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# Transspecies urban theory: chickens in an African city

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New cultural animal geography offers conceptual tools for a reinterpretation of urbanization in Africa. This article applies transspecies urban theory to the existing literature on urban livestock in the developing world, as well as a case study of chickens in Botswana to demonstrate how cities are inextricably wrapped up in human–animal relations. A focus on animals as influential actors, and interspecies mingling encourages one to acknowledge that animals are shaped by, and are themselves central actors in the constitution of, urban form, function, and dynamics. Recognition of subaltern ‘animal towns’ challenges the perceived centrality of human existence.

**Keywords:** Africa • Botswana • chickens • new cultural animal geography • transspecies urban theory • urban livestock • urbanization

[Animals] are social subjects, like us, whose idiosyncratic, subjective experience of us plays the same role in their relations with us that our subjective experience of them plays in our relations with them. If they relate to us as individuals, and we relate to them as individuals, it is possible for us to have a personal relationship<sup>1</sup>

## Introduction

African cities are fully populated with nonhuman dwellers. The presence of livestock<sup>2</sup> in urban Africa may be attributed to economic circumstances of human dwellers given rapid urbanization,<sup>3</sup> as well as enabling political scenarios and sociocultural identity tied to agrarian tradition.<sup>4</sup> Yet urban livestock have snuck under academic and policy radars largely because they are out-of-place. Not only are livestock not supposed to be in cities, they are not readily visible given their placement in or preference for out-of-the-way spaces and temporary use of land across the urban landscape.<sup>5</sup> Regardless, they shape their activities around what the city has to offer, as in Nairobi where the ‘cattle roam freely along with pigs, goats, sheep and chickens to scavenge whatever they can find and, at the end of the day, they make their way [back to their urban] home’.<sup>6</sup> Despite the lack of attention to, and relative invisibility of urban livestock, these nonhuman animal<sup>7</sup> dwellers are central to the form, function, and dynamics of African cities. Indeed understanding urban human–animal relations is central to explaining urbanization in Africa.

The recently revived sub-discipline of animal geography provides a fundamental starting point for such an investigation. Animal geographers of the early 20th century engaged either zoogeographic perspectives to examine animal spatial patterns and distributions<sup>8</sup> or a culturally oriented perspective that questioned the privileging of solely economic human–animal

relations and reflected on animals as symbolic sites.<sup>9</sup> While the latter was critiqued for simplistic, apolitical, and super-organic approaches to culture, the former was eventually subsumed into branches of biology.<sup>10</sup> Animal geography was also deemed ‘too remote from central problems of human geography’<sup>11</sup> and retreated from the discipline around mid-century. During the 1990s animals emerged once again as a focus of geographical inquiry, facilitated by powerful environmental movements challenging speciesism, as well as new intellectual currents that turned many scholars towards consideration of marginalized groups.<sup>12</sup> Making claims that ‘animals are the ultimate Other’,<sup>13</sup> new cultural animal geographers<sup>14</sup> look beyond conceptualizations of nonhuman animals as ‘natural resources’, ‘units of production’, or simply entities to be trapped, counted, mapped, and analyzed.<sup>15</sup> This new perspective recognizes that a focus on animals is essential in explanations of human–environment or spatial relations because interdependence between species is irrefutable.<sup>16</sup>

This article is an attempt to recognize and more centrally include animals in an investigation of urbanization in Africa so as to ‘re-imagine the breath, life, soul, and spirit of the city as embodied in its animal life’.<sup>17</sup> To do so requires a new perspective on urban theory that incorporates animal actors and recognizes that interspecies mingling is fundamental to city life. Section 1 outlines the emergence of transspecies urban theory as conceptualized by new cultural animal geographers. Recent developments in geographical thought highlight animals as influential actors, the dialectical relationship between humans and animals, and the impacts of this relationship on urban form, function, and dynamics. This section elaborates on the main tenets of transspecies urban theory in order to set the conceptual stage for the article. Section 2 provides a brief survey of geographical research on urban animals and then applies transspecies urban theory to the existing literature on urban livestock in Africa, a body of work predominantly oriented towards international development practitioners. The merger of geographical thought with an international development agenda will appeal to scholars across disciplines interested in urban development and African affairs. Analysis that makes animals visible and acknowledges their influential role in society provides new insights on the significance of livestock in African cities. This reinterpretation of the literature also contributes a new case study to animal geography, which has yet to focus on urban livestock in the developing world, as well as to urban geography through an investigation of human–environment (animal) relations. Section 3 builds further the application of transspecies urban theory by focusing on the specific case of chickens and people in Greater Gaborone, Botswana. It offers preliminary insights on how urbanization processes are inextricably wrapped up in human–animal relations, and reveals the dialectical relationships between chickens, people, and the city. Ultimately, the article both conceptually clarifies and empirically illustrates the value of transspecies urban theory as an explanatory framework of urban Africa.

## **Transspecies urban theory**

The idea that humans are primary agents in cities is widespread in academic thought, expressed through an anthropocentric bias in contemporary urban theory. Nature as broadly defined, and animals specifically, rarely figure in urban geographical studies, a silence instigated by the Chicago school despite their application of an ecologically based model of urban form and

function.<sup>18</sup> Yet a recent critical turn in urban studies and geography has generated distinct interest in the environment, whereby cities are increasingly conceptualized as complex interactive products of human–nonhuman exchange processes, formed through processes of political struggle.<sup>19</sup> Geographers are exploring the idea of *socionature*, a mixture of two essentialized categories, and challenging the object/subject binary that underlies the nature/society divide. The world can be viewed as an ‘always already inhabited achievement of heterogenous social encounters, where all of the actors are not human’.<sup>20</sup> Through such lenses, geographers can acknowledge the presence and recognize the role of nonhumans in social life.<sup>21</sup> Nature is ‘no longer fixed at a distance but emerges within the routine interweavings of people, organisms, elements and machines as these configure in the partial, plural and sometimes overlapping time/spaces of everyday living’.<sup>22</sup> In the urban context, some geographers are embracing a perspective whereby ‘urban’ implies a conscious living with rather than living against nature in cities. This urban ecology requires an ontology that moves beyond the antagonism of urbanization and nature to a position where nature is brought back into the city.<sup>23</sup> Swyngedouw applies Haraway’s hybrid metaphor of the cyborg to propose an ‘urban cyborg’, characterizing the city as a network of interwoven processes that are human and natural, real and fictional, mechanical and organic.<sup>24</sup> The city is neither purely social nor natural, but rather is produced by socio-ecological processes that become embodied in city life.

New cultural animal geographers take these ideas further by suggesting that the ‘urban’ is inherently wrapped up in human–animal relations such that the city itself is characterized by, and thus can be conceptualized as a product of, transspecies relations.<sup>25</sup> The roots of this transspecies urban theory are based on the work of Wolch et al., later termed *Zoopolis*,<sup>26</sup> beginning with the claim that urbanization processes, embedded in the conquest and exploitation of nature by culture, have seemingly de-naturalized the environment and left wild lands and things on the margins.<sup>27</sup> Despite cities being built to accommodate humans and their pursuits, subaltern ‘animal towns’ consisting of animals profoundly affected by urbanization processes inevitably emerge with urban growth and shape practices of urbanization in key ways.<sup>28</sup> And although humans influence the possibilities for animal life in cities, the opposite also holds true. How humans think, feel, and talk about animals will shape their sociospatial practices towards these beings on an everyday basis with important consequences regarding the extent to which different species are in-/excluded from common sites of human activity.<sup>29</sup> To this end, animals are central actors in the constitution of space and place, are major elements of local and global economies,<sup>30</sup> and actively shape the form and function of the city.

Transspecies urban theory thus helps explain the urban by focusing on the dialectical relationship between people and animals, and viewing this relationship as fundamental to understanding the form, function, and dynamics of the city. Central to such explanation is the recognition of animals as visible subjects. As suggested by Tuan,<sup>31</sup> animals can be viewed as a social group bound up in a relationship (struggle) with humans, generating conflicting power dynamics ranging from reverence to revulsion, compassion to control, and utilitarianism to disinterest. According to Philo and Wilbert,<sup>32</sup> many human discourses contain within them definitive ideas regarding the positionality of species in this relationship, serving to position ‘them’ (animals) relative to ‘us’ (humans) in a manner that entrenches a conceptual othering (by setting them apart from us in terms of character traits) and a geographical othering (by fixing them in worldly places and spaces different from those that humans tend to occupy).

Animals have been rendered relatively powerless in such human–animal relations.<sup>33</sup> Further, animals are so indispensable to the structure of human affairs and so tied up with (human) visions of progress and good life that humans have been unable to fully see them.<sup>34</sup> The conceptual othering of animals has prevented humans from not only *seeing* them as sentient beings, but also *recognizing* them as significant actors in their own right.

Transspecies urban theory attempts to move beyond utilitarian, symbolic, and ultimately anthropocentric conceptualizations of human–animal relations in the urban realm. New cultural animal geographers acknowledge a wider range of societal actors and their effects in everyday life, and explore the role of animals through two distinctive yet interrelated conceptualizations: animals as experiential subjects and animals as influential actors. On the one hand, animals are viewed as experiential subjects that ‘have their own realities, own world-views’,<sup>35</sup> as well as their own intentionality. Philo’s<sup>36</sup> work, for example, depicts the potential terror of cattle at the hands of drovers and the possibility of their challenge to human-set limits, as they jump through shop windows and engage in ‘bestly’ sexual conduct.<sup>37</sup> Within this conceptualization, one can interpret the emergence of subaltern ‘animal towns’ as a case of nonhumans transgressing human urban boundaries. Livestock, which have been often contested and excluded from cities because they are regarded as wild, unclean, unhygienic,<sup>38</sup> have at times countered negative perceptions and have made a place for themselves within the urban landscape, generating an ‘intrusive reality of [livestock] mingling with people in spaces of . . . [an] urban area’.<sup>39</sup> Underlying this conceptualization are efforts to establish animal thought and behavior, and potentially the intention behind animal actions. While acknowledging animal standpoints offers a theoretical means through which to challenge the inherently subordinate positionality of nonhuman animals, empirical investigations are fraught with difficulties given their speculative nature, lack of scientific evidence, and anthropomorphic excessiveness.<sup>40</sup>

On the other hand, as is the conceptual focal point of this article, new cultural animal geography purports the idea of animals as influential actors fashioning in part the relationships in which they are engaged and the environments which they inhabit. The influence of animal actors can be viewed through what Whatmore<sup>41</sup> describes as a relational effect generated by a network of heterogeneous, interacting components whose activity is constituted in the networks of which they form a part. Extending this idea, the role and significance of animals is in essence produced and comes into being through a relational encounter between human and nonhuman animals. Dempsey<sup>42</sup> applies this conceptualization in her explorations of British Columbian grizzly bears as ‘players’ in the regional forest economy:

The bear does not have some internal agency to change policy but rather its power comes into being through connections, in this case between charisma, science, scientist, environmentalists, foundations, capital, and First Nations. With these connections or networks in place, the bear becomes a player, and has a better chance of claiming its rights and entitlements to life/home. The bear is not an inert, passive thing that environmentalists use as a pawn in their games, or as just a symbol (although it is a symbol too at times), but a nonhuman whose presence in the space, influences the ‘state of affairs’, changing the face of a political economy.

Conceptualizing animals as influential actors makes more tangible the relationship between humans and animals, steering one away from potentially esoteric connections based on

subjectivity and intentionality (as reflected in Smuts' quote that opens this article) and steering one towards visibility and recognition of the significance of animals in society. It is a matter of literally seeing animals and acknowledging their role in shaping the lives of urban dwellers, as well as shaping cities themselves, and vice versa. To this end, transspecies urban theory can make sense of cities as spaces of political–economic power, sociocultural difference, and places constituted by particular constellations of animals, both human and non-human, that intermingle together.<sup>43</sup>

## Urban livestock reinterpreted

There has been increasing attention to urban animals in the geographical literature, which has explored theoretically and empirically the role of animal actors and their subjectivity to varying degrees. Wolch's 'Anima urbis' provides a comprehensive overview of this body of work, thus allowing for an abbreviated summary here based on three central themes aimed at re-animating urban scholarship. First, animal geographers reveal how animals shape the identity and subjectivity of urban dwellers. They consider in the urban context questions of animals' role in the social construction of culture, individual/collective identity, the human–animal divide, and the nature of animal agency and subjectivity itself. They have sought to understand the role of animals in the development of heterogeneous identities that urban residents adopt or have ascribed to them.<sup>44</sup> Second, animal geographers reveal the critical role of animals in urban place and landscape formation, as well as the networks in which animals are enmeshed, leaving imprints on particular places, regions and landscapes over time.<sup>45</sup> Third, animal geographers reveal the dilemmas that arise when animals are allowed to figure in urban moral reckoning. The emergence of postmodern environmental ethics that tends to take non-human subjectivity seriously, stresses the situatedness and partialness of knowledge, and emphasizes the interconnectedness of living creatures and environments, as well as between nature and culture.<sup>46</sup> Geographers have explored animal rights, ethical perspectives on production/consumption, 'moral geographies', and animal suffering and justice.

Although animal geography investigations provide rich insights into human–animal relations in cities, urban livestock have not featured as a specific social group. An exception is Philo's<sup>47</sup> exploration of 19th-century debates about meat markets and slaughterhouses, facilitating the exclusion of livestock animals from cities such as London and Chicago on medical, hygienic, organizational and moral grounds. Additionally, Wolch, Brownlow and Lassiter's<sup>48</sup> study reveals how Latina immigrants in Los Angeles keep chickens in their backyards so as to retain a connection to rural landscapes of their past. In the rural context, animal geographers examine the place of farm animals within the geographical imagination. They conceptualize livestock as more than units-of-production within agriculture systems, and taking a culturally informed standpoint, studies illuminate the spatial and temporal variations in animal distributions, as well as variations in physiology and human–animal relations.<sup>49</sup> For example, a number of studies draw attention to the 'construction' of livestock by people to 'fit' into particular rural spaces through association with cultural heritage and breed valuation<sup>50</sup> or industrial spaces through physiological and technical advancements.<sup>51</sup> Studies also provide new insights on domestication as a political process of human–animal relations guided by humans, whereby

animals deemed suitable for service and company are incorporated into social structure of human communities where they become objects of ownership, purchase, and exchange.<sup>52</sup> In light of these research trajectories, new cultural animal geography, and an explicit application of transspecies urban theory, has much to offer an investigation of urban livestock in the developing world.

In many countries animals far outnumber people in cities. In the average developing country, villages and urban areas are characterized by a variety of small and large animals which scurry, peck, forage and plod their way through most aspects of community life.<sup>53</sup> Although the presence of livestock in cities of the developing world has been largely unexplored by academics, a substantial body of practitioner-oriented international development literature exists. The nature of this literature is descriptive and informative, often characterizing the use of livestock as a means of survival, economic gain, and empowerment for urban dwellers, as well as a means of facilitating sustainable development, and underscoring the fundamental importance of the multifaceted role played by such animals in the developing world. In many instances, reports and articles, such as the special issue of *Urban Agriculture Magazine*, focus on 'how different cities and people cope with problems that are sometimes caused by animals, and with other problems that can be solved by animals'.<sup>54</sup> Other sources provide comprehensive overviews of the urban livestock phenomenon.<sup>55</sup>

Generally, these overviews reveal the growing number of urban families that are raising animals (e.g. poultry, goats, sheep, pigs, rabbits, dairy cattle) to generate supplementary income and foodstuffs, while urban entrepreneurs are investing in intensive production systems to cater to specialized demands of city dwellers.<sup>56</sup> Urban livestock also serve in rites for sacrificial purposes, as status symbols, or as pets, as well they help upgrade food waste from kitchens or agro-industry and contribute to local neighborhood or personal empowerment, particularly for women.<sup>57</sup> Livestock offer many opportunities for efficient and effective land-use of marginal, temporarily vacant, undeveloped, or unsuitable city plots.<sup>58</sup> Some advocates claim that sustainable urban development will not be possible without continued support for urban agriculture, including livestock.<sup>59</sup> It is argued that recognition must be given to the fundamental role played by urban livestock in developing countries as a source not only of food, income, assets and investment, but also of employment, security and recreation and as an element in sociocultural values.<sup>60</sup>

Despite acclamations for the fundamental role that livestock play in developing country cities, this group of animals is treated largely as objects and denied a role in shaping urban form, function, and dynamics. Urban livestock are described as units-of-production and labelled as inputs or products that serve an important function in urban food supply and security.<sup>61</sup> The relations between people and urban livestock are often described in terms of ownership or 'urban livestock keeping', whereby the nonhuman animals are posited only as owned/kept-by-human animals.<sup>62</sup> There is much attention to 'systems' and related characteristics, feed and genetic resources, and breeding processes.<sup>63</sup> The FAO,<sup>64</sup> for example, conceptualizes these urban animals as 'system[s] that can be roughly defined as a form of livestock keeping that is concentrated in and around cities'. In some instances, animals are separated from their contributions such as a focus on 'milk production'.<sup>65</sup> Sprinkled throughout the literature are references to the negative role of urban livestock as 'disease vectors' leading to economical hazards for human producers<sup>66</sup> or as 'sources of pollution, health hazards'.<sup>67</sup>



Furthermore, the human-side of the human–livestock relationship garners much attention in the literature. For example, Sumberg's<sup>68</sup> informative piece focuses on small- and large-scale human poultry producers that co-exist in urban areas and reveals how the relationships between these human groups and their production systems affect income generation and development interventions. Similarly in Losada et al.<sup>69</sup> the authors focus on how humans have responded to the process of urbanization through the establishment of urban dairying systems. The role and significance of animals in these dynamics is generally denied. Animals are rendered invisible and ignored, as noted here: 'in order to meet the increasing demand for animal products, new actors are gradually appearing in the production process, the urban farmer and livestock breeder. They [the urban farmer and livestock breeder] provide fresh products for city markets, thereby creating employment opportunities for themselves, their families and for other city dwellers involved in the production, processing and marketing of livestock commodities'.<sup>70</sup> Finally, the role of urban livestock is focused more closely on urban food production rather than to the multitude of structures, processes and dynamics in which their actions are central.

While the general discourse surrounding urban livestock in developing countries leans towards objectification, it simultaneously reveals the centrality of this social group to city life. A reinterpretation of the literature through transspecies urban theory serves to reanimate understanding of human–livestock relations and sheds light on the complex ways in which cities are spaces of political–economic power, sociocultural difference, and species intermingling. The production of the urban in Africa is inherently wrapped up in human–animal relations and can be characterized by and conceptualized as a product of transspecies relations. The remainder of this section applies transspecies urban theory to the phenomenon of urban livestock. Specifically, a focus on animal actors, human–animal relations, and the impacts of these relations on African urban form, function, and dynamics reveals six key insights.

First, livestock make up a significant part of the African urban population. There are five million fowl in Dakar, Senegal<sup>71</sup> and over 250,000 fowl and 60,000 goats and sheep in Bamako, Mali.<sup>72</sup> Ouagadougou, Burkina Faso has some 4000 cattle, 6000 sheep and pigs, 2000 goats and 19,000 fowl.<sup>73</sup> Numbers are similarly high in secondary urban centers, for example, 13,000 goats and sheep live in Bobo Dioulasso, Burkina Faso,<sup>74</sup> Nakuru, Kenya is home to 12,000 cattle, 13,400 goats and sheep, and 375,000 chickens and ducks.<sup>75</sup> Kumasi, Ghana had around 26,000 goats, 30,000 sheep, 3000 cattle in 1999.<sup>76,77</sup>

Second, livestock are particularly amenable to the physical spaces and ecological niches presented by the urban habitat. Their 'belonging' in cities is largely on account of their adaptability, flexibility, suitability for the built and natural environment. For example, pigs can subsist easily in confined areas or areas of the city characterized by land scarcity. Cows thrive and generate milk in intensive zero-grazing urban areas, and have been described as one of the major development success stories occurring in sub-Saharan Africa.<sup>78</sup> Chickens carve out niches for themselves in Cairo given that the city layout provides precious little in the way of green spaces that would accommodate grazing animals.<sup>79</sup> The variety of sizes, temperaments, and needs of such animals means that the urban landscape offers them numerous spatial locales, be they peri-urban or urban, on-plot or off-plot, prime or marginal lands. Moreover, urban livestock co-exist with one another either within small-scale subsistence groups, with a few chickens and two or three sheep or goats often in human backyards, for example, or with



large numbers of animals in commercial groups located on city outskirts.<sup>80</sup> In turn, the urban homes that animals inhabit, for example, stables or poultry houses, become part of urban land-use plans.<sup>81</sup> In instances where permanent animal spaces are unavailable, livestock become mobile, using land only temporarily until conditions require them to move on. Livestock thus reconstitute and reinforce the function of urban form and 'animal town' becomes an ever-present and populous group on the urban landscape.

Third, livestock provide essential ecological service in and around the city, shaping the urban environment. This social group offers a clean-up service pivotal in residential waste management by consuming and processing organic solid waste, wastewater, or foodstuffs that would otherwise be disposed of. Richardson and Whitney<sup>82</sup> document the symbiotic relationship of goats and garbage in Khartoum, Sudan whereby uncollected household food waste and street refuse benefit urban animals as a source of nutrition, urban humans by reducing economic cost of purchased animal feed yet still generating milk, cheese, and meat products, and the community by closing the environmental loop through re-use of urban waste. At the same time, livestock keeping in the city is criticized for creating health and environmental hazards stemming from disease, odors, noise, waste, and road blockage.<sup>83</sup> This is particularly the case where management practices are undefined or where human dwellers improperly handle animals in densely populated areas. Although urban livestock may exert negative aspects in this respect, their presence and role in shaping the city remains pivotal.

Fourth, urban livestock are intricately wrapped up with political economic structures and processes at various scales. For example, regarding the global context, Sumberg<sup>84</sup> investigates the increasing presence of urban livestock-given impacts of structural adjustment programs, claiming that urban food systems are being affected indirectly by a suite of macro-level policies, and directly by programs and projects aimed to encourage or broaden (peri-)urban livestock production by the development community and governments. At the national level, urban livestock in Dar es Salaam are welcomed and encouraged to remain within city limits through state policies, bylaw waivers, and extension services in order to pacify unrest among underpaid urban dwellers, sustain status of senior government officials through possession of high-valued animals, and encourage individual sustenance in the city.<sup>85</sup> At the municipal level, urban planning options create livestock-friendly spaces that in turn bring benefits to the city. For example, providing a return from land that is unsuitable for construction (e.g. seasonal flood zones), still undeveloped or not being used for other purposes (land foreseen for airport expansion), or suitable for multiple use (e.g. urban woodland). Livestock may also reduce public expenditure for municipal services and land maintenance (e.g. vegetation control, waste management). Benefits for cities also extend to employment provision (in terms of input supply, processing, and marketing), and reduction of transport and energy costs within the food supply chain.<sup>86</sup>

Fifth, livestock are interwoven within urban social networks, actively shaping human positionality and social dynamics within the city. Indeed these animals are 'part of social networks that are . . . clear to those intimately involved in them'.<sup>87</sup> Urban livestock are often associated with 'vulnerable groups' in African cities, such as women, especially heads-of-households and widows, children, retirees, uneducated persons, and low-income urban dwellers, who interact with livestock as a social security strategy.<sup>88</sup> The undervaluation of these marginalized urban dwellers (both human and nonhuman) often reproduces their

respective vulnerability. For example, because urban livestock is often associated with women as part of their unpaid household chores, income-generating activities, and empowerment strategies, these animals remain undervalued given lack of value associated with women. In other words, urban livestock face (further) marginalization given their association with marginalized groups in the city. This is particularly the case for the lesser value given smaller animals (e.g. chickens, guinea pigs, goats, sheep) compared with larger animals (e.g. cattle); the former tend to be associated with women and the household, whereas the latter with men and socio-economic status, thus garnering more attention from veterinary and government services.<sup>89</sup> Thus, on the other side of this scenario, people's relations with livestock can serve to reinforce and elevate their socio-economic status within the city. Mlozi<sup>90</sup> reveals that senior government and ruling party officials form relationships with cattle as a means of achieving elitist and privileged status. The high status placed on such human–cattle relations means that urban livestock remain welcome within city boundaries despite the recognized negative effects born on the environment (e.g. disease, noise, odors). These relationships can also reflect human marginalization within the city and are expressed spatially given that livestock are often found in slums and villages, or in marginal areas such as on rooftops and balconies, cul-de-sacs and hallways, with few 'vulnerable groups' (human or animal) residing in 'modern' districts.<sup>91</sup>

Sixth, livestock in the developing world are transgressing an urban imaginary that deems them out-of-place, thus challenging human notions of modernity and constructions of urban space. The presence of this social group does not sit well with urban planners or policy-makers, who make little room for the 'unsuitable business' of livestock production<sup>92</sup> or scholars such who focus on the serious problems relating to environmental degradation, human health, and aesthetics.<sup>93</sup> The presence of livestock in cities is often regarded as problematic, backward, and a sign of poverty.<sup>94</sup> While long thwarted and disabled by officials, livestock continue to reside in urban areas, more often than not unchecked by practitioners and local government.<sup>95</sup> The 'invisibility' of these animals is hidden by physical boundaries such as walls, as well as people's collusion in hiding or not disclosing their relations with animals given the often hostile political climate.<sup>96</sup> Furthermore, urban livestock have numerous advocates within the international development community that elicit normative visions of urban centers filled with nonhuman animals. Livestock are increasingly recognized for their role in cities and urban life.<sup>97</sup> A significant amount of literature makes recommendations as to how urban livestock may be further positively integrated into urban areas in the future, addressing resource access, technical issues, and institutional and policy constraints.<sup>98</sup>

Transspecies urban theory applied to international development literature on urban livestock in Africa reveals new insights on the role and significance of nonhuman dwellers in cities. The presence and sheer number of animals residing in urban areas is remarkable yet plausible given their adaptability, flexibility, and suitability to spaces and ecological niches offered by the urban form. Indeed, their transgression of urban boundaries suggests that livestock are fundamental actors in city life and indispensable to those human urban dwellers who intermingle with them. Urban livestock are inherently wrapped up in urban structures and processes that shape ecological functions, political–economic circumstances, and social dynamics. Equipped with these new insights, the investigation now turns to an application of transspecies urban theory to a case study of chickens in Botswana in order to develop further understanding of African 'animal towns'.

## Chickens and the city

Using as a springboard the earlier reinterpretation of urban livestock literature, this article offers preliminary insights into the role and significance of chickens in the form, function, and dynamics of Greater Gaborone, Botswana. In essence, such analysis constitutes a reinterpretation of field research conducted during 2000–1 and 2004 on commercial urban agriculture, as well as a recent visit in 2007. The first field season involved baseline data collection and analysis into the dynamics of this entrepreneurial sector. A comprehensive listing of enterprises was compiled and verified through numerous sources, including the Ministry of Agriculture, Registrar of Companies, Tribal Land Board and Department of Lands' allocation records, key informants, agricultural suppliers/distributors, veterinarians, farmers' organizations and word of mouth. This led to the identification of 114 commercial urban agricultural enterprises, of which 109 participated in the study. Participants describe themselves as operating their agricultural production exclusively or primarily for commerce and income-generating purposes. Semi-structured interview surveys focused on productivity levels, as well as a number of socio-economic, location, and environmental variables. Sessions ran approximately 60–90 minutes in length and were conducted primarily in English with a translator employed in cases where participants felt more comfortable using Setswana. Beyond formal interviews, conversations with participants included unstructured 'farm tours' at the agricultural sites. The second field season involved follow-up interviews with all available enterprise owners (making up 66 per cent of original participants) in order to document productivity levels, key socio-economic, spatial and environmental factors, as well as changes that had occurred since the initial interviews. Much greater attention was focused on participants' reasons for pursuing particular agricultural enterprises (e.g. selecting poultry over vegetable or dairy farming). As observed and documented during the 2000–1 field season, the 2004 interviews revealed that chickens play a major role in the commercial urban agriculture sector, as well as in the lives of the entrepreneurs themselves.

The following empirical findings are drawn from substantive content gained from fieldwork that has been reinterpreted by placing emphasis on chickens rather than humans in the city. While research initially focused on the characteristics and experiences of humans, by exploring their involvement in commercial agriculture production,<sup>99</sup> it now investigates how urbanization trends have shaped the lives of chickens and how chickens have shaped the course of urbanization in Botswana. The research contributes to international development literature that details the characteristics of poultry in cities,<sup>100</sup> highlights chickens as an attractive and profitable form of urban agriculture,<sup>101</sup> and claims that chickens are key to urban food supply.<sup>102</sup> Further, this article may be described as a 'thought experiment'<sup>103</sup> to see what happens when animals (in this case chickens) are treated as another, albeit radically different, social group.<sup>104</sup> It attempts to detail the role and significance of nonhuman urban dwellers that emerges from intricate human–animal relations and to re-think the evolution of Greater Gaborone from a transspecies perspective.

The investigation reveals that there is a significant interdependence among chickens, people, and the city. Specifically, a focus on chickens as influential actors, people–chicken relations, and the impacts of these relations on the city leads to three fundamental empirical insights that consolidate the six points detailed above regarding human–livestock relations in

urban Africa more broadly. First, structures and processes associated with urbanization are changing the life chances of chickens themselves in terms of visibility and status. Indeed, broader trends and increased human attention have facilitated the possibility for chicken life in Greater Gaborone, leading to larger numbers of chicken dwellers in the city and greater reverence granted to them. Second, a heightened people–chicken relationship, whereby human urban dwellers see the value, potential and significance of these animals, means that chickens are shaping the sociocultural, political–economic, and spatial landscape of the city. Without these nonhuman dwellers, Greater Gaborone would look and operate differently than it does, and people’s activities in the city would be altered. Third, chickens are providing opportunities for socio-economic empowerment and positive change for Batswana,<sup>105</sup> which further enhances chicken significance and hence visibility and status, ultimately securing their presence and role within the urban realm. Therefore, although admittedly the power dynamic between chickens and people in Greater Gaborone is an unequal one, chickens are influential actors in the constitution of urban form, function, and dynamics in Botswana.<sup>106</sup>

### *Chicken visibility and status*

Botswana, like many other African nations, has experienced rapid urbanization since independence in 1966, bringing about significant changes in human settlement patterns and population distribution. Some 54 per cent of the country now resides in urban areas.<sup>107</sup> Gaborone alone had a population of 186,007 in 2001,<sup>108</sup> with government estimates projecting that the city will reach 490,030 persons by 2021.<sup>109</sup> This demographic shift has been prompted by low-level rural investment, rural agricultural problems and recurrent droughts,<sup>110</sup> as well as opportunities in waged employment, services and facilities, and ‘modern’ lifestyles of cities, and is being sustained by natural urban population growth.<sup>111</sup> Changing settlement patterns and population distribution in favor of urban areas, in particular the capital has meant that government initiatives aimed at local economic development and agricultural diversification, while not necessarily urban in intent, are necessarily manifesting themselves in the Greater Gaborone area.<sup>112</sup> Botswana faces an overly centralized economy based on diamond mining, as well as agricultural stagnation in rural areas, both of which have increased dependence on South African imports for manufactured goods and foodstuffs. In response, the government has encouraged entrepreneurship among Batswana so as to foster a more economically diverse, independent, and self-sufficient nation; new commercial agricultural sectors, including poultry, horticulture and dairying, have been part of this initiative.<sup>113</sup> Accommodative yet de facto urban land-use mechanisms have formalized agriculture in and around the city by honouring previously established zoning distinctions (where the city has literally grown up around agricultural sites) or making new land available. Further, with their cultural identity firmly shaped by an agrarian-based tradition, Batswana continue to seek out opportunities to farm in the urban context.<sup>114</sup>

From these political–economic and sociocultural trends has emerged the possibility for chicken life in Greater Gaborone. Commercial agriculture has emerged in the past decade in and around Gaborone and is increasing steadily in its presence as a notable urban economic sector. Poultry (broiler meat production) is by far the largest and most substantial sub-sector; of 109 commercial urban agriculture producers in 2000, 66 were in broiler production,

generating over 15 million kilograms of meat at a market value of 81,451,826 pula (US\$16,290,365) in 2000. Taken out of these unit-of-production terms, Greater Gaborone in 2000 was home to approximately 200,000 human and 2,300,000 chicken dwellers. This is a significant population increase from the previous year when approximately 1 million chickens inhabited the city; trends suggest that this demographic reached some 3 million by 2004.<sup>115</sup>

Through connections to the commercial agricultural sector, and its largely (peri-)urban human practitioners, the chicken has garnered increased human attention and in turn visibility and status as embodying a means to and symbol of economic prosperity and social standing for Botswana. In the past, chickens were largely relegated to the rural subsistence agriculture realm, while other animals, specifically cattle, were deemed of higher value both in commercial and social spheres. This delineation paralleled an undervaluation and marginalization of chickens in Tswana culture.<sup>116</sup> Over the past decade, however, chickens have emerged on the national development agenda as recognition of their productivity, versatility, and efficiency has grown. They are noticeably absent from the government's Vision 2016 document published in 1997, which acknowledges and privileges beef cattle as nonhuman agents in fostering entrepreneurship, household economic prosperity, and food security in Botswana.<sup>117</sup> Yet by the 2002 release of the ninth National Development Plan (NDP 9), chickens are featured as part of the backbone of agricultural diversification and export strategies and a means of enhancing employment opportunities, technological innovation, and household food security.<sup>118</sup> Further, the document praises chickens for 'remarkable growth during NDP 8', which has 'resulted in Botswana being almost [98%] self-sufficient in [chicken] products'.<sup>119</sup> Chickens are increasingly discussed in government circles as indispensable to national planning and development goals. As one Ministry of Agriculture official remarked at the 2003 Poultry Exposition in Gaborone: 'As we look forward to the Vision 2016, we realize that Botswana will need a top class of [chicken] products and diversification for competitiveness hence contribute to the achievements of food security, poverty alleviation and citizen empowerment'. Interviews with people in Greater Gaborone during field seasons reveal that beyond national attention, chickens are valued by local Botswana. Sentiments such as 'chickens help us as citizens contribute to the economy' and 'these chickens are our family . . . we love the chickens' were commonplace.

The increased visibility and status accrued to chickens by humans, on account of the value and role of these nonhumans in political-economic and sociocultural realms has in turn instilled chickens with power and significance. On account of who-they-are, and wrapped up in the broader trends of urbanization and agricultural diversification, chickens have persuaded humans of their importance to the Botswana and national development goals. Shifts in human thinking about chickens have emerged together with shifts in sociospatial practices such that chickens have transcended urban boundaries. While cattle continue to occupy a position of high status, the physical barriers of city life, given their physical bulk and the lack of grazing areas, have meant that cattle are absent from the urban realm. Budding agricultural entrepreneurs have been drawn to chickens given their slight physique and adaptability to small, intensive-use spaces, easily guiding their entry into the city. Further the transition from subsistence- to commercially oriented activities has also provided a boost to chickens given human valuing of economic production over that for the household. The multiple benefits to be accrued from interactions with chickens, for example, social status, income generation,

and food security have encouraged human urban dwellers to insist on the presence of these animals in and around Gaborone. Chickens are no longer relegated to small backyard rural spaces; rather they are increasingly found in a variety of urban and peri-urban habitats, including large-scale, intensive industrial sites, and occupied approximately 46 hectares of land in 2000. The increased human attention to chickens, resulting in increased visibility and status of these nonhuman urban dwellers, has taken on a spatial expression whereby chickens have increased their physical claims to space in the city.

### *Chickens shaping urban form and function*

The role and significance of chickens in Botswana has in essence been produced and come into being through a relational encounter between people and chickens, whereby people have shaped the possibilities for chicken life in Greater Gaborone. Yet the opposite also holds true in that chickens are shaping the possibilities for urban form and function, as well as human opportunities in the city as will be explored in this section and the next respectively. Assuming their role as influential actors, chickens are shaping possibilities for how the city looks (e.g. through urban planning mechanisms), how the city functions (e.g. through local economic dynamics), and how human dwellers experience urban life (e.g. through socio-economic empowerment).

Notably, chickens on account of their increased visibility and status have encouraged government and planning officials to formally recognize their existence across the urban landscape. There is no comprehensive policy around chicken dwellers per se; however, urban land-use planning mechanisms in freehold, leasehold and tribal areas reflect an acceptance of these animals within city limits. Chickens have in a sense encouraged city officials to honor previously established land-use categories and to make new land available. Some 1.3 million chickens are located on freehold land, a designation introduced during Botswana's period as a British Protectorate entitling human dwellers to private ownership and exclusive rights with an inheritable title deed.<sup>120</sup> On account of the benefits accrued from their relationships with chickens, freehold land owners have been encouraged to keep chickens on their property, and city planners have encouraged these choices by not outlawing chickens in Greater Gaborone. Some 400,000 chickens are located on state or leasehold land within Gaborone City. These sites were established several decades ago, and planning officials have been encouraged by the productive nature of chickens to continue supporting their presence in designated zones. The main hub of chickens is located next to Gaborone Dam, a site that was established by the government during the 1970s, and that has persisted despite grumblings from some state officials about the cleanliness of these nonhuman urban dwellers. Indeed key informant interviews revealed several individuals' resentment of chickens being located so close to the city's main water source. Yet these same individuals admitted that the benefits of having chickens in the vicinity, in terms of economic and food security encouraged them to 'leave [the chickens] alone'. Finally, over 600,000 chickens are located on tribal land in Greater Gaborone. This land is allocated to humans free of charge and is based on usufruct rights to community land.<sup>121</sup> Over the past decade officials have designated land for chickens after recognizing particularly the income-generating boost for people in peri-urban districts of Tlokweng and Kweneng. Land designations have specifically incorporated the biophysical characteristics



of chickens such that Land Board officials, as revealed during interviews, have taken into account the size, growth patterns, and density requirements of these animals to thrive in tribal zones. In other instances, officials spoke of turning a blind-eye to those chickens located in residential zones rather than zones specifically designated for animals. Chickens have thus inspired particular land-use planning decisions that have ensured their continued presence in and around Gaborone, and in turn facilitated further their visibility and status.

Beyond their role as agents-of-influence in urban planning realms, chickens are shaping the local (food) economy in and around Gaborone. As exclaimed by a Ministry of Agriculture official, 'overall the sector is flourishing . . . everyone is talking about [chickens] because this is the sector that is surviving!' There is a general sense that chickens 'continue to gain popularity and have great potential' because of their contribution to economic development and food security efforts in the city and the nation as a whole.<sup>122</sup> Specifically, chickens have provided jobs and skills trainings to numerous human urban dwellers over the past decade. In 2000, 302 people in Greater Gaborone had jobs related to chickens. By 2005, 2142 people in and around Gaborone and three other major urban centres had such jobs, and 738 people were trained nation-wide in short-courses related to interaction with them.<sup>123</sup> As central players of the poultry industry, chickens have facilitated the emergence of a solid vertically integrated economic sector, slowly earning national significance alongside diamond mining and beef production. For 2000, chickens together with their human producers generated approximately 27 million kilograms of broiler meat worth over 20 million pula for the Botswana market; 55 per cent of this was produced by urban nonhuman and human dwellers in Greater Gaborone alone. Average annual production output has increased from 268 metric tones of broiler meat produced in 1961 to 6166 metric tones in 2000, reflecting an annual growth rate of 11 per cent.<sup>124</sup> Chicken contributions to food security are embedded within this economic success. Demand for chickens as a foodstuff has skyrocketed given human urban dwellers' insistence on this 'white meat' as a healthy alternative to beef; per capita consumption has increased from 4 kilograms per year in 1991<sup>125</sup> to 37.8 kilograms per year in 2005.<sup>126</sup> Chickens can boast self-sufficiency in themselves given that all broiler meat consumed since 1999 has been produced within Botswana's borders.<sup>127</sup>

### *Chickens empowering people*

Beyond the broader realms of urban planning and local (food) economy detailed above, chickens are shaping and providing socio-economic empowerment opportunities for human urban dwellers in Greater Gaborone. Specifically, chickens have facilitated women's ability to provide for their families and balance multiple roles of income-generating and household welfare by being highly adaptable to women's circumstances in the city. Chickens require minimal physical space and minimal (albeit regular) care from humans so that relationships with them can be fostered while also caring for children at home, and in return chickens mature quickly (in approximately six weeks) offering a fast-cash economic strategy. For low-income women interviewed, their relationships with chickens was a particular source of relief given the role of these nonhuman dwellers in helping secure finances and reliable foodstuffs in high-density residential areas where women had access to small plots of land. Janet, for example, whose family shared a 40-square-meter homestead with 100 chickens in the peri-urban



village of Mogoditshane, spoke of her 'life of suffering' that has been alleviated in part because of the amenability of chickens to her lifestyle and circumstances. In turn, chickens have become an indispensable means to security and fulfillment. As a woman facing similar circumstances, Rosa remarks, 'I have had my kids and all of them raised and educated with the help of these chickens. They keep bread on the table, pay debts, keep me busy, and pay two laborers'. For other women their relationships with chickens have facilitated valuable skills training, networking opportunities, and entrepreneurial success in the city. Kay, for example, became involved with chickens because she was 'not too educated' but soon was able to tap into Ministry of Agriculture short-courses that had previously been out of her reach. With her new skills and sense of confidence, Kay has forged further relationships within government, as well as within the private sector with poultry suppliers who businesses are necessarily premised on human–chicken relationships. Joan, in another example, has found an 'easy in' to entrepreneurial activities in Greater Gaborone given her successful relationship with chickens, transforming her casual, small-scale, backyard operation into an established poultry business that has been running for over a decade at a sustained profit.

For several of the urban dwellers interviewed, in particular men, their interaction with chickens in the city allowed them to maintain their identity as 'farmers' and embrace their agrarian traditions within the urban context despite being removed from traditional rural realms of agricultural activity. Given the increased visibility and status of chickens, indeed acceptability of chickens within Tswana culture as discussed earlier, men in the study were drawn to chickens as a means of status. Interestingly, more men than women claimed to be involved with chickens as a 'hobby' than as an income-generating activity and the extent to which they revered these animals was clear during interviews. As Robbie expressed, 'I feel the same joy that people do with cattle: on weekends they drive to the cattle post just to see them. I feel the same thing [with the chickens]. I want to see them, to admire them'. Amenable to the nooks and crannies of the urban landscape, chickens have become the animal of choice among urban dwellers in the study, helping to foster an agricultural identity in the humans with whom they interact. To some extent this has brought about a shift in gender roles and status; chickens were previously associated with women in rural areas and viewed as subsistence-based but with a change in status for chickens, women in the study found themselves in a position of advantage given their initial pairing with these nonhuman dwellers. While women have thus had that 'easy in' to relationships with chickens for commercial purposes, men have tried to assert themselves through their own relationships with chickens. Subversion of this gendered relationship with chickens was evident in a few interviews with men; as one respondent put it: 'Around the city, poultry is a man's job. It needs a lot of attention to look after the birds and their health, look for the market. This is demanding work. Poultry is woman's job in rural areas . . . women getting involved with poultry in cities but small-scale and towards rural areas and small markets in the backyard'.

Chickens are also catalysts in the formation of social networks and channels of communication between different groups of people in the city. Traditionally individualistic, some Batswana are embracing a collaborative approach to raising chickens whereby chickens become catalysts for informal training, learning and information sharing in the city. The majority of low-income persons in the study, for example, knew each other and spoke at length about their knowledge exchanges and general trial-and-error approaches shared with

each other in order to enhance their, in many cases, newly formed relationships with chickens. They acknowledged that chickens had brought them together and has been a source of personal fulfillment and economic gain. People also noted that their involvement with chickens had prompted them to reach out to others in the community, for example, those within the poultry industry or government authorities, to further strengthen their relations with chickens.

## **Conclusion**

Transspecies urban theory offers a means through which to draw out empirical insights on chickens as influential actors, people–chicken relations, and the impacts of these relations on Greater Gaborone, Botswana. Chickens as a social group have become inextricably bound up with structures and processes of urbanization in Botswana. Indeed, the capital city would look and function differently without their presence. Shifts in Botswana thinking about chickens over the past decade, largely on account of their role in national diversification and food self-sufficiency efforts, have increased chicken visibility and status. Emergence of and support for the commercial agriculture sector in Greater Gaborone has facilitated the possibility for chicken life in the city, which has brought with it multiple benefits for human urban dwellers in terms of social status, income generation, and food security. While the role and significance of chickens has been produced and come into being through this relational encounter between people and chickens in Greater Gaborone, chickens themselves as influential actors are shaping possibilities for how the city looks, how the city functions, and how human dwellers experience urban life. Through their influence, chickens have secured a presence and role in the city that reinforces and increases their visibility and status because they are indispensable to human activities and national interests.

Ultimately, transspecies urban theory is an important theoretical tool for empirical investigations of livestock in developing countries. Not only does it render livestock visible, it also allows one to explore concretely the ways in which animals are drivers of urban processes, structures and dynamics. A survey of urban livestock literature through this lens reveals the centrality of livestock to urban life in Africa: they make up a significant part of the African urban population; they are amenable to physical space and ecological niches presented by the urban habitat; they provide essential ecological services in the city; they are wrapped up with political economic structures and processes; they are interwoven with human social networks; and they transgress an urban imaginary that deems them out-of-place, thus challenging human notions of modernity and constructions of urban space. A specific focus on chickens in Greater Gaborone through transspecies urban theory facilitates a focused exploration of the role and significance of nonhumans that is not addressed by the urban livestock literature. Recognizing and acknowledging chicken actors means that one can see further how these nonhuman urban dwellers make a difference in how the city looks and in the lives of human urban dwellers. Indeed, viewed as spaces for species intermingling, it is undeniable that cities are inherently wrapped up in human–animal relations.

Thus the application of transspecies urban theory sheds new insights on urban livestock in Africa, and will appeal to scholars across disciplines interested in urban development and

African affairs. At the same time, by focusing on the African context, this article enhances and extends this theoretical framework in ways that are useful and productive for new cultural animal geographers. Empirically, the article offers a new geographical case study to reveal an environment in which animals play a more visible, socio-economically central role in cities compared with those regions where most urban and animal theory has been developed to date. The heightened human–animal relations that occur across sub-Saharan Africa demonstrate clearly the complexity of dynamics that evolves when animals are ‘let into’ or ‘transgress’ human boundaries of cities. Again this is not always visible or tangible in case studies emerging from parts of the world where many animals (and livestock in particular) are barred from urban life. By demonstrating in yet another context the indispensability of animals to urban life, this case study also reinforces the importance of and need for the sub-discipline of animal geography in academia. Animal geography is not in fact ‘too remote from central problems of human geography’ as it has been critiqued in the past.

Theoretically, the article offers a nuanced discussion and articulation of the role and significance of animals. Previous iterations of transspecies urban theory offer a conceptual starting point for human–animal investigations and this article builds on this relational understanding to articulate the ways in which animals are influential actors wrapped up in human thinking about the world, ultimately acquiring power to shape that world in ways that reinforce their own influence. To this end, transspecies urban theory becomes both a conceptual tool to explore human–animal dynamics and a theoretical tool that helps explain the reasons why and ways in which animals exert power and influence in human society.

Philosophically, this theoretical trajectory raises questions regarding the extent to which one can say that animals have actual *agency* in the human–animal relationship. Within the context of chickens and people in Botswana this is significant given that increased visibility and status of chickens has necessarily given rise to intensive slaughter of these nonhuman urban dwellers. To what extent can one talk about chicken agency if this influence and power is ultimately couched in a hierarchical, anthropomorphic system of control? Further still, is it possible or even right to interpret the lives and influence of nonhuman animals through the lens of the human world, as has been done in this particular ‘thought-experiment’? Such philosophical questions, and the political practices that shape animal well-being and experience, require much greater attention than granted here. Nevertheless, the explicit focus of this article on animals and making visible their presence, role and significance in urban Africa is a fundamental starting point for addressing larger issues of animal welfare and positionality.

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## Notes

- <sup>1</sup> B. Smuts, 'Reflections', in J. M. Coetzee, *The lives of animals* (Princeton, Princeton University Press, 1999), p. 118.
- <sup>2</sup> 'Livestock' here refers to any domestic animals that are raised for subsistence or commercial use, and include cattle, horses, donkeys, sheep, goats, pigs, poultry, guinea pigs, rabbits, and so on. Although this term may be considered anthropocentric, it is recognized by academics and practitioners and necessarily implies a symbiotic relationship between people and animals that is fundamental to the central argument of this article.
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- <sup>5</sup> A. Waters-Bayer, 'Living with livestock in town, urban animal husbandry and human welfare', *Urban agriculture magazine* 1 (2000).
- <sup>6</sup> 'Leaving out the livestock?', *New agriculturalist on-line* 3 (2000), <http://www.new-agri.co.uk/03-5/focuson/focuson2.html>.
- <sup>7</sup> 'Animal' includes both mammals and birds, which do not appear as distinct categories in the new cultural animal geography literature.
- <sup>8</sup> J. Wolch, 'Anima urbis', *Progress in human geography* 26 (2002), p. 722.
- <sup>9</sup> C. Philo, 'Animals, geography and the city, notes on inclusions and exclusions', in J. Wolch and J. Emel, eds, *Animal geographies, place, politics and identity in the nature–culture borderlands* (London, Verso, 1998), pp. 56–7.
- <sup>10</sup> Wolch, 'Anima urbis', pp. 722, 725.
- <sup>11</sup> C. Philo and C. Wilbert, eds, *Animal spaces, beastly places, new geographies of human–animal relations* (London, Routledge, 2000), p. 4.
- <sup>12</sup> Wolch, 'Anima urbis', pp. 722, 725.
- <sup>13</sup> J. Wolch and J. Emel, 'Guest editorial on "bringing the animals back in"', *Environment and planning D, society and space* 13 (1995), p. 632.
- <sup>14</sup> 'New' cultural animal geography is a fundamental rethinking of animals through which geographers may be able to bring animals into clearer focus and back into understanding of social life (Wolch and Emel, *Animal geographies, place, politics and identity in the nature–culture borderlands* 1998, p. xii).
- <sup>15</sup> Philo, 'Animals, geography and the city, notes on inclusion and exclusions', p. 54; C. Philo and J. Wolch, 'Through the geographical looking glass, space, place, and society–animal relations', *Society and animals* 6 (1998), p. 107.
- <sup>16</sup> Wolch and Emel, 'Guest editorial on "bringing the animals back in"', p. 632.
- <sup>17</sup> Wolch, 'Anima urbis', p. 722.
- <sup>18</sup> *Ibid.*, p. 726.
- <sup>19</sup> G. Desfor and R. Keil, *Nature and the city, making environmental policy in Toronto and Los Angeles* (Tucson, University of Arizona Press, 2004), p. 70.

- <sup>20</sup> D. Haraway, 'Otherworldly conversations: terran topics; local terms', *Science as culture* 3 (1992), p. 67.
- <sup>21</sup> S. Whatmore, 'Hybrid geographies, rethinking the "human" in human geography', in D. Massey, J. Allen and P. Sarre, eds, *Human geography today* (Cambridge, Policy Press, 1999), p. 27.
- <sup>22</sup> Whatmore, 'Hybrid geographies, rethinking the "human" in human geography', p. 33.
- <sup>23</sup> Desfor and Keil, *Nature and the city*, p. 72.
- <sup>24</sup> E. Swyngedouw, 'The city as a hybrid, on nature, society and cyborg urbanization', *Capitalism, nature, socialism* 7 (1996), pp. 66–7.
- <sup>25</sup> J. Wolch, A. Brownlow and U. Lassiter, 'Constructing the animals worlds of inner-city Los Angeles', in C. Philo and C. Wilbert, eds, *Animal spaces, beastly places, new geographies of human–animal relations* (London, Routledge, 2000), p. 71.
- <sup>26</sup> J. Wolch, K. West and T. E. Gaines, 'Transspecies urban theory', *Environment and planning D, society and space* 13 (1995), pp. 735–60; later termed Zoopolis in J. Wolch, 'Zoopolis', in J. Wolch and J. Emel, eds, *Animal geographies, place, politics and identity in the nature–culture borderlands* (London, Verso, 1998), pp. 119–38.
- <sup>27</sup> Wolch, 'Zoopolis', p. 119.
- <sup>28</sup> *Ibid.*, p. 125.
- <sup>29</sup> Philo, 'Animals, geography and the city, notes on inclusion and exclusions', p. 51.
- <sup>30</sup> Wolch and Emel, eds, *Animal geographies, place, politics and identity in the nature–culture borderlands*, p. xiii.
- <sup>31</sup> Y. F. Tuan, *Dominance and affection, the making of pets* (New Haven, CT, Yale University Press, 1984).
- <sup>32</sup> C. Philo and C. Wilbert, eds, *Animal spaces, beastly places, new geographies of human–animal relations* (London, Routledge, 2000).
- <sup>33</sup> *Ibid.*, p. 4.
- <sup>34</sup> Wolch and Emel, *Animal geographies, place, politics and identity in the nature–culture borderlands*, p. xi.
- <sup>35</sup> Wolch, 'Zoopolis', p. 121.
- <sup>36</sup> C. Philo, 'Animals, geography and the city, notes on inclusions and exclusions', *Environment and planning D, society and space* 13 (1995), pp. 655–81.
- <sup>37</sup> Wolch, 'Anima urbis', p. 728.
- <sup>38</sup> Philo and Wolch, 'Through the geographical looking glass', p. 108.
- <sup>39</sup> Adapted from Philo, 'Animals, geography and the city, notes on inclusion and exclusions', p. 53.
- <sup>40</sup> Wolch, 'Anima urbis', p. 729.
- <sup>41</sup> Whatmore, 'Hybrid geographies, rethinking the "human" in human geography', p. 28.
- <sup>42</sup> J. Dempsey, 'Tracking grizzly bears through environmental struggles in British Columbia', paper presented at the Association of American Geographers Annual Meeting, San Francisco CA, 20 April 2007.
- <sup>43</sup> Wolch, Brownlow and Lassiter, 'Constructing the animal worlds of inner-city Los Angeles', p. 71.
- <sup>44</sup> Wolch, 'Anima urbis', p. 727.
- <sup>45</sup> *Ibid.*, p. 729.
- <sup>46</sup> *Ibid.*, p. 733.
- <sup>47</sup> Philo, 'Animals, geography and the city, notes on inclusion and exclusions' (1995).
- <sup>48</sup> Wolch, Brownlow and Lassiter, 'Constructing the animal worlds of inner-city Los Angeles'.
- <sup>49</sup> R. Yarwood and N. Evans, 'Taking stock of farm animals and rurality', in C. Philo and C. Wilbert, eds, *Animal spaces, beastly places, new geographies of human–animal relations* (London, Routledge, 2000), pp. 98–114.
- <sup>50</sup> For example, Yarwood and Evans, 'Taking stock of farm animals and rurality', p. 99.
- <sup>51</sup> For example, F. M. Ufkes, 'Building a better pig, fat profits in lean meat' in J. Wolch and J. Emel, eds, *Animal geographies, place, politics and identity in the nature–culture borderlands* (London, Verso, 1998), pp. 241–55; M. Watts, 'Afterword, enclosure', in C. Philo and C. Wilbert, eds, *Animal spaces, beastly places, new geographies of human–animal relations* (London, Routledge, 2000), pp. 292–304.
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- <sup>55</sup> See, for example, FAO, 'Livestock keeping in urban areas, a review of traditional technologies (test version – limited circulation)', *Animal production and health papers* No. 151 (Rome, Food and Agricultural Organization, 2001); Smith and Olaloku, 'Peri-urban livestock production systems'.
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- <sup>57</sup> H. Schiere and G. den Dikken, 'Urban farming and animal production, a synthesis', *RUAF urban agriculture annotated bibliography* (Wageningen, The Netherlands, RUAF, 2001), pp. 326–7.
- <sup>58</sup> A. Waters-Bayer, 'Animal farming in African cities', *African urban quarterly* 11 (1996), p. 222.
- <sup>59</sup> L. Mougeot, 'Urban food production, evolution, official support and significance', *Cities feeding people report series* No. 8 (Ottawa, International Development Research Center, 1994).
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- <sup>70</sup> Ghirotti, 'Making better use of animal resources in a rapidly urbanizing world, a professional challenge'.
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- <sup>75</sup> D. Foeken and S. Owuor, 'Livestock in a middle-sized east-African town, Nakuru', *Urban agriculture magazine* 1 (2000), p. 21.
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- <sup>77</sup> Estimates from the early 1990s reveal that Nairobi, Kenya was home to 25,000 cattle, 30,000 small ruminants, 30,000 pigs, 8500 rabbits and 350,000 poultry (J. A. van der Blik, *Urban agriculture*,



- possibilities for ecological agriculture in urban environments as a strategy for sustainable cities [Leusden, Netherlands, ETC, 1992]). Harare, Zimbabwe was home to 27,776 animals (ENDA, Urban agriculture in Harare, final report for International Development Research Center project #93-0024, 1994) and Accra, Ghana had a population of 4.5 million animals (Smith and Olaloku, 'Peri-urban livestock production systems'). Dar es Salaam, Tanzania had populations of 793,411 chickens, 15,658 pigs, 6217 goats, and 8517 dairy cattle (A. C. Mosha, 'Urban farming practices in Tanzania', *Review of rural and urban planning in South and East Africa* 1 [1991], p. 84). In the mid-1980s, Maseru, Lesotho was home to 75,000 chickens (T. Greenhow, 'Urban agriculture, can planners make a difference?' *Cities feeding people report series* No. 12 [Ottawa, International Development Research Center, 1994], p. 3). Given subsequent research it is probable that these figures have steadily increased.
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- <sup>81</sup> For example, Losada, Bennett, Soriano, Vieyra and Cortes, 'Urban agriculture in Mexico City, functions provided by the use of space for dairy based livelihoods', p. 428.
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- <sup>83</sup> UNDP, *Urban agriculture, food, jobs and sustainable cities* (New York, United Nations Development Programme, 1996), p. 205.
- <sup>84</sup> Sumberg, 'Poultry production in and around Dar es Salaam, Tanzania', p. 190.
- <sup>85</sup> M. R. S. Mlozi, 'Impacts of urban agriculture in Dar es Salaam, Tanzania', *The environmentalist* 17 (1997), pp. 122.
- <sup>86</sup> Waters-Bayer, 'Animal farming in African cities', p. 222.
- <sup>87</sup> Schiere, Tegegne and Veenhuizen, 'Livestock in and around cities', p. 2.
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- <sup>89</sup> Foeken and Owuor, 'Livestock in a middle-sized east-African town, Nakuru', p. 21.
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- <sup>91</sup> Gertel, 'Animal husbandry, urban spaces and subsistence production in Cairo', p. 50.
- <sup>92</sup> *Ibid.*, p. 51.
- <sup>93</sup> For example, Drechsel, Amoah, Cofie and Abaidoo, 'Increasing use of poultry manure in Ghana'; Ghirrotti, 'Making better use of animal resources in a rapidly urbanizing world, a professional challenge'; M. R. S. Mlozi, 'Urban agriculture in Dar es Salaam, its contribution to solving the economic crisis and the damage it does to the environment', *Development southern Africa* 13 (1996) pp. 47–65; Mlozi, 'Urban agriculture, ethnicity, cattle raising, and some environmental implications in the city of Dar es Salaam, Tanzania'; Mlozi, 'Impacts of urban agriculture in Dar es Salaam, Tanzania'.
- <sup>94</sup> FAO, 'Livestock keeping in urban areas'.
- <sup>95</sup> Spore, 'Urban and peri-urban livestock production, when the ark comes to town'.
- <sup>96</sup> Losada, Bennett, Soriano, Vieyra and Cortes, 'Urban agriculture in Mexico City, functions provided by the use of space for dairy based livelihoods', p. 420; Waters-Bayer, 'Animal farming in African cities'.
- <sup>97</sup> For example, FAO, 'Livestock keeping in urban areas'; N. Bakker, M. Dubbeling, S. Gündel, U. Sabel-Koschella and H. de Zeeuw, eds, *Growing cities, growing food, urban agriculture on the policy agenda* (Germany, Deutsche stiftung für internationale Entwicklung, 2000); RUAf, *Urban agriculture magazine*.



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- <sup>99</sup> A. J. Hovorka, 'The (re)production of gendered positionality in Botswana's commercial urban agriculture sector', *Annals of the Association of American Geographers* 95 (2005), pp. 294–313; A. J. Hovorka, 'Commercial urban agriculture in Greater Gaborone, form & function, challenges & prospects', *Journal of African studies* 18 (2004), pp. 80–94; Hovorka, 'Entrepreneurial opportunities in Botswana, (re)shaping urban agriculture discourse'.
- <sup>100</sup> For example, W. Wynne and M. Lyne, 'An empirical analysis of factors affecting the growth of small-scale poultry enterprises in KwaZulu-Natal', *Development southern Africa* 20 (2003), pp. 563–78; FAO, 'Livestock keeping in urban areas'; J. Moreki, 'Urban and peri-urban agriculture in the livestock sub-sector', in D. Keboneilwe and A. J. Hovorka, eds, *Proceedings of the national workshop on (peri-)urban agriculture* (Gaborone, Botswana, Ministry of Agriculture, Government of Botswana, Gaborone, 2001), pp. 57–60; Sumberg, 'Poultry production in and around Dar es Salaam, Tanzania'.
- <sup>101</sup> Drechsel, Amoah, Cofie and Abaidoo, 'Increasing use of poultry manure in Ghana', p. 25.
- <sup>102</sup> B. Baumgartner and H. Belevi, *A systematic overview of urban agriculture in developing countries* (Geneva, Swiss Federal Institute for Environmental Science & Technology, Department of Water & Sanitation in Developing Countries, 2001), p. 14.
- <sup>103</sup> Philo, 'Animals, geography and the city, notes on inclusion and exclusions', p. 67.
- <sup>104</sup> Text adapted from Sarah Whatmore's entry on animal geography in Johnston et al.'s *The dictionary of human geography*, 4th edn (2000).
- <sup>105</sup> Batswana refers to citizens of Botswana.
- <sup>106</sup> This line of argument is not intended to glamorize urban chickens or to diminish genuine human concerns about their negative aspects, especially in terms of infectious disease and hygiene. Rather this argument attempts to reorient one's understanding of cities by taking on a nonhuman animal entry point into such explorations.
- <sup>107</sup> Central Statistical Office: [www.cso.gov.bw](http://www.cso.gov.bw) (Gaborone, Government of Botswana, accessed, 10 June 2003).
- <sup>108</sup> Ibid.
- <sup>109</sup> Ministry of Local Government, Lands and Housing, Gaborone City Development Plan (1997–2021) – Draft Final Plan (Gaborone, Botswana, Ministry of Local Government, Lands and Housing, Gaborone City Council, Department of Town and Regional Planning, 1998), p. 288.
- <sup>110</sup> E. Jones-Dube, 'Non-metropolitan migration in Botswana with an emphasis on gender', in J. Baker and T. Akin Aina, eds, *The migration experience in Africa* (Uppsala, Sweden, Nordiska Afrikainstitutet, 1995), p. 325.
- <sup>111</sup> Hovorka, 'Entrepreneurial opportunities in Botswana', p. 378.
- <sup>112</sup> Ibid., p. 378.
- <sup>113</sup> Ibid., p. 374.
- <sup>114</sup> Ibid., p. 739.
- <sup>115</sup> These population estimates were generated from Ministry of Agriculture data: Ministry of Agriculture, Poultry Section annual report 2005/2006 (Gaborone, Botswana, Ministry of Agriculture, 2006); Ministry of Agriculture, Poultry Section annual report 1999 (Gaborone, Botswana, Ministry of Agriculture, 1999) for broiler production in the Southern and Kweneng South Districts within which Greater Gaborone is situated.
- <sup>116</sup> C. Bond (1974) cited in L. Fortmann, 'Women's involvement in high risk arable agriculture: the Botswana case', *Women in development* (Washington DC, USAID, 1980).

- <sup>117</sup> Government of Botswana, *Long term vision for Botswana: prosperity for all* (Gaborone, Botswana, Presidential Task Group, 1997), p. 45.
- <sup>118</sup> Government of Botswana, *National development plan 9 2003/04–2008/09* (Gaborone, Botswana, Government of Botswana, 2002), pp. 187–90.
- <sup>119</sup> *Ibid.*, p. 178.
- <sup>120</sup> Ministry of Local Government, *Lands and housing, Gaborone City development plan (1997–2021)*, pp. 85–7.
- <sup>121</sup> Hovorka, ‘Entrepreneurial opportunities in Botswana’, p. 381.
- <sup>122</sup> Ministry of Agriculture, Poultry Section annual report 2001 (Gaborone, Botswana, Ministry of Agriculture, 2002), p. 1.
- <sup>123</sup> Ministry of Agriculture, Poultry Section annual report 2005/2006, pp. 2, 9.
- <sup>124</sup> T. Seleka, *Diversification in Botswana’s agricultural sector: issues, prospects and challenges, BIDPA publication series* (Gaborone, Botswana, Botswana Institute for Development Policy Analysis, 2004), p. 15.
- <sup>125</sup> Ministry of Agriculture, Poultry Section annual report 2001.
- <sup>126</sup> Ministry of Agriculture, Poultry Section annual report 2005/2006, p. 5.
- <sup>127</sup> Ministry of Agriculture, Poultry Section annual report 2005/2006, p. 1; Ministry of Agriculture, Poultry Section annual report 1999, p. 3.