the biopolitical governance of W-E-F nexus sites and processes. For example, an important seam of literature explores the prevalence of normative, panic-laden media/political discourses about children’s obesogenic diets and lifestyles in many European and North American contexts (Fairbrother & Ellis, 2016; James, Kjørholt, & Tingstad, 2009), and critiques the resulting interventions that target children’s bodies and food practices via dining halls (Pike, 2008), lunchboxes (Metcalf, Owen, Shipton, &

Dryden, 2008), mealtime supervisors (Dotson, Vaquera, & Cunningham, 2015), curricula (Pike & Leahy, 2012), and pedagogies (Cairns, 2017; Welch, McMahon, & Wright, 2012). Allied work has also explored the perpetuation of anti-obesity anxieties, and individualized, gendered, classed norms of blame, shame and responsibility (Evans, 2010; Gibson & Dempsey, 2015) within intimate domestic and family spaces (Fairbrother & Ellis, 2016). These examples are significant in revealing the pervasive operation of normative discourses and biopolitical governance that are infrastructural in many W-E-F nexus contexts, despite this language and mode of analysis seeming entirely alien to most existing models of nexus-thinking.

The absence of children and young people from formulations of W-E-F nexuses limits the extent to which advocates of nexus-thinking have been able to witness the kinds of everyday spatialities, socialities, politics and discourses (especially of *food*) discussed in this section. In one sense, we suggest that greater engagement with young people's everyday lives – and with existing scholarship regarding them – would begin to address these key lacunae. In another sense, however, over the following sections we suggest that working with young people in Brazil has exposed us to some profoundly disquieting narratives of food which require rethinking nexus-thinking – a *transfigured* nexus approach, as we argue, able to articulate the constitutive embeddedness of W-E-F resources into the socio-materialities of everyday life, and illuminate their social and political implications for achieving equitable and sustainable development.

Research context and methods

The following sections draw on a large-scale, interdisciplinary research project investigating young people's experiences of, participation in, and learning about the W-E-F nexus in Brazil. The project was based in Brazil's Metropolitan Region of Paraíba do

Sul River Basin and São Paulo State North Shore (MRPSRBSSNS). With a population of 2.5million, the region is economically significant (Emplasa, 2015), and socially/geographically diverse, comprising large urban centres, traditional rural, coastal and mountain communities, seasonally-popular tourist destinations, and several national parks and conservation areas. This case study was selected for its strategic position between the extensively-studied metropolises of São Paulo and Rio de Janeiro strategically allowing for an analysis of the wider region – and W-E-F interdependencies – connecting the two cities.

Over 30 months, the project team completed a programme of qualitative and quantitative researchⁱ, engaging with more than 4,000 young people aged 10-24 plus public- and private- sector professionals within water, energy, food and education sectors. The focus on young Brazilians was pivotal. Firstly, it provided important insight into W-E-F nexus experiences in a country where 42% of the population is under the age of 24, and where food, water and energy are strategic development goals in national policy agendas (Emplasa, 2015). Secondly, as noted, this age group is rarely involved as stakeholders in nexus-thinking or policymaking. Thirdly, much existing research on food and childhood focuses empirically on case studies from the Minority Global North, perpetuating Western assumptions about what food is, how/where eating happens, and the normative policy focus on obesity. Fourthly, the research complements – and challenges – predominantly Minority Global North definitions of the nexus with ‘bottom-up’ perspectives on W-E-F nexus.

Here we focus on one major element of the project: a programme of detailed, qualitative research with 48 10-24-year-olds. Participants were recruited from socially-, culturally- and economically-diverse communities. Young people were invited to participate through education institutions, risk prevention bodies, local environmental

associations, grassroots groups, and via snowballing through personal networks. Participants were diverse in terms of age, gender and social background including university, high school and primary school students, and formal/informal workers, living in very diverse settings from wealthy, affluent, consumerist enclaves to informal settlements profoundly exposed to hazards like flooding, drought and energy threats.

The qualitative component, which informs this paper, entailed a sustained process whereby participants were invited to partake in a series of research activities. These included in-depth interviews focusing on ‘My life – food-water-energy’; geo-located photography and daily diary collection focusing on experiences of food-water-energy vis-à-vis a specifically designed mobile app; follow-up interviews and discussions prompted by app data and elaborated through a ‘visual web’ exercise, and finally, a mapping exercise in which W-E-F routines and mobilities were plotted using Google ‘My Maps’. These one-to-one activities established trustful, continued relationships through repeated research encounters over a prolonged period, often leading to participants getting increasingly engaged in the research, comfortable in interacting with the researchers and open to sharing experiences. These activities were mostly carried out in participants’ living places – homes, schools, hangouts and youth centres – allowing for first-hand observations of the contexts from which their accounts emerged.

Combined, these methods enabled us to collect data on diverse aspects of young people’s nexus experiences. Indeed, resonant with the overarching objective of the research, we adopted a nexus approach to the data collection, with the different methods and activities building upon one-other and enabling us to co-construct intersecting data. The co-analyses of data with participants also derived shared definitions for nexus. The resulting data offers both deep insights into young people’s lives, and the capacity for them to articulate these insights as part of a variety of narrative-visual-creative registers.

Bringing these diverse data and analysis together, the ‘visual web’ exercise in particular produced rich visual and textual artefacts. In these, participants were invited to reflect on everyday experiences of dis/connection with food, water and energy and represent them on a large sheet of paper through different modes of expression, including drawing, photos, writing, symbols and post-it notes. Participants’ app photos worked as prompts to elaborate upon, and draw, their nexus webs; highlights from the mobility mapping exercise and the first interview were also used. The ‘*web of lacks*’ framing that we adopt in the analysis resulted directly from this particular method. Although a loose definition of nexus as water-energy-food dis/connections was initially proposed, as part of these activities participants were free to explore, use, drop or take this idea further, especially in the visual web exercise. Hence, by ‘nexus’ here we do not mean a single, *apriori* definition or approach to its analysis, but rather a set of complex dis/inter/connections wrought from the experiences of young people themselves.

Food nexuses in young Brazilians’ everyday lives

The analysis in the rest of this paper is presented in two parts. Offering a multi-scalar and multi-temporal analysis of socio-material nexus relations in Brazil we start with young people’s articulations of everyday food nexuses (although, as will become evident, their narratives cut across sectors, spaces and scales). We use ‘nexus’ as a working term to designate the plural ways in which food intersects with other resources, issues and activities. The analysis then considers food relations *beyond* food to show how multi-scalar everyday nexuses matter in our theorisation of the W-E-F nexus. We use boxed empirical examples, juxtaposing images, pseudonymized quotations and anonymized ethnographic observations to focus attention on the complex geographies and interconnections present within any one participant’s narrative. These accounts,

however, are indicative of findings from the more extensive (qualitative and quantitative) project datasets, offering insightful and thicker glimpses of young people's daily interactions with water-energy-food as emerging through their own narratives and visual representations.

Busyness: routines, mobilities and temporalities of food

The first prominent theme in our analysis is busyness and its intersection(s) with food. Many of our participants' lives are characterized by (often draining) fast-paced rhythmic patterns, associated with the demands of study and work. University students in particular reflect on their busy schedules, exam pressures, commuting routines and the mundane chores associated with independent living. The cases of Adriana and Sonia (Figure 1) illustrate the sheer busyness of such spatio-temporal rhythms.

[Figure 1 about here]

Gibson and Dempsey's (2015) work with children notes that 'children's bodies function as sites of contestation around choice, agency, and the controlling and restriction of such choices' (p. 49). To this, we add time and mobility as key factors in young people's food choices and consumption. As highlighted earlier, a discourse of young people making 'bad', 'unhealthy' food choices is at the heart of debates about obesity, with the blame lying squarely with individuals (Gibson & Dempsey, 2015). However, our accounts of young people's experiences show how their lives are enveloped in a normative acceptance of *speed*, forcing them to make certain food choices, at particular times, in particular spaces.

Previous research on young people's lives and food tends to focus on the space of the institution, whether it be the school, foster or residential care (Punch et al., 2010). Focusing on young people's lives, in motion, in-between spaces, offers new insights into

food related practices, experiences, anxieties and challenges. Bell and Valentine (1997) advocate analyses of food focused on temporal intricacies of ‘consumption’s role in punctuating or periodising all our lives through repetitive techniques of the body’ (p. 4). We add a further dimension, and consider how a perceptible ‘speeding-up’ of young people’s lives impacts consumption, and at the same time, how what is eaten shapes space-times of consumption practices.

Clara’s insights into young people, mobilities, time and food choices (Figure 2) further complicate the discourse of ‘good and healthy lifestyle choices and behaviour’ (Punch et al., 2010, p. 231). Delving deeper into these intersections between food choice(s) and mobility reveals that access to transportation and infrastructure is an important factor in shaping relationships to food.

[Figure 2 about here]

The importance of time in young people’s everyday mobilities is well represented in Lina’s visual web and associated narrative (Figure 3); a clock sits central to a range of transportation options, which are in turn affected by different weather conditions. The temporalities of food revealed by Lina, and many of our participants, resonate with recent work identifying ‘processes of escalation (doing more things) and acceleration (doing things within a shorter time)’ (Jackson et al., 2018, p. 10) that are transforming practices of eating, preparing, cooking and shopping for food towards ‘convenience’ (Jackson et al., 2018).

[Figure 3 about here]

However, we note that young people’s experiences in our study add further complexity to recent studies of time and food in terms of *movement*. The entanglement of time, food and *mobilities* contributes to an extensive body of research on children and

young people's mobilities (Barker, Kraftl, Horton, & Tucker, 2009; Bosco, Joassart-Marcelli, & O'Neil, 2017; Horton, Christensen, Kraftl, & Hadfield-Hill, 2014), but importantly it progresses beyond well-rehearsed debates about obesity and obesogenic environments to expose *other* experiences of eating – and eating on the move – as constituent of foods' wider nexuses. Moreover, our data also enable an upscaling of analyses, beyond a focus on micro-spaces of canteens and homes.

Leandro, for example, tellingly frames his nexus experiences around the *Dutra* highway, a critical arterial road, connecting Rio de Janeiro and São Paulo (Figure 4). Highlighting how the W-E-F nexus weaves together resources, practices and the body, Leandro, like Adriana, believes that improving the bus service – currently extremely time-consuming – would help to save energy, including that of his own body. As a consequence, Leandro devises his own coping strategies by consuming home-made food along the *Dutra*.

[Figure 4 about here]

Evidently, mobilities constitute cultures of young Brazilians' food consumption. Other forms of 'convenience food' are also evident. In particular, notions of 'practicality' – another mode of coping with hectic schedules – also constitute a common way of consuming food in Brazil: the *marmita* and *marmitex*. Sonia explains that these are pre-prepared meals consumed away from home. A unique kind of 'fast food', *marmitex* is prepared by specialized restaurants, typically ordered on-call and delivered to work/study places. Some restaurants also cater for schools and work canteens. Whilst *marmitex* and *marmita* are mostly used synonymously, Sonia notes that the term *marmita* is sometimes used to distinguish *home-made* packaged lunches carried to work or school. The lunchbox typically comprises the classically Brazilian rice, beans and meat-based meal. *Marmitex*

provides a practical and cheap option for many young people who want to save time and still have a ‘decent’ meal.

Once again, space and time are connected through food. These connections are material (i.e. foodstuffs-themselves; digital devices used for ordering/delivering; the lunchbox packaging) as well as social and emotional. On the latter point, many young people claimed that the home-made *marmita*, usually prepared by a close relative, tasted better, was healthier, and cooked with more care, enabling them to somehow evoke ‘home’ into their time-pressed study and work regimens. The preparation of a *marmita* resonates with imaginaries that circulate around children and their school lunchboxes – folding an ethic of care, identity and emotion into the box (Metcalf et al., 2008). Whilst it is tempting to deploy *marmitas* to highlight connections to, and positive associations with, ‘home’, Nukaga’s (2008) analysis of food and the ‘gift’ economy reminds us that homemade food is also used to ‘control...relationships with peers as well as to mark, maintain, and mute ethnic boundaries’ (p. 344). More broadly, *marmita* practices speak to extant scholarship on geographies of care by highlighting a particular ‘topology of care’ where place-specific networks of actors, objects and technologies configure around the act of caring for, and ‘being related’ (Hanrahan & Smith, 2020, p. 233) through food.

This section has highlighted young people’s nexus experiences in relation to time-mobility-food to extend recent debates on convenience food and nutrition (Foden et al., 2019; Jackson et al., 2018). It also contributes to emerging nexus-thinking scholarship within critical infrastructure studies (Monstadt & Coutard, 2019; Williams et al., 2019) by showing how transportation and W-E-F infrastructures are deeply woven into young people’s nexus geographies. Developing our argument for complicating nexus-thinking, young people’s diverse experiences are not redolent of ‘a’ simplistic time-mobilities-food nexus. Rather they expose manifold everyday nexuses, via a series of daily *strategies*,

which, in weaving together elements of water, energy, food and far more besides, are developed through, and indeed generate different food-time-energy-transportation-infrastructure nexuses. Herein individual choices are shaped by the material and temporal organisation of urban infrastructures (public transport and *marmitex* systems) and by centralized time regimes of work and school, which participants felt they had little power to negotiate. In carving out ways to ‘cope’, Leandro and Adriana’s modes of snacking-on-the-move subvert conventional time-space choreographies of Brazilian mealtimes. In a sense, snacking gave young people a degree of control, offering a rather different take on previous evocations of the power relations involved in young people’s food practices (Punch et al., 2010).

Everyday nexuses: food relations beyond food

The previous section highlighted how foodstuffs – and differential practices of eating – are entangled with multiple, complex everyday nexuses that destabilized any neat sense of ‘a’ water-energy-food nexus (Allouche et al., 2015). In this section, although still *starting* with food, we push our analyses further to examine how such (broadly) food-orientated nexuses are interconnected with and productive of wider relationalities and connections (and, crucially, *dis*-connections). We highlight two key sub-themes: webs of ‘lacks’ and, socio-political sensibilities, enabling us to extend our argument about the multi-scalar constitution of everyday nexuses and, thereby, young people’s everyday lives, identities and socio-political sensibilities.

Firstly, we focus on *webs of lacks*. Exemplifying how food can be experienced and framed very differently by young people in different socio-spatial contexts, it is here that Paulo’s experiences come to the fore, in stark contrast to those of Adriana and other better-off young people. Figure 5 shows part of Paulo’s nexus web. A key distinction in

Paulo's experience of food is between the 'necessary food', deemed essential for sustaining the body, and the 'special food' for exceptional occasions.

[Figure 5 about here]

Paulo's narrative once again complicates extant literature on childhood and food (Curtis, James, & Ellis, 2010; Wills et al., 2008). Paulo's everyday food rhythms are paced by presences and absences: of foodstuffs themselves, and of the money, family and social relations that can materialize them, alongside other interdependent factors that he depicts (Figure 6).

[Figure 6 about here]

Existing research highlights the importance of immediate family members in giving care to others, particularly children, through food preparation (Punch et al., 2010). In our research, however, Paulo emphasizes the importance of his *neighbourhood* in temporarily bridging lacks in his nexus, and other participants recounted similar experiences of interdependency. Valentina, a seventeen-year-old female, speaks about food affordability and the connections with wider political-economic issues:

The food is not expensive, it's the tax that is high. Lack of employment is what makes the lack of food and many people suffer from hunger.

Meanwhile, Victor, a fifteen-year old male, tries to make sense of the situation of a school friend living in deprived socio-economic conditions. He effectively articulates the lived experiences of the food-family-money-employment nexus:

It's a complicated situation...she [single mother] couldn't find a job, the job she had also did not pay well enough for her to buy food sometimes... I think it was also the

difficulty of getting a job itself, because she lived very far from the city...she didn't have a car or anything, she had to go to places on foot...

Absence and 'lack' are key to many young people's narratives. These lacks, however, are expressed differently depending on a young person's socio-economic position. Adriana's, Lina's and Sonia's accounts are characterized by a lack of *time*; for Leandro's and others', it is the lack of efficient connectivity through transportation; in Paulo's, Valentina's and Victor's lives, absences were part of 'wider' nexuses of lacks – food relations *beyond* food – that included economic resources, affordability, employment and family circumstances. Crucially, these narratives contribute an expanded, lived notion of resource nexus to scholarly attempts to unpack multiple, W-E-F related socio-material-environmental vulnerabilities and spatial inequalities (Browne et al. 2018).

Secondly, young people's experiences of lack are entrained in their wider *socio-political sensibilities* of food. We have shown that everyday nexuses are contingent, destabilising any neat sense of 'the nexus'. Indeed, young people – especially Paulo – convey a sense in which social, affectual and material webs are continuously interwoven, being constituted through unstable assemblies of foodstuffs, care, neglect, parents, carers, friends, neighbours, cars, buses, job, money and drugs. None of these nexus elements are 'social' in their own right, but by virtue of their associating in ever-changing ways, they afford new social relationalities.

The social thus takes on a double value in young people's nexus experiences. It is expressed in terms of social issues, especially poverty, drug addiction, alcoholism, unemployment, family breakdown, which undermine some young people's ability to access resources (including but not limited to food). Whilst aware of the danger of framing *any* complex sets of circumstances as a nexus, we build upon young people's

explicit perception of the relationality that exists between such social issues and water-energy-food resources in particular. Importantly, with a focus on *lack*, they questioned the rhetoric of interconnectedness that underpins much nexus-thinking (Hoff, 2011; Leck et al., 2015), pointing out gaps, absences and ruptures in webs of interdependencies, whilst nevertheless retaining forms of nexus sensibility (not least as these were expressed explicitly in their visual webs).

Thus, redolent of calls to draw out the political implications of nexus-thinking and policymaking (Allouche et al., 2015; Leck et al., 2015; Schwanen, 2018), young people highlight forms of inter-/dis-connection that foreground issues of resource allocation as an intrinsically *social and political* issue. For many young people – like Valentina and Victor – nexus dis-connections materialize as unequal distributions of resources, with some social groups being more exposed to nexus threats than others, whether in terms of gender (e.g. lone mothers), economic situation (e.g. low-income families; unemployment) or social circumstance (e.g. youths involved in crime or substance abuse). They prove to be acutely aware of, and vocal about, the fact that social inequalities are deeply entrenched in issues of water-energy (and especially) -food, many of them suggesting that for nexus imbalances to be addressed, other, wider inequalities needed to be addressed first. The social is very much ‘political’, and indeed young people are highly attuned to the political as a way of tackling responsibilities within the nexus. The State, but also ‘the people’ and communities are seen as key actors in everyday webs of dis/connections, both as holding responsibility for the deficiencies and as potential agents of change. For Isabelle, an eighteen-year female student, unequal access to food should be tackled mainly at the government level, as she argues:

I can give everybody a little bit of help; it will be better. But I think that needs to be a bigger thing, like, governmental.

Whilst Rubens, an eighteen-year male student, discussing responsibilities for improving water provision in his town, thinks that:

The entire community ends up being involved, right? Also in the matter of asking for improvement. The organ, which is distributing, I think should be aware of the product it is offering. The government mediates this and should also be monitoring. So I guess, overall, it's everyone.

Although these suggestions afford a view of Brazilian youths' social and Political (with a big 'P') sensibilities (Skelton, 2013), young people also articulate forms of social and political (with a small 'p') agency that they deem supportive and progressive (Jeffrey, 2012; Kallio & Häkli, 2013). For instance, social networks figure as important resources as well as nexus threats. This is explicated by many as social networks of care and, especially, *sharing* that family, community, neighbours or friends put in place during hardship. In Paulo's nexus drawing, for instance, the vignette that he labels 'neighbourhood collaboration' shows a woman handing over a packet of sugar to her neighbour who had run out. Clara tells us about a rural area very rich in waterfall and spring water where she and her family would go to stock up on water from natural sources. Though located on private land, these water sources are left open for people to use freely. She explains that the community in the area believe that anyone should be able to access water from natural sources; she frames the community as being 'present', and receptive to, in her words, the right to 'natural resources for all', defining this practice as community 'solidarity'.

Conclusion

This paper opens up important conceptual connections between child and youth studies, nexus-thinking, and the spatio-temporalities of food. Extending the three

interventions into nexus-thinking with which we began this paper, we argue that our research encounters with young people in Brazil *transfigure* nexus-thinking in several interconnected ways.

Firstly, our analysis encourages a focus on unpacking the mundane workings of food within and as expressive of the *temporalities* of everyday nexuses. We have called for and exemplified an empirical, conceptual and political project in which ‘the nexus’ is complicated, destabilized and embodied in ways that resonate with, but extend beyond recent arguments for nexus research at the community and household level (Leck et al., 2015; Rohrer & Köhler, 2019). In so doing, the paper complements, challenges and (crucially) connects with discourses of long-term temporality, global projections and distant futures inherent especially to policy and development debates on the nexus (e.g. FAO, 2019), by interrogating how these play out at the time-scale of everyday routines and movements. Our participants’ narratives showed how food temporalities entail complex synchronising, clashing and overlapping timings, from bodily to institutional rhythms, from slow to fast paces, from seasonal to economic cycles. Thus, in line with the growing academic interest into the temporalities of food, eating and agricultural processes (Coles, 2016; Jackson et al., 2018; Warde, Cheng, Olsen, & Southerton, 2007), we call for an approach to understanding food which, without dismissing the macrotemporalities involved in dominant discourses on the nexus, embraces a perspective that reframes food processes, including issues of food security, as engaging simultaneously with multiple temporalities of the environment, the social, the individual and the material body.

Secondly, and relatedly, young people’s experiences and spatial practices highlight *mobility* as a key point of articulation in the spatio-temporalities of food (Bosco et al., 2017; Jackson et al., 2018). Young people’s experiences of food are shaped by

movement; food is carried around, consumed in between spaces, chosen, or neglected based on the moving bodies of young people, their access to transport infrastructures, and their adapting to time regimes of work, study and commuting. The food-time-mobilities ‘nexus’ (if we can call it that) revealed by young people offers an important entry point to *rethink nexus-thinking* from bottom-up perspectives. Not only does it reconfigure food through a series of socio-material assemblages of, for instance, vehicles, timetables, lunchboxes and road networks; crucially, it also demonstrates how nexus-thinking might derive greater conceptual force from being able to incorporate ever new elements – such as mobilities – drawn from lived experiences of resource access and use.

Thirdly, the processes and practices analysed in this paper are intrinsically *multi-scalar*. We have explored relationalities of food at multiple, intersecting scales – implicating *marmita*, the street, the bus, the supermarket, the classroom, the factory, the canteen, the home, the neighbourhood, the state and places/spaces beyond Brazil. This research sheds light on the entanglements of food with multiply-scaled spaces, places and materialities that shape and are shaped by young people’s use of, and access to, resources. As the examples demonstrated, these have profound implications for issues of sustainability, food security and social inequalities. Thus, an important contribution of this paper has been to reveal the embeddedness of nexus resources and trade-offs in the cultures, politics and social fabric of communities, thus enabling a (re)politicisation and critical transfiguration of nexus-thinking.

Finally, and consequently, this paper makes a key contribution to recognising the workings of social difference with/in nexus-thinking (and, we would hope, nexus policy-making). Not only does it represent one of the first attempts to interrogate the W-E-F nexus from a ‘bottom-up’ perspective, or from the perspective of young people, but also, importantly, it demonstrates how the intersectionalities of youth and socio-economic

circumstance produce very different experiences of food-in-the-nexus. This move responds to, but, crucially, extends well beyond recent calls for a focus on the ‘domestic nexus’ (Foden et al., 2019) – not least since the experiences and concerns analysed in this paper transcend a range of spaces and practices beyond the (obviously) ‘domestic’ sphere. The multi-scalar, entangled socio-material experiences of food – and beyond – discussed here have shown that the concept of a resource nexus is an effective analytical tool in thinking through questions of everyday resource use, vulnerability and marginalisation; as a critical framework, it moves interdependence theories forward by illuminating the complex geographies of scale, power and materiality underlying resource governance. As we demonstrated in the final part of the paper, these experiences articulate nexus connections in ways that not only afford insights into differential access to *food*, but into pressing questions of social, political and environmental justice that could – and in our view should – be central to future forms of nexus-thinking.

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ⁱ In addition to the qualitative component, the wider project entailed: i) a large-scale survey involving 3,705 young people; ii) semi-structured interviews with 63 key professionals whose work remit extended fully or partly within the case study region; iii) workshops with schools, community groups and environmental educational providers; iv) a ‘Food-Water-Energy Challenge’ global video competition addressed to young people worldwide.