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Chi-Mao Wang
National Taiwan University, Taiwan (R.O.C.)

Damian Maye
University of Gloucestershire, UK

Michael Woods
Aberystwyth University, UK

Abstract

This paper proposes planetary rural geographies to counter the narrative of planetary urbanisation, which has contended that the whole planet has been urbanised and can be understood through urban theory without an outside. Whilst critics have challenged the metrophilia inherent to planetary urbanisation, advanced post-colonial critiques, and posited alternative models of ruralisation, we argue that these responses fall short of fully embracing the radical potential of a planetary perspective. We call for planetary rural geographies that examine rural places as sites of interaction between diverse more-than-human relations that extend above and below the Earth surface and contend that the configuration of human–environment interactions at the 'rural' end of urban–rural relations is critical to addressing planetary crises. We elaborate this argument by focusing on three geographies of planetary rurality: as a space of crisis, as a space of conflict, and as a space of hope, evidenced by examples drawn from the global rural literature.

Keywords

More-than-human relations, planetary, ruralisation, urbanisation, rural–urban relations

Introduction

The thesis of planetary urbanisation has become an influential, if controversial, idea in human geography, agitating for a radical epistemological shift in the conceptualisation and study of 'urban' – and 'rural' – spaces globally. Rooted in Lefebvre's hypothesis that 'society has been completely urbanised' (Lefebvre, 2003: 1), and his later warning of 'the planetarisation of the urban' (Lefebvre, 2014: 569), planetary urbanisation has been rebooted by urban scholars as a response to the increasing integration and interdependence of cities, towns, and non-urban spaces under globalisation (Brenner, 2013, 2018; Brenner and Schmid, 2014, 2015; Merrifield, 2013, 2014; Stanek et al., 2014). Planetary urbanisation starts from the 'problem' that in this entangled world, rural–urban binaries have become blurred, and the 'city' – as conventionally understood – accounts for the location of only a fraction of so-called

Corresponding author:
Chi-Mao Wang, Department of Bio-Industry Communication and Development, National Taiwan University, No. 1, Sec. 4, Roosevelt Rd., Taipei, 106, Taiwan (R.O.C.).
Email: chimaowang@gmail.com

'urban processes' (Brenner, 2014). As urban processes overspill city boundaries, the inference that urbanisation *can* be found *anywhere* (proposed by Lefebvre, 1970) is extended in the planetary urbanisation thesis into the assumption that rural spaces have been engulfed by urbanisation: spaces and places previously characterised as 'rural' or 'wilderness', as well as the sea, atmosphere and planetary sub-surface, are all constitutive of a global urban fabric (Brenner, 2013). Understanding this expanded urban, it is asserted, requires a 'new vision of urban theory without an outside' (Brenner, 2014: 15) – in other words, an urban theory that is no longer constrained to the city.

Planetary urbanisation has attracted critiques of intellectual colonisation and methodological metrophilia and has been criticised for its failure to engage with feminist and queer theory (Buckley and Strauss, 2016; Gillen et al., 2022; Grange and Gunder, 2019; Oswin, 2018; Robinson, 2022; Schindler, 2017). Particular criticisms have been directed at the apparent erasure of the 'rural' in planetary urbanisation, the implication that with the dissolution of the rural–urban binary, it is 'rural' not 'urban' that becomes the 'obsolescent category' (Gillen et al., 2022: 187). In this framing, it is not only 'rural' as a spatial category that is rendered irrelevant, but rural geography and allied sub-disciplines such as rural sociology and rural planning, together with the conceptual toolkits that they have assembled, supplanted by the explanatory power of a planetary urban theory.

Critics have pushed back by highlighting the substantial minority of the world's population that still lives outside cities and the importance of rural spaces as critical nodes in global networks of food, water and energy provisioning (Aguiar et al., 2023; Grange and Gunder, 2019; He and Zhang, 2022; Krause, 2013). Additionally, post-colonial scholars have warned that focusing solely on urban processes perpetuates the legacy of colonialism and a 'modernisation' agenda that valued rural spaces primarily for their natural resources and portrayed extant rural societies and cultures as 'backward', worthless and replaceable (Aguiar et al., 2023; Gois, 2022; Moreno-Tabarez, 2020a, 2020b). A unidirectional epistemology of 'development' as a rural-to-urban progression not only negates the contributions of Indigenous and peasant economic and social systems but also obscures the potential that these distinctively rural practices have to help address planetary crises (Aguiar et al., 2023; Chaves et al., 2018; Gudynas, 2011). These counternarratives do not challenge the premise that rural and urban have become intermingled, or that urbanisation processes are present in conventionally 'rural' spaces, but they do reject the subjugation of the rural by the urban that is implicit in many accounts of planetary urbanisation, and instead seek a more balanced treatment of rural and urban in planetary frameworks.

Notable contributions in this regard have been made by He and Zhang (2022) and Gillen et al. (2022). He and Zhang (2022) propose 'planetary thinking of the rural that transcends the unidirectional and binary interpretations of rural transition and rural–urban relations' (p 44), emphasising a rural viewpoint on spatial, economic, socio-cultural, and political relations that extend into the urban. Gillen et al. (2022) meanwhile posit an approach to rural–urban relationality from the rural side and highlight geographies of ruralisation.

As rural geographers, we are sympathetic to these counternarratives. However, we contend that they miss an opportunity to fully engage with the potential of planetary thinking by primarily focusing on human dimensions of rural–urban interactions played out on the surface of the Earth. Planetary thinking is more-than-human and more than two-dimensional, differing in the last respect to merely referring to globalisation. Planetary thinking introduces verticality, seeing connections not only across the Earth's surface, but into the atmosphere and subterraneanly. It engages with the planet as a whole, human and nonhuman, and emphasises 'earthly multitudes' in which collectives experience, engage with, know, imagine, and respond to 'planetary multiplicity' (Clark and Szerszynski, 2021: 88–90; see also Seitzinger et al., 2012; Tsing, 2015). Yet, although Brenner and Schmid (2014) state that 'the world's oceans, alpine regions, the equatorial rainforests, major deserts and polar zones, and even the earth's atmosphere itself are increasingly interconnected with the rhythms of planetary urbanisation at every geographical scale' (p 162), these

more-than-human and more-than-terrestrial relations are underplayed in the planetary urbanisation literature.

The lacuna stems from the theoretical anchoring of planetary urbanisation in neo-Marxist political economy and its proponents' antagonism to Deleuzian and Latourian inspired assemblage and network approaches that emphasise hybridity and more-than-human agency (Brenner, 2013; Robinson, 2022). Planetary urbanisation traces connections from cities to farms, mines, forests, aquifers, oceans, and so on, but it views these relations in terms of their incorporation into capitalist modes of production and accumulation. The lacuna also reflects the urbanormativity (Fulkerson and Thomas, 2019) of the planetary urbanisation gaze. That the nonhuman agency of plants and animals, or the vibrant materialities of rock, soil, and oil (Bennett, 2010), are hidden from view in planetary urbanisation is precisely because such matters and their harnessing in economic and social geographies have conventionally been studied through rural research that is suppressed in the rolling-out of 'urban theory without an outside'.

We accordingly call in this paper for planetary rural geographies that examine rural places as sites of interaction between diverse more-than-human relations extending around the globe, across city and countryside, and above and below the Earth's surface. We argue that foregrounding 'rural' in this framing, rather than positioning such interactions as part of extended urban processes, is important for two reasons. First, it counters the implication embedded in the term 'urbanisation' that power resides in the city, with urban processes radiating out and transforming the non-urban. Rather, we recognise that agency is dispersed and that rural–urban relations may be initiated from the rural as well as from the urban. Second, it acknowledges that the interaction of people and planet, for example through farming, forestry, or mining, is a core element in the social construction of rural identities and cultures, and that such cultural identities have an emotional and political resonance that can shape and disrupt rural–urban relations.

Indeed, we contend that planetary rural geographies matter because the configuration of human–environment interactions at the 'rural' end of urban–rural relations is critical to addressing planetary crises, from climate change to biodiversity loss, and from food security to energy sustainability. We elaborate this argument through the paper by focusing on three geographies of planetary rurality: as a space of crisis, as a space of conflict, and as a space of hope. Our narrative emanates from discussion in a UK–Taiwan networking grant on 'Transnational theory-building for researching the global countryside', and its elaboration has been informed by field visits in Taiwan and in Wales, UK, as well as by engagement with examples in the global rural literature.

From planetary urbanisation to planetary rural geographies

Planetary urbanisation and ruralisation

A key criticism directed at the planetary urbanisation thesis is that in its formulation, 'the rural is inevitably reduced to a residual and diminishing place with little conceptual and practical values' (He and Zhang, 2022: 43). Debates around urbanisation and the saliency of rural as a category are not new. Early attempts in geography and sociology to define the essence of 'rurality' and to delimit rural and urban were increasingly critiqued as empirical evidence revealed the impacts of industrialisation, modernisation, and globalisation in tightening interconnections between city and countryside. The ascendancy of political–economy approaches in the 1970s and 1980s reinforced recognition of rural–urban integration and failed in efforts to isolate a distinctively 'rural' political–economy (Buttel and Newby, 1980; Cloke, 1989). Accordingly, Hoggart (1990) questioned the continuing relevance of 'rural' as a geographical concept (p. 245).

This was the context in which Lefebvre was writing, as the recent 'rediscovery' by Anglophone scholars of his work on rural sociology makes clear (Lefebvre, 2022). Lefebvre's interest in the 'urban question' was instigated by his research on rural society in the French Pyrenees and his observations of the impacts of industrial development and the construction of a new town. However, as

Elden and Morton (2022) observe, 'the question of the rural never entirely disappears for Lefebvre: it is fundamental to his project of the political economy of space' (p. 15). Indeed, the language employed in Lefebvre's writing on urbanisation is far more conditional and tentative than later derivative treatments imply. The statement that society has become completely urbanised was presented as a hypothesis not a conclusion (Lefebvre, 1970, 2003). His later reference to the planetary spread of urbanisation was actually framed as 'Another threat: the planetarisation of the urban' (Lefebvre, 2014: 569). Lefebvre did not view this prospect positively.

Returning to Lefebvre thus highlights the difference between acknowledging that urbanisation processes may be found anywhere and are globally interconnected – positions long accepted in human geography – and making the jump to assert that the whole planet is characterised by urbanisation and can be studied through an urban theory without an outside – which is the provocative addition of the contemporary planetary urbanisation thesis.

Walker (2015: 188) captures this problem when he notes that although Brenner and Schmid 'are at pains to say that they are not claiming that the planet is totally urban, they effectively erase the rural'. He contends that 'the urbanisation of the countryside is always underway but always never complete' (Walker, 2015: 188). Not only does this permit space for the rural to continue as a salient category, but it also allows for 'a reverse ruralisation of cities that is altering the urban fabric in important ways' (Walker, 2015: 188). The assertation of ruralisation is an important counternarrative to planetary urbanisation because it challenges the assumption of the unidirectional subjugation of the rural by the urban and instead imagines the emergence of a more hybrid world, constituted by parallel and related processes of urbanisation and ruralisation.

Krause (2013) argues that 'if the whole world is urbanising, it must also be ruralising' (p. 234), contending that as rural and urban interact – for example in rural migration to the city, or urban migration to the countryside – the rural rubs off on the urban as much as the reverse. Gillen et al. (2022) build on Krause to articulate a more elaborated geography of ruralisation, informed by their research in Southeast Asia. They outline three models of ruralisation: *in situ ruralisation*, in which translocal commodity networks and migration cycles are engaged to support the reproduction of stereotypically rural spaces and practices; *extended ruralisation*, in which peasant livelihoods are stretched over space, including into cities, inserting rural formations and practices into cityscapes; and *rural returns*, in which persistent rural identities among city-dwellers are enacted through cultural and economic ties and return migration. Positioned as a direct counterpoint to planetary urbanisation, Gillen et al. (2022) contend that ruralisation can be 'a productive term for encapsulating the processual, more-than-residual, and geographically variegated socio-spatial dynamics of contemporary human investments in and engagements with rural land, livelihoods, and lifestyles' (p. 188).

Gillen et al.'s ruralisation framework echoes Roy's (2016) formulation of the rural as a 'constitutive outside' to the urban (p. 816). For Roy, rural is not the antonym of urban, nor a dialectical opposite to the urban (see also Grange and Gunder, 2019), but is inherent to answering the question posed by planetary urbanisation of explaining the 'processes through which the urban is made, lived, and contested' (Roy, 2016: 816). He and Zhang (2022) also emphasise the co-evolution of ruralisation and urbanisation, and the planetary significance of the sustainable development of the rural as a 'buffer zone' between human activity and nature. In centring the mutual constitution of rural and urban and deconstructing the rural–urban binary, He and Zhang (2022) and Roy (2016) both reject the totalising urbanormativity of planetary urbanisation by imagining a hybrid world in which places and processes can be both rural and urban. He and Zhang refer to ideas of agropolitanism or the agrocity (Abramson, 2020; Friedmann and Douglass, 1978) that encapsulate this dual status. A truly planetary perspective might hold that these are merely the most visible expressions of a more mundane global pattern of rural/urban co-existence.

It is no coincidence that several of the most notable challenges to planetary urbanisation have

come from Asia, Latin America, and Africa. Critics have argued that the thesis of planetary urbanisation has been asserted from a European–American urban theoretical tradition that is laden with assumptions that do not necessarily translate to contexts in the South or the East (Gillen et al., 2022; Grange and Gunder, 2019; Schindler, 2017). Not only is the narrative of urbanisation problematic in countries where the rural population is still in the majority, or where rural–urban differences in living standards are far greater and more impactful than in the west/north, but the planetary projection of urbanisation also ignores the European cultural grounding of the urban–rural ordering of space. Gillen et al. (2022), for instance, highlight the notion of *desa-kota* zones in southeastern Asia (McGee, 1991) where urban and rural are blurred in the intermingling of agriculture, industry, and high-density housing. Moreover, Gkartzios et al. (2020) point out that many languages do not have a direct equivalent to the English/Latin term 'rural' as a spatial referent, and words that are used in translations as substitutes are not necessarily counterposed to urban in the same way.

Equally, the language of planetary urbanisation risks occluding the entwined histories of colonialism and urbanisation as political and intellectual projects. The categories of 'rural' and 'urban' were employed by colonial authorities to impose spatial order on societies that did not understand space in that way, as Nolan (2018) describes for the 'villagisation' of Kenya. The export of European moral geographies further associated urbanisation with racialised colonial notions of progress, positioning the cities and towns of white settlers as superior to unconsolidated or semi-nomadic rural Indigenous communities. These imaginaries depicted pre-colonial rural spaces as lacking vitality, portrayed Indigenous and peasant agriculture as unproductive, and permitted the formation of slavery-dependent plantations that were always connected to metropolitan centres in a globalised rural–urban spatial division of labour (Chlouba and He, 2021; Gois, 2022; Moreno-Tabarez, 2020a, 2020b).

Depicting rural spaces as vacant and devoid of significant human settlement has served to rationalise extractive endeavours, resulting in social–environmental conflicts and environmental displacement across Africa, Latin America, and Asia (Brad et al., 2015; Gyapong, 2021; Mingorria, 2018; Scheidel and Work, 2018; Watkins, 2018). This logic is now arguably being extended to new frontiers associated with top–down 'solutions' to planetary crises, ranging from renewable energy to conservation and rewilding (Bresnihan and Brodie, 2021; Le Billon, 2021; Lunstrum et al., 2016; Root-Bernstein et al., 2018). Moreover, by occluding endogenous rural agency, it stymies the potential of transformative movements *from* the rural, such as repeasantisation (van der Ploeg, 2018), the holistic concept of *buen vivir* from South America (Chaves et al., 2018; Gudynas, 2011), or the recovery of Indigenous rural knowledge in Australia, New Zealand, and Central America (Gammage et al., 2021; Marques et al., 2021; Moreno-Tabarez, 2020b).

Accordingly, we call for planetary rural *geographies*, plural, recognising the need for epistemological plurality (Buckley and Strauss, 2016) in examining the planetary interconnections of rural and urban. In Anglophone geography, the salience of the 'rural' as a concept was rescued by epistemological plurality in the cultural turn and post-structuralist influences that acknowledged the persistent relevance of rurality as a cultural ideal and a signifier of identity. Attention turned to the social construction of 'the rural' through academic, media, and lay discourses, and later, following calls for re-engagement with the material (Cloke, 2006), to relational, hybrid, and assemblage approaches that emphasise the rural as multiple, dynamic, elusive, and more-than-human (Heley and Jones, 2012; Murdoch, 2003; Woods, 2007). We therefore position rural places as contingent assemblages of human and nonhuman, material and expressive, components that are intrinsically connected through translocal flows and networks with other places, both rural and urban, but which maintain as associations of practices and discourses an identity that is articulated through culturally situated understandings of 'ruralness' (Woods et al., 2021). The interactions between rural and urban places include dynamics of urbanisation, but also dynamics of ruralisation. Both are incorporated within our

framework for planetary rural geographies as a new conceptual vocabulary and approach for research.

The more-than-human rural and planetary crises

Counternarratives to planetary urbanisation have provided a useful corrective in reclaiming a place for the rural. However, they have focused more on the *urbanisation* part of planetary urbanisation than on the *planetary*. As such, they have failed to grasp the full potential of planetary thinking for rural studies by sticking to a '*human-centred geography* of ruralisation' (Gillen et al., 2022: 191). Broader planetary thinking recognises that 'making worlds is not limited to human[s]' (Tsing, 2015: 22) and encompasses both the agency of animals, plants, and microbes in 'multispecies world-making' (Tsing, 2015: 22) and the 'vibrant materialities' (Bennett, 2010) of inanimate things such as rocks, soil, forests, water, carbon particles, air currents, tools, and artefacts, even the 'Earth' itself (Clark and Szerszynski, 2021; Escobar, 2020; Kohn, 2013). In an ontology of 'planetary multiplicity' (Clark and Szerszynski, 2021: 88–90), the totalising tendencies of planetary urbanisation are tempered by the capacity of the Earth for self-differentiation.

In the planetary rural, agencies embedded in relations with nonhuman entities are fundamental to the capacities of rural societies and economies to engage in global networks and produce differentiation. Take soil, for instance. Formed from the erosion of bedrock and worked by human labour, variations in soil type, soil quality, and interactions with hydrological and atmospheric systems have historically dictated what crops can be grown, the settlement and societal types that arise, enrolment into colonial and global commodity networks, and the protection afforded to farmland and its availability for 'urban' development. Industrialisation has modified soil with fertilisers, linking agricultural land to rural sites of oil or phosphate extraction. Moreover, soil can be both active and mobile, transgressing rural–urban boundaries, with Wenzel (2022), for example, describing dust storms hitting cities as a form of ruralisation of the urban. Loose soil can further be a vector for the global mobility of pathogens and viruses, transporting plant, animal, and human diseases that originate in rural settings, possibly unlocked from wild species by deforestation, prospecting, or hunting, or incubated in intensive livestock operations. Soil is also a critical mediator in the impact of changing weather patterns, disrupted by climate change, on agricultural productivity and global food security.

In these ways, the rural is central not only to planetary chains of provisioning, but also to emerging planetary crises, from the climate crisis to biodiversity loss, pandemics, food security, and water and energy sustainability. Seitzinger et al. (2012) argued that 'the sustainability of a city can no longer be thought of in isolation from the combined resource use and impacts of cities globally' (p. 789). By extension, urban sustainability cannot be tackled without rural sustainability. This was recognised by Lefebvre (2014) in connecting planetary urbanisation to ecological questions and is asserted by He and Zhang (2022) as a dynamic of ruralisation.

Our proposition of planetary rural geographies foregrounds the ways in which such planetary challenges not only extend into 'non-urban' spaces, but are intimately bound up with practices, identities, representations, and lifestyles that are conventionally figured as 'rural' (Aguiar et al., 2023; Cusworth et al., 2022; Hinchliffe et al., 2017; Maye et al., 2021, 2022; Nagavarapu and Kumar, 2022). In the remaining sections of this paper, we investigate this relationship through three optics. First, we examine the planetary rural as a source of crises threatening the survival of humanity. This lens draws attention to the environmentally destructive dimensions of both resource extraction and modern agricultural production systems (Aguiar et al., 2023; Forget and Bos, 2022; Hein et al., 2018; Kelly-Reif and Wing, 2016; Lazarus, 2014; Maye et al., 2022), questions of environmental justice, including around the displacement of harms from urban consumption, and the propensity for rural-based crises to leach back into the city. Second, we consider the planetary rural as a space of conflict. Here, we highlight tensions in the meanings attributed to the rural in both urban and rural

discourses and how these can feed conflicts over land and resource use that transcend rural and urban political spheres and which risk compromising efforts to counter planetary crises. Finally, we emphasise the planetary rural as a space of hope. This perspective rejects the privileging of urban agency in the planetary urbanisation thesis and instead affords rural actors with agency to respond to planetary crises by, for example, enacting radical ruralities in practice and by creating convivial worlds with nonhumans, with practices that may be speculative and probiotic and involve relational ethics of more-than-human care.

Planetary rural geographies I: Rural as a space of crisis

Rural landscapes, environments, and communities feature prominently in representations of planetary crises reproduced by the media and transnational campaigning organisations. Although most of the world's population will experience the effects of crises such as climate change, water depletion, food insecurity, biodiversity loss, and pandemics in cities, they encounter emerging impacts through images that are predominantly rural: parched drought landscapes, wildfires, flooded fields and villages, retreating glaciers, and endangered species on arctic ice floes or in tropical rainforests.

This ruralisation of the imagery of crisis reflects a planetarisation of environmental politics involving a shifting treatment of urbanisation. Earlier nineteenth and twentieth-century environmentalism tended to focus on threats from urbanisation to rural landscapes at local and regional scales, countered by enforcing the separation of rural and urban space (see Murdoch and Lowe, 2003). Later awareness of global environmental issues also initially focused on threats emanating from the urban, such as acid rain or carbon emissions from urban industry, but emphasised global interconnectivity of rural and urban. For example, the effects of climate change–induced drought, floods, and extreme weather on agricultural productivity in parts of Africa, undermining agrarian livelihoods and intensifying rural-to-urban migration (Ebhuoma et al., 2022; Yiridomoh et al., 2021), have been portrayed as instances of global injustice by the urbanised 'North' on the 'rural' 'South' (Moellendorf, 2012).

More recently, the rural has been positioned as a *source* of crisis as well as a victim. In particular, the contribution of farming to greenhouse gases has been increasingly highlighted: notably carbon dioxide and methane emissions from livestock farming, but also the replacement of rotation crops with artificial fertilisers (Cusworth et al., 2021; Liu and Zhang, 2011; Willett et al., 2019). In total, industrial agriculture is calculated to contribute between 10 and 12 percent of global greenhouse gas emissions (CGIAR, 2018). These emissions form planetary connections vertically through the atmosphere, contributing to a global emergency of climate change that transcends rural and urban spaces. More broadly, telecoupling analysis has demonstrated the rural-to-rural interconnections between, for instance, intensive livestock production in China and deforestation in Brazil (Kapsar et al., 2019; Liu et al., 2013).

Some renderings of planetary urbanisation might consider these to be expressions of urbanisation, produced by the incorporation of rural places and practices into urban-centric production networks or the application of 'urban' models of industrial organisation to rural activities. We argue that such a reading is tautological in that it understands industrial processes as 'urban' precisely because it views them from an urban perspective. In so doing, it disregards the rural roots of many rural industries and the history of innovation in the global countryside that contributed to capitalist development and facilitated mass urbanisation (Beckert, 2014). Moreover, it risks reproducing moral geographies of urban and rural that are increasingly problematised in environmental discourse. Activists such as Monbiot (2022) contend that traditional extensive livestock farming is as damaging as industrial intensive agriculture, in that it takes more land from nature, whilst advocating industrial forms of food cultivation – potentially located in urban or peri-urban locations and hence a form of 'ruralisation' of urban space – as a more sustainable model for the planet (see also Woods, 2021).

Rather, we position industrial and intensive agriculture, along with mining and resource extraction, power stations and cables, reservoirs, industrial forests, and so on not as urban incursions into the rural, but as part of the constant re-assembling of rural places, with new and old components and shifting relations to urban networks and spaces, but remaining territorially fixed in rural settings and – crucially – coded as 'rural' by local actors. Indeed, this capacity to absorb new components into rural identity has contributed to the rural as a space of planetary crisis by reorienting rural economies around environmentally damaging industries and practices and fuelling resistance by rural communities to perceived 'urban' efforts to remove them (Farrugia et al., 2019; Kojola, 2019; Mayer, 2022).

The re-1assembling of rural places reconfigures relations between humans and nonhumans in ways that can unleash new and often unpredictable capacities, shaped by more-than-human agency, that have planetary consequences across both rural and urban space. These include not only the release of carbon emissions and air or water pollutants, or the depletion of water resources or the degradation of soil quality – threatening food security – but also the activation of new diseases. Guthman's (2019) post-humanist analysis of soilborne *Verticillium dahliae* in strawberry plants, for example, revealed how the capacities of *Verticillium dahliae* transformed from parasitic to pathogenic only in the context of human agriculture. Efforts to control the disease through chemical fumigation proved partially successful, but in turn destroyed soil biodiversity, allowing more aggressive fungi such as *Trichoderma* to thrive and novel diseases to emerge. Rural and urban are intricately connected in these dynamics, as the demands of urban consumers for fresh strawberries drive intensification and chemical use, and as disease virulence disrupts the supply of fruit to urban markets, but their articulation is embedded in the rural planetary interface.

Whilst disruption to strawberry supplies may not constitute a planetary crisis, other disease vectors have more devastating potential, destroying staple crops or cultivating viruses that jump species becoming human pandemics. Deforestation for agriculture or mining, driven by urban consumption demands but enacted in rural assemblages, risks unlocking new diseases that had been contained in remote wild animal species but could travel through human networks to proliferate in cities, in a form of ruralisation (Guegan et al., 2020; Lorenz et al., 2021).

Industrial livestock farms can form intermediary spaces for disease development. For example, confined intensive production systems often house tens of thousands of chickens, creating 'a ready-made disease incubation chamber' (Hinchliffe et al., 2017: 99). With a compromised immune system and stressed bodies, birds are prone to infections of *Campylobacter* and generate the intra-action environments to produce new sorts of virulence. The harvest of chicken meats is also often performed in an environment where personal protective equipment rapidly becomes ineffective. The bodies of poultry catchers become vulnerable to illnesses such as diarrhoea, and working with immune-compromised birds generates socio-ecological conditions for microbes to mutate and transcend species boundaries. H5N1, commonly known as avian influenza, has killed over 260 people since 2003 (Wallace, 2016), and waves of both 'bird flu' and swine flu (H1N1) are met with apprehension of cross-over to humans.

The meatification of urban diets has provided the context for the amplification of new diseases, but it is not the cause of epidemics. For post-humanist thinkers, disease outbreaks are socio-technical assemblages with capacities emerging from the internal relations between components, not dictated by external factors (Hinchliffe et al., 2017). From this relational perspective, the rural becomes the place where the intensity of all entangled elements reaches a 'tipping point' into planetary crisis.

Planetary rural geographies II: Rural as a space of conflict

If rural areas are frontiers where the components of planetary crises are assembled and articulated, they are also battlegrounds where both the processes contributing to crises and responses to them are contested. In a planetary urbanisation framework, some such conflicts may be positioned as the

displacement of urban politics – struggles over capitalism or class transplanted to rural locales, or urban social movements extended to confront rural structures and practices. Rural mobilisations can also be represented as resistance to urban incursions. Yet, the framing of such struggles solely in terms of urbanisation is insufficient.

Conflicts over mines and quarries, fracking and oil and gas extraction, deforestation and afforestation, reservoirs and dams, wind turbines and solar farms, and various forms of industrial or intensive agriculture all focus in on the interaction of humans and planet in rural economies, and all are entangled in global and rural–urban relations (Bresnihan and Brodie, 2021; Dunlap, 2020; Kenney-Lazar et al., 2018; Szabo et al., 2022). Writing about a forestry conflict in western Canada, Magnusson and Shaw (2003) described the contested logging zone at Clayoquot Sound as a place where distinctions between 'local' and 'global' were collapsed. It could equally be described as somewhere that the 'rural' and the 'urban' are collapsed. Campaigns against deforestation, or mining, or intensive farming that involve urban-based NGOs and engage urban-based activists might be seen as urban interventions in the rural, but they are also vectors for the ruralisation of urban politics and society (Brad et al., 2015; Hein et al., 2018; Mingorria, 2018; Paredes, 2016). Concerns about rural environments, landscapes and livelihoods, and representations of contested rural places are carried into urban public spaces and institutions and shape urban behaviours, for example in consumer boycotts.

Moreover, such struggles cannot be reduced to rural–urban conflicts. They are also intra-rural conflicts, enrolling rural actors on both sides in a 'politics of the rural' (Woods, 2003b), in which the meaning and regulation of rurality is the core issue of dispute. Indeed, emotional attachments to specific notions of what it is to be rural are powerful motivations for political mobilisation (Woods et al., 2012), whether stemming from embedded livelihoods, kinship ties to place, or the emotional investments of in-migrants in imaginings of the rural idyll. These affective dimensions of rural conflicts cannot be understood through urban theory alone.

Engaging with the 'politics of the rural' is important for implementing effective responses to planetary crises. The planetary urbanisation thesis has encouraged a new spatial order in which rural spaces, seen only from the perspective of their utility to urban systems, are recoded with novel functions in renewable energy production, ecosystem services, and nature restoration that may be detached from current and historical rural activities (Brenner and Schmid, 2014). As with other aspatial technocratic responses to global challenges from climate change to food security, they risk failure precisely because they consider current rural land uses to be erasable and ignore the emotional investments tied to, for instance livestock farming or commercial forestry, and their attendant landscapes, and the capacity for these attachments to motivate resistance to new land uses (Woods, 2013). Following Latour (2004a, 2004b), these various responses can be understood as 'propositions' that entail 'complex material, biological, semiotic, and performative elements capable of "worlding" human–[animal] landscapes, politics, atmospheres, and multispecies entanglements' (McGregor and Houston, 2018: 6). As McGregor and Houston (2018) demonstrate in relation to Australian cattle farming, propositions advanced from contrasting socio-technical or ideological standpoints envisage very different reconfigurations of rural spaces and activities in response to planetary crises, jostling for political influence. As such, the planetary rural is a space of conflict between competing propositions for Earth futures.

Conflicts can be observed across both the Global South and the Global North, although the configurations of disputed elements are shaped by local contexts and embedded in unique rural place-assemblages. Large swathes of forest and savannah land in Africa, Latin America, and Southeast Asia, for example, are sites of struggles between globalised conservation models aimed at protecting biodiversity, land investments for agricultural developments justified by global food or energy security concerns, international tourism or resource exploitation interests, and the customary practices of Indigenous and traditional communities. In Madagascar, western-backed designations of protected forests with communities repositioned as conservation managers compete with illegal

prospecting to supply rosewood exports to China (Zhu, 2017); in the transfrontier Limpopo Park in southern Africa, plans to relocate farmers and villagers that were constructed as incompatible with both conservation models of a people-free wild space and expectations of the tourist gaze were stalled when land scheduled for resettlement was let as concessions for sugarcane for biofuels (Lunstrum, 2016; Masse, 2016); whilst in India, the removal of communities from tiger reserves has compromised their capacity to follow livelihoods based on traditional use of natural resources configured to particular places (Kabra and Das, 2022).

The disconnection between socio-ecological propositions for the necessary function of rural land in securing planetary futures and the embedded cultural understandings of rural communities is also evident in disputes around rewilding and carbon forestry in the Global North. Whilst rewilding projects have gained popularity in many countries, the implied return to 'wilderness' is frequently (mis-)interpreted by rural actors as a dismantling of the 'rural' that has been created through agrarian cultivation and husbandry (Brook, 2018; Drenthen, 2018; Lorimer and Driessen, 2013; Wynne-Jones et al., 2018). Thus, although rewilding may not be accurately described as urbanisation, it is for some a form of de-ruralisation. Similarly, carbon forestry on farmland superficially replaces one rural landscape with another, but faces opposition for the loss of working farms, and related cultural and environmental impacts, in both Global South and Global North contexts (Hein et al., 2018; Kansanga and Luginaah, 2019; Nel, 2017; Schwartzman, 2022; Scheidel and Work, 2018). Like rewilding projects, carbon forestry is commonly framed by opponents as an external, urban-led imposition on rural communities, ignoring support within rural areas.

Over a longer time period, renewable energy developments for wind, solar, and hydro-power have elicited emotional reactions and divided rural communities (Batel and Kupers, 2022; Dunlap, 2020; Mason and Milbourne, 2014; Phadke, 2011; Wheeler, 2017; Yenneti and Day, 2016; Zografos and Martinez-Alier, 2009). For some, wind turbines and solar panels are urban intrusions, out of place in the rural landscape; for others, they are a continuation of the countryside as a productive space (Anderson et al., 2017; Mason and Milbourne, 2014; Woods, 2003a). Conflicts around renewables can also engage and question planetary imaginations, with developments justified in relation to climate change impacts in distant locations, but also resisted through framings that position local landscapes and habitats as constitutive parts of a global patchwork (Woods, 2003a). Furthermore, the material requirements of technologies such as wind turbines and solar panels (as well as those of electric vehicles) make connections to new rural resource frontiers of rare metal extraction. These form emergent sites of conflict, whether around pollution and environmental injustice associated with lithium harvesting in Bolivia or the contribution of artisan cobalt mining to intensifying and financing violent conflict in the Democratic Republic of the Congo (Bustos-Gallardo et al., 2021; Vogel and Raeymaekers, 2016).

The importance of farming to the social and material constitution of the rural is repeatedly evoked in conflicts, even in contexts where the economic significance of agriculture has been diminished. Land use disputes get framed as struggles between farming and conservation, or 'food and fuel' (Farrugia et al., 2019; Tomei and Helliwell, 2016), but agricultural practices are also contested. These include questions of animal welfare, prompted by new globalised values challenging existing biopolitical regimes of human–animal interaction (Buller and Roe, 2018; Sexton et al., 2022; Sykes, 2016). The perception of being under attack from urban social movements has led farmers to adopt increasingly defensive positions, including questioning aspects of scientific knowledge that link agriculture to climate change, biodiversity loss, or animal cruelty and articulating alternative propositions, such as the 'green re-branding of cattle' (Cusworth et al., 2022). Equally, tapping into discourses of food security, or eliding farming interests and rural identity, is a strategy that enables broader coalitions to be mobilised in rural struggles (Woods et al., 2012).

One recurrent rhetorical device is to suggest that challenges to agriculture stem from urban ignorance about farming and 'where food comes from'. Yet,

this assertion neglects the reality that where food comes from is changing – not only through globalisation but also through the growth of peri-urban intensive or vertical farming (Butt and Taylor, 2018; Woods, 2021), and the rise of alternative proteins, including lab-cultivated meat (Bryant and van der Weele, 2021; Smith et al., 2022). Trends such as these presage a decoupling of food production and rural spaces that represent a potentially existential crisis for conventional understandings of what it means to be 'rural'.

Against this backdrop, farmers' protests can be portrayed as reactionary movements, entwined with populist politics and resistant to progressive changes necessary for planetary sustainability (van der Ploeg, 2020). Such a perspective contributes to the positioning of the rural as a problematic space in relation to addressing planetary crises. However, this overlooks the capacity of the rural for innovation and reinvention and the agency of rural actors in articulating alternative propositions that approach planetary crises from a rural starting-point and which recast the global countryside as a space of hope.

Planetary rural geographies III: Rural as a space of hope

A major obstacle to realising the rural as a space of hope is the temptation to address planetary troubles 'in terms of making an imagined future safe, of clearing away the present and the past in order to make futures for coming generations' (Haraway, 2016: 1). This 'anxious, pessimistic politics of the Anthropocene' conveys a sense that 'the game is over, it's too late, there's no sense trying to make anything better, or at least no sense having any active trust in each other in working and playing for a resurgent world' (Haraway, 2016: 3). In reality, neither despair nor hope is a sensible approach to futurism. We should instead be tuned to the senses, mindful matter, and material semiotics in 'thick copresence' (Haraway, 2016: 4). It is about 'learning to be truly present, not as a vanishing pivot between awful and edenic pasts and apocalyptic or salvific futures, but as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings' (Haraway, 2016: 1). Hope is found then in practices and less so in particular emotions, a 'gritty, keeping-going kind of hope' (Head, 2016: 11), in a context of distributed agency and non-linear change and where 'small' issues of culture and everyday practice are important. Expressing 'hope' in less human-centred (emotional terms) thus overcomes fatalistic Anthropocene and Capitalocene senses of planetary doom and recognises the connections of human self-making processes to planetary self-ordering and variation (Clark and Szerszynski, 2021: 9).

The challenge for a more 'hopeful copresence' is thus to harness strategies to develop 'positive transition' rather than an ecology of problems for rural futures and more-than-human ethics of care (Beacham, 2018), including radical geographies that challenge hegemonic processes of planetary place-making to enact new 'territories of peace' (Chaves et al., 2018). Below, we point to hopeful progress in this direction, including notable approaches that extend established human-centred global analysis of rural land as sites of crisis, conflict, and hope in more holistic directions, such as La Via Campesina's planetary-attuned repeasantisation (Aguiar et al., 2023). This vision incorporates forms of 'planetary rural bioeconomy', including speculative experimental dimensions, such as *buen vivir* (Chaves et al., 2018; Escobar, 2020; Gudynas, 2011), soil health, new protein economies, planetary probiotics, and politics of symbiosis (Lorimer, 2020).

Reframing rural and agri-food economies as newly forming biological futures and speculative practice is not in itself sufficient. A recalibration of 'planetary rural politics' to develop more equitable future place-making is also required. Three elements are critical here. The first step is to engage with what Escobar (2020) called 'pluriversal politics', which rejects the western cosmovision that creates a dichotomy between self-contained subjects and objects. All beings, including humans, are not entirely independent of each other. Nevertheless, the view that objectifies nature reinforces the belief in human superiority over it, which serves as the foundation for capitalist societies and is the main cause of environmental crises. The

objectifying stance, according to Escobar, hinders and undermines our ability to coexist with the diverse range of human and nonhuman entities in a cooperative manner that is more intelligent in its interactions with the Earth and the rhythm of life. The concept of *buen vivir* (living well) has its roots in various notions among certain Indigenous communities in the Andean regions, such as Peru, Bolivia, and Ecuador (Gudynas, 2011). It is a plural concept, aiming to seek out the radical possibilities that inhere in alternative methods of linking nature and culture rather than keeping them apart. Applying the idea of *buen vivir*, Ecuador and Bolivia legally recognised the rights of nature in 2008 and 2009, respectively. The *buen vivir* movement in South America is paralleled by other emergent concepts of human–nonhuman conviviality in a reconfigured planetary system in other parts of the world, including assertations of 'radical ruralities' that aim to 'produce a rural space that is different from and a challenge to the mainstream trajectories that the production of the rural is taking in the global north' (Halfacree, 2007: 125). Radical relationality emerging in rural spaces can be an antidote to the western metaphysics of separation, the ontologies of coloniality and anti-Blackness and anti-Indigenous, and the destruction of the Earth (Chaves et al., 2018; Escobar, 2020; Gudynas, 2011).

Second, the development of planetary solutions via rural systems (e.g. land, forests) should be more territorialised and place-based. This means giving voice to farmers, foresters, fishers, and rural communities to articulate their ideas of rural futures, which may challenge new bioeconomy orthodoxies such as the growing importance of 'flex crops' and carbon credit markets in Africa, southeast Asia, and South America (Borras et al., 2016) and demands for 'multifunctional land use' and valorisation of natural capital in the Global North. One incentive for capturing local voices, histories, and place-based stories is to better appreciate already existing connections with nature, Earth systems, and bio-geographies to build new relationships. Recent work on more-than-human ethics of soil care, soil and carbon accounting, analysis of agroecology, and regenerative practices (Krzywoszynska, 2019) has similarly provided tools for rebuilding human–nature connections, but much more can be done. Political economy and political ecology critiques related to bioeconomy, regenerative agriculture, and the dispossession of rural knowledge through decarbonisation – all inherently rural in their planetary composition and identity politics – also raise fundamental questions about how 'planetary rural democracy' gets done for climate, nature, and biodiversity.

In some literature around alternative proteins, including so-called 'lab meats', but also new forms of precision fermentation and synthetic proteins (see Burton, 2019: for an excellent review), there is a temptation to position these developments as a threat to traditional livestock farming and rural communities, heightened through a discourse of urban society needing to eat less meat and find protein alternatives, and talk of 'post-meat bioeconomy futures'. Whilst these claims have some validity, and much of the contestation manifests through forms of public social media discourse (Maye et al., 2021), the wider biological economy transition potentially offers significant hope for the planet and for rural communities and landscapes. For a start, many high-tech precision fermentation ventures are quite small, venture capital initiatives (Myland et al., in press). The real potential for 'rural bioeconomies' lies in a wider framing of biological resources that underpin rural areas (e.g. farmland, hedgerows, forests, fisheries, and coastlines). The challenge is to find solutions that can help the planet and local communities to adapt and benefit from strategies linked to decarbonisation, energy security, food security, nature protection, and so on. This more hopeful vision is articulated in the biological economies work pioneered by rural researchers in New Zealand (Le Heron et al., 2016; Pawson, 2018), which draws on more-than-human approaches to economic life to salvage new pathways for how value will be generated from the land and other forms of 'vital materialism' in the future.

Such an agenda is not pessimistic but is equally alive to power politics, new forms of financialisation, and planetary regimes already in play in re-making rural bioeconomies. It nevertheless points to potentially important rural development

pathways that are hopeful in their attempt to reimagine material forms that constitute rural life. In this context, experimentation plays a key role in identifying progressive forms of human nonhuman 're-coupling' that can reconnect agriculture, food, environment, and health. As Marsden et al. (2020: 203) note, a priority here is 'to critically and normatively examine how concepts like the eco-economy and the circular economy may help to understand how new "re-coupled" economic relationships could indeed be fostered in rural spaces and places', with a view to progressing more sustainable transitions (e.g. agroecology) as practice-based assemblages. Crucially, it is in the rural domain where these potentially disruptive forms of innovation and creative place-making are taking hold.

A critical third step in planetary rural politics is to promote more just forms of climate and Earth system governance. This highlights the need for participatory forms of democracy, building on the 'deliberative wave' (Willis et al., 2022), but also exploring and enacting ways of including nonhuman interests and 'voices' in deliberation (Kurki, 2022). In working towards Latour's (2004b) 'parliament of things', this may involve empowering and listening to Indigenous and rural actors as 'representatives' of nature alongside scientists and governments. An equitable approach to climate and Earth governance therefore goes beyond prioritising social justice and inclusion; it also aims to challenge the modern western perspective that divides individuals from the environment. As such, it is important to recognise the multiple planetary rural geographies of knowing, telling, and relating which have potential for how we value and relate to rural land, coasts, fisheries, and seas now and in the future.

We conclude this section with some remarks regarding moral geography and spatial justice, including reimagining planetary social thought as both intra-rural and as new emancipatory forms of rural–urban relation (Marsden et al., 2020). In the wider Anthropocene literature, new work within food geography recognises food system agency attentive to underlying inequalities and socio-ecological complexity. This asserts the need to 'provincialise' planetary ruralism 'for' the Anthropocene in, for example, histories of landscape (Nagavarapu and Kumar, 2022), in order to avoid a Euro-centric vision of global change and to decolonialise planetary rural geographies to support epistemic justice in ways that avoid depoliticising the ecological crisis. Enhanced geographical awareness is about more than describing connectivity between places and spaces. It emphasises a need for spatial justice in food system and rural policy-making (Maye et al., 2022).

In conceptualising new forms of bioeconomy, new resource and mineral politics, and nature-based pathways that benefit human and nonhuman elements, a key argument in this paper has been to reiterate their inherent presence in rural places (as intra-rural conflicts, as sites of disruption and innovation). This is critical, but we envisage too potential transformation in the geography of rural–urban relations, which holds much emancipatory potential for rural areas and relationships with urban conglomerations. If we think, for example, about nature-based solutions in rural landscapes (Kok et al., 2022), which hold also co-benefits for climate change, we can reimagine rural places in terms of the ecosystem and planetary benefits they bring to urban places near and far. If these 'planetary resources' are better managed and rural places adequately remunerated, it can benefit rural places too through, for example, providing essential services and infrastructure to enable rural regions to remain 'liveable places'. New planetary rural geographies extend early thinking on rural–urban experiments and sustainable place-making, pioneered by food networks (Marsden et al., 2020: 204), to include energy, conservation, environmental amenities, and 'one health'.

Conclusion

In this paper, we have called for planetary rural geographies that recognise the interdependence of rural and urban on a global scale, but focuses on the specific roles that rural spaces, practices, and people play in planetary systems, and hence in responses to planetary crises. In this framing, planetary rural geographies are a way of engaging with and studying a changing world, rather than an

attempt to categorise or isolate spaces or processes. The approach is intended to open up not close down theoretical pluralism, including theoretical insights from the majority world. It is in this sense that planetary rural geographies are counterposed to the thesis of planetary urbanisation. Planetary rural geographies recognise global rural–urban interconnectivities and interdependencies and the introduction of 'urban' elements into rural places, but the approach rejects implications that the rural has been subjugated to the rural, or that it can be understood through a western-centric 'urban theory without a boundary'. As such, we concur with critiques of planetary urbanisation that have drawn attention to parallel and persistent processes of ruralisation, but argue that these counternarratives have not gone far enough in embracing the potential of planetary thinking, remaining too fixated on human actors.

Our perspective on planetary rural geographies recognises the rural to be the contingent and complex product of multispecies worlding and entanglements with the vibrant materialities of earth, air, water, mineral resources, and the like. Rather than the exploitation of these resources being driven by urban agency and urban interests, as the planetary urbanisation thesis suggests, we contend that capacities they create to supply food, energy, raw materials, and so on for an urbanising global population emerge from situated interactions between diverse entities that occur in rural spaces (see also Woods et al., 2021). Moreover, the 'ruralness' of these processes and the resulting assemblages is defined not only by their geographical location, but because they have been socially constructed and coded as 'rural' by discourses that are deeply embedded in many cultures around the world.

From this view, understanding the 'rural' is intrinsic to understanding planetary crises, from climate change to biodiversity loss to food security to energy resilience to managing pandemics. Rural economies and societies have historically been constructed on interactions with the more-than-human world through farming, mining, forestry, and other primary industries, which have enabled the rise of urbanisation but which have also through unintended effects contributed to planetary crises, for instance, in carbon or methane emissions from agriculture, or the propagation of new pathogens. Some of the resulting crises are manifested in rural spaces, but they spread and leach into cities, in a form of malign ruralisation. Actions to address crises frequently, in Latourian terms, involve propositions that reconfigure rural assemblages and challenge deeply embedded notions of what it means to be rural, prompting emotionally driven resistance. Yet, rural actors are also developing alternative propositions for planetary futures, for example through regenerative agriculture or social experiments for sustainable livelihoods, which come from the rural rather than being imposed on it. As such, the planetary rural is a space of crisis, a space of conflict, and a space of hope.

Studies of planetary rural geographies need to engage with each of the dimensions, building insights into planetary crises that cannot be achieved through merely extending urban theory, but which require engaging with rural theory and the rich threads of debates in rural geography and related disciplines. Planetary rural geographies should be approached through a relational ontology, recognising the more-than-human constitution of spaces we label as 'rural' and 'urban' as well as the complex horizontal and vertical global interconnections of rural and urban, place and planet. From this perspective, our approach rejects the rigid understanding of the rural–urban dichotomy and argues for the co-evolving nature of rural–urban relations. Our propositions are not dismissive of urbanisation but are attentive to the ever-changing trajectories of rural–urban relations. At the same time, our analysis of planetary rural geographies should be open to epistemic pluralism, including a decentring of western or Anglophone theories and concepts to embrace a truly planetary perspective on a precarious world where dynamics of urbanisation and ruralisation go hand in hand.

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ORCID iDs

Chi-Mao Wang https://orcid.org/0000-0002-5125-230X
Michael Woods https://orcid.org/0000-0003-3813-4138

References

Abramson DB (2020) Ancient and current resilience in the Chengdu Plain: Agropolitan development re-'revisited'. *Urban Studies* 57(7): 1372–1397.

Aguiar D, Ahmed Y, Avcı D, et al. (2023) Transforming critical agrarian studies: solidarity, scholar-activism and emancipatory agendas in and from the Global South*. *The Journal of Peasant Studies* 50(2): 758–786.

Anderson NM, Ford RM and Williams KJH (2017) Contested beliefs about land-use are associated with divergent representations of a rural landscape as place. *Landscape and Urban Planning* 157: 75–89.

Batel S and Kupers S (2022) Politicizing hydroelectric power plants in Portugal: Spatio-temporal injustices and psychosocial impacts of renewable energy colonialism in the Global North. *Globalizations*. early view online.

Beacham J (2018) Organising food differently: Towards a more-than-human ethics of care for the Anthropocene. *Organization* 25(4): 533–549.

Beckert S (2014) *Empire of Cotton : A Global History*. New York: Vintage.

Bennett J (2010) *Vibrant matter : A Political Ecology of Things*. Durham, NC: Duke University Press.

Borras SM, Franco JC, Isakson SR, et al. (2016) The rise of flex crops and commodities: Implications for research. *Journal of Peasant Studies* 43(1): 93–115.

Brad A, Schaffartzik A, Pichler M, et al. (2015) Contested territorialization and biophysical expansion of oil palm plantations in Indonesia. *Geoforum; Journal of Physical, Human, and Regional Geosciences* 64: 100–111.

Brenner N (2013) Theses on urbanization. *Public Culture* 25(1): 85–114.

Brenner N (2014) Introduction: Urban theory without an outside. In: Brenner N (eds) *Implosions/Explosions*. Berlin: Jovis, 16–30.

Brenner N (2018) Debating planetary urbanization: For an engaged pluralism. *Environment and Planning D: Society and Space* 36(3): 570–590.

Brenner N and Schmid C (2014) Planetary urbanization. In: Brenner N (eds) *Implosions/Explosions*. Berlin: Jovis, 160–163.

Brenner N and Schmid C (2015) Towards a new epistemology of the urban? *City* 19(2–3): 151–182.

Bresnihan P and Brodie P (2021) New extractive frontiers in Ireland and the moebius strip of wind/data. *Environment and Planning E-Nature and Space* 4(4): 1645–1664.

Brook I (2018) Restoring or re-storying the lake district: Applying responsive cohesion to a current problem situation. *Environmental Values* 27(4): 427–445.

Bryant CJ and van der Weele C (2021) The farmers' dilemma: Meat, means, and morality. *Appetite* 167: Article 105605.

Buckley M and Strauss K (2016) With, against and beyond Lefebvre: Planetary urbanization and epistemic plurality. *Environment and Planning D: Society and Space* 34(4): 617–636.

Buller H and Roe E (2018) *Food and Animal Welfare*. London: Bloomsbury Academic.

Burton RJF (2019) The potential impact of synthetic animal protein on livestock production: The new "war against agriculture"? *Journal of Rural Studies* 68: 33–45.

Bustos-Gallardo B, Bridge G and Prieto M (2021) Harvesting lithium: Water, brine and the industrial dynamics of production in the Salar de Atacama. *Geoforum; Journal of Physical, Human, and Regional Geosciences* 119: 177–189.

Butt A and Taylor E (2018) Smells like politics: Planning and the inconvenient politics of intensive peri-urban agriculture. *Geographical Research* 56(2): 206–218.

Buttel FH and Newby H (1980) *The Rural Sociology of the Advanced Societies : Critical Perspectives*. London: Croom Helm.

CGIAR (2018) *Big facts on climate change, agriculture and food*. Available at: https://ccafs.cgiar.org/bigfacts.

Chaves M, Macintyre T, Verschoor G, et al. (2018) Radical ruralities in practice: Negotiating buen vivir in a Colombian network of sustainability. *Journal of Rural Studies* 59: 153–162.

Chlouba V and He J (2021) Colonial legacy, private property, and rural development: Evidence from Namibian countryside. *Economic History of Developing Regions* 36(1): 30–56.

Clark N and Szerszynski B (2021) *Planetary Social Thought : The Anthropocene Challenge to the Social Sciences*. Cambridge: Polity Press.

Cloke P (1989) Rural geography and political economy. In: Peet R and Thrift N (eds) *New Models in Geography: The Political Economy*, Vol 1. London: Unwin Hyman, 18–28.

Cloke P (2006) Conceptualizing rurality. In: Cloke P, Marsden T and Mooney PH (eds) *Handbook of Rural Studies*. London: Sage, 18–28.

Cusworth G, Garnett T and Lorimer J (2021) Agroecological break out: Legumes, crop diversification and the regenerative futures of UK agriculture. *Journal of Rural Studies* 88: 126–137.

Cusworth G, Lorimer J, Brice J, et al. (2022) Green rebranding: Regenerative agriculture, future-pasts, and the naturalisation of livestock. *Transactions of the Institute of British Geographers* 47(4): 1009–1027.

Drenthen M (2018) Rewilding in layered landscapes as a challenge to place identity. *Environmental Values* 27(4): 405–425.

Dunlap A (2020) Bureaucratic land grabbing for infrastructural colonization: Renewable energy, L'Amassada, and resistance in southern France. *Human Geography* 13(2): 109–126.

Ebhuoma OO, Gebreslasie M, Ebhuoma EE, et al. (2022) The future looks empty': Embodied experiences of distress triggered by environmental and climatic changes in rural KwaZulu-Natal, South Africa. *GeoJournal* 87(4): 3169–3185.

Elden S and Morton AD (2022) *From the Rural to the Urban and the Production of Space. Foreword to H. Lefebvre (2022)*. Minneapolis: University of Minnesota Press.

Escobar A (2020) *Pluriversal Politics : The Real and the Possible*. Durham: Duke University Press.

Farrugia D, Hanley J, Sherval M, et al. (2019) The local politics of rural land use: Place, extraction industries and narratives of contemporary rurality. *Journal of Sociology* 55(2): 306–322.

Forget M and Bos V (2022) Harvesting lithium and sun in the Andes: Exploring energy justice and the new materialities of energy transitions. *Energy Research & Social Science* 87: Aritcle 102477.

Friedmann J and Douglass M (1978) Agropolitan development: Towards a new strategy for regional planning in Asia. In: Fu-Chen L and Kamal S (eds) *Growth Pole Strategy and Regional Development Policy*. Oxford: Pergamon Press, 163–192.

Fulkerson GM and Thomas AR (2019) *Urbanormativity : Reality, Representation, and Everyday Life. Studies in Urban–Rural Dynamics*. Lanham: Lexington Books. 1 online resource.

Gammage B, Pascoe B, Neale M, et al. (2021) *Country : Future Fire, Future Farming*. Port Melbourne, Victoria: Thames & Hudson.

Gillen J, Bunnell T and Rigg J (2022) Geographies of ruralization. *Dialogues in Human Geography* 12(2): 186–203.

Gkartzios M, Toishi N and Woods M (2020) The language of rural: Reflections towards an inclusive rural social science. *Journal of Rural Studies* 78: 325–332.

Gois GR (2022) Nature, agriculture, and black spacemaking in Serra dos Tapes, Brazil. *Annals of the American Association of Geographers*. early view online.

Grange K and Gunder M (2019) The urban domination of the planet: A Rancierian critique. *Planning Theory* 18(4): 389–409.

Gudynas E (2011) Buen vivir: Today's tomorrow. *Development* 54(4): 441–447.

Guegan JF, Ayouba A, Cappelle J, et al. (2020) Forests and emerging infectious diseases: Unleashing the beast within. *Environmental Research Letters* 15: Article 083007.

Guthman J (2019) *Wilted : Pathogens, Chemicals, and the Fragile Future of the Strawberry Industry*. Oakland, Calif.: University of California Press.

Gyapong AY (2021) Land grabs, farmworkers, and rural livelihoods in West Africa: Some silences in the food sovereignty discourse. *Globalizations* 18(3): 339–354.

Halfacree K (2007) Trial by space for a 'radical rural': Introducing alternative localities, representations and lives. *Journal of Rural Studies* 23(2): 125–141.

Haraway DJ (2016) *Staying with the Trouble : Making Kin in the Chthulucene*. Durham: Duke University Press.

He S and Zhang Y (2022) Reconceptualising the rural through planetary thinking: A field experiment of sustainable approaches to rural revitalisation in China. *Journal of Rural Studies* 96: 42–52.

Head L (2016) *Hope and Grief in the Anthropocene: Reconceptualising Human-Nature Relations*. Abingdon, Oxon; New York, NY: Routledge, Taylor & Francis Group.

Hein J, Faust H, Kunz Y, et al. (2018) The transnationalisation of competing state projects: Carbon offsetting and development in Sumatra's coastal peat swamps. *Antipode* 50(4): 953–975.

Heley J and Jones L (2012) Relational rurals: Some thoughts on relating things and theory in rural studies. *Journal of Rural Studies* 28(3): 208–217.

Hinchliffe S, Bingham N, Allen J, et al. (2017) *Pathological Lives : Disease, Space and Biopolitics*. Chichester, West Sussex: Wiley Blackwell.

Hoggart K (1990) Let's do away with rural. *Journal of Rural Studies* 6(3): 245–257.

Kabra A and Das B (2022) Aye for the tiger: Hegemony, authority, and volition in India's regime of dispossession for conservation. *Oxford Development Studies* 50(1): 44–61.

Kansanga MM and Luginaah I (2019) Agrarian livelihoods under siege: Carbon forestry, tenure constraints and the rise of capitalist forest enclosures in Ghana. *World Development* 113: 131–142.

Kapsar KE, Hovis CL, da Silva RFB, et al. (2019) Telecoupling research: The first five years. *Sustainability* 11: Article 1033.

Kelly-Reif K and Wing S (2016) Urban-rural exploitation: An underappreciated dimension of environmental injustice. *Journal of Rural Studies* 47: 350–358.

Kenney-Lazar M, Suhardiman D and Dwyer MB (2018) State spaces of resistance: Industrial tree plantations and the struggle for land in Laos. *Antipode* 50(5): 1290–1310.

Kohn E (2013) *How Forests Think : Toward an Anthropology Beyond the Human*. Berkeley: University of California Press.

Kojola E (2019) Bringing back the mines and a way of life: Populism and the politics of extraction. *Annals of the American Association of Geographers* 109(2): 371–381.

Kok M, Immovilli M, Fransen A, et al. (2022) *Exploring nature-positive pathways: A contribution to the implementation of the CBD Post-2020 Global Biodiversity Framework-Full report.* The Haguel PBL publication number:5105: PBL Netherlands Environmental Assessment Agency.

Krause M (2013) The ruralization of the world. *Public Culture* 25(2): 233–248.

Krzywoszynska A (2019) Caring for soil life in the Anthropocene: The role of attentiveness in more-than-human ethics. *Transactions of the Institute of British Geographers* 44(4): 661–675.

Kurki M (2022) Relational revolution and relationality in IR: New conversations. *Review of International Studies* 48(5): 821–836.

Latour B (2004a) How to talk about the body? The normative dimension of science studies. *Body & Society* 10(2–3): 205–229.

Latour B (2004b) *Politics of Nature: How to Bring the Sciences into Democracy, Trans*. Cambridge, MA: Harvard University Press.

Lazarus ED (2014) Land grabbing as a driver of environmental change. *Area* 46(1): 74–82.

Le Billon P (2021) Crisis conservation and green extraction: Biodiversity offsets as spaces of double exception. *Journal of Political Ecology* 28: 864–888.

Lefebvre H (1970) *La Révolution Urbaine*. Paris: Gallimard.

Lefebvre H (2003) *The Urban Revolution*. Minneapolis: University of Minnesota Press.

Lefebvre H (2014) Dissolving city, planetary metamorphosis. In: Brenner N (eds) *Implosions/Explosions*. Berlin: Jovis, 569–570.

Lefebvre H (2022) *On the Rural : Economy, Sociology, Geography*. Minneapolis: University of Minnesota Press.

Le Heron RB, Campbell H, Lewis N, et al. (2016) *Biological Economies : Experimentation and the Politics of Agri-Food Frontiers. Routledge Studies in Food, Society and Environment*. London: Routledge, 1 online resource.

Liu JG, Hull V, Batistella M, et al. (2013) Framing sustainability in a telecoupled world. *Ecology and Society* 18(2): Article 26.

Liu XJ and Zhang FS (2011) Nitrogen fertilizer induced greenhouse gas emissions in China. *Current Opinion in Environmental Sustainability* 3(5): 407–413.

Lorenz C, Lage MD and Chiaravalloti F (2021) Deforestation hotspots, climate crisis, and the perfect scenario for the next epidemic: The Amazon time bomb. *Science of the Total Environment* 783: Article 147090.

Lorimer J (2020) *The Probiotic Planet : Using Life to Manage Life*. Minneapolis: University of Minnesota Press.

Lorimer J and Driessen C (2013) Bovine biopolitics and the promise of monsters in the rewilding of Heck cattle. *Geoforum; Journal of Physical, Human, and Regional Geosciences* 48: 249–259.

Lunstrum E (2016) Green grabs, land grabs and the spatiality of displacement: Eviction from Mozambique's Limpopo National Park. *Area* 48(2): 142–152.

Lunstrum E, Bose P and Zalik A (2016) Environmental displacement: The common ground of climate change, extraction and conservation. *Area* 48(2): 130–133.

Magnusson W and Shaw K (2003) *A Political Space : Reading the Global Through Clayoquot Sound*. Minneapolis, Minn; London: University of Minnesota Press.

Marques B, Freeman C, Carter L, et al. (2021) Conceptualising therapeutic environments through culture, indigenous knowledge and landscape for health and well-being. *Sustainability* 13: Article 9125.

Marsden T, Lamine C and Schneider S (2020) *A Research Agenda for Global Rural Development*. Cheltenham: Edward Elgar.

Mason K and Milbourne P (2014) Constructing a 'landscape justice' for windfarm development: the case of Nant Y Moch, Wales. *Geoforum* 53: 104–115.

Masse F (2016) The political ecology of human-wildlife conflict: Producing wilderness, insecurity, and displacement in the Limpopo National Park. *Conservation & Society* 14(2): 100–111.

Maye D, Coles B and Evans D (2022) Food geographies 'in,' 'of' and 'for' the Anthropocene: Introducing the issue and main themes. *Geographical Journal* 188: 310–317.

Maye D, Fellenor J, Potter C, et al. (2021) What's the beef?: Debating meat, matters of concern and the emergence of online issue publics. *Journal of Rural Studies* 84: 134–146.

Mayer A (2022) Who is to blame? Nostalgia, Partisanship, and the death of coal. *Environmental Sociology* 8(4): 471–483.

McGee TG (1991) The emergence of desakota regions in Asia: Expanding a hypothesis. In: Ginsburg NS, Koppel B and McGee TG (eds) *The Extended Metropolis: Settlement Transition in Asia, Ginsburg*. Honolulu: University of Hawaii Press, 3–25.

McGregor A and Houston D (2018) Cattle in the Anthropocene: four propositions. *Transactions of the Institute of British Geographers* 43(1): 3–16.

Merrifield A (2013) *The Politics of the Encounter : Urban Theory and Protest Under Planetary Urbanization*. Athens: University of Georgia Press.

Merrifield A (2014) The urban question under planetary urbanization. In: Brenner N (eds) *Implosions/ Explosions*. Berlin: Jovis, 164–180.

Mingorria S (2018) Violence and visibility in oil palm and sugarcane conflicts: The case of Polochic Valley, Guatemala. *Journal of Peasant Studies* 45(7): 1314–1340.

Moellendorf D (2012) Climate change and global justice. *Wiley Interdisciplinary Reviews-Climate Change* 3(2): 131–143.

Monbiot G (2022) *Regenesis : Feeding the World Without Devouring the Planet*. London: Allen Lane.

Moreno-Tabarez U (2020a) Rural pandemic: The afterlives of slavery and colonialism in Costa Chica, Mexico. *Dialogues in Human Geography* 10(2): 230–233.

Moreno-Tabarez U (2020b) Towards Afro-Indigenous ecopolitics. *City* 24(1–2): 22–34.

Murdoch J (2003) Co-constructing the countryside: Hybrid networks and the extensive self. In: Cloke P (eds) *Country Visions*. Harlow: Pearson, 263–282.

Murdoch J and Lowe P (2003) The preservationist paradox: Modernism, environmentalism and the politics of spatial division. *Transactions of the Institute of British Geographers* 28(3): 318–332.

Myland J, Andrews J and Maye D (in press) The big business of sustainable food production and consumption: Exploring the transition to alternative proteins. *Proceedings of the National Academy of Sciences*.

Nagavarapu S and Kumar R (2022) Constituting the norm: Interrogating the Anthropocene through food geographies in the more-than-human worlds of western Avadh, India. *Geographical Journal* 188(3): 370–382.

Nel A (2017) Contested carbon: Carbon forestry as a speculatively virtual, falteringly material and disputed territorial assemblage. *Geoforum; Journal of Physical, Human, and Regional Geosciences* 81: 144–152.

Nolan G (2018) *The Neocolonialism of the Global Village*. Minneapolis: University of Minnesota Press.

Oswin N (2018) Planetary urbanization: A view from outside. *Environment and Planning D: Society and Space* 36(3): 540–546.

Paredes M (2016) The glocalization of mining conflict: Cases from Peru. *Extractive Industries and Society-an International Journal* 3(4): 1046–1057.

Pawson E (2018) *The New Biological Economy : How New Zealanders Are Creating Value from the Land*. Auckland: Auckland University Press. 1 online resource.

Phadke R (2011) Resisting and reconciling big wind: Middle landscape politics in the New American West. *Antipode* 43(3): 754–776.

Robinson J (2022) *Comparative Urbanism: Tactics for Global Urban Studies*. Chichester, West Sussex: John Wiley & Sons.

Root-Bernstein M, Gooden J and Boyes A (2018) Rewilding in practice: Projects and policy. *Geoforum; Journal of Physical, Human, and Regional Geosciences* 97: 292–304.

Roy A (2016) What is urban about critical urban theory? *Urban Geography* 37(6): 810–823.

Scheidel A and Work C (2018) Forest plantations and climate change discourses: New powers of 'green' grabbing in Cambodia. *Land Use Policy* 77: 9–18.

Schindler S (2017) Towards a paradigm of Southern urbanism. *City* 21(1): 47–64.

Schwartzman G (2022) Climate rentierism after coal: Forests, carbon offsets, and post-coal politics in the Appalachian coalfields. *Journal of Peasant Studies* 49(5): 924–944.

Seitzinger SP, Svedin U, Crumley CL, et al. (2012) Planetary stewardship in an urbanizing world: Beyond city limits. *Ambio* 41(8): 787–794.

Sexton AE, Garnett T and Lorimer J (2022) Vegan food geographies and the rise of Big Veganism. *Progress in Human Geography* 46(2): 605–628.

Smith DJ, Helmy M, Lindley ND, et al. (2022) The transformation of our food system using cellular agriculture: What lies ahead and who will lead it? *Trends in Food Science & Technology* 127: 368–376.

Stanek Ł, Schmid C and Moravánszky Á (2014) *Urban Revolution Now : Henri Lefebvre in Social Research and Architecture*. Farnham: Ashgate.

Sykes K (2016) Globalization and the animal turn: How international trade law contributes to global norms of animal protection. *Transnational Environmental Law* 5(1): 55–79.

Szabo A, Shriver TE and Longo S (2022) Environmental threats and activism against extractive industries: The case of gold mining in Rosia Montana, Romania. *Journal of Rural Studies* 92: 26–34.

Tomei J and Helliwell R (2016) Food versus fuel? Going beyond biofuels. *Land Use Policy* 56: 320–326.

Tsing AL (2015) *The Mushroom at the End of the World : On the Possibility of Life in Capitalist Ruins*. Princeton: Princeton University Press.

van der Ploeg JD (2018) *The New Peasantries : Rural Development in Times of Globalization*. London: Routledge.

van der Ploeg JD (2020) Farmers' upheaval, climate crisis and populism. *Journal of Peasant Studies* 47(3): 589–605.

Vogel C and Raeymaekers T (2016) Terr(it)or(ies) of peace? The Congolese mining frontier and the fight against "conflict minerals". *Antipode* 48(4): 1102–1121.

Walker R (2015) Building a better theory of the urban: A response to 'towards a new epistemology of the urban?'. *City* 19(2–3): 183–191.

Wallace RG (2016) *Big Farms Make Big Flu : Dispatches on Infectious Disease, Agribusiness, and the Nature of Science*. New York: Monthly Review Press.

Watkins C (2018) Landscapes and resistance in the African diaspora: Five centuries of palm oil on Bahia's Dende Coast. *Journal of Rural Studies* 61: 137–154.

Wenzel J (2022) Hinterland, underground. In: *Rural Imaginations Conference*, Amsterdam, 4–26 August.

Wheeler R (2017) Reconciling windfarms with rural place identity: Exploring residents' attitudes to existing sites. *Sociologia Ruralis* 57(1): 110–132.

Willett W, Rockstrom J, Loken B, et al. (2019) Food in the Anthropocene: The EAT-Lancet Commission on healthy diets from sustainable food systems. *Lancet* 393(10170): 447–492.

Willis R, Curato N and Smith G (2022) Deliberative democracy and the climate crisis. *Wiley Interdisciplinary Reviews-Climate Change* 13: Article e759.

Woods M (2007) Engaging the global countryside: Globalization, hybridity and the reconstitution of rural place. *Progress in Human Geography* 31(4): 485.

Woods M (2013) Grounding global challenges and the relational politics of the rural. In: Cawley M, Bicalho A and Laurens L (eds) *The Sustainability of Rural Systems*. Galway: Whitaker Institute, 27–35.

Woods M (2003a) Conflicting environmental visions of the rural: Windfarm development in Mid Wales. *Sociologia Ruralis* 43(3): 271–288.

Woods M (2003b) Deconstructing rural protest: The emergence of a new social movement. *Journal of Rural Studies* 19(3): 309–325.

Woods M (2021) Rural-urban linkages. In: Duncan J, Carolan M and Wiskerke JSC (eds) *Routledge Handbook of Sustainable and Regenerative Food Systems*. Abingdon: Routledge, 363–375.

Woods M, Anderson J, Guilbert S, et al. (2012) The country(side) is angry': Emotion and explanation in protest mobilization. *Social & Cultural Geography* 13(6): 567–585.

Woods M, Fois F, Heley J, et al. (2021) Assemblage, place and globalisation. *Transactions of the Institute of British Geographers* 46(2): 284–298.

Wynne-Jones S, Strouts G and Holmes G (2018) Abandoning or reimagining a cultural heartland? Understanding and responding to rewilding conflicts in Wales-the case of the Cambrian Wildwood. *Environmental Values* 27(4): 377–403.

Yenneti K and Day R (2016) Distributional justice in solar energy implementation in India: The case of Charanka solar park. *Journal of Rural Studies* 46: 35–46.

Yiridomoh GY, Sullo C and Bonye SZ (2021) Climate variability and rural livelihood sustainability: Evidence from communities along the Black Volta River in Ghana. *GeoJournal* 86(4): 1527–1543.

Zhu A (2017) Rosewood occidentalism and orientalism in Madagascar. *Geoforum; Journal of Physical, Human, and Regional Geosciences* 86: 1–12.

Zografos C and Martinez-Alier J (2009) The politics of landscape value: A case study of wind farm conflict in rural Catalonia. *Environment and Planning A* 41(7): 1726–1744.