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ARTICLE

Living waste, living on waste: A bioeconomy of urban cows in Delhi

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Abstract

The economic implications of biopolitics – or the administration, regulation, and control of life – have received significant attention in recent geographical and cognate scholarship. An emerging theme of inquiry, largely focused on the Global North, makes contributions to specifying 'lively capital', defined here as bodily value in motion – predicated on accumulation from other-than-human life. In this paper, we argue that the biopolitical process of bringing life into the ambit of capital works in cultural, political, and economic registers and not just through singular logics of the economic, as extant accounts have implied. The rendition of life into capital through modes of biopower is not a universal process. It has diverging trajectories that, in postcolonial contexts, involve hybrids between biopolitical and vernacular practices. This argument is made through an account of bovine biopolitics in urban Delhi with specific reference to the city's 'cattle problem' involving 'surplus' animals. It unfolds in four distinct parts. First, drawing on archival work, we trace colonial histories of cattle improvement to reveal how the category of 'surplus' was invented. Second, we deploy more-than-human ethnographies of free-ranging animals in Delhi to foreground how 'surplus' cattle – which we conceptualise as 'living waste' – are driven to feed on waste as a result of gentrification and the enclosure of erstwhile grazing grounds. Third, we turn to *gaushalas* (cow shelters) in Delhi to show how 'surplus' cattle from the city's streets are rehomed and managed. Fourth, we examine the uneven practices of care afforded to different bovines based on logics associated with right-wing Hindutva nationalism. Our account provincialises lively capital by opening up more nuanced and situated understandings of the relations between biopolitics and capitalism, attentive to divergences from models situated in Western modernity.

KEYWORDS

biopolitics, cows, India, lively capital, more-than-human geographies, urban ecologies

1 | INTRODUCTION

On Delhi's streets, cows mingle freely with pedestrians, rickshaws, buses, and cars. Their presence, however, does not align with the urban elite's aspirational image of Delhi as a modern world city. Consequently, stray cows have been outlawed and categorised as 'problem animals'. Responding to the 'overpopulation' of 'surplus' cows, Delhi's municipal authorities remove cows from the streets. It is illegal to slaughter cows in most Indian states due to their sacrality in Hinduism, so once captured, they need somewhere to go. One solution involves moving them to *gaushalas* (cow shelters), but across India, *gaushalas* are overcrowded and underfunded. Meanwhile, the Indian government incentivises cow production to foster both the Indian economy and *gau seva* (cow service), exacerbating India's 'cattle problem'.

Cows are forms of 'lively capital' (Sunder Rajan, 2012), understood as bodily value in motion (Barua, 2019). India is the world's largest milk producer, making cows a major source of income for many, including those in the urban margins. But they are not just economic animals. In India, cows 'inhabit several worlds simultaneously': domesticated, wild, human, divine, transcendental (Robbins, 1998, p. 237). Cows are considered sacred in Hinduism and, since the Bharatiya Janata Party (BJP) rose to power in 2014, they have been mobilised as political symbols for the *Hindutva* movement and become conduits for the expression of majoritarian forms of right-wing Hindu nationalism (Adcock & Govindrajan, 2019). *Gau seva* and cow protectionism are now political priorities. Political, economic, and sacred animals in equal measure, cows in urban India raise a number of questions concerning the conjunction between biopolitics – or the governance and administration of life – and bioeconomy – or the spaces and avenues of generating profit from life itself. How did cows in India come to be configured as 'surplus'? What do the lives of surplus cows look like? And what can India's so-called 'cattle problem' teach us about the intersection between bovine biopolitics, lively capital, and urban ecologies?

A growing body of work on 'more-than-human' (Biermann & Mansfield, 2014; Chrulew & Wadiwel, 2017) and 'bovine biopolitics' (Gillespie, 2014; Lorimer & Driessen, 2013) extends Foucauldian biopolitics to nonhumans (see Srinivasan, 2013, 2014). Drawing from Foucault's (1998) early observations of biopower as a technology of capital, others are now expanding a more-than-human biopolitics by drawing attention to how the administration of life has political economic consequences. An emerging literature on 'lively commodities' (Barua, 2016; Collard & Dempsey, 2013) and 'lively capital' (Barua, 2019; Collard, 2020) examines the diverse arrangements through which other-than-human life is brought into the ambit of value and the bearings liveliness has on processes of capital accumulation (see Shukin, 2009). Geographers have explored how other-than-human life is administered differently in South Asian contexts, attending to informal practices of managing life that occur outside interventions by the State (Narayanan, 2019; Srinivasan et al., 2019). Yet, just as the administration of life operates through hybrids of biopolitical techniques enacted by the State and vernacular practices that are not necessarily Statist in their orientation, 'the economic' does not conform to a 'singular logic that is derived from a pre-made domain' (Bear et al., 2015, n.p.). It is writ through with cultural practices (Amin & Thrift, 2007), aptly illustrated by the diverse forces through which India's 'cattle problem' manifests.

This paper has three aims. First, we want to further conversations between biopolitics and political economy, specifying a bioeconomy centred on diverse practices of administering bovine life in postcolonial urban India. We trace how biopolitical practices intersect with economic imperatives of rendering cattle into sources of value, or of discarding them as surplus: 'living waste'. Second, we examine the diverse cultural practices that constitute 'the economic' vis-à-vis bovine life. Analyses of lively capital, we argue, cannot take a bioeconomy – often capitalist in its orientations – to be formed a priori. The economic must be conceptualised as a historically situated and relational performance of productive powers, manifesting differently across contexts. Third, responding to recent calls to globalise and decolonise animal geographies (Hovorka, 2016; Srinivasan et al., 2019), we wish to provincialise lively capital. Bovine biopolitics and bioeconomies outside the West, we contend, are not simply an idiographic variation of a singular logic through which value is generated from life. Rather, such bioeconomies call for theorising lively capital as a plural concept that emerges differently across geographies.

The paper begins by surveying scholarship on bovine geographies and outlines our ethnographic and archival methods. It then unfolds via four empirical sections. The first examines the colonial roots of India's 'cattle problem' in relation to the enclosure of urban space. We show that the idea of 'surplus cattle' was a colonial invention, which, in postcolonial urban India, merged with anxieties over slums. Next, we offer several vignettes concerning the lives of urban cows as they wander Delhi's garbage dumps and informal settlements. Here, we examine the political economy of urban dairies and the reasons cows roam the streets. We then turn to Delhi's *gaushalas*, the sites where 'surplus' cattle often end up. We examine *gaushalas*' role in homing and caring for surplus cattle, revealing that they often aggravate the problem they aim to solve. Finally, we map the nativist biopolitics underpinning the variegated geographies of cattle care in *gaushalas*. We conclude with reflections on the implications of this research for future work on biopolitics, lively capital, and urban ecologies.

2 | BOVINE GEOGRAPHIES, BIOPOLITICS, AND LIVELY CAPITAL

Bovines have long been targets of bio- and anatomo-political interventions – bodies through which politics are enacted, culture is expressed, and value is produced. Scholarship on Western bovine biopolitics, drawing on Foucault's formulations of biopower rooted in European modernity (Foucault, 1998, 2009), is plentiful. It examines how bovine lives are regulated through different biopolitical practices including agriculture, conservation, welfare, biosecurity, and climate change mitigation (Lorimer & Driessen, 2013; McGregor & Houston, 2018). Biopolitics is a variegated life-governing force, one that is historically situated (Holloway & Morris, 2017); specific to moments, geographies, and sites.

Moving from biopolitics to bioeconomy, there is exemplary work on political economies surrounding bovine life. Such research examines, for instance, the economic geographies of industrial dairies (Gillespie, 2014, 2020) and the role of genomics in determining the value of livestock (Holloway & Morris, 2012). In Western contexts, the administration of bovine life tends to be dominated by economic logics, where cows have largely become commodities in industrial dairy production. Kathryn Gillespie's (2014, 2020) research in US dairies exemplifies how the administration of bovine life becomes synonymous with the generation of surplus value. Cattle are thus an emblematic example of 'lively capital' (Sunder Rajan, 2012) – fleshy, or corporeal value in motion – where their lives as centres of production trump other forms of bovine being.

Bovines are 'rendered' into capital (Shukin, 2009), meaning they are coded as sites through which surplus value is generated and materially reconfigured into diverse commodities in several ways. At one moment, they are 'workers' for the dairy industry (milk-producers); at others, 'whole' commodities exchanged and traded (livestock); and yet at other moments, they are sold as 'parts' (beef), which circulate as products with their own 'concomitant geographies of consumption, realization and valorization' (Barua, 2019, p. 660). Such geographies are historically situated and are writ through by cultural forces. Lively capital, like biopower, thus comes into being in a variegated fashion, through specific, historically situated pathways and conditions. Accounts of biopower rooted in a model of Western modernity, therefore, cannot be off-the-shelf analytics for understanding how bovine life is administered and rendered into a locus of accumulation in the South Asian context.

Such difference is elucidated by Paul Robbins' work on meat-eating in India, in which he highlights the prevalence of a complex 'cultural commodity politics' 'in a period when the global market is generally supposed to be erasing local meaning and applying uniform significance to objects, producers and consumers' (Robbins, 1999, pp. 399–400). Indeed, as Robbins argues, 'the ethics that govern the treatment of and interaction with nonhumans are tied to cultural forms [which] are in a state of constant flux' (Robbins, 1998, p. 234). The cultural economies in which bovines in South Asia are caught up prompts us to query the relationship between biopolitics, nature, and capital. What is at stake are the plurality of channels through which life is administered and valued beyond the economic. As our archival work and the histories we trace reveal, there are many currents at play in the formation of lively capital – currents that a genealogy of biopolitics derived from a model of European modernity sometimes overlooks or takes for granted.

In post-colonial contexts, cultural, economic, Statist, and vernacular practices intertwine to administer bovine life and render it into a realm of accumulation. As Anand Pandian notes, in South Asia, the governance of life is 'shot through with the traces of other moments and prior forms of biopolitical government, both Western and non-Western, and each with their own genealogies both distinctive and intertwining' (Pandian, 2008, p. 110). Histories of *gaushalas*, for instance, reveal how as sites of bovine biopolitics, they have long been caught up in the cow-protectionist discourse, which was at times in tension with colonial profit-driven imperatives of cattle 'improvement' and at other times in tune with them (Adcock, 2010, 2019). Colonial biopolitics of managing cattle thus intersected with vernacular, non-Statist practices, which had bearings on how the 'surplus cattle problem' was configured. Indeed, the category of 'surplus' cattle was a colonial invention, with roots in quests to 'improve' the 'quality' of Indian bovines. Yet, animals considered 'surplus' were never directly eliminated due to cultural and religious constraints. Bioeconomies involving cattle also intersect with postcolonial developmentalist logics of improving cattle breeds, notably through imperatives of generating high-yielding breeds during India's Fourth Five Year Plan (1969–1974), and the disastrous effects they have had on rural communities, including the extinction of indigenous breeds (Sainath, 1996).

In the contemporary context, cattle are entangled in frictions regarding mobility in metropolitan Delhi (Baviskar, 2011). There are tensions between free-roaming cows, their owners, and urban elites who aspire to an aesthetic 'world class' city. Extending these critiques, Rajayshree Reddy argues that 'the ecologies of urban India are constitutively casteist' (Reddy, 2021, p. 643). Indeed, the analytics of caste are vital for grasping bovine biopolitics in India. Casteist ecologies involve an 'eviscerating urbanism' in metropolitan India, where certain bodies – both human and other-than-human – are designated as wasteful according to modern logics of urban governance (Gidwani & Reddy, 2011). The lower castes

are associated with cattle-rearing and waste management, while wealthier, middle-class sections of society (typically from more privileged castes) are associated with *gau seva*. Extending these analytics to other-than-human worlds, Yamini Narayanan (2018b) describes a 'casteised speciesism' at work in contemporary Indian bovine biopolitics, where once again, vernacular practices are beginning to have an impact on what forms of bovine life are valued and which ones are disavowed. Indigenous Indian cows, Narayanan argues, are 'burdened with representing Hindu purity, while buffalo and crossbred or Jersey cows are exposed to exploitation and oppression comparable to the situation faced by Dalits' (Narayanan, 2018b, p. 331). This has also been called 'nativist biopolitics', and associated with dreams of a racially 'pure' Hindu nation (Münster, 2017). There is a caste/class dynamic to the uneven human geographies of lively capital, which acts not only on bovine bodies but on people who occupy marginalised positions within a racial hierarchy of caste. It is thus essential to attend to *both* cattle rearers *and* cows together (Robbins, 1998).

Examination of casteised ecologies reveals a core emerging logic underpinning contemporary Indian bovine biopolitics: the distinction between 'indigenous' and 'exotic' cows.[1] This examination provides an avenue for provincialising lively capital. To flesh out this logic, we examine the situated geographies of bovine biopolitics and their attendant economies in Delhi through archival and more-than-human ethnographic work. Fieldwork in Delhi's *gaushalas* was carried out by Jonathon Turnbull in the summer of 2017, involving guided tours and in-depth interviews with *gaushala* managers and workers. This involved visiting on-site veterinary hospitals (when present), cow shelters, and other features of *gaushala* premises, like ayurvedic shops selling myriad cow products, from milk to urine-infused toothpaste. We observed general maintenance, assisted with feeding, massaged and groomed cows, and even observed a live birth. We also interacted with workers and local visitors. The *gaushalas* visited were recommended by several scholars of Delhi's urban ecologies and local contacts. One prominent, well-connected *gaushala* manager arranged the majority of visits, ensuring we saw the best, worst, and average *gaushalas* in the city. We also conducted interviews with five animal welfare activists in Delhi and the former chairman of the Animal Welfare Board of India (AWBI). Field notes were typed up, coded, and analysed manually according to several emergent themes.

Gaushalas are sites where the multiple logics of Indian bovine biopolitics are brought into sharp relief. They are popularly considered sites of care for old, sick, abandoned, injured, disabled, non-economical, or retired cattle, offering a unique model of bovine welfare provision across India (Lodrick, 2005; Sharpes, 2006). They are associated with *dharma* (religious duty) in Hinduism and are dedicated to *gauraksha* (cow protection) and *gau seva*. During British colonialism, the number of *gaushalas* and *pinjrapoles* (animal shelters) grew exponentially, which was connected to a growth in nationalistic sentiment antagonistic to British occupation (Kennedy et al., 2018). Since that period, the number of *gaushalas* has continually risen. In 2002, according to a Report of the National Commission on Cattle, there were 3000 *gaushalas* in India homing around 600,000 cattle. Today, the AWBI funds 1837 affiliated *gaushalas* (Sharma et al., 2019). Traditionally, *gaushalas* have relied on charitable donations, but many receive significant funding from the State. Nevertheless, it is widely acknowledged they lack capacity for dealing with India's 'stray cattle problem'.

We situate our account of surplus cattle within specific histories, drawing on archival research in the National Archives of India and the Delhi State Archives, and reports from imperial and Indian State commissions. These histories inform our understanding of cattle in Delhi today, whose lives we track through 'bovine ethnographies' conducted by Maan Barua between 2018 and 2019. Drawing on extant methods, including 'bovine ambles' (Baviskar, 2011; Nagy, 2020), we track how cows interact with various facets of the urban environment, revealing the details of 'surplus' lives, or 'living waste'. We begin by tracing the colonial roots of 'surplus' cows.

3 | LIVING WASTE: THE COLONIAL ROOTS OF INDIA'S SURPLUS CATTLE

3.1 | Creating surplus

The management of cattle in India under colonial government began in the late 19th century. Following several famines across the country, which caused significant human and bovine death, the colonial government began advocating cattle management according to 'scientific principles'. The imperative was to 'weed out' weaker animals to not overburden food supply (Mishra, 2013). Efforts to eliminate 'worthless' males deemed unfit for producing quality progeny began in the 1920s. This process accelerated when The Royal Commission of Agriculture in India, appointed in 1926, produced a set of recommendations for 'cattle improvement', which involved increasing economic output. Only bullocks that could be 'fully employed' to work and cows from a 'heavy milking strain' were kept as stock (Royal Commission of Agriculture

in India, 1928, p. 182). This process of 'breed improvement' went hand-in-hand with creating the outside to lively capital: 'useless bulls' were prevented from breeding through castration. In the Punjab province alone, under whose jurisdiction Delhi fell, 218,000 castrations were undertaken between 1926 and 1927 (1928, p. 182). Breed improvement entailed a mode of biopolitics that demanded increased economic productivity. Biopolitics and political economy were thus deeply entwined, which is further elaborated in this section drawing on archival research.

To improve the milking capacity of India's cattle, the colonial government imported European breeds and crossbred them with indigenous Indian breeds. Maintaining European cows in the Indian climate, however, is difficult. They require many more resources than indigenous cows. The colonial government thus resorted to working with the 'best indigenous breeds' in each locality (Anon, 1937). At the time, the Indian cow protection movement began to endorse milch cattle improvement, recognising and supporting the colonial State's position that preserving *all* bovines ran contrary to cattle improvement. Rearing cattle was framed as central to India's economy, rather than simply being 'a matter of private Hindu sentiment' (Adcock, 2019). British colonial officials praised *gaushalas* working on breed improvement and, by the 1930s, cow protectionism and breed improvement went hand-in-hand (Adcock, 2019). Vernacular practices of cow protectionism and the colonial biopolitics of breed improvement were thus wedded from the outset.

Cow protectionism, and wider cultural and religious practices, shaped how bovine life – whether productive or surplus – could be managed. In 1947, an expert committee appointed by the Government of India to assess the population of 'old and unproductive cattle' noted that 'prevailing sentiments against slaughter' meant these bovines could not be simply disposed of (Government of India, 1949). The committee proposed plans to create what it called cattle 'concentration camps' for 'dealing with the problem of unproductive cattle' (Government of India, 1949). Unclaimed and old bovines were sent to these camps in rural areas, each housing 2000 animals with pastures and workers looking after them (Government of India, 1949).

Soon, the problem of surplus cattle was increasingly framed by the State as an *urban* problem, a view expressed by cow protectionists since the early 20th century (Adcock, 2019). Another expert committee on the 'Prevention of Slaughter of Cattle', formed in the 1950s, stated that:

> The root cause of slaughter of milch cattle is the unnatural conditions under which animals are kept for milk production *in urban areas*. The sale of dry animals for slaughter becomes under these conditions, an economic necessity. The only way in which the present abuse can be permanently prevented is to follow the method found most suitable by other countries *namely the removal of cattle from the cities* and the arrangements of milk supplies from rural areas
>
> (Government of India, 1955, emphasis added)

By the early 1960s, it was generally accepted by economists and agricultural scientists that India's bovine stock was surplus relative to available feed supply (Misra, 1973). To prevent the 'slaughter of useful milch animals in the cities', the expert committee called for 're-organizing [urban] milk supply' (Government of India, 1955, p. 40). Policies for 'salvaging' dry milch cattle were instated, involving 'a short-term measure, a scheme for conservation of dry-cattle from city stables' (Gosamvardhana, 1958, n.p.). The scheme was designed to prevent the slaughter of dry cattle while improving 'their breed by mating them with suitable breeding bulls stationed at the dry stock farm' (Gosamvardhana, 1958) (Figure 1).

3.2 | Postcolonial bovines

In the postcolonial era, logics of cattle improvement registered an important shift. Instead of improving indigenous breeds as per the earlier strategy, State-led efforts aimed to crossbreed indigenous cattle with 'exotic' breeds. Through India's third Five Year Plan in the 1960s, the State intensified efforts to produce a 'general utility animal' to replace low-yielding 'non-descript' animals. These animals, crossbred between Jersey and Holstein-Friesian breeds, would be better adapted to Indian landscapes, more disease resistant, and have improved 'milk and work qualities' (Gosamvardhana, 1963). By the fourth Five Year Plan (1969–1974), crossbreeding was the *modus operandi* of cattle improvement (Basu, 2009). Crossbreeding was promoted widely during the 'White Revolution', part-fuelled by the World Bank's investment in India's dairy sector. By the late 1980s, they comprised around 5.5% of Indian dairy cows (Scholten, 2010). In 2012, Delhi had 67,000 'exotic' and crossbred cattle, which was two-and-a-half times the number of indigenous cattle (Government of India, 2012). Today, estimates suggest there are 57,000 crossbred animals and 27,000 indigenous or 'non-descript' cattle in Delhi (Government of India, 2019). The introduction of crossbred cattle during this period caused the extinction

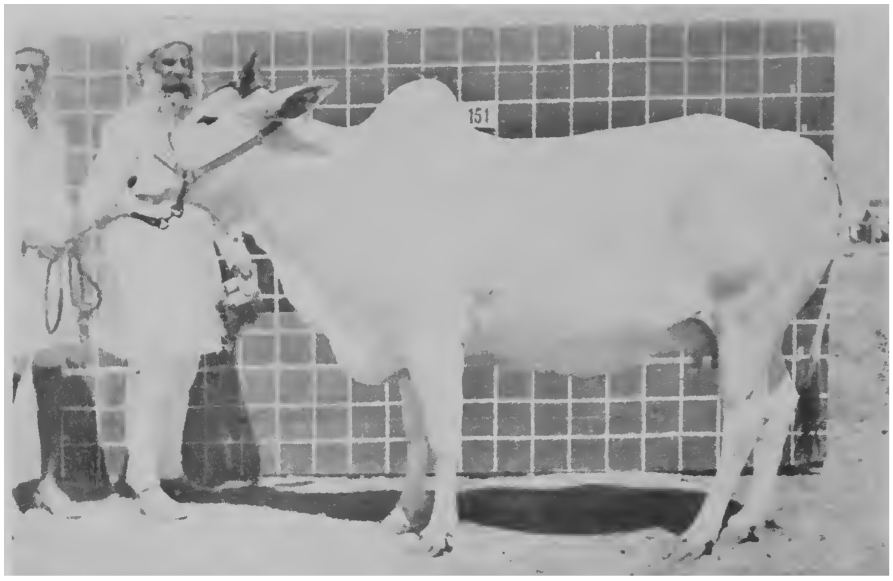

FIGURE 1 Prize-winning Hariana bull, from the third 'All India Cattle Show' organised by the Indian Council of Agricultural Research, 1955. These initiatives were about showcasing India's cattle wealth and the progress made in cattle improvement.
Source: ICAR, public domain.

of various indigenous breeds (Sainath, 1996), which have decreased from around 130 to 40 breeds in the past 70 years. Indigenous cows were seen as inferior economic animals, and so lost favour with Indian farmers and dairies.

Bovine biopolitics in colonial and postcolonial India rendered cows into lively capital, furthering regimes of accumulation. But simultaneously, it produced a category of 'surplus' animals deemed unproductive, which were (and are) abandoned on streets. Alex Blanchette (2019) describes 'living waste' as the biological agencies of agricultural waste that make it difficult to manage. For us, 'living waste' refers to how bovine bodies rendered disposable go on living as an outside to dairy capital. The presence of free-roaming cattle on Delhi's streets today is the product of a range of intersecting forces: colonial-era biopolitics, vernacular cow protectionist discourse, postcolonial economic/development logics, constraints facing urban dairies due to gentrification, and the conversion of erstwhile villages into metropolitan urban environments. To cut feeding costs, Delhi's urban dairy owners release cows onto streets, despite its illegality. Many cows are caught and impounded, or rehomed in *gaushalas*.

3.3 | Accommodating 'surplus'

Since the mid-1930s, *gaushalas* were promoted in Delhi to house unproductive animals and as centres for cattle improvement (Adcock, 2019). The main Delhi *gaushala* had two sections: one for dairy, one for 'maintenance of old and infirm animals' (Anon, 1944, n.p.), illustrating the plurality of biopolitical logics operating simultaneously in the *gaushala* space. In the 1940s, to further the breed improvement programme, the colonial government initiated a nationwide *gaushala* survey. Overpopulated *gaushalas* were found to be a major problem, further compounded by the fact that fodder for the housed animals could not easily be grown or obtained in Delhi (Anon, 1944). The lack of pastures meant that many cows grazed within urban limits (Anon, 1944), aggravating the problem of free-roaming bovines on the city's streets. *Gaushalas* also faced a lack of technical knowledge regarding cattle improvement, and struggled to meet the competing demands – and governing logics – of housing unproductive animals while generating profit by selling milk (Anon, 1944). As a result, the colonial government recommended sending infirm animals to rural areas (Anon, 1944).

A number of *gaushalas* were established in Delhi following India's Independence, particularly under the newly formed nation's first Five-Year Plan (1951–1956). This was largely as a response to the 'unproductive cattle problem' and the adverse economic effects they were seen to have (Simoons et al., 1979). By the mid-1950s, Delhi had eight state-run *gaushalas* covering 575 acres of land (Singh, 1955). *Gaushalas* became sites for segregating 'good cows' from 'bad cows' in the name of breed improvement (Anon, 1955). Many of them, however, as authorities noted, were not being 'run on scientific lines'. As a result, *gaushalas* were 'incurring heavy expenditure on maintaining unproductive cattle' (Directorate

of Public Relations, 1962). Yet, the state inaugurated certain *gaushalas* due to the 'religious sentiments of the people', some of whom even '[contributed] towards their expenses' (Directorate of Public Relations, 1962, n.p.). Members of the public cared voluntarily for up to 2000 cows in the name of *gau seva* (Directorate of Public Relations, 1962), highlighting how *gaushalas* were never purely economic institutions. Indeed, they were spaces where the economic and the cultural were inexorably entwined, making Indian bovine biopolitics a hybrid of Statist and vernacular practices.

Gaushalas were further caught up in practices of urban governance. Some served as pounds for unclaimed cattle in Delhi where, in the 1970s, over 10,000 cattle were being impounded yearly. Many *gaushalas* reached capacity during this period, refusing to admit more cows (Municipal Corporation of Delhi, 1974). By the early 1990s, efforts to drive stray cattle out of Delhi intensified, partly in response to several public interest litigations filed in the city's High Court, and partly due to elite desires for a 'world class' city aesthetic that took cattle on the streets to be an affront to achieving these aims (Baviskar, 2011). In 1993–94, the Municipal Corporation of Delhi caught almost 20,000 cattle. The animals were moved to one of six *gaushalas* run by the civic body (two had been closed), which could house only 8000 animals (Planning Department of Delhi, 2002). The issue of overburdened *gaushalas* continued through the 1990s, when Delhi's Municipal Corporation caught between 14,000–30,000 bovines annually (1997; Anon, 1994).

Today, according to probably conservative official estimates, Delhi has 12,000 stray cattle (Government of India, 2019). Delhi's *gaushalas*, however, can home about 15,000 cows (Rajput, 2019), making them regularly overcrowded; a problem made worse as cows caught in other cities are frequently transported to private *gaushalas* in Delhi to alleviate overpopulation problems elsewhere (Anon, 2013). Across India, cows commonly live and die in crowded, squalid *gaushalas*. Between 2008 and 2011, 46,000 cattle died in *gaushalas* maintained and supervised by the Delhi Government (Anon, 2011). In 2015, when the BJP-led Government's support for *gaushalas* escalated, reports of cattle dying in *gaushalas* increased.

Commenting on Delhi's *gaushalas*, Rajendar Singh Sekhawat, manager of Sri Krishna cattle shelter stated, 'we are left with no space.[2] We cannot accommodate any further cattle. We also have to accommodate cattle from neighbouring villages who abandon their bulls, and the police bring cattle which they caught during illegal transportation.' Similarly, the manager of Ghuman Hera Gramin *gaushala* in Najafgarh stated that 'space is an issue in all the shelters, but the bigger problem is that we are not getting sufficient funds. We get Rs 20 per cow per day from the government and the same amount is given by corporation [sic] which is not enough. The funds too are mostly delayed' (Anon, 2017, n.p.), meaning *gaushalas* are often in debt.

Recently, three incidents have led to an increase in the number of cows on Delhi's streets. First, the government began closing slaughterhouses in 2017, which led to farmers abandoning unproductive cattle, believing they would not be killed. Second, stray cows continue to be brought from outside Delhi, adding to the city's already-crowded *gaushalas*. And third, the COVID-19 pandemic caused significant disruptions (see Pinjarkar, 2020), meaning previous plans to put stray cows in *gaushalas* and to shift urban dairies to the city's outskirts have not been enforced. Consequently, many of Delhi's cattle resort to living on waste, which becomes evident when we consider bovines' own geographies.

4 | LIVING ON WASTE: CONTEMPORARY BOVINE ETHNOGRAPHIES

Cattle from Sohan Lal's dairy in north Delhi make their way along a busy metropolitan road. Their ambles are determined as they stride towards a Municipal Corporation *dhalao* (waste collection depot) where piles of organic and recyclable waste from middle-class residential colonies are stashed (Figure 2). They join another group of cows in a corrugated iron shed. 'This is a regular haunt for cattle', says Kamal, a migrant worker from the *Yadav* community in Bihar, employed by a private company to monitor the collection of municipal waste. 'They come here to feed as there is a lot of *kuda* [waste]', ranging from vegetable peels to half-eaten *chapatis*. The cattle are a source of ire for waste-workers, as they unsettle piled and sorted waste. Yet the workers are remarkably tolerant: 'what else will the animals do?', Kamal tells us, 'they barely have any other places to graze'.

Feeding in *dhalaos* is routine for certain bovines (see Kumar et al., 2019), who forge their own itineraries in the city. 'These ones arrive at 9am or so', says Kamal, 'and each animal has its own timings.' The assembled herd consists of cows from several dairies. One day, after feeding had finished, we followed a free-roaming cow to understand how bovines inhabit the city (see Nagy, 2019, 2020). After leaving the *dhalao*, she entered a small informal settlement through a narrow alleyway to drink from an intentionally placed plastic trough. It was evident that such acts of hospitality are directed towards cows: 'it's for them to drink from', a passer-by said, as we followed the cow through labyrinthine streets. The cow occasionally paused, sometimes going into smaller streets to find vegetable peels put outside for wandering cows. Each movement was purposeful, signalling this was her regular 'grazing' route, and she knew where to find food. Eventually,

FIGURE 2 Cattle feeding in a Municipal Corporation waste collection depot.
Source: Author.

the amble halted. She lay down in a small 'park' within the settlement, resting and ruminating for a couple of hours. In the evening, she arose and retraced her steps back to Sohan Lal's dairy where she was tethered, only to be released the next morning to repeat her routine.

Sohan Lal is one of Delhi's 2000 or-so urban dairy-keepers who rear cows in informal settlements, disputed land, and other city interstices (Anon, 2019). From the *Gujjar* community, traditionally associated with rearing and grazing cattle, Sohan Lal is concerned about the impact that plastic is having on his cows' health. Increasingly, he is reluctant to let cows roam freely due to risk of plastic-induced internal injuries. Urban cows in India have, on average, around 33 kg of plastic in their bodies (Vohra, 2012), earning the nickname 'plastic cows' (Anon, 2016; Nagy, 2020; Vohra, 2012).[3] This can weaken their immune systems, increase their chances of mortality, and lead to painful blockages or punctures of the intestine (Anwar et al., 2013). The urban commons have become the toxic commons for wandering bovines. Official estimates from 60 Indian cities, suggest that annually Indians use 16.5 million tonnes of plastic and produce 9.46 million tonnes of plastic waste (CPCB, 2018). Despite banning polyethylene bags in 2009, and later all single-use disposable plastic packaging, Delhi's plastic waste stream continues to increase. In 2016, more stringent rules were introduced, phasing out non-recyclable plastics and charging merchants for plastic bags. But these rules were later relaxed, the government caving to pressure from businesses (Sharma, 2019). Today, up to 43% of plastic used for packaging is single-use (Venkatesh & Kukreti, 2018). Consumers increasingly seal food waste in plastic bags for convenient disposal.

Many inhabitants of informal settlements visit restaurants and canteens in the evening to collect organic waste to feed to urban animals. These animals that 'metabolize waste into food, allow for the repurposing of materials, and make toxic, abandoned environments into urban farmyards' (Gutgutia, 2020, n.p.). When cows are released by dairies to scavenge, they forage untended. This form of grazing requires fewer resources and less labour than attentive herding and food provisioning, something which cash-strapped urban dairy owners like Sohan Lal can barely afford. These 'slum ecologies' are thus characteristic of the casteised governance of urban life (Gutgutia, 2020; Reddy, 2021). Cows source the raw materials to feed themselves, which they convert into milk via their bodily, metabolic work (Barua, 2018), bringing waste back into the ambit of value as the resultant milk is sold for profit.

This process can be considered a kind of informal 'waste work' performed by cows and people in the urban margins (Doherty, 2019). It takes place amid an 'eviscerating urbanism', where a rapid, parasitic colonisation of land and the transformation of erstwhile commons into commercial space is producing a growing urban bourgeoisie tied into circuits of global capital, and a corresponding underclass that lives off their detritus (Gidwani & Reddy, 2011). Eviscerating urbanism manifests through bovine bodies differentially. Females and older animals are more susceptible than males and younger animals to the development of ruminal impaction – the accumulation of indigestible materials in the rumen (Priyanka & Dey, 2018). Preferences for certain breeds also affect which cows get exposed to harmful materials. Sohan Lal keeps mostly crossbred Jersey cows, but also has a few *Sindhi* and *Gir* cattle. His most expensive breeds remain tethered and watched over closely, fed a range of 'hay and concentrates in the evening'. Productive, milch animals tend to be well-fed by owners, but older, unproductive bovines receive less attention. Cows, therefore, roam the streets out of necessity, rather than opportunism.

Dairy owners like Sohan Lal are often vilified for cow-keeping, a practice that he says is his *khandani pasha* (traditional vocation), associated with caste. Dairy owners are incessantly harassed by the State who want to remove dairying from modern Indian cities. They are continually subject to changing regulations and often forced out of the city. As costs for maintaining cows have risen, care for certain bovines has declined. Many poor farmers are unable to afford the dietary requirements of crossbred cows like millets and pulses, which are staples of the most vulnerable people in Indian society. This puts strain on the capacity of already-marginalised people to provide for themselves and their families. Casteised forms of structural violence thus underpin the proliferation of plastic cows.

Urban dairy owners are further stigmatised by middle-classes who refer to their produce as *zahrilla dudh* (poisonous milk). According to them, the rancid smell of this milk comes from the waste-intensive diets of cows released to graze by 'greedy urban dairy farmers' who want to maximise their returns. 'The milk stinks', a resident of a middle-class colony not far from Sohan Lal's dairy tells us. 'What else will the milk be if cattle are feeding on garbage all day?' The metabolic flow of synthetic chemicals from waste to cow to milk is a cause for concern. Certain chemicals leach into cows' blood, meat, and milk, which can cause hormone disruption in humans, bovines, and their offspring (Gore et al., 2015; Nagy, 2019; Teuten et al., 2009). However, vilifying dairy owners constitutes an apolitical reading, which fails to account for the wider cultural and economic conditions of the production of urban milk. Specifically, it fails to take into account, and remains symptomatically silent about, the ongoing enclosure of common grazing grounds where cows were previously free to graze, as well as the consumption of spectacular commodities that leads to the production of cheap discardable plastics and other harmful materials in.

Government officials, urban elites, and animal rights activists too readily dissociate urban bovine lives from those of the urban poor. As Amita Baviskar's (2011, 2019) poignant analyses of 'bourgeois environmentalism' show, placing the blame solely on urban dairy farmers constitutes a class-neutral, unsituated discourse, exhibiting a prejudiced understanding of more-than-human urban precarity. By espousing their concerns in the name of 'public interest' and 'animal rights', such groups disavow a more situated version of the public sphere and conveniently relinquish urban elites, and the structures they benefit from, of blame and responsibility (Baviskar, 2011, 2019). Indeed, it seems much easier to settle for the removal of urban dairies and bovines from the streets than it is to address commodity consumption, the ongoing privatisation of waste, and the enclosure of urban commons. When no longer economical, free-roaming 'surplus' cattle are often abandoned outright. When this happens, they tend to end up in *gaushalas*, where they are subjected to variegated geographies of care.

5 | *GAUSHALAS* I: SPACES OF CARE?

Manish, a *gaushala* manager in the outskirts of Delhi, considers his *gaushala* the best in India. Indeed, the AWBI designated it as a 'model *gaushala*'. *Bhajans* (devotional music) composed especially for cows play 24-hours-a-day. There is a veterinary hospital with an on-call 'cow ambulance', a rarity since only 17% of *gaushalas* have in-house veterinarians (Sharma et al., 2020). There is a small free school for children, a temple, and a number of sheds and pens. Manish points to his cows peacefully ruminating in the shade: 'they're the only untied cows in any *gaushala* in India … They're fed plenty of green and dry fodder, jaggery [cane sugar], and a mineral supplement. We give them plenty of space and freedom.' Moreover, according to Manish, his is the 'only *gaushala* in the country where calves are allowed to stay with their parents'.

Manish's team of 30 staff are on call 24-hours-a-day and live on-site. They are not permitted to drink alcohol or smoke, but are provided food and shelter in return for labour. *Gaushala* workers are part of India's huge informal workforce. They receive little job security or financial freedom. Manish explains that working here is considered *dharma* (religious duty), and comprehensively lays out the roles of all 30 employees. 'To run a *gaushala* is not a job. You are responsible for any death of a cow, or sickness, or any illnesses. If she is not happy, you are not happy.' Manish's *gaushala* receives many donations from the local community as well as government funding. He is able to spend around Rs 3 million per month (around £29,000) on feed and medicine alone. Around half of *gaushalas* are run by charitable societies, and most rely more heavily on the support of local communities than on government funding, which is often subject to delays (Sharma et al., 2020).

Manish's *gaushala* is indeed well-run, living up to its traditional and idealised role as a space of welfare provision, where former labouring bovines can rest, sick cows can receive treatment, and strays can be rehomed. But Manish's *gaushala* is exceptional. Commenting on the general state of Delhi's *gaushalas*, Navisha, an animal welfare activist, described them as 'cow concentration camps'. Many of them are overcrowded to the point where cows 'cannot even stand'.

During a visit to one of Delhi's oldest *gaushalas*, we saw cows eating garbage from the floor. A cow slipped on slurry walking across the courtyard as water taps had been left running. Cows were densely packed into sheds where they competed for food at the feeding troughs (Figure 3). And all cows were permanently tied, calves were separated from their mothers, and they were only allowed to feed for five min before milk was collected for sale.

Navisha regularly sees 'animals that, for 24-h, sit in their own dung and urine because they're tied, or they stand because they don't want to sit in their own shit'. Faced with a lack of skilled labour, financial constraints, and scarce veterinary support, *gaushalas* often struggle to maintain their herds, many of which are made up of former productive dairy cows (Kennedy et al., 2018). Indeed, most are chronically underfunded, and despite consistent promotion by the BJP as the solution to the cattle overpopulation problem, the current budget allocated to them is not enough to support existing *gaushalas*, nor to build the extra sheds the BJP deems necessary (Noronha, 2018; Reddy, 2021). As aforementioned, cows regularly die in *gaushalas*. Conflicting biopolitical logics – whereby the State encourages and mandates their reverence and production, while simultaneously outlawing their urban presence – leads to variegated geographies of care as we reveal below.

In desperate need of funding, many *gaushalas* turn to milk production to survive. To produce milk, a cow must be pregnant and give birth. *Gaushalas* engaged in the production of milk are thus also engaged in the production of animals. Over half of India's *gaushalas* allow for reproduction (Sharma et al., 2019). Manish proudly told us that his is 'the only *gaushala* in India that does not produce milk commercially', although this was impossible to verify. Every other *gaushala* we visited, though, was engaged in commercial milk sales. Commercial milk production, Manish suggested, compromises the ability of *gaushalas* to provide care for cows. In most cases, it prevents them from having the adequate capacity and resources to take in additional stray, sick, abandoned, or injured animals from the streets. The role of *gaushalas* as spaces of care is undermined by their economic reliance on milk (see Srinivasan, 2014). Instead of dealing with the cattle 'overpopulation crisis', many *gaushalas* contribute to it. Economic and vernacular logics of bovine governance are thus deeply entwined at *gaushalas*, inaugurating a specific form of biopolitics unmatched in most Western contexts where economic logics dominate.

6 | *GAUSHALAS* II: NATIVIST BIOPOLITICS

In a spacious pen of her own lies Kamadhenu, Manish's 'most sacred' and beloved cow, a 'pure indigenous' breed, a *Sahival*. On his office wall is a photograph of Manish lying underneath Kamadhenu as she defecates on his legs. In

FIGURE 3 Cows in Delhi's old *gaushala* compete for food during feeding time.
Source: Author.

another, he is cuddling her. He proudly shows a photograph of himself smeared in cow dung, meditating. Manish's practices are related to his reverence of the *pancagavya* – the five sacred products of the cow: milk, curd, ghee, dung, and urine. In Kamadhenu's pen, Manish asks us to get closer for our own photograph. Kamadhenu seems more dog than cow, so despite her size, we oblige (Figure 4). Manish offers us to drink fresh milk and, later, fresh cow urine (*gau mutra*) – an apparent elixir for several ailments. Naisargi Dave (2017, p. 40) received similar treatment when visiting Manish, writing: Manish 'took a brush from his pocket [...] The *Sahival*'s flank was caked with dung and mud' and after brushing her, Manish 'put his finger between the bristles, plucked out some muck, and put that finger in his mouth.' As Manish's treatment of Kamadhenu makes clear, *gaushalas* do not afford all cows the same level of care. But care does not entail a predetermined set of practices. Rather, it always emerges as a situated ethical practice (Gerlach, 2020). In India, care practices are informed by a suite of at times contradictory logics, including science-based animal welfare, tradition, spirituality, and economics. Distinctions between 'indigenous' and 'exotic' animals increasingly shape bovine governance in India, where bovine life is administered along lines that are not solely economic as is often the case in Western contexts.

Recently, BJP politician Dilip Ghosh stated in an interview that 'the breeds of cows that we bring from abroad are not cows. They are a kind of *janwar* [beast]. These foreign breeds don't sound like cows. Those are not our *gaumata* [mother cow], but our aunties. It is not good for the country if we worship such aunties' (Anon, 2019, n.p.). Such views were commonly held by *gaushala* managers, with one telling us:

> Exotic cows are aggressive. There's no love in their eyes, they consume four times more water than indigenous cows. They have no hump, no dewlap. They cannot tolerate heat. They do not want to love or be loved. They are non-vegetarian and have no beauty.

In contrast, the same person told us, indigenous cows 'have compassionate eyes' and 'want to love and be loved'. Following Robbins, the cultural forms taken by bovines in India are 'easily manipulated by political players drawing on the urge for consistency and tradition' (Robbins, 1998, p. 234). Constructions of indigeneity and exoticness must be scrutinised to understand how cows are valued in the South Asian context through an intersection of cultural and economic logics, vernacular and Statist practices.

Indigenous breeds were prioritised by many *gaushalas* we visited, making up the majority of, if not entire, herds. One *gaushala* manager refused entry to exotic cows, simply 'because they're foreign'. This choice was justified by the need to

FIGURE 4 In Kamadhenu's private pen, the authors are encouraged to feed and interact with her.
Source: Author.

conserve indigenous breeds, the supposed superiority of their milk, and the apparent healing properties of their products. Where indigenous cows and exotic cows were housed together, indigenous cows received preferential treatment, including better dietary provisions. A distinct form of biopower operates here, wherein 'care for some individuals and species translates into suffering and death for others' (van Dooren, 2014, p. 292). This was viscerally apparent at one *gaushala* which functioned as a *Red Sindhi* breeding facility. Indigenous cows were housed in large spacious sheds with overhead fans and fed a mixture of green fodder and mineral mixture. Contrastingly, the few exotic and crossbred cows housed were fed only dry fodder and left outside in the heat with very little shade. One cow lay panting and motionless as others walked over her (Figure 5). The manager said she was resting, but her emaciated condition suggested otherwise. This *gaushala* received subsidies from the Indian government to breed *Red Sindhi* cows – a clear illustration of our contention that in India lively capital is rendered via bovine biopolitical logics involving both economic and situated vernacular practices. At this *gaushala*, vernacular practices are suffused with nativism.

This 'nativist biopolitics' is actively promoted by the Indian government (Münster, 2017). The departments of Science and Technology, Biotechnology, the Council of Scientific and Industrial Research, and the Ministry of AYUSH (Ayurveda, Unani, Siddha, Homeopathy), among others, actively support the breeding of, and research on, indigenous Indian bovines for several reasons, including their uniqueness, the health benefits of their products, and the agricultural benefits of rearing them (Koshy, 2020).

Many states actively promote indigenous cows, yet these policies are contradicted by their reliance on Jersey cows for milk (Basu, 2009; Govindrajan, 2018). Widespread deployment of artificial insemination programmes that produce hybrid, 'scrub', and exotic cows in service of milk production are championed by a government that simultaneously endorses discourses that demonise these same cows (Govindrajan, 2018). Countervailing tendencies thus exist in Indian bovine biopolitics, from colonial imperatives of removing weak animals, to the postcolonial developmentalist agenda of promoting crossbreeds, and now a reactionary force that vilifies crossbreeds in tune with nationalist discourse. Simple notions of productivity as the driving bioeconomic logics do not always apply in *gaushalas* where lower-yielding indigenous milch animals are sometimes favoured and protected over the higher-yielding exotic/hybrid cows. As Radhika Govindrajan (2018) notes, in the Himalayas, Jersey cows were often referred to as 'business cows'. Thus, biopolitics and bioeconomy are closely related to culture, deviating from the Western model of biopower and the political economies they draw in their wake.

Indigeneity is not the only means by which Indian bovine biopolitics operates differentially. In a number of states, the slaughter of males is legal, whereas females cannot be killed unless mortally sick or wounded (Nagy, 2019). The 2019 Livestock Census of India documents the number of male bovines decreasing by over 30% (Government of India, 2019), compared to a decrease of around 20% in the previous census period (Government of India, 2012). In contrast, the number of females increased by around 18% (Government of India, 2019). Despite incomplete official statistics, it is widely acknowledged there are more stray male bovines than females. Govindrajan (2018, p. 78) notes that male bovines are regularly 'found huddling in small groups by the highway', and people often pay to have them removed. Narayanan (2018a) reported that some *gaushalas* sell male calves directly to butchers, indicating how informality and spaces outside formal

FIGURE 5 Left: Well looked-after indigenous cows. Right: A rescued cow 'resting' outside in the heat.
Source: Author.

State regulation play crucial roles in forging Indian bovine bioeconomies. Here, practices of care have diverse motivations, from spiritual to economic, all of which bear out differentially, contingent on which bovine bodies – male or female, exotic/hybrid or indigenous – are involved.

7 | CONCLUSIONS: PROVINCIALISING LIVELY CAPITAL

Indian bovines, as living waste that live on waste, tell a specific but important story of bovine biopolitics and their attendant political economies. 'Surplus' cattle, a marker with Malthusian overtones, were an invention of the late 19th and early 20th centuries. This marker was derived from, and even prompted, colonial practices of cattle 'improvement', undertaken in multiple ways, from breeding what were considered the best strains to castrating bovines considered unworthy or infirm. Improvement was enacted in a range of spaces from villages and towns to urban *gaushalas*. While the colonial biopolitics of improvement focused on indigenous breeds, postcolonial developmental logics promoted high-yielding crossbred cows. With the rise of Hindu nationalism, the emphasis has shifted back to native breeds. As a consequence, crossbreeds are increasingly vilified. The movement to encourage indigenous breeds did not begin as a nationalist project per se but rather has been co-opted by right-wing nationalism. These developments indicate how the 'orientation' of life towards capital is not fixed (cf. Collard & Dempsey, 2017) but topological. Beings move between categories, taking the form of lively capital at certain historically situated moments, while being cast aside as surplus at others, only to return to the realm of value when social and political forces change. By historicising human–bovine relations in India, we expose the contemporary vilification of hybrid cows as ahistorical and contradictory, rooted in nativist biopolitical logics. The emergence of these vilified animals is preceded by a colonial history of cattle improvement, one with which the cow protectionist movement was closely linked.

This situated account of bovine biopolitics and the political economy of cattle improvement forges new ways of conceptualising lively capital and biopower in the social sciences more broadly. In the South Asian context, lively capital should not be read as a regional variation of a universal capitalist process. Rather, we argue that lively capital is not a category formed a priori: it emerges through specific practices that are a hybrid of biopolitical logics, whether enacted through the colonial or postcolonial State's will to improve breeds, and vernacular practices that are non-Statist and that involve differential powers of care. Our account of Delhi's *gaushalas* renders the vernacular into a productive ethnographic and analytical site. *Gaushalas* have long been caught up with the administration of bovine life, intersecting with colonial and Statist biopolitics differentially throughout history (Adcock, 2019). Attending to such sites is crucial for offering more plural and variegated accounts of lively capital, for it challenges the universality of the Western industrial food production model from which many conceptualisations of lively capital are derived. These other, non-Western trajectories of bringing other-than-human life into the ambit of accumulation have salience for rewriting histories of capitalist agriculture more globally (see Otter, 2020). Significantly, it draws attention to the ways in which bovine biopolitics has to be worked out anew, in that it is not simply a copy–paste of biopolitical imperatives developed in the West. Attempts to administer bovine bodies and render them into lively capital involve encounters with difference, and play out in a realm where the economic is simultaneously cultural. This is not to say that modes of biopower associated with lively capital in the West are not in operation in the Indian context or that the economic is cultural solely in the South Asian context. Rather, our analysis points to the importance of the specific religious and cultural value of cows in India and why they matter for an analysis of capitalist accumulation. Animals deemed unfit for breeding are not always culled or disposed of, and this places constraints on how economistic biopolitical imperatives unfold. Scholars have argued that academic debate regarding cattle in India has proceeded through a problematic opposition between 'religion' and 'economy'. In practice, though, religion is entangled with and inseparable from the biopolitics and bioeconomies of Indian bovines (Adcock & Govindrajan, 2019), including those emerging from practices of slaughter (Narayanan, 2019).

The colonial construction of the category of surplus cattle, the concomitant enclosure of grazing grounds and urban commons in postcolonial India, and the vilification of urban dairying and an anxiety surrounding slums (Sundaram, 2010) all contribute to the so-called 'cattle problem' in Indian cities. Not only is there a strong casteised dimension to this issue, but the mediation of urban ecologies through caste contributes to framing particular sets of urban practices as being a 'problem' (Narayanan, 2021; Reddy, 2021). We sketch out such casteised ecologies in relation to urban bovines, but the topic deserves further and fuller empirical attention in future work. While *gaushalas*, as sanctuaries for old and infirm cows, are proposed as a remedy, they become, in Narayanan's words, 'spaces of exploitation, incarceration, and gendered violence for the animals' (Narayanan, 2018c, p. 195). Our attention to the histories of *gaushalas* reveals how they have long been sites where biopolitics and vernacular practices meet to administer bovine life. With the rise of right-wing Hindu

nationalism in recent years, there has been a reactionary move against crossbred cattle once cherished and promoted by the postcolonial developmental State. This can be termed a 'nativist biopolitics' (Münster, 2017), which has its own set of attendant economic logics, including the promotion of indigenous cow products made from the *pancagavya*. What these currents reveal is that what is valued and what is considered disposable is never fixed. Neither is the use-value of cows for capital solely reducible to economic logics alone. There are varying and contingent cultural and political currents at work that shape which bodies are economised and allowed to flourish, and which ones are relegated to living (on) waste.

This topology of lively capital has wider implications, particularly in terms of reconfiguring what constitutes urban life and metropolitan natures (Gandy, 2022). By attending to the variegated practices of administering bovine life in cities and the conjunctions between colonial biopolitics, political economy, and urban ecology, we have opened up new ways of thinking about capitalist urbanisation. Regulating metropolitan dairies and 'noxious' trades involving animals were crucial to configuring Western urbanity (Atkins, 1977; Brantz, 2005). They entrenched divisions between the urban and the rural (Philo, 1995). Unlike European metropolises, however, elements of the rural or agrarian remain immanent to Indian metropolitan formations, although expunging the rural from the urban has been a long-standing theme in Delhi's urbanisation (Sharan, 2014), poignantly witnessed in the State's continued attempts to capture free-ranging cattle and relocate dairies deemed 'illegal' to the city's outskirts. Provincialising lively capital, therefore, not only complicates unitary accounts of capitalist natures but draws attention to other trajectories of urbanisation. These bring with them a raft of questions concerning ecological justice and how to make cities more liveable and for whom. Colonial and postcolonial biopolitics not only generate fraught, casteised worlds, they result in punitive action towards urban bovines. Similarly, throughout much of the world, capitalism has never solved the problem of surplus populations. Rather, what the intersections of these forces achieve is a selective subsumption of certain bodies by capital and the casting aside of others as living waste.

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ENDNOTES

[1] 'Exotic' – a term frequently used by our participants – refers to non-indigenous cows, often 'foreign' breeds or crossbreeds.

[2] Names of participants and *gaushalas* are anonymised where requsted.

[3] The film *The Plastic Cow* (2012) documents cows feeding on India's streets and their veterinary care.

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