



The political ecology of crops: From seed to state and capital

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1. Introduction

‘Grains make states’, writes James Scott (2017: 128) in *Against the Grain: A Deep History of the Earliest States*. Excavating the history of early state-making, Scott proposes what he calls ‘the grain hypothesis’ whereby cereal grains come to be seen as foundational to states, as ‘only the cereal grains can serve as a basis for taxation: visible, divisible, assessable, storable, transportable, and “rationable”’ (Scott, 2017: 129). This particular utility, Scott continues, entails that ‘[t]hese qualities are what make wheat, barley, rice, millet, and maize the premier political crops’ (Scott, 2017: 131 emphasis in the original). The role Scott gives to crops in early state-making breaks with the standard anthropocentric domestication narrative. The plants that formed the essential energy basis for population growth and the establishment of the first states were not passive objects of human projects, rather they had particular characteristics that facilitated this new type of social organisation. Likewise, as Scott also develops in his earlier work on ‘escape agriculture’, particular crop materialities are found to facilitate people’s resistance or evasion of the reach of the state: ‘roots and tubers such as yam, sweet potatoes, potatoes, and cassava/manioc/yucca are nearly appropriation-proof’ (Scott, 2009: 195). Scott thus focuses our attention on the political role of crops and how certain materialities favour state control or resistance.

In this themed issue we find inspiration in the attention Scott pays jointly to the materialities of crops and their political entanglements. Scott’s insistence on empirical detail and simultaneous openness to theory has inspired us to think broadly about how the recent relational turn in the humanities and social sciences, and the associated attention on the ‘more-than-human’, can be fruitfully combined with agrarian political economy perspectives to shape what we refer to here as a ‘political ecology of crops’¹. Bringing political crops into the present day, this themed issue brings together a group of papers that build on Scott’s work and in particular his opening of our eyes to the political nature and agency of crops as co-producers of agrarian change. This issue draws from a panel organised at the Political Ecology Network (POLLEN) biannual conference in September 2020 and features

contributions dealing with a number of specific crops, crop technologies and their entanglements with human projects of political worldmaking at different times, in different contexts and on different scales: transgenic soy in Argentina (Rauchegger, 2021), maize in South Africa (Fischer, 2021), cassava in Brazil (Roman and Westengen, 2021), cotton, rice (Sinha, 2021) and onion (Matthan, 2021) in India, tea in India and Kenya (Karlsson, 2021), and hops in the geopolitics of beer brewing (Legun et al., 2021). This themed issue concludes with a commentary by James Scott on the broader themes raised in it, inviting us to locate current debates and theoretical engagements within longstanding questions of agrarian change.

2. The role of crops in key literature on seed politics and agrarian change

The contemporary agrarian world is one where states around the globe are taking a backseat in agricultural development, and where technology has enabled greater human control over plants than ever before. The majority of farmers in the Global North and an increasing share of those in the Global South are dependent on purchasing seed developed and owned by a handful of multinational corporations (Clapp and Purugganan, 2020; Kloppenburg, 2014). This configuration of science and capital in the seed development and supply system has attracted a significant amount of scholarly and activist attention to what we would call ‘the politics of crops’ (examples from across the globe include Bezner Kerr, 2013; Fitting, 2006; Müller, 2020; Stone and Glover, 2017). This literature has contributed to the analysis of politics and power over plant-breeding technologies, and at the same time contributed to a rich literature on the contestation of the global governance of seeds – sometimes referred to as the ‘seed wars’ (Mooney, 2011). It has been important in informing the establishment, and debating the outcomes, of the international governance regime for ‘genetic resources’ such as the International Treaty on Plant Genetic Resources for Food and Agriculture (Brush, 2007; Esquinas-Alcázar, 2005; ITPGRFA, 2001) and the UN Declaration on the Rights of Peasants (Claeys and Edelman, 2020; UN, 2018). In addition, studies of

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¹ For a detailed account of how Scott’s work is relevant in political ecology, see also McElwee (2021).

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traditional ecological knowledge and social institutions for seed exchange and use have decentred scientific knowledge and modernisation perspectives, lifted farmers' voices, and provided 'on the ground' examples of how the concentration of the power over seed is playing out for farmers and their environments (e.g. [Bezner Kerr, 2013](#); [Perales et al., 2003](#); [Peschard and Randeria, 2020](#); [Soleri et al., 2008](#); [Teeken et al., 2012](#)). However, the crops themselves are typically given a fairly passive role in this literature, focusing on the human struggles over ownership and control of this 'resource'.

Another important stream of scholarship that scrutinises human struggles over the control of agrarian resources is found in the emphasis of critical agrarian studies on the processes of agrarian change in global capitalism. Over the past couple of decades, critical agrarian studies have paid sustained attention to the frequently conflictual, unjust and environmentally destructive effects of the political-economic dynamics of global agrarian transformations ([Edelman and Wolford, 2017](#); [McMichael, 2009](#); [van der Ploeg, 2010](#)). While cropping patterns are clearly crucial to such changes – registered in sustained attention to expanding plantation agriculture across the tropics – we find that crops as such have received comparatively less attention than (in particular) land in this literature ([Akram-Lodhi and Kay, 2010](#); [Bernstein et al., 2018](#); [Borras et al., 2011](#); [Peluso and Lund, 2011](#)).² Agrarian scholars have come to see land less as a 'given' element of the world and instead recognise that land is 'inexorably relational' ([Akram-Lodhi et al., 2009: 214](#)) as it comes to co-shape agrarian change ([Li, 2014b](#)). Crops, we argue, are likewise inexorably relational, yet these relations are in need of further scrutiny. Indeed, the increasing efforts to control plants for private gain and capital accumulation have made it increasingly clear how plants and their wider environments are unruly and not easily subjected to human control in predictable ways ([Guthman, 2019](#); [Mann and Dickinson, 1978](#); [Warman, 2003](#)).

Clearly, as Marcus Taylor states, it is relevant to 'ask where the ecology is hidden away within the agrarian question' considering that 'the drivers of rural change have tended to be represented as emphatically anthropocentric, and the social categories of capital and labour seemingly impose themselves on the natural substrate of the rural landscape' ([Taylor, 2014: 114–115](#)). This abiding anthropocentrism sits uneasily with important aspects of the agrarian studies tradition. As a recent assessment holds, notwithstanding the way agrarian scholars 'have generally assumed a problematic Cartesian binary between nature and humanity', their conclusions nonetheless 'firmly reject the notion of human dominance' ([Reisman and Fairbairn, 2021: 691](#)). Indeed, despite the lack of theoretical attention paid to the agency of plants, the agrarian studies tradition still clearly demonstrates how 'the materiality of soils, plants, and other organisms composing the farm actively resist control and profoundly shape human economic activities' (*ibid.*). Our proposed notion of a political ecology of crops therefore seeks to draw agrarian studies, with these tensions attached, into conversation with recent multispecies perspectives.

3. Uniting multispecies perspectives with critical agrarian studies

Scott's notion of political crops, this themed issue suggests, can contribute to furthering recent efforts at surpassing the limitations in anthropocentrism found both in the politics of crop literature and critical agrarian studies. We therefore find it interesting to ask what happens if we bring Scott's radical extension of the political into studies of contemporary configurations of crop-human relationships. What comes into view if we also 'decentre' the human and follow the crops? This quest leads us through the recent explosion in multispecies ethnography and more-than-human political ecology.

² See, however, [Li, 2014a](#) for a prominent counter-example that shows strong interest in crops as such.

Multispecies and more-than-human perspectives are increasingly attracting interest across the social sciences ([de la Cadena, 2015](#); [Guthman, 2019](#); [Haraway, 2008](#); [Head et al., 2014](#); [Tsing, 2015](#)). Seeing the world as co-constructed between actors whose material properties are shaped and shape those of others is central to multispecies thinking. Feminist studies of science, with their longstanding attention to materialities and relations ([Barad, 2003](#); [Barad, 2007](#); [Haraway, 1988](#)) along with feminist political ecology ([Rocheleau and Roth, 2007](#); [Sundberg, 2016](#)), have inspired multispecies studies with an interest in exposing dimensions of power and inequalities ([Head, 2016](#); [Head et al., 2014](#); [Hinchliffe et al., 2016](#)), and include contributions to this themed issue (e.g. [Fischer, 2021](#)).

However, multispecies social sciences have so far paid comparatively little attention to agriculture and crop production ([Galvin, 2018](#)). Scott's emphasis on the role of the specific qualities of plants – their growth cycles, ecological relationships and other traits – in political domination and resistance, meanwhile, show us that paying attention to the materiality of crops can allow novel analytical insights. With crop cultivation, Scott writes, the plants dominating our agriculture have a significant impact on how work is organised. Life becomes organised around the cropping cycle: 'they [the plants] insist, as it were, on a certain form of cooperation and coordination' ([Scott, 2017: 91](#)). Scott thus invites us to think about the agency of plants, although this is not a strand that he develops much further in *Against the Grain*. Nevertheless, Scott's account can be brought into conversation with other efforts pushing in a similar direction.

In what ways do crop materialities co-shape agrarian change? The juxtaposition of 'statemaking crops' and 'escape crops' above may give the impression that certain material qualities predispose *only* or *primarily* certain sociopolitical projects or trajectories. In contrast, however, the exploration and experimentation with these and related concepts to make sense of agrarian political economy across contexts in this themed issue do not indicate the existence of fixed patterns of crop determinism. Rather, the papers show that crops are less than faithful to human political projects.³ A crop that at one point entangles with and facilitates state-making may also, at another point, resist or undermine this very same state making (see [Fischer, 2021](#) and; [Rauchecker, 2021](#) in this issue). Political crops, in other words, are continuously *becoming with* the farmers, scientists, bureaucrats and multinationalals that aim to control them for their own ends (cf. [Haraway, 2008](#)). Thus, understanding how and why a particular crop *becomes with* in particular politically laden ways, and with what consequences for power relations at various scales, demands careful examination of the materiality of crops, the formation of human-crop entanglements and, simultaneously, how these entanglements come to interact with social relations of production set within agrarian conjunctures. Emerging works focusing on how crops become with other actors find different ways of conceptualising plants' forms of agency or 'affordances' ([Nally and Kearns, 2020](#)). Lesley Head and colleagues, drawn on by [Fischer \(2021\)](#) in this themed issue, talk about plants' 'plantiness'⁴ ([Head and Atchison, 2016](#); [Head et al., 2014](#)). The purpose with 'plantiness' is to place an emphasis on plants' agency. Plantiness can as such be understood as an assemblage of material characteristics and processes and relations. While emphasising the agency derived from particular plant materialities, plantiness should not be seen as something pre-discursive or 'natural', but as something that is 'derived via the modes of representation of scientific thought' ([Head and Atchison, 2016: 29](#)). [Fischer \(2021\)](#) as well as [Roman and Westengen \(2021\)](#) also draw on assemblage thinking. As [Julie Guthman \(2019: 17\)](#) usefully recounts in her recent crop-centred study of the strawberry industry in California, assemblage thinking has the advantage of holding that 'nonhumans play an active role in

³ For a more extended discussion of 'faithfulness' in human-crop entanglements, see [Jakobsen and Westengen \(2021\)](#).

⁴ Inspired by [Whatmore's \(2006\)](#) conceptualisation of 'livingness'.

bringing phenomena into being'. However, it does not need to contradict a 'critical realist ontology', as the agency of nonhumans does not need to mean intentionality, 'but rather an object's capacity to produce an effect on another object' (Guthman, 2019: 17). We suggest that the notion of political crops can be usefully developed along these lines, combining attention on 'the material' and its multispecies entanglements with explicit attention on political and economic forces and thus social justice.

What we want to draw out of these theoretical affinities is the need for curiosity-driven research into the social lives of political crops, rather than a premature closure along specific lines of inquiry. In keeping with the spirit of Scott's offerings in *Against the Grain*, we thus find it appropriate to insist on the open-endedness of conceptual experimentation in the quest for crop-centred analyses that make their plantiness (Head and Atchison, 2016) a central consideration in understanding the contemporary agrarian world.

4. The papers in this themed issue

Several of the papers in this issue (Fischer, 2021; Matthan, 2021; Sinha, 2021) adhere strongly to the critical agrarian studies tradition, but place crops more centrally in their analysis than is commonly found in this tradition. Other papers in the collection emphasise political ecology and more-than-human perspectives more strongly (Karlsson, 2021; Legun et al., 2021; Rauchecker, 2021; Roman and Westengen, 2021), but all relate explicitly to Scott's conceptualisation of political crops.

Sinha (2021) draws on a combination of critical agrarian studies, political ecology and commodity studies to compare the competing politics of rice (paddy) and cotton crops in Punjab, India, as a way of evaluating the state's trajectory of agrarian capitalism. Also with a geographical focus on India, Matthan (2021) links recent work on the political economy of speculation with scholarship on agrarian transformations in her examination of onion cultivation and trade in central India. The material properties of the onion, she argues, create novel possibilities for speculative accumulation, but it is largely wealthy upper-caste landowners who have access to the means of speculation – from storage facilities to price information – that allow them to capitalise on the crop's unique potentiality.

Moving from India to Kenya, Karlsson (2021) provides a detailed analysis of tea in the British Empire. While research on tea within the social sciences and humanities has been important for exposing the precarious situation of plantation labourers, less attention has been paid to tea itself. As Karlsson (2021) suggests, focusing attention on the tea plant and the intimate relations between people and plants sheds new light on the imperial history of tea. In a similar vein, Fischer (2021) dives into the materialities of maize, and its political entanglements, to bring new understanding about the role of maize in South Africa's unequal agricultural development from the colonial era to the present day. Fischer (2021) illuminates how attention to the material properties and entanglements of maize with South African politics, global agricultural markets and technological development contributes important new understanding of the persistence of South Africa's extreme inequality in agriculture, and about why recent introductions of genetically modified (GM) maize have worsened rather than improved the situation for the country's smallholders.

Discussing GM, or transgenic, soy and maize respectively, Rauchecker (2021) and Fischer (2021) both engage with the role of modern crop technologies in shaping crop materialities and socio-natural entanglements. Studying the politics of transgenic soy in Argentina, Rauchecker (2021) shows how particular materialities of transgenic soy simultaneously enable state and corporate control and farmer resistance. While the transgenic materiality of soy gives more control possibilities to the state and seed corporations, Rauchecker (2021) nevertheless shows that it does not hinder farmer resistance.

The contribution of Roman and Westengen (2021) represents one of

the 'micro-level' studies of the themed issue, zooming in on the social life of cassava in a contemporary quilombo-remnant community in north-eastern Brazil. Cassava cultivation by runaway slave communities is one of Scott's (2009) prime examples of 'escape agriculture' under colonialism and, drawing on material semiotics, Roman and Westengen (2021) describe the way that the relationality between roots and people also shapes the community's subjectivity, collectivity and resistance today.

Like Karlsson (2021), Legun et al. (2021) focus on one crop, but move across continents. They describe how the growth of craft beer production has shifted the valuation of hops from one that is focused on quantitative measures of bittering to qualitative approaches to aroma. This 'new aesthetic regime,' as they refer to it, is associated with diverse structural shifts in hop economies across production regions through its encouragement of more bespoke and less cooperative forms of marketing.

The papers in this themed issue are all inspired by the spirit of open-endedness, experimentation and curiosity found in James Scott's work (Scott, 1985, 1998, 2009, 2017). As Scott himself puts it in his commentary for this themed issue, the project is done in the spirit of 'reasoning together' (Scott, 2021). In different ways, the papers deploy Scott's notion of political crops, bringing it into conversation not only with a diversity of theoretical impulses, but more importantly with a diversity of plants and their materialities, social lives and agrarian conjunctures. In sum, the contributions offer explorations of what an emerging political ecology of crops might look like with combined attention focused on processes across scales from seed to state and capital.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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