This is a published version of a paper published in **Progress in Human Geography.**

White Rose Research Online URL for this paper:

http://eprints.whiterose.ac.uk/77908/

Paper:

Tornaghi, C (2014) *Critical geography of urban agriculture.* Progress in Human Geography: an international review of geographical work in the social sciences and humanities. 1 - 17 (17).

http://dx.doi.org/10.1177/0309132513512542

Critical geography of urban agriculture

Chiara Tornaghi
University of Leeds, UK

Abstract
Urban agriculture is a broad term which describes food cultivation and animal husbandry on urban and peri-urban land. Grassroots as well as institution-led urban agricultural projects are currently mushrooming in the cities of the Global North, reshaping urban landscapes, experimenting with alternatives to the capitalist organization of urban life and sometimes establishing embryonic forms of recreating the Commons. While this renewed interest in land cultivation and food production is attracting increasing interest in a wide range of disciplines – from planning to landscape and cultural studies – it remains a very marginal and almost unexplored field of human geography. Nonetheless, beyond the rhetoric of sustainability and health, urban agriculture raises several relevant questions of interest for a critical geographer. Starting by drawing a map of concepts and theories available in an interdisciplinary literature, and highlighting fields of possible inquiry, this paper aims to define the scope of and an initial agenda for a critical geography of urban agriculture.

I Introduction

This paper aims to define the scope of – and an initial agenda for – a critical geography of urban agriculture (UA). UA is defined as 'the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities' (Urban Agriculture Committee of the CFSC, 2003:3). It includes small-intensive urban farms, food production on housing estates, land sharing, rooftop gardens and beehives, schoolyard greenhouses, restaurant-supported salad gardens, public space food production, guerrilla gardening, allotments, balcony and windowsill vegetable growing and other initiatives (Hou et al., 2009; Mougeot, 2005; Nordahl, 2009; Redwood, 2008).

UA is a common practice in many cities of the Global South. In the cities of the Global North, people's engagement with food production has been marginalized and limited in ways that vary between countries and cities, with relevant exceptions during world conflicts (e.g. the 'Dig for Victory' campaign). However, we are currently witnessing a great resurgence of UA. The beehive on the roof of Chicago City Hall, food production on urban vacant plots in Detroit, the commercial rooftop growing initiative 'Food from the sky' in London, the UK LandShare

Corresponding author:
School of Geography, University of Leeds, Woodhouse Lane, Leeds LS2 9JT, UK.
Email: c.tornaghi@leeds.ac.uk

movement, the many local groups harvesting plants in public space and distributing the produce (Reynolds, 2008; Tracey, 2007): these are just a few examples of an extraordinary list of visionary and innovative projects promoted by single individuals, community organizations, local councils, universities, charities, cooperatives and social enterprises. Many of these are also exemplary practices explicitly addressing urban food provision and food rights, individual and communal health, urban and peri-urban environmental quality and socio-environmental justice (Sonnino, 2009). Projects like 'P-Patch' in Seattle, 'Growing Power' in Milwaukee or 'DUG' in Denver, for example, combining measures such as the establishment of land trusts, the organization of training programmes and links with existing food outlets, have become reference points for the food justice movement. They have not only been granting access to urban land for the recreational and food production needs of immigrants and other food-insecure populations, but have been systematically challenging the concentration of land, and other inequities embedded in the dominant agriculture and food systems, such as environmental impact, health hazards and the exploitation of workers (Gottlieb and Joshi, 2009: 149).

Some UA projects in post-industrial cities are even playing with the urban form, challenging current land-use management and ownership, reinventing the urban landscape, and experimenting with radical alternatives to the capitalist neoliberal organization of urban life (Tornaghi, 2011, 2012a). An example of this kind is 'Grow Heathrow', a food-growing project on the outskirts of London which represents an innovative example of grassroots-designed sustainable living space and a new urban common. Started during a mobilization against the construction of Heathrow Airport's third runway, the project is located in the derelict greenhouses of a former market garden in the heart of Sipson village. These spaces are now creatively integrating facilities for political meetings and conviviality

with raised beds, camping areas, plant nurseries, bike workshops and cooking.

Some of the changes and claims proposed by these projects – for example, a call for environmentally sound farming practices or land reform which satisfies the need for affordable and accessible cultivable land – have become evident to different governing institutions. In the UK, for example, in March 2010 the Labour government announced that so-called 'under-used and uncared-for land' would be given to local communities in order to help meet the unmet demand of 100,000 people on allotment waiting lists and enable them to grow their own food (Communities and Local Government, 2010). In the same month, a supplementary document to 'Growing in the community' (a well-known guide for allotment officers) was released by the Local Government Association to guide local councils on how to deal with the growing demand for land (Wiltshire and LGA, 2010). This came just days after the London Assembly Planning and Housing Committee published the report 'Cultivating the capital: Food growing and the planning system in London' (LAPHC, 2010). While land has not been distributed, rising pressures to engage with climate change and food security are putting local food-growing and food planning on the agendas of a number of cities.

Urban agricultural practices are being portrayed as benevolent and unproblematic, with the potential to partially solve problems associated with food quality and affordability, reduce ecological footprints, increase community cohesion, achieve greater community resilience and promote urban sustainability. However, many controversial and potentially unjust dynamics lie unexplored.

While many food-growing projects are mushrooming around cities of the Global North, often funded by 'greening' agendas – in what Jackson (2009) has termed the Keynesian 'Green New Deal' – or health preventative measures which form a prelude to conspicuous public budget cuts, we know very little of how effectively these

initiatives are achieving their aims. How do they contextually fit in the overall geography of austerity, selling of council land and cuts to council budgets? Is access to urban land for food-growing guaranteed across the spectrum of society? Are the management arrangements for the use of public land preventing the rise of new forms of enclosures and gentrification? What is the role of UA initiatives in increasing the value and attractiveness of undeveloped inner-city areas? Are the urban food-growing spaces included within urban new developments of a substantial size to feed the new residents, or do they just provide a 'green wash' to revamp the real-estate market? Are the grassroots attempts to establish urban food commons equally well regarded by national and local governments? What role are urban agricultural projects playing in the more regressive cases of rescaling of urban ecological security (Hodson and Marvin, 2009; Whitehead, 2013)? While UA projects undoubtedly provide an opportunity for many urban dwellers to reconnect with food production, we need to scrutinize more closely the way these initiatives are becoming, directly or indirectly, new tools or justifications for a new wave of capital accumulation (new green development), economic-growth-led policies (local food as a tool in city autarky), privatization of the urban realm (Big Society takes over the management of public assets) and disinvestments in disadvantaged neighbourhoods (cuts to health and wellbeing services, public space management, etc.).

If we look carefully, there is already empirical evidence of these forms of socio-environmental injustice taking shape across Europe, but a specific assessment can only be contextual and built on a wider view of regulatory frameworks, the range of policies and the actual engagement of civil society.

The academic community so far has paid little attention to this social practice and its cultural, economic and social dimensions. While a geography of food has consolidated in recent years, particularly within cultural and consumption studies (Atkins and Bowler, 2000; Cook et al., 2008), an analysis of the specific geography of urban food cultivation and its relations with the politics of space is still a neglected field of human and urban geography, with a handful of journal articles as exceptions (Blomley, 2004; Wekerle, 2004).

My aim in this paper is to initiate a *critical* approach to UA which, in continuity with the work of radical scholars on the social production of space (namely Lefebvre, Harvey and Marcuse), and within a political ecology framework, aims to '[expose] the forms of power, exclusion, injustice and inequality' (Brenner, 2009: 200) that frame or that are potentially embedded into these place-making practices and 'to explore the possibility of forging alternatives' (p. 200). While most of the existing literature on the topic has a clear advocacy intent, I am calling for a critical approach which puts UA initiatives in the context of specific sociopolitical (and food) regimes, and investigates the role that they play in the reproduction of capitalism, in the transformation of urban metabolic processes, and in the discursive, political and physical production of new socio-environmental conditions (Heynen et al., 2006; McMichael, 2009). Within this approach, I call for an understanding of how UA initiatives contribute to perpetrate new forms of injustice or open the way to subvert current forms of urbanization through the implementation of new ecologically sound and just forms of living and/or the reconstruction of the urban commons (Hodkinson, 2012).

While UA might be an interesting topic to be investigated from a cultural perspective, my aim here is to stress the importance of an analysis which is 'geographical' in its sensitivities. The starting point for this endeavour is an understanding of existing urbanization in the Global North as a process dominated by capital accumulation which in the past four centuries has appropriated, enclosed and compromised the natural environment, and naturalized the commercialization of

land, depriving human beings of the right to feed themselves through the unconditional use of their surrounding space (Heynen, 2010). Modern urban dwellers, trapped within the chronic insufficiency of tenable urban agricultural land (including allotments and home gardens), unfavourable regulations on animal farming, and the time requirements of waged jobs, are to a great extent subjugated to the industrial agro-food system, commercializing food whose provenance may not be transparent and may not be in line with urban dwellers' ethical views. Western urbanization has not only established a structural dependency on unsustainable forms of exploitation of natural resources (oil extraction, greenhouse gas emissions, massive use of fertilizers and pesticides) to be able to sustain its population (McMichael, 2009; Shiva, 2008; Steel, 2008) but is progressively extending this model across the planet through a new range of forms of dispossession, land enclosures and cheap labour (McMichael, 2012). Within this context, UA not only plays a role in the envisioning of alternative forms of urbanization which reconcile activities of production and reproduction, and break with the urban-rural dichotomy, but may also play a role in the geopolitics of food.

Aware of these dynamics, and acknowledging the complexity of sociopolitical and economic factors which contribute to configure western urban landscapes, I believe we need to develop a critical geography of UA motivated by two sets of reasons. The first is the need to unveil how issues of socio-environmental justice and inequality are embedded in UA as a form of place-making, and systematically explore the spatial opportunities for a radical remaking of the urban. The four parts in section II of this paper will draw on existing literature to call for new analytical endeavours and simultaneously unveiling spheres in which different forms of injustice – either as distributional justice, procedural justice or context-based capability justice (Nussbaum and Sen, 1993) – take place.

The second set of reasons for a critical geography of UA revolves around the major global challenge of food security. In the light of climate change, increased energy costs and demographic pressure on the one hand and financial speculation in food commodities on the other (Kaufman, 2010), governments and city authorities are expecting a significant rise in food prices, if not food shortages. While land grabbing in the Global South is becoming a worrying and fast-growing phenomenon, UA is becoming a compelling field of investigation in search of sustainable alternatives for food security on a planet in which the majority of the population lives in cities. Given the political and strategic role which UA can play in the future, the development of its critical theorization will set the parameters for evaluating what type of initiatives are fit for non-regressive and socially just urban food policies.

To develop this agenda, in the next section I will start by drawing a map of the theoretical contributions currently available in a multidisciplinary perspective for the analysis of UA, identifying their analytical limitations. In section III, I will then more systematically define the scope, questions and research agenda for a critical geography of UA.

II Analysing urban agriculture history and current trends: a multi disciplinary literature

The first and most evident problem when approaching the literature on UA is its overwhelming focus on cities in the Global South: I refer, for example, to the work of Mougeot (2005), Obosu-Mensah (1999) and Redwood (2008). While there is potential to learn from their regulatory frameworks (i.e. the way planning regulations conceive of food production in urban contexts), these contributions concern urban realities quite distant from those characterizing the post-industrial Global North. Not only are Global North and South experiencing

different degrees of population growth and triple crunch effects, they have also different histories of 'eviction' or marginalization of farming from cities, different food consumption styles and a different manifestation of back-to-the-land exodus (Halfacree, 2006; Kaufman and Bailkey, 2000) or, to use an expression of Lefebvre (1991 [1974]), dis-alienation strategies.

A second problem of the existing literature on UA in the Global North is its narrow confinement within disciplinary fields. While social economy, landscape architecture and food planning are the first disciplinary fields to consider UA as a matter of inquiry, the existing contributions are particularly prone to an advocacy attitude which probably helps to bring the issue to the attention of the press, but which reinforces a benign and uncritical approach rather than one which should ultimately inform socio-environmentally just policy-making.

Navigating within the literature it is nonetheless possible to critically explore the field, weaving reconnections, exposing disconnections. In this section I organize my argument along four analytical blocks: (1) the sociopolitical history of the urban form; (2) the multilayered meanings of food-growing which reconnect urban gardening and agriculture; (3) the emerging food system policy field and its dis-connection with food ethics, consumption and land access; and (4) the recent western 'sustainability-environmental turn' which tends to incorporate commoditized versions of urban agricultural practices while perpetrating socio-environmental exclusion. While these four analytical blocks emerge out of a multidisciplinary literature, they will constitute the basis for the geographical configuration of a research agenda on UA which will be outlined in section III of this paper.

I Rise and demise of agriculture in urban contexts: a sociopolitical history

A first step for understanding the conjunctural meaning of UA in cities of the Global North is tracking its rise and demise within the sociopolitical history of urban settlements, its form and management. Why is UA today mainly perceived as a residual practice? How did the space for agricultural practices evolve within planning models and theories, and what happened to their implementation? We learn from historians like Kostof that agricultural activities were at the very core of the foundation itself of new colonies since Greek and Roman times (Kostof, 1991) and several other contributions in the recent book *Gardening*: *Philosophy for Everyone* (O'Brien, 2010a) give a good account of some of the early gardens in Mediterranean and Middle Eastern societies, their productivity, aesthetic and philosophy. Far from being simply an agglomeration of craftsmen, trading businesses and power structures, ancient cities incorporated farmers and farming land (Kostof, 1991). Even in medieval times, when walls and defensive structures left out most of the farming land, agricultural patches were available among the buildings and next to the city walls (Cockrall-King, 2012; Howe et al., 2005; Steel, 2008). Steel (2008) and Van der Schans and Wiskerke (2012) briefly sketch the making of the urban-rural divide in pre-industrial time and the disappearance of intensive farming from cities in connection with transport facilities and the relocation of the agricultural service industry.

What we do not know is how, in specific historical and geographical contexts, urban farming has been banned from urban settlements and how these trends have been resisted and opposed. Pressure of urban development and population growth? Enclosures of common land and dispossession? Enforcement of health and nuisance regulations? Development of national planning laws?

To track this history we need a critical geography of UA which is able to connect at least three disciplinary fields: (1) the history of land tenure regimes from pre-feudal time to modern days, which accounts for land privatization, enclosures of the commons and rural to urban

migrations, on the example of the British history of enclosures and the Diggers movement (Bradley, 2009; Fairlie, 2009); (2) the history of colonialism and imperialism and their impact on specific national agricultural markets, which accounts for transformations in local agricultural systems and urban food provision, as well as for food commodification, changes in families' food allocation and backyard gardening habits; and (3) the history of planning ideas and their specific development into national planning systems, which accounts for application of modernist concepts of health and functionality to urban living space, and for citizens' deprivation of the right to determine the shape and functions of their living environments. The hypothesis is that the specific combination of these three spheres – land tenures, agricultural markets/food regimes and planning systems, can explain to a large extent the contemporary urban form, its functions and the residual space of UA.

Literature on UA has only timidly started to look at these fields and their connections (Van der Schans and Wiskerke, 2012). While there is a recent interest in visionary city models such as Howard's Garden City, searching for sustainable urban settings which incorporate food-growing in urban dwelling (McKay, 2011), we also need to critically assess the responsibilities of utopian city models in the marginalization of UA. It is arguably with the artificial separation of life spheres (i.e. dwelling, working and leisure) in modernist planning ideas that criteria of hygiene and sanitization merged into planning systems and forms of urbanization based on blueprint urban zoning and disempowerment of local communities from place-making. Whether this was due to the original planning model or to its imperfect implementation, the result is that the production of food at the family level is not contemplated and the whole food chain is completely invisible. Henri Lefebvre, back in 1974, highlighted the co-optation of science by the interests of power, and marked the

affirmation of modern planning ideas into his history of spatialization (Lefebvre, 1991 [1974]). In his work he has also made clear the fundamental nature of modern urbanization, its key role in the second circuit of capital and the consequent, ongoing and never-ending alienation of the rural. Neoliberalism has taken this approach forward, promoting and normalizing 'a growth-first approach to urban development' (Peck and Tickell, 2002: 394), which, by its very nature, consolidates the marginalization of urban food production. A contextual sociopolitical history of UA should build on these standpoints.

While western cities were undergoing processes of modernization and renewal organized according to separation and zoning, and were left with a landscape of green spaces made primarily of private home gardens, front lawns, unproductive parks and residual green bits along railways or streets, or in peripheral areas, it is nonetheless during this period that many western cities witnessed a resurgence of food-growing spaces of a different kind. Some of these were predominantly spontaneous and illegal – for example, the patches of land at the periphery of many Italian industrial cities – and represent the fulfilment of land attachment and food-growing habits of workers who moved to the city from rural areas. Most of these insurgent growing spaces have eventually been regularized into public allotment provision after a few decades. In other European contexts internal migration is less central in the establishment of regulated and systematic urban agricultural sites, such as allotments, and these were rather the legacy of wartime food shortages. Some accounts of how these spaces are cultivated today and how their meanings are changing over time have become available in recent years. Crouch and Ward (1988) give us the most complete overview of allotment sites in Europe. Beyond this, we have a few other contributions that help us understand how UA unfolds in contemporary cities: Buckingham (2005) investigates the gendering of allotment tending and

points out a relatively recent increase in women's engagement with this practice in the UK; Zavisca (2003) gives us an overview of the cultural and political meaning of food cultivation in the peri-urban Russian dachas; and Poole (2006) provides us with a detailed history of allotment institutionalization in the UK. A little more prolific is the literature on American 'community gardens' – spaces generally more similar to allotment sites than to genuinely collectively run spaces – of which Hou et al. (2009) and Lawson (2005) are the most substantial contributions.

However, beyond allotment gardening, signs of UA are increasingly appearing in front lawns, kitchen gardens, pavement verges, railway embankments and other interstitial spaces through guerrilla gardening and more or less conflictual projects reclaiming the land for food production. While the guerrilla gardening movement has his own manifesto which tracks the visions and values of a pioneering practice of land reappropriation and citizens' interventions in the urban environment (McKay, 2011; Reynolds, 2008; Tracey, 2007), we still do not have a wider knowledge of the strategies, political manifestos and cultural meanings of the multitude of urban agricultural projects that challenge the urban form and that could be inscribed within the constellation of the food justice movement (for a few exceptions, see Block et al., 2012; Gottlieb and Joshi, 2010; Tornaghi, 2011, 2012b; Wekerle, 2004). In a recent contribution, Haeg (2010) looks into the meaning of front lawns in American suburbs, tracking their origins in the English front garden, and details the first experiments in edible estates in the American urban sprawl. Despite being more like a catalogue of an art intervention rather than an academic inquiry into UA, the book starts to question the legacy of urban models on urban and suburban forms of dwelling and is a good start for exploring how food-growing initiatives are shaped by material opportunities and the cultural background embedded in the existing urban form.

A transversal reading of this literature, I argue, and a interdisciplinary research into land enclosures, food regimes and planning systems, should be the first step for a critical geography of UA and could help to track and expose the trajectory that has led to overregulated land management, uneven and unjust land distribution, and the forms of people's disempowerment which have contributed to the current land cultivation setting and the autocracy of the urban form.

2 The blurred line between leisure gardening and food cultivation

A second area of inquiry which needs development in the direction of a critical geography revolves around the cultural and political meaning of gardening. Approaching the field from this perspective we encounter a greater amount of literature, mainly among gardening books and health policy reports, which give accounts of the increased interest in the promotion of open gardens and garden visiting, such as the new rhetoric of ludic and pedagogic gardens in France (Jones, 2005), as well as the promotion of gardening within educational institutions or social services programmes (Bock and Caraher, 2012). These contributions, however, tend to focus more on the benefits of experiencing an established garden than on the dynamics of its establishment. We therefore know very little of the drivers of this increasingly popular practice, the enabling and constraining role of local institutions in different policy fields (not only health, but more specifically the environment and planning sectors), the changing demographics of the actors involved as promoters and as users, their enacted or inherited land allocation models, the use they actually make of the produce, the intermingling of (and sometimes tension between) leisure and economical needs, mental benefits and physical health, environmental ethics and social justice principles, their food preferences and environmental 'aesthetics'.

While these elements are interwoven in practice, the literature tends to split along a line which separates gardening from agriculture, and urban gardens from the various other forms in which urban agricultural practices take shape (indoor growing, vertical and rooftop gardens, peri-urban farming, etc.). This division, along with the use of an implicit definition of 'garden' as either a private enclosed garden or a public park, leaves out of the picture urban agricultural uses of liminal spaces, and so not only entails a disconnection in the recursive model of space and society, leaving unquestioned the sociopolitical history of the urban form and disregarding the empowering element of land access, but also tends to ignore the lines along which alternative aesthetics, leisure practices or radical political projects develop through the means of UA, reimagining and reinventing the urban form and its management (Tornaghi, 2011). To borrow an expression from Hodgkinson (2005: 67), 'in maintaining your own patch of earth, you escape the world of money, governments, supermarkets … you have escaped the constriction of the wage economy … digging is anarchy … anarchy in action'. The pioneering 'Incredible Edible Todmorden' (UK), with its cultivated street verges and small patches of land in cemeteries, school yards and police stations, is one of the most emblematic cases in this field, demonstrating that mindset change can start from an act of guerrilla gardening in a municipal flowerbed, and urban food production, reconciling gardening and agriculture, can become mainstream in public space management.

I am therefore advocating a transdisciplinary and analytical reconnection of the analysis of gardening for its leisure, educational and therapeutic benefits on the one hand (i.e. in Bhatti and Church, 2000; Davis and Middleton, 2012; Jamison, 1985; Jones, 2005; O'Brien, 2010b; Wakefield et al., 2007) and the spatiality of radical, informal, grassroots practices of contestation, land appropriation, food sovereignty, back-to-the-land movements and recreation of

commons on the other (Blomley, 2004; Federici and Haiven, 2009; Halfacree, 2006; Kaufman and Bailkey, 2000; Pasquali, 2006).

A line of reconnection could, for example, explore the space of radical urban agricultural alternatives within mainstream forms of leisure gardening, landscape aesthetics and the management of the urban natural environment. To what degree, for example, have permaculture principles for agroforestry and edible forest gardens permeated public urban park design? To what extent are agroecology principles being spread through schools' and health services' gardens? Can we identify emerging forms of re-commoning urban land within alternative approaches to leisure and health, such as in public healing gardens?

3 From food ethics to urban agricultural systems: reconnecting consumption patterns and land access

A third area of relevance for a critical geography of UA emerges at the intersection of several well-developed analytical streams around ethical foodscapes (Morgan, 2009), food ascetics (Osti, 2006), alternative food networks (Harris, 2009) and more generally a geography of food (Cook et al., 2008). While these contributions are extremely interesting for an understanding of the market relations around smallholdings and urban food producers, most of this literature tends to ignore emerging urban agricultural practices and their embeddedness in wider ethical views of which consumption is just one end. How are urban agricultural practices effectively changing the consumption patterns of their activists? What is the causal role of land access and environmental ethical positions in determining consumption choices? There are of course a few exceptions to the mainstream food literature approach, such as works by Cockrall-King (2012), Kneafsey et al. (2008) and Steel (2008), which provide tentative analysis of several forms of reconnection between producers and consumers. However, when

it comes to understanding the current consumption models which lead towards poor diets or disconnection from food production, these studies tend to focus mainly on the industrialization of agriculture and to ignore the enabling and constraining effects of access to land or community gardens in consumption patterns and choices. The ongoing history of urban development, land enclosure, land struggles and land claims is usually left out of the picture. However, recent research on UA is showing a very strong connection between urban agriculturalists and the activists of food ethics/food sovereignty movements (Gottlieb and Joshi, 2010; Haiven, 2009; Tornaghi, 2011). A disconnection between land access, food production and food consumption patterns can also be observed within the policy field. While urban food-growing is present in more than one policy document in cities like London, Bristol or Brighton, there are local administrations where this focus is very patchy. Take the example of Leeds, in the UK: while the council is actively promoting UA by making park land available to community groups, its climate change strategy does not mention food waste, food production and urban food allocation strategies. Within a society used to separating gardening as a leisure activity and agriculture as a profession to which food production is delegated entirely, this disconnection is not surprising. UA is still very little understood as something which has to do with the food we eat. In the same light we can read two documents – 'Land use futures' and 'Global food and farming futures' – recently released by Foresight (2010, 2011), the research and consultancy agency commissioned by the UK government: UA does not appear even as a remote possibility.

Nonetheless there are a number of recent UA initiatives, even promoted by local government officials, as well documented by Nordahl (2009), which are motivated by food ethics and a commitment to food justice, and which are fighting food deserts and urban poverty by initiating urban agricultural projects in interstitial urban sites. Lyson (2004) points out the role community and urban gardens play not only in re-skilling and employment opportunities, but as nurturing devices for rebuilding vital communities and community-led food and agriculture systems. In the same vein is the work of the Chicago Food Policy Advisory Council, which according to Allen (2010) is working around urban farming as a 'key in the reclamation of an Earth- and ecology-based value system', where communities are involved in producing and distributing their own food, and their sovereignty over land and water is the main principle in making the project work (p. 140). While these are all excellent examples of projects and policies able to link an ethical approach to food production, allocation and consumption with the basic starting point of land access and the establishment of UA projects, the connection (and causal effects) between availability of land and the development of an ethic of food is generally barely a matter of inquiry within these analytical contributions.

A critical geography of UA would therefore not only complement a geography of food and studies on food cultures and consumption, but also emerge as a promising field for exploring the generative potential of urban environments – and UA projects in particular – in creating the material and educational opportunities for becoming re-activators of reconnections between food production, ethics and consumption.

This stream would also point towards the need for more integrated and interdisciplinary work between the fields of food planning, urban planning and land rights to enable the construction of forward-looking urban agricultural systems, in the direction of ecological intensification which Bohn and Viljoen (2005) have depicted well.

4 The 'green turn' and the place of urban agriculture

A fourth area of inquiry has to do with the relationship between UA and the rhetoric of the sustainable city. Most of these urban agricultural

practices – either grassroots or institutional – are emerging in dialogue with – or as a challenge to – the current western rhetoric on the sustainable city. We could refer to these discourses as a new 'green turn' or 'ecological turn' that appear to be at least as pervasive as the 'cultural turn' in urban policies, in place-making and built-environment studies, in university curricula and in media and popular discourses. They generally encompass categories such as ecological footprints, community resilience and energy efficiency.

Among the most likely users of these discourses are the promoters of so-called 'sustainable development' and urban ecological security. Many new eco-settlements and buildings, for example, integrate some allotment facilities or growing spaces, although these are sometimes very limited or merely symbolic. An example is the 'One Brighton' new development, in central Brighton (UK), which has a few 1-m^2 roof allotments (rented for something like 250 times the price of an equivalent size of land in a municipal allotment), and a number of landscaped green spaces which recall the sharp description of Clément (2005: 75), where nature is treated as an object which can be handled, shaped and machinated without any clue about its living essence and biological balance.

Equally embedded in the rhetoric of sustainable living are many eco-towns, (like the four British ones currently under construction) planned to be built on mostly green land, which trade better-insulated homes with cultivable roof gardens or patches of land for a more intensive car-dependent living.

On a more positive note, we see a wide range of community gardens and allotments, permaculture sites and landshare projects within the Transition Town network that all variously refer to more socially just and/or environmentally sustainable forms of urban living (Girardet, 2006). While many of these are certainly more critical of the 'green wash' of sustainable developers and are genuinely seeking to reduce ecological

footprints (Pinkerton and Hopkins, 2009) or increase community cohesion (Mares and Peňa, 2010), a vast amount of them tend rather to represent forms of small-scale economic 'entrepreneurialism' within the available pots of charity and lottery funds, primarily with the intention of seeking an income in times of financial crisis, rather than promoting radically alternative forms of urban living. This is often the case within artist-led projects, which are now turning their ability to challenge, surprise and engage the public into gardening projects that are better funded than the performing and public arts. When we assess these initiatives more substantially for the type of sustainability that they pursue, a series of issues emerge. The first one is the localism/self-sufficiency agenda – as in the transition initiatives described by Mason and Whitehead (2012) – which underestimate the potential benefits of an alliance with international fair trade to defeat the primacy of the agro-food industry; or, as in the case of most public policy in this field, look into food security and food self-sufficiency not with a view to making a fairer use of the planet's resources, but more simply to ensure that the underlying growth-oriented economic model can continue its smooth reproduction.

Another danger is the risk of becoming trapped in planning models, such as the low-density garden city model or its recent revisitation as agrarian urbanism (Duany, 2011; Van der Schans and Wiskerke, 2012) – which, on a planet with a fast-growing population, could never represent a living solution for everyone, but rather a privilege for a few. The concept of density itself is in fact a matter of debate within the advocates of the UA-led ecological intensification (Viljoen, 2005).

As critical geographers we are called to inquire deeper into what models of justice and sustainability these initiatives are based on. While many of these food-growing projects are actually providing access to land for some social groups, this does not always translate into a fairly accessible resource for the whole population,

lacking therefore in terms of distributional justice. Nor does this new provision always embed an ethic of procedural justice, that is to say a facilitated wider public participation in the process of defining the scale and location of these newly available food-growing spaces and projects. Following Whitehead (2009) we could go even further, and try to assess the extent to which they promote an embodied capability through a 'ready-to-hand' space which improves socio-environmental justice in the everyday life of urban communities.

The wide critical literature on urban metabolism (Broto et al., 2011; Gandy, 2004; Schneider and McMichael, 2010), the production of nature (Swyngedouw, 2009), ecological gentrification (Dooling, 2009) and eco-imperialism (Shiva, 2008) framed within a cultural political ecology approach (Heynen and Swyngedouw, 2003; Heynen et al., 2006) is an excellent starting point to build a critical geography of UA which looks beyond the western, pro-growth and market-driven definition of sustainability, and investigate alternative paradigms such as agroecology and agroforestry (Gliessman, 2012) and its suitability for an urban context.

III Towards a critical geography of urban agriculture: a research agenda

Drawing on the existing literature and the range of emerging urban agricultural practices, in the previous section we identified four areas of inquiry and signification which pose a number of questions. Building on these four analytical areas, I would like now to draft a research agenda for a critical geography of UA, inspired by Marcuse's proposition for a critical inquiry into the right to the city: 'expose, propose, politicize' (Marcuse, 2009).

We need a geography of UA which goes beyond the naive and unproblematic representation of urban food production practices, able to expose the socio-environmental exclusionary dynamics which are embedded into them. Given the nature of these practices, we also need a body of theory which is able to engage in a *transdisciplinary* dialogue with the field of policy-making and civil society to propose alternatives and repoliticize a neglected field of urban living. By 'transdisciplinarity' (Moulaert et al., 2013) I mean a practice of inquiry which goes beyond academic disciplines and aims to create a dialogue with civil society organizations to forge alternatives.

The discussion of the existing literature on UA across different disciplinary fields, which I have outlined above, has identified the forms of disempowerment, conceptual and practical disconnections, and rhetorical discourses which limit and constrain the radical potential of UA as a vector of change. From this discussion we can build a tentative research agenda for a critical geography of UA.

A first research area could be an exploration of the cultural and political meanings of urban agricultural initiatives in different historical conjunctures and urban contexts in the Global North. This research track should first look for the specific forms of land regulation and ownership which determine the set of constraints and opportunities which shapes the initiatives in their contexts, and then focus on the analysis of emerging urban agricultural practices, exposing their objectives, values, meanings and claims. Its driving questions should be: why is UA a growing practice at the current time? What kinds of UA projects are emerging? Who has access to the land? What are the objectives of UA practitioners? Are they driven by material need (recession, food price hikes, poverty, etc.), economic self-interest (business opportunity) and/or environmental concerns (food miles, climate change)? Or is this a deeper manifestation of urban life distress or the search for new community ties?

The main goal of this first track should be the *exposition* of the link between the specific contextual sociopolitical arrangements of the host

society, including its governance, food regimes and mainstream economic structure, and the goals of urban agricultural projects in relation to – or detachment from – them. In short, the specific place of UA initiatives within a cultural political ecology analysis.

Framing the analysis in the structure-agency debate and theoretical approaches of political ecology, this research area could extend its scope identifying the specific policy challenges that urban agricultural projects raise, such as the current mechanisms for land allocation and the current configuration of land distribution, the competing claims for land, or the externality effects on the environment. Crucial questions will be: how is UA conceptualized in the political sphere? What role does it play in the arguments of dismantling the welfare state, through the forms of self-sufficiency and new localism? How are these views influencing the understanding of UA as an emerging multifaceted 'urban culture'? What role does it play in the current restructuring and rescaling of urban ecological security and in the changing geopolitical configurations between cities and countries?

Further to a location in context, a second suggested research stream is a systematic work of exposure of the socio-environmental injustice and exclusionary dynamics in place within urban agricultural initiatives. The focus of this research area should be the understanding of the potential – or actually occurring – exclusionary and inclusionary dynamics of UA; for example, the extent to which they promote social equality, socio-environmental justice, poverty alleviation or community participation. While these questions might seem to fall outside the remit of a geographical approach, I believe this second line of inquiry can show the role of UA in tackling specific localized urban problems. Digging into the rhetoric of sustainability and inclusion, the main driving questions will be: how are social cohesion and social exclusion promoted and alleviated through UA? What is

the potential for food-growing in the city? What productivity rates, skills and infrastructures can make UA a key tool for community resilience to food deserts, food poverty and to the current economic crisis? While I do not believe the solutions to these problems – nor to the one of ecological security – can and should be sought after through an attempt at self-sufficiency, I do believe that UA intensively practised in an urban environment can create the necessary premises for a serious reconsideration of the structural elements which determine the functional organization of urban space, people's consumption behaviours and their dependency on the current food regimes.

A third research area is interdisciplinary in nature and could bridge reflections on the innovative content of these practices as pioneering new spatial arrangement, forms of land management and urban design on the one hand, and their attempts to experiment with the construction of new social bonds on the other. Looking at the intersection of these two fields – the built and the social environments – this research area would *aim at proposing alternative models for a critical envisioning of post-capitalist, de-growth inspired urban living*. This track would not only offer an overview of projects which are doing UA via alternative forms of land management (i.e. new urban commons and community land trusts; innovative forms of integration between food production and dwelling; new spatial arrangements for the materialization of an urban abundance in public space) but would also investigate to what extent these experiences are embedded within wider visions and struggles. What role does UA play in the various attempts to regain control over the means of reproduction of social life? What is their potential to constitute an alternative for larger societies? What implications do these models suggest for the reorganization of urban communities in ways that are built on ecologically and socially just forms of living? What are the cultural, ecological, economical, political

and philosophical models which inform these initiatives, and what geography and radical alternatives are they building? This research stream could start from the provocative work of Atkinson (2013), McClintock (2013) and Saed (2012).

A final, fourth research area could engage in a political ecology inspired action-research, along the lines suggested by Blaikie (2012). Engaging in the critical field of policy-making, the research could experiment with the use of participatory tools to bridge the communication divide between grassroots groups and policy-makers. This final research area would be aimed at *repoliticizing the role of UA in the urban structure.* Within this research stream we could, for example, explore why grassroots-based food-sovereignty movements and government-based community-growing campaigns are exponentially growing with little or nothing in common. What is the potential of participatory research in creating a meeting space for knowledge sharing and for exposing diverging perspectives with the ambition of overcoming these differences? While the aim of repoliticizing our right to food and land – in line with a critical geography of UA – is intuitively conflicting with the necessarily cautious process of participatory research in the field of policy-making, the time seems ripe for experimenting with planting seeds of change out of their usual fields.

IV Conclusions

In this paper I tried to define the scope and an initial agenda for a critical geography of UA. I started this task with an overview of the discourses currently used in media and policy to describe the benefits of UA. I then raised some doubts, questioned these discourses and identified potential exclusionary dynamics or hidden aims which reveal how regressive and neoliberal agendas, new forms of enclosures, or the reproduction of social inequality can become real through urban agricultural projects. On the basis of these driving questions, I then provided

a frame for the rest of the paper, by explaining why I claim we need a *critical* and a *geographical* analysis of this increasingly popular practice. Two main motivations call for a 'spatial' and eminently urban analysis of food cultivation. The first is an interest in the ongoing process of place-making, the role that UA plays within this historical trajectory and the potential it embodies for a radical retheorization and reorganization of urban functions. The second motivation looks more widely at the relationship between the maintenance of the status quo of neoliberal cities and the geopolitics of food: given the pace and the scale at which urban food security is resulting in land grabbing, the role of UA as a large-scale alternative, or at least as an ethical food-sourcing choice, becomes more and more relevant. In section II, I proceeded with an analysis of the existing literature, divided into four subsections, in order to show existing knowledge gaps, possible reconnections or new forms of signification which do not find a proper theorization, highlighting forms of injustice and directions for new research. In section III, I reorganized these questions in four areas which would build the backbone for a critical geography of UA. The first two, respectively looking at a larger or smaller scale of meanings and relations in the making of UA, are predominantly focused on analysing and *exposing* the variety of meanings, forms, challenges or conflicts that characterize urban agricultural projects in their specific contexts. The third identified research area is predominantly dedicated to *proposing* and questioning alternatives to neoliberal urbanism and its socio-economic organization, which are being carried out through UA, and to understanding their alternative cultural, political or philosophical models. The fourth and final research area, which includes also a methodological prescription, is more clearly aimed at repoliticizing the role of UA, suggesting working alongside grassroots initiatives and engaging with the field of policy-making.

To conclude this paper, I would like to reflect on what might be the purpose of a critical geography of UA once it is under way. While a large part of this paper has been dedicated to identifying themes for a research agenda, I am not advocating a new subdiscipline which merely aggregates under its umbrella a number of small, in-depth, empirical accounts, organized thematically. Nor it is my intention to call for comparative research and large generalizations on what UA in the Global North might look like. As for any other geography, however, it is useful to reflect on how different scalar and methodological approaches might relate to each other. To this end, I want to recall the work of Marcuse and Brenner on critical urban theory which frames this paper. Each has been calling for research committed to exposing forms of injustice and exclusion, as well as for attempts to politicize, empower and identify alternatives. I believe that to achieve these aims micro and macro approaches are complementary.

On the one hand, narrowly focused and contextualized case studies would provide a much-needed critical analysis in a field that is prone to be exploited as a tool for the regeneration of capital, as a new spatial fix or just as another opportunity for urban enclosure. At the same time, case-study-based research can also highlight examples where UA counteracts specific 'mechanisms of neoliberal localization' (Brenner and Theodore, 2002: 368–375) that have characterized neoliberal urbanism in the last decades: for example, new increased intra-national and regional collaboration around new food systems; virtuous closed-loop urban metabolic cycles; and initiatives that support social reproduction and food sovereignty, that re-engage local communities in emancipatory place-making, or that rescale the food supply chain. UA, for its ability to reconnect the sphere of reproduction to its ecological and physical substrate, opens important windows of opportunity for experimenting with radical mechanisms of territorial development and urban living.

On the other hand, while I am generally sceptical about the benefits of comparative endeavours for the sake of generalization, I believe that the broader view of the constellation of UA projects that this critical geography will allow to emerge across regions or countries, and how these projects can interlink and articulate at specific geographical scales – something along the lines of Brenner and Theodore's (2002) systematization of the moments of neoliberal creation and destruction – will be extremely useful. I believe this will facilitate the equally necessary work of identifying creative and innovative projects, mapping successful alternatives, and weaving new reconnections, that can help to imagine and forge new directions for socio-environmentally just cities.

Funding

References

Allen E (2010) Growing community food systems. In: Heinberg R and Lerch D (eds) *The Post Carbon Reader: Managing the 21st Century Sustainability Crises*. Healdsburg, CA: Watershed Media, 140–152.

Atkins P and Bowler IR (2000) *Food in Society: Economy, Culture, Geography*. London: Arnold.

Atkinson A (2013) Readjusting to reality. *City: Analysis of Urban Trends, Culture, Theory, Policy, Action* 17: 85–96.

Bhatti M and Church A (2000) 'I never promised you a rose garden': Gender, leisure and home-making. *Leisure Studies* 19: 183–197.

Blaikie P (2012) Should some political ecology be useful? *Geoforum* 43: 231–239.

Block DR, Chavez N, Allen E, et al. (2012) Food sovereignty, urban food access and food activism: Contemplating the connections through examples from Chicago. *Agriculture and Human Values* 29: 203–215.

Blomley N (2004) Un-real estate: Proprietary space and public gardening. *Antipode* 36: 614–641.

Bock B and Caraher M (2012) Integrating health, environment and society: Introducing a new arena. In: Viljoen A and Wiskerke JSC (eds) *Sustainable Food Planning: Evolving Theory and Practice*. Wageningen: Wageningen Academic Publishers, 173–180.

Bohn K and Viljoen A (2005) More city with less space: Vision for lifestyle. In: Viljoen A (ed.) *Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities*. Burlington, MA: Architectural Press, 251–264.

Bradley M (2009) Down with the fences: Battles for the commons in south London. *The Land* 7: 34–38.

Brenner N (2009) What is critical urban theory? *City: Analysis of Urban Trends, Culture, Theory, Policy, Action* 13: 198–207.

Brenner N and Theodore N (2002) Cities and the geographies of 'actually existing neoliberalism'. *Antipode* 34: 349–379.

Broto VC, Allen A and Eriksson A (2011) Urban metabolism at UCL: A working paper. Available at: http://www.ucl.ac.uk/environment-institute/research/metabolism.

Buckingham S (2005) Women (re)construct the plot: The regen(d)eration of urban food growing. *Area* 37: 171–179.

Clément G (2005) Landscape design and the biosphere: Conflict or complicity. In: Richardson T and Kingsbury N (eds) *Vista: The Culture and Politics of Gardens*. London: Frances Lincoln, 74–78.

Cockrall-King J (2012) *Food and the City*. New York: Prometheus Books.

Communities and Local Government (2010) Grow your own revolution gets major land boost. Available at: http://www.24dash.com/news/communities/2010-03-03-grow-your-own-revolution-receives-major-land-boost.

Cook I, et al. (2008) Geographies of food: Mixing. *Progress in Human Geography* 32: 821–833.

Crouch D and Ward C (1988) *The Allotment: Its Landscape and Culture*. Nottingham: Five Leaves Publications.

Davis L and Middleton J (2012) The perilous road from community activism to public policy: Fifteen years of community agriculture in Sandwell. In: Viljoen A and Wiskerke JSC (eds) *Sustainable Food Planning: Evolving Theory and Practice*. Wageningen: Wageningen Academic Publishers, 197–208.

Dooling S (2009) Ecological gentrification: A research agenda exploring justice in the city. *International Journal of Urban and Regional Research* 33: 621–639.

Duany A (2011) *Garden Cities, Theory and Practice of Agrarian Urbanism*. London: The Prince's Foundation for the Built Environment.

Fairlie S (2009) A short history of enclosure in Britain. *The Land* 7: 16–31.

Federici S and Haiven M (2009) On capitalism, colonialism, women and food politics. *Politics and Culture* 2. Availiable at: http://www.politicsandculture.org/2009/11/03/silvia-federici-on-capitalism-colonialism-women-and-food-politics.

Foresight (2010) Land use futures: Making the most of land in the 21st century. Available at: http://www.bis.gov.uk/assets/foresight/docs/land-use/luf_report/8614-bis-land_use_futures_exec_summ-web.pdf.

Foresight (2011) Global food and farming futures. Available at: http://www.bis.gov.uk/foresight/our-work/projects/published-projects/global-food-and-farming-futures/reports-and-publications.

Gandy M (2004) Rethinking urban metabolism: Water, space and the modern city. *City: Analysis of Urban Trends, Culture, Theory, Policy, Action* 8: 363–379.

Girardet H (2006) *Creating Sustainable Cities: Schumacher Briefings*. Totnes: Green Books.

Gliessman S (2012) Agroecology: Growing the roots of resistance. *Agroecology and Sustainable Food Systems* 37: 19–31.

Gottlieb R and Joshi A (2010) *Food Justice*. Cambridge, MA: The MIT Press.

Haeg F (ed.) (2010) *Edible Estates: Attack on The Front Lawn*. New York: Metropolis.

Haiven M (2009) Food, finance, crisis, catalyst: Global capitalism and the revolutionary value of food sovereignty. *Politics and Culture* 2. Available at: http://www.politicsandculture.org/2009/11/03/max-haiven-food-finance-crisis-catalyst-global-capitalism-and-the-revolutionary-value-of-food-sovereignty.

Halfacree K (2006) From dropping out to leading on? British counter-cultural back-to-the-land in a changing rurality. *Progress in Human Geography* 30: 309–336.

Harris E (2009) Neoliberal subjectivities or a politics of the possible? Reading for difference in alternative food networks. *Area* 41: 55–63.

Heynen N (2010) Cooking up non-violent civil-disobedient direct action for the hungry: 'Food Not Bombs' and the resurgence of radical democracy in the US. *Urban Studies* 47: 1225–1240.

Heynen N and Swyngedouw E (2003) Urban political ecology, justice and the politics of scale. *Antipode* 35: 898–918.

Heynen N, Kaika M and Swyngedouw E (eds) (2006) *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*. Abingdon: Routledge.

Hodgkinson T (2005) Digging for anarchy. In: Richardson T and Kingsbury N (eds) *Vista: The Culture and Politics of Gardens*. London: Frances Lincoln, 66–73.

Hodkinson SN (2012) The new urban enclosures. *City: Analysis of Urban Trends, Culture, Theory, Policy, Action* 16: 500–518.

Hodson M and Marvin S (2009) 'Urban ecological security': A new urban paradigm? *International Journal of Urban and Regional Research* 33: 193–215.

Hou J (ed.) (2010) *Insurgent Public Space: Guerrilla Urbanism and the Remaking of Contemporary Cities*. Abingdon: Routledge.

Hou J, Johnson JM and Lawson LJ (2009) *Greening Cities, Growing Communities*: *Learning from Seattle's Urban Community Gardens*. Seattle, WA: University of Washington Press.

Howe J, Bohn K and Viljoen A (2005) Food in time: The history of English open urban space as a European example. In: Viljoen A (ed.) *Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities*. Burlington, MA: Architectural Press, 95–107.

Jackson T (2009) *Prosperity Without Growth: Economics for a Finite Planet*. London: Earthscan.

Jamison MS (1985) The joy of gardening: Collectivist and bureaucratic cultures in conflict. *The Sociological Quarterly* 26: 473–490.

Jones L (2005) The explosion of garden visiting in France. In: Richardson T and Kingsbury N (eds) *Vista: The Culture and Politics of Gardens*. London: Frances Lincoln, 52–65.

Kaufman J (2010) The food bubble: How Wall Street starved millions and got away with it. *Harper's Magazine* July. Available at: http://frederickkaufman.type pad.com/files/the-food-bubble-pdf.pdf.

Kaufman J and Bailkey M (2000) Farming inside cities: Entrepreneurial urban agriculture in the US. Working paper. Cambrdge, MA: Lincoln Institute of Land Policy. Available at: http://www.lincolninst.edu/pubs/95_Farming-Inside-Cities.

Kneafsey M, Cox R, Holloway L, et al. (2008) *Reconnecting Consumers, Producers and Food: Exploring Alternatives*. Oxford: Berg.

Kostof S (1991) *The City Shaped: Urban Patterns and Meanings Through History*. London: Thames and Hudson.

Lawson LJ (2005) *City Bountiful: A Century of Community Gardening in America*. Berkeley, CA: University of California Press.

Lefebvre H (1991 [1974]) *The Production of Space*. Oxford: Blackwell.

London Assembly Planning and Housing Committee (LAPHC) (2010) Cultivating the capital: Food growing and the planning system in London. Available at: http://www.london.gov.uk/sites/default/files/archi ves/archive-assembly-reports-plansd-growing-food.pdf.

Lyson TA (2004) *Civic Agriculture: Reconnecting Farm, Food and Community*. Medford, MA: Tufts University Press.

McKay G (2011) *Radical Gardening*. London: Frances Lincoln.

McClintock N (2013) Radical, reformist, and garden-variety neoliberal: Coming to terms with urban agriculture's contradictions. *Local Environment: The International Journal of Justice and Sustainability*. doi: 10.1080/13549839.2012.752797.

McMichael P (2009) A food regime genealogy. *The Journal of Peasant Studies* 36: 139–169.

McMichael P (2012) The land grab and corporate food regime restructuring. *The Journal of Peasant Studies* 39: 681–701.

Marcuse P (2009) From critical urban theory to the right to the city. *City: Analysis of Urban Trends, Culture, Theory, Policy, Action* 13: 185–197.

Mares TM and Peña DG (2010) Urban agriculture in the making of insurgent spaces. In: Hou J (ed.) 2010: *Insurgent Public Space: Guerrilla Urbanism and the Remaking of Contemporary Cities*. Abingdon: Routledge, 241–254.

Mason K and Whitehead M (2012) Transition urbanism and the contested politics of ethical place making. *Antipode* 44: 493–516.

Morgan K (2009) Feeding the city: The challenge of urban food planning. *International Planning Studies* 14: 341–348.

Mougeot L (ed.) (2005) *Agropolis: The Social, Political and Environmental Dimensions of Urban Agriculture*. London: Earthscan.

Moulaert F, MacCallum D, Mehmood A, et al. (eds) (2013) *The International Handbook On Social Innovation: Collective Action, Social Learning and Transdisciplinary Research*. Cheltenham: Edward Elgar.

Nordahl D (2009) *Public Produce: The New Urban Agriculture*. Washington, DC: Island Press.

Nussbaum M and Sen A (1993) *The Quality of Life*. New York: Clarendon Press.

Obosu-Mensah K (1999) *Food Production in Urban Areas: A Study of Urban Agriculture in Accra, Ghana*. Aldershot: Ashgate.

O'Brien D (ed.) (2010a) *Gardening: Philosophy for Everyone*. Chichester: Wiley-Blackwell.

O'Brien D (2010b) Cultivating our garden: David Hume and gardening as therapy. In: O'Brien D (ed.) *Gardening: Philosophy for Everyone*. Chichester: Wiley-Blackwell, 192–203.

Osti G (2006) *Nuovi Asceti: Consumatori, Imprese e Istituzioni di Fronte alla Crisi Ambientale*. Bologna: Il Mulino.

Pasquali M (2006) *Loisada: NYC Community Gardens*. Milan: A&M Bookstore.

Peck J and Tickell A (2002) Neoliberalising space. *Antipode* 34: 380–404.

Pinkerton T and Hopkins R (2009) *Local Food: How to Make it Happen in Your Community*. Totnes: Green Books.

Poole S (2006) *The Allotment Chronicles: A Social History of Allotment Gardening*. Kettering: Silver Link.

Redwood M (2008) *Agriculture in Urban Planning: Generating Livelihoods and Food Security*. London: Earthscan.

Reynolds R (2008) *On Guerrilla Gardening: A Handbook for Gardening without Boundaries*. London: Bloomsbury.

Saed (2012) Urban farming: The right to what sort of city? *Capitalism Nature Socialism* 23: 1–9.

Schneider M and McMichael P (2010) Deepening and repairing, the metabolic rift. *The Journal of Peasant Studies* 37: 461–484.

Shiva V (2008) *Soil Not Oil: Climate Change, Peak Oil and Food Insecurity*. London: Zed Books.

Sonnino R (2009) Feeding the city: Towards a new research and planning agenda. *International Planning Studies* 14: 425–435.

Steel C (2008) *Hungry City: How Food Shapes Our Lives*. London: Vintage.

Swyngedouw E (2009) The antinomies of the postpolitical city: In search of a democratic politics of environmental production. *International Journal of Urban and Regional Research* 33: 601–620.

Tornaghi C (2011) Steal this veg. *The Red Pepper* June. Available at: http://www.redpepper.org.uk/steal-this-veg.

Tornaghi C (2012a) Public space, urban agriculture and the grassroots creation of new commons: Lessons and challenges for policy makers. In: Viljoen A and Wiskerke JSC (eds) *Sustainable Food Planning: Evolving Theory and Practice*. Wageningen: Wageningen Academic Publishers, 349–364.

Tornaghi C (2012b) Edible public space: Experimenting with a socio-environmentally just urbanism. *Territorio* 60: 39–43.

Tracey D (2007) *Guerrilla Gardening: A Manualfesto*. Gabriola Island, Canada: New Society Publishers.

Urban Agriculture Committee of the Community Food Security Coalition (CFSC) (2003) Urban agriculture and community food security in the United States: Farming from the city center to the urban fringe. Available at: http://community-wealth.org/sites/clone.community-wealth.org/files/downloads/report-brown-carter.pdf.

Van der Schans JW and Wiskerke JSC (2012) Urban agriculture in developed economies. In: Viljoen A and Wiskerke JSC (eds) *Sustainable Food Planning: Evolving Theory and Practice*. Wageningen: Wageningen Academic Publishers, 245–258.

Viljoen A (ed.) (2005) *Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities*. Burlington, MA: Architectural Press.

Wakefield S, Yeudall F, Taron C, et al. (2007) Growing urban health: Community gardening in South-East Toronto. *Health Promotion International* 22: 92–101.

Wekerle GR (2004) Food justice movements: Policy, planning and networks. *Journal of Planning Education and Research* 23: 378–386.

Whitehead M (2009) The wood for the trees: Ordinary environmental injustice and the everyday right to urban nature. *International Journal of Urban and Regional Research* 33: 662–681.

Whitehead M (2013) Neoliberal urban environmentalism and the adaptive city. *Urban Studies* 50: 1348–1367.

Wiltshire R and Local Government Association (LGA) (2010) A place to grow: A supplement document to 'Growing in the community'. London: LGA.

Zavisca J (2003) Contesting capitalism at the Post-soviet Dacha: The meaning of food cultivation for urban Russians. *Slavic Review* 62: 786–810.