

Un-making Environmental Activism

Beyond Modern/Colonial Binaries
in the GMO Controversy

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Much environmental activism is caught in a logic that plays science against emotion, objective evidence against partisan aims, and human interest against a nature that has intrinsic value. Radical activists, by contrast, play down the role of science in determining environmental politics, but read their solutions to environmental problems off fixed theories of domination and oppression. Both of these approaches are based in a modern epistemology grounded in the fundamental dichotomy between the human and the natural. This binary has historically come about through the colonial oppression of other, non-Western and often non-binary ways of knowing nature and living in the world. There is an urgent need for a different, decolonised environmental activist strategy that moves away from this epistemology, recognises its colonial heritage and finds a different ground for environmental beliefs and politics. This book analyses the arguments and practices of anti-GMO activists at three different sites – the site of science, the site of the Bt cotton controversy in India, and the site of global environmental protest – to show how we can move beyond modern/colonial binaries. It will do so in dialogue with Gilles Deleuze, Bruno Latour, María Lugones, and Gayatri C. Spivak, as well as a broader range of postcolonial and decolonial bodies of thought.

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Abbreviations

ANT	Actor-Network-Theory
Bt	bacillus thuringiensis
DNA	deoxyribonucleic acid
EC	European Communities
GE	genetic engineering
GJM	Global Justice Movement
GM	genetically modified
GMO	genetically modified organism
HGP	Human Genome Project
ICC	Intercontinental Caravan
IMF	International Monetary Fund
KFC	Kentucky Fried Chicken
KRRS	Karnataka Rajya Raitha Sanga (Karnataka State Farmers Organisations)
MNC	multinational corporation
NGO	nongovernmental organisation
RNA	ribonucleic acid
WSF	World Social Forum
WTO	World Trade Organisation

1 Un-making environmental activism

Tucked away in the countryside of Northern Germany lies the Wendland, which is a region that to the outsider does not stand out in any particular way. But over the past 40 years the Wendland has become a significant location for German anti-nuclear power activists, after a salt dome in one of its small villages – Gorleben – was chosen to be the *Zwischenlager* (intermediate storage facility) for Germany's nuclear waste in the 1970s. Today the Wendland means a lot to Germans like me who have undergone their initiation into environmental activism by participating in the protests against nuclear waste transports that make their way to Gorleben on a yearly basis. In these protests, Greenpeace activists join anarchists as well as local farmers to occupy rail tracks and roads. In fact, the whole Wendland population participates, with the anti-nuclear symbol 'X' being exhibited in many windows. I still vividly remember my own 2003 Gorleben protest in which I was given a lesson on the merits of the former Socialist German Democratic Republic at the booth of the Marxist-Leninist Party and learned about the dangers of nuclear power at the Greenpeace stall, while my partner – a Greenpeace activist – danced with a fiddler and his children on the occupied rail tracks. At the time, being a German environmentalist for sure meant to be 'anti': anti-nuclear power, anti-biotechnology, anti-rainforest logging and, already looming on the horizon, anti-man-made climate change.

Since that time the once clear waters of my environmental beliefs have become muddied. Environmentalists have started to prominently discuss whether some environmental issues are more significant than others, and whether there are even outright contradictions between the various 'anti'-positions. In the UK, where I have been living at the time of writing for more than a decade, the renewed commitment to nuclear power is (among other things) justified by pointing at the need to protect the climate, based on the argument that the nuclear industry is allegedly low carbon. This is an argument not just made by the UK government (see e.g. Leadsom, 2016), but also by some prominent environmentalists. George Monbiot, for example, argues that the fighting of nuclear power is counterproductive for environmentalists insofar that it distracts them from the problems that really matter, such as the CO₂ emissions of the coal industry (which, Monbiot (2013) suggests, can only be tackled by advocating an energy mix that includes nuclear power). Similarly, some argue that the issue of climate change

should make us environmentalists change our attitude towards agricultural bio-technology, the activism around which lies at the heart of this book. Environmentalist and popular writer Mark Lynas, for example, publicly 'converted' to a pro-genetically modified organisms (GMO) position based on the argument that he has to be consistently 'pro'- or 'anti'-science. He cannot, so his reasoning, be 'anti-science' in relation to agricultural biotechnology, whilst being 'pro-science' in relation to climate change (Lynas, 2015). There is, he (ibid.) maintains, a scientific consensus for both the actuality of man-made climate change and the safety of GMOs.

What are the reasons for this professed desire to organise into a hierarchy and/or play against each other environmental beliefs, with agricultural biotechnology and nuclear power being two of the most prominent issues losing support among at least some environmentalists? ¹ As Lynas's comments make clear, the distinction between 'proper' and 'improper' environmental beliefs is often grounded in science as the decisive site for verifying claims about how nature needs to be protected best. Indeed, those environmentalists who continue to be concerned about agricultural biotechnology often counter pro-biotech arguments with the same logic: they point out that the 'evidence' for a pro-position is either not there or that it is inconclusive; in other words, they contest the idea that there really is a scientific consensus. This is often related to the allegation that those in favour of biotechnology are not independent scientists, but are compromised by their ties to industry (see e.g. Robinson, 2015). In fact, as I was writing the first version of this introduction, Riverford veg box scheme owner Guy Watson responded in the newsletter that accompanied my box for that week to a pro-GMO BBC *Panorama* episode that had just been aired in the following way (Watson, 2015; emphasis added):

I remain open-minded about the benefits that GM might bring in the future..but . . . bombarding us with *emotive messages* driven more by a PR agenda than by *fact* is unforgivable. We need, rather, a *cool headed evaluation of the scientific evidence and the commercial interests at play.*

One of the most interesting features of this quote is the binaries that it invokes, which also (at least implicitly) structure the arguments of those in favour of biotech: the 'cool' scientific versus the 'emotive' other, 'pro' versus 'anti'-science, (objective) 'evidence' versus (commercial or otherwise partisan) 'interests'.

In this book I will argue that this urge towards binarisation is grounded in a taken-for-granted modern epistemology that is delimiting our understanding of nature, reality and political transformation. Crucially, this epistemology has historically come about through oppressing and annihilating other, non-Western and often non-binary ways of knowing nature and living in the world, which is why I call previously mentioned binaries not just *modern*, but also *colonial*. What interests me in this book is what sort of environmental politics and activist strategy could emerge if we moved away from this epistemology and dropped this urge towards binary categorisation, if we acknowledged its colonial heritage and

(consequently) found a different ground for environmental beliefs, values and politics more generally (cf. Braun, 2002)?

There are of course other, more radical forms and arguments of/in environmental activism. Indeed, the approach outlined so far could be called a mainstream, 'paci-fied', evidence-based one that usually complies with paradigms such as ecological modernisation, sustainable development and green growth. Such an approach sees effective governmental regulation as the best response to enduring environmental problems, instead of trying to change the fundamental oppressive socioeconomic structure of society. This institutional approach to 'saving' the environment has always stood in 'historical tension' with more radical environmental Marxist or anarcho-autonomist branches (Reitan and Gibson, 2012: 396–7). However, one of the contributions of this book lies in the argument that it is not only mainstream environmentalists that sign up to a modern/colonial epistemology, but also, as I will outline in one of the following sections of this introduction, many radical activists and scholars. Drawing on decolonial thought (e.g. Quijano, 2007; Mignolo, 2000), I will argue that radicals, while acknowledging that other, non-Western ways of making sense of nature have been ignored and suppressed in *political and socioeconomic practice*, often neglect the way that Marxist, anarchist, deconstructivist or otherwise radical Eurocentric *concepts and categories* continue to suppress alternative bodies of knowledge about the world.

This book engages with a particular environmental issue and the activism against it: agricultural biotechnology/GMOs. This issue is interesting because two of the rationales that underlie activists' fight against GMOs have in themselves the potential to disrupt modern/colonial binaries. First, anti-GMO activists who continue to argue against biotechnology do so, as Lynas rightly points out, *against* the scientific consensus. However, that does not mean that they altogether abandon the scientific argument: drawing on complexity science they maintain, against mainstream molecular biology, that the organism (and/or nature as such) is a complex, self-coordinating entity that cannot be externally controlled. As I will show in Chapter 2, they contest the traditional binary between the scientist as subject and the organism as object and instead depict observer and observed as intermingled. With this they at least implicitly go against the crucial modern mind/matter dichotomy as well as related understandings of cause and effect working in a linear manner, and the possibility of predictability and control. Some anti-GMO activists see the latter as being the outcome of a human chauvinistic attitude towards nature that needs to be overcome. At least at a first glance, this argument seems to be close to many non-Western cosmologies in which the human and the nonhuman have never been as clearly distinguishable as they have been for the modern subject. However, as I will also show in Chapter 2, when it comes to the concrete political argument that activists make about GMOs, modern/colonial binaries re-enter the picture, particularly when a strong distinction is made between the 'natural' organism and the 'unnatural' GMO. Paradoxically, this distinction is based on the assumption that the GMO is a bounded entity the identity of which can yet again be described on the basis of inherent, fixed and stable properties (rendering it 'unnatural'). This too easily leads to a call for excluding and destroying the 'unnatural' or

‘monstrous’, as well as a collapsing of the true and good into the ‘natural’. As I will show particularly in Chapter 4, both moves have very problematic implications for the way that non-Western cultures, societies and bodies of knowledge are perceived, judged, appreciated and/or excluded.

The second rationale of anti-GMO argument and practice that makes it interesting for challenging and overcoming modern/colonial binaries in environmental activism explicitly builds on a critique of neocolonial/neoliberal structures of domination. Prominent Indian intellectual Vandana Shiva, for example, calls Western environmental science ‘masculine’, instrumental and exploitative (see Shiva, 1989). Shiva makes a link between this understanding and the developmental and economic agenda advanced by multinational corporations (MNCs) and Western-led international organisations in relation to agriculture (see e.g. Shiva, Emani and Jafri, 1999). Shiva argues that this Western understanding should be replaced by an approach towards agriculture and development that draws on non-Western, Indigenous, nurturing ways of engaging with land and nature. As I will show in Chapter 3, agriculture is indeed a prime site for making visible what some scholars have called ‘ontological incompatibility’ (Carro-Ripalda and Astier, 2014). This means that the modern understanding of what it means to be human, of how the human relates to the nonhuman, and what the general place of humans and nonhumans is in the cosmos (all of which is significant for doing agriculture) not only clashes with non-modern understandings, but is incomprehensible to the latter (and vice versa).² However, based on an analysis of the Indian controversy around Bt cotton, I will argue in Chapter 3 that the continuous invocation of the ‘external’ (Western states, Western ways of doing agriculture, MNCs, international organisations) versus the ‘internal’ (traditional, Indigenous, democratic, local ways of doing agriculture) reinforces modern/colonial binaries at the same time as it challenges them. As the case of the Indian Bt cotton controversy manifests, the distinction that anti-GMO activists make between the ‘natural’ and the ‘unnatural’ does not only refer to the GMO as opposed to the ‘natural’ organism, but also to agriculture as a whole: the ‘unnatural’ is linked to the industrial approach, which follows the ideas of the Green Revolution, whereas the ‘natural’ is embodied in the traditional, authentic, Indigenous approach. As I will argue, anti-GMO activists need to understand and challenge modernity/coloniality at a much deeper epistemological and ontological level; tracing it back to particular colonial and postcolonial trajectories. In the case of Indian agriculture, for example, activists need to understand how colonial approaches towards state and economic development that have wholesale swallowed colonial ontologies and rationales make it very difficult – if not even impossible – to hark back to an ‘authentically’ different ontology and agricultural practice. As I will show in Chapter 4, the continuous upholding of the modern=bad/traditional=good binary also has profound implications for the activist attempt to join forces across diverse geographical, cultural and socioeconomic backgrounds – i.e. the attempt to make environmental protest *global* – which too easily leads to a reproduction of colonial oppression through reading protest rationales, strategies and activist identities through one particular (modern) epistemic frame.

In sum, this book studies the problem of modern/colonial binaries in relation to anti-GMO activism at altogether three sites: the site of science (Chapter 2), the site of India's controversy around Bt cotton (Chapter 3) and the site of global environmental protest (Chapter 4). It does so by analysing the activists' arguments and practices that we find at these sites, as well as by using certain conceptual and ontological resources to both understand and move beyond the taken-for-granted (colonial) 'common sense' of existing positions. The resources that I will use are in particular Bruno Latour's (2004) attempt to overcome the modern society/nature binary by assembling humans and nonhumans in a new political collective, Sylvia Wynter's (2003) foundational essay on coloniality, Gayatri C. Spivak's (1988) famous questioning of the subaltern's voice and her general take on power and representation, Gilles Deleuze's non-binary meta-physics of transformation, and María Lugones's decolonial approach. Some of what I have described above, particularly in relation to the Indian Bt cotton controversy, sounds close to a traditional *postcolonial* approach, insofar that I question how colonialism has in itself created understandings of the 'natural', the 'traditional' and the 'authentic' from which the 'postcolonial' is unable to get away. Relating this interrogation to the question of how to pursue a *postcolonial* environmentalism brings this book close to Bruce Braun's work on conceptualisations of and activism around the temperate rainforest in British Columbia. In his seminal book *The Intemperate Rainforest: Nature, Culture and Power on Canada's West Coast* (2002) Braun aims 'to strive towards a new set of concepts that might inform a radical environmentalism that is attuned . . . to the relations of power and domination that infuse our environmental ideas and imaginations', with particular attention being paid 'to the subjugated histories and buried epistemologies – often *colonial* epistemologies – that are hidden by, or within, the terms and identities through which forest politics . . . is organized and understood' (*ibid.*, x; emphasis in original). However, in addition, the aim of my book is a *decolonial* one. Indeed, I aim to use some of the mentioned conceptual and ontological resources to not just analyse the debates, but to pinpoint how the exclusion of non-modern ontologies and epistemologies that has become cemented in much anti-GMO argument and practice has been central to the rise of the modern project as such. In other words, I aim to show how modernity and coloniality have to be understood as co-constituted (Quijano, 2007).

Due to its transitional nature (cf. Preface), the book does not substantially engage with non-modern bodies of thought and practice, as the decolonial approach encourages us to do. However, it aims to use previously mentioned conceptual and ontological resources in dialogue with anti-GMO rationales and arguments to open up space for *sensing* the existence of ontological difference and incompatibility. As I will show throughout the chapters to come, this will make the book in itself become a means of disrupting modern/colonial binaries. Finally, the book will attempt to provide practical suggestions for how to concretely move anti-GMO activism beyond modern/colonial binaries. As the subsequent chapters and particularly the conclusion of this book will show, these suggestions are often (though not always) counter-intuitive to common environmentalist belief.

For example, I will make a case for the need to respect the rights of GMOs for ontological self-definition, the need to let go of an 'anti'-attitude at specific sites, and the need to understand and come to terms with the 'unnatural' monstrosity of nature.

Anti-GMO activism past and present

About 12 percent of arable land worldwide is currently cultivated with GM crops. In 2013, 27 countries used the technology of genetic engineering (GE) in their agricultural production, though most GMOs were grown in just five: the US, Brazil, Argentina, Canada and India (Macnaghten, Carro-Ripalda and Burity, 2015: 8–9). Biotechnological research and its application had begun in the US in the 1970s and had been initially accompanied by US public concern. But this concern waned after scientists had managed to convince the US public that the risks were both 'marginal and manageable' if certain guidelines were followed (Torgersen et al., 2002: 35). By contrast, due to strong public opposition, the Western European market has remained virtually closed to GM-products until very recently (Schurman and Munro, 2009: 156). Established NGOs such as Greenpeace and Friends of the Earth had taken up the fight against GM technology, as had more radical organisations and social movements such as 'Gendreck Weg!' or 'Earth First!'.

In the so-called Global South there has been a rapid growth in the planting and selling of GMOs in the last decade. In 2011 more land was cultivated with GMO crops in the Global South than in the Global North (Macnaghten, Carro-Ripalda and Burity, 2015: 9). While the US, Canadian and Argentinian markets have become saturated, Brazil and India (as 'late adopters') have continued to expand (*ibid.*). However, both Brazil and India have also featured some of the strongest farmer-based anti-GMO movements in the world. In the late 1990s and early 2000s campaigns against transnational agribusiness in the Global South were coordinated by the People's Global Action network, which included hundreds of Indian farmers and members of the Landless Movement of Brazil (Kousis, 2010: 230). While worries about safety have for a long time constituted the core of concerns in the Western world – particularly in Scandinavian and German-speaking countries, which became the stronghold of European anti-GMO activism in the late 1990s and early 2000s (Torgersen et al., 2002: 60) – campaigns in the Global South have been dominated by issues such as corporate control over seeds and the neoliberal context of the implementation of the technology (Kinchy, 2012: 14; cf. Schurman and Munro, 2010: 57; Jasanoff, 2005: 38).

Although contemporary expressions of protest around agricultural biotechnology remain in many ways wedded to earlier arguments (Kinchy, 2012: 14), more recently the rhetoric has globally shifted towards a suggested need to maintain the right to choose which way to farm, and the socioeconomic consequences that infringing on those rights might entail (*ibid.*, 133; cf. Alessandrini, 2010: 9; Kousis, 2010: 236). In March 2014, for example, Brazil rendered a verdict against agricultural giant Monsanto banning the planting of GE maize in the state of Campeche on the grounds of protecting local Indigenous communities. Growing

GMOs, it was argued, would go against 'the local communities' right to decide on what grows on their land' (Díaz Pérez, 2014).

The debate on rights is closely related to discussions about the possibility of the coexistence of GM- and other 'natural' or 'organic' products, and the potential danger of the former 'contaminating' the latter. In the European Communities (EC) the issue of coexistence was already debated in the mid-2000s and resulting regulations, as well as those that make the labelling of GM-products compulsory, have led to a considerable dying down of much anti-GMO sentiment (Jasanoff, 2005: 144–5). This went hand in hand with a significant recovery of the biotech industry in the late 2000s, when it was able to capitalise on the spike in global food prices in 2008 and a growing demand for biofuels due to increasing concerns about climate change (Schurman and Munro, 2010: xiv). In North America, by contrast, the lack of formal coexistence rules and the fact that the liability of ensuring that agricultural products remain GM-free lies on the shoulders of individual farmers have led to an increase in protests in the last decade (Kinchy, 2012: 130–1). This had led some researchers, such as Rachel Schurman and William Munro (2010: 180–2), to argue that simple 'pro'- and 'anti'-GMO arguments have started to lose ground. However, resistance to 'the GMO', including calls for its ban or, at least, tight regulation continue to remain central to activism over agricultural biotechnology – exemplified by the neat division that is made between GMOs and 'natural' products, and expressed in the idea of 'choice' (cf. Ansems de Vries and Rosenow, 2015: 1122).

The 'radical' argument against science-based environmentalism

As the previous section has made clear, much of the GMO controversy in Europe has taken place around the question whether or not science has established that GMOs are 'safe' to plant and consume. This focus on science and scientific evidence is typical for Western, modern societies and it has long been questioned by critical theorists. Michel Foucault is one of the prominent thinkers coming to mind when reflecting on how the emergence of 'true' (scientific) knowledge is always interrelated with a particular constellation of political, social and economic power relations. Foucault deemed the human sciences such as psychology to be the decisive sites for the production of acceptable knowledge in modern societies – not because of their objective truthfulness, determined by some 'internal dynamic' (cf. Fuller, 2007: 3), but because they allow an existing set of power relations to function (Foucault, 1991: 27).

Drawing on this and similar accounts, many contemporary critical scholars interested in environmental politics caution us against arguments that rely on 'hard science' as the decisive site of veridiction, because these arguments marginalise those voices that link the need for environmental protection to the need for a more radical economic and political restructuring of society. As some scholars (e.g. de Goede and Randalls, 2009; Swyngedouw, 2007) point out, radical political approaches (rightly) focus on problems that are internal to society, such

as structural inequality and exploitation. By contrast, a science-based approach has a tendency to advocate technocratic regulatory solutions for environmental problems, as the latter are regarded as existing externally to the way contemporary society is structured. Here 'nature' is understood as a given object, the comprehension of which relies on technical, calculable knowledge, graspable with numerical evidence, eschewing the 'political' question about 'what kinds of natures we wish to inhabit, what kinds of natures we wish to preserve, to make, or, if need be, to wipe off the surface of the planet' (Swyngedouw, 2007: 23). For Eric Swyngedouw (*ibid.*, 21) the debate over GMOs shows particularly well how one particular kind of 'Nature' (the one that can be 'packaged, numbered, calculated, coded, modelled, and represented') has become hegemonic, and is used by technocrats, scientists as well as environmental activists to ultimately (possibly unintentionally) fend off more fundamental challenges to our world. What underlies Swyngedouw's critique is an understanding of 'politics' as the struggle of different visions about how to structure society as a whole, while 'post-politics' makes political procedure a consensual exercise that erases any notion of fundamental struggle (cf. Rancière, 1999, 2010; Žižek, 1999).

Others argue that scientific evidence allows neoliberal ideologies an ever-tighter grip on contemporary societies. Inspired by Foucault's notion of 'biopolitics', which Foucault uses to describe the intimate relationship between the governance of populations and the knowledge about their presumably 'natural' processes that is available to those in power, it is maintained that neoliberal regimes make use of knowledge to be found in e.g. systems ecology. Based on this knowledge, neo-liberals, the argument goes, make a case for the benefits of self-regulation and the becoming 'resilient' of socio-ecological systems (see e.g. Walker and Cooper, 2011). Emphasising the 'complexity' of these systems, neoliberal theorists and policy-makers supposedly maintain that the idea of controlling socio-ecological systems needs to be replaced with a focus on adaptation, so that external catastrophes such as climate change or terrorism can be survived. Elaborating on this logic, Julian Reid (2012: 69) argues that environmentalists consequently need to give up the idea of 'ecological reasoning' as means of political contestation. Instead they need to recognise that the decisive problem of our time is not that there is insufficient concern for the vulnerability of the natural world in main-stream policy-making. Indeed, there is rather too much: neoliberal governance today is, Reid (*ibid.*) suggests, all about our vulnerability to nature and other external forces (cf. Chandler, 2012; Evans and Reid, 2013, 2014). Instead of misrecognising how ecological systems work, Reid (2012: 68–9, 77) maintains that contemporary neoliberal governmentality has understood this far too well: it has made it part and parcel of the neoliberal logic of self-reliance and responsibility.

All of these analyses and arguments allow for insight into the problems that occur when 'science' is invoked in order to make a case for political action on behalf of some diffuse entity called 'Nature' or 'Ecology'. Particularly the critique of the post-political also rightly emphasises the need to listen to marginalised voices that connect environmentalism to a politics that aims to challenge structures of injustice at a deeper level. However, I am concerned about

the extent to which critique in these approaches remains wedded to what Walter D. Mignolo, drawing on Aníbal Quijano, has called the coloniality of knowledge (Mignolo, 2007: 451; cf. Quijano, 2007). The theoretical framework that is used remains an intra-modern one that is sitting, unchallengeable, on top of the critique that is made. Indeed, both the notion of 'post-politics' and the notion of 'bio-politics' have been elevated to the status of 'fixed' theoretical schemata against which existing political practices (such as environmentalist ones) are judged in a binary manner (cf. Coleman and Hughes, 2015: 142; Coleman and Rosenow, 2017a). The 'true' problem that needs to be tackled, the argument goes, is either the socioeconomic structure of Western societies, or global neoliberal biopolitics, both of which being exclusively analysed through the lens of given (European) categories and concepts. In those conceptions 'nature' as something 'out there' is nothing but a construction, a discourse that serves capitalist, neoliberal elites. The implications of this are particularly stark when David Chandler and Julian Reid (forthcoming) use their understanding of the nature of contemporary neoliberal governmentality to explicitly criticise the call for challenging modern/colonial epistemologies and for turning to 'outside' ontologies such as the ones found in Indigenous thought and practice. Instead of seeing those arguments as radical or emancipatory, we should, Chandler and Reid maintain, see them as extending 'dominant western hegemonic practices' (i.e. neoliberal governmentality) (ibid.; emphasis added). Though we should stand in 'political solidarity' with Indigenous struggle e.g. against the 'repossession of the lands of which it has been robbed', any attempt to use Indigenous knowledge in order to understand 'politics and ontology' anew 'through a way of being' leads us into celebrating 'defeat' rather than 'resistance' (ibid.). Here we can precisely see the problem of a 'radical' scholarship that affirms socioeconomic (decolonial) struggles, but fails to come to terms with the epistemological and ontological dimension of coloniality. The decisive problems of our world are solely grasped through the lens of given (Eurocentric) concepts, while Indigenous cosmologies are reduced to mere 'discourses' that are appropriated by dominant governmental regimes and logics. The eye of the critic remains firmly fixed on the coloniser and what He does, with no scope left for 'outside' knowledge to regain any sort of agency. 3

The coloniality of knowledge remains unchallenged.

Moving beyond modern/colonial binaries? The New Materialisms and Latour's politics of the collective

Compared to the arguments that I have outlined and challenged in the previous section, the critical tradition of the so-called New Materialisms could be considered as having a natural affinity with the decolonial project of overcoming the coloniality of knowledge. This is because it explicitly engages in ontological re-imagination in order to critique and potentially overcome modern conceptions of nature, matter, agency and politics. Admittedly the label 'New Materialisms' is in many ways misleading because it tends to conceal the fundamental disagreements between the scholars who are grouped together in its name. Here, I use the

label as it is employed and explained by Diana Coole and Samantha Frost in their edited volume *New Materialisms* (2010b), and in relation to the scholars who have contributed to that volume. Many of the latter share an interest in developing different understandings of materiality in order to fundamentally challenge modern philosophical frames.⁴ Even more importantly, there are quite a few similarities between the 'new' ontologies outlined by those scholars and the understandings of those anti-GMO activists who draw on complexity theory in order to make their case against the technology of genetic engineering (GE) (cf. Braun, 2015).

According to Coole and Frost (2010a) New Materialists attempt to altogether break with binary understandings of the world. Individual entities (human as well as nonhuman) are regarded as fundamentally interconnected and (thereby) unable to hold fixed, contained identities. For William Connolly, for example, the world is one of 'abundance' in which individuals are 'not exhausted' by their identity, but relate to wider 'force-fields' on which they emerge, fracture and (re-)connect (Connolly, 2002: 120, 2011: 5). The force-fields that condition different identities are fundamentally non-binary, and any identity emerging from them is never sufficiently 'finished' to be constituted in opposition to something else. In line with this, any interpretation of reality, of its truth and of its problems, is always exceeded by the ontology it tries to capture, which disrupts any sense of certainty about oneself, the world and the problems that we face. It disrupts any sense of 'attunement, explanation, prediction, mastery, or control' (Connolly, 2011: 5; cf. White, 2000: 114). All of what is usually assumed to be binary becomes part of a non-binary, vibrant, agentic process of materialisation. Politically this should encourage us, as Connolly argues in his latest work which is particularly concerned with the problem climate change, to form 'a new pluralist assemblage organized by multiple minorities drawn from different regions, classes, creeds, age cohorts, sexualities, and states'; engaging in a 'politics of swarming' that is 'activated by the power of planetary forces' (Connolly, 2017: 8–9).

However, if agency is everywhere and if materiality is vibrant, it becomes difficult to recognise an actual *lack* of it on the side of those who are powerless and oppressed. 'Lack' points to a fundamental negativity that is difficult to integrate into an ontology of 'abundance'. If 'structures' are replaced with 'networks' (as happening for example in Actor-Network-Theory (ANT)), 'all parties are pre-sented as exerting their own kind of power over each other, according to alliances they can form in a given circumstance' (Fuller, 2010: 11). In other words, everything seems to be constantly in flux and open for new events and alliances to take shape. It is often critiqued that New Materialist ontologies occlude how the interrelation of (material) identities is impacted on by particular historical 'power geometries' that have led (and continue to lead) to agents being 'affected' differently (Tolia-Kelly, 2006: 213–14). In other words, structural inequalities and oppression (in their historical and contemporary manifestations) have had an impact on how different agents are affected and how they connect – or indeed fail to do so (*ibid.*; cf. Ansems de Vries and Rosenow, 2015: 1120). As Gayatri C. Spivak (1988) poignantly argues in her famous essay 'Can the Subaltern Speak', the problem of dismissing representation is that it erases any possibility to reflect

on differentiated positions, and on the fact that people, for historical and geopolitical reasons, have differentiated capacities to act and speak. Pulling everyone and everything together as emerging from some infinite force-field harbours the danger of not being able to interrogate how particular identities emerge as differentiated, shaped by particular sedimented historical (colonial) legacies. Even if the injustices of colonial and neoliberal capitalist exploitation are acknowledged and analysed, as in Connolly's case (see e.g. Connolly, 2008), the call for a 'politics of swarming' that 'is composed of multiple constituencies, regions, levels, processes of communication, and modes of action' (Connolly, 2017: 125) makes it difficult to reflect on varying distributions of affect and connectivity *within* the assemblage. What are the internal hierarchies and structurally differentiated positions, what do they tell us about past and contemporary domination, and what are, as result, the specific responsibilities of those participating in the assemblage?⁵

As this book will show in relation to biotechnology, much of conventional science (in practice and theory), still heavily relies on Cartesian subject-object or mind-matter dualisms: in the process of scientific investigation, the truth of the object is revealed to the scientist as subject, contributing to scientific progress and delineating a world in which those who have minds are agents, and in which matter stays passive and predictable. In other words, GMOs are precisely *not* regarded as agents that exercise an (not entirely predictable) 'force' (cf. Barry, 2013: 2; Whatmore, 2009: 588; Whatmore, 2002), but as objects that are controllable by the human agents who have modified them. By contrast, for Isabelle Stengers, GMOs are nonhuman agents that are brought into the political realm by humans (e.g. anti-GMO activists) who act as their 'spokespersons' and who thereby make the organisms' 'presence felt' (Stengers, 2010: 20).⁶ It is argued that this human-nonhuman-assemblage leads to an extension of debates about expertise, a questioning of the limits of knowledge and a contestation over what GMOs really are: objects of progress that are under control, or (for example) 'vehicles for intellectual property rights' that illustrate 'capitalist expropriation strateg[ies]'? (ibid., 21) However, Stengers also deliberately takes the 'oppositional connotation' out of Deleuze and Guattari's concept of the 'minoritarian', and puts it into a context of 'togetherness', where people and things are 'attached' and 'associated' in heterogeneity (ibid., 14). They then have the 'capacity . . . to band together and act in concert but in the manner of a "swarm" rather than in consequence of some pre-figured category of political interest . . . or class' (Whatmore, 2009: 592). But isn't it precisely the oppositional nature of the concept of the 'minoritarian' – or of a concept such as 'class' – that makes it politically powerful, able to disturb the given social and political order by pointing at fundamental structures of oppression and injustice?

As I will show in the following, this problem is at least partly addressed in the work of what Graham Harman (2014) calls the 'middle Latour'. For Latour, the binary between 'nature' and 'society' is decisive for the organisation of modern life: it has developed, he (2004: 3) suggests, 'over centuries in such a way as to make any juxtaposition, any synthesis, any combination of the two terms impossible', and it stabilises all other traditional modern dichotomies: man/

nature, subject/object, mind/matter, etc. With regard to the political implications of his work, Latour has moved, Harman (*ibid.*) suggests, through different phases. In his early work, Latour is most inspired by the political philosophies of Thomas Hobbes and Niccolò Machiavelli, though he replaces the struggle between *human* power players that we find in both with the struggle of *human and nonhuman* 'actants' the agency of which is solely measured in line with the effect that they are able to generate. Latour's early work is characterised by a 'symmetrical' ontology' in which actants are seeking allies to connect to in order to establish hegemony (*ibid.*, 51). '[M]ight' trumps 'right' (*ibid.*, 13), with 'no court of appeal beyond winning or losing' (*ibid.*, 46). By contrast, the 'middle Latour' replaces this power struggle with a 'carefully assembled institutional network' (*ibid.*, 56). Particularly in his book *Politics of Nature: How to Bring the Sciences into Democracy* (2004), Latour argues that we need to create a 'new Constitution' and set up a new 'collective' that very well serves as a 'court of appeal' for the various propositions that plea for inclusion. He explicitly attempts to establish a practical 'procedure' for making things 'right', one that leaves behind the 'old', modern, binary Constitution. It is for that reason that this part of his work will be one of the crucial conceptual resources that will be used in this book.

In *Politics of Nature* Latour uses the metaphor of the 'house' to describe the make-up of what he calls the 'old [modern] Constitution': the *social* house is the place of humans, who can communicate via speech but 'find themselves in chains', ignorant of the world and its real mechanisms (*ibid.*, 13). The house of *nature*, by contrast, is inhabited by 'nonhumans' that are governed by objective laws but unable to communicate (*ibid.*, 13–14). Because the truth of reality is solely located in the second house, it is regarded as having the authority to 'tell the truth without being challenged, put an end to the interminable arguments [of the first house] through an incontestable form of authority that would stem from things themselves' (*ibid.*, 14). This truth is communicated to the social house by 'travellers', who 'can make the mute world speak' (*ibid.*). Importantly, these travellers – the scientists – are the only ones who 'can go back and forth from one world to the other no matter what'; the only ones who have been able to escape the 'tyranny of the social dimension, public life, politics, subjective feelings, popular agitation' (*ibid.*, 10).

Latour argues that the only solution to this problem is to get rid of the houses altogether, and to develop a new Constitution that allows for establishing *one* collective. Importantly, for Latour, constructivist critical approaches to reality (including, I argue, much of the Foucauldian discourse-focused approaches that I have previously critiqued) aims to cut off any ties between the natural and the social, closing the door for *any* travellers instead of throwing it wide open for everyone to go through. Constructivist approaches rigidify the binary between the natural and the social by leaving 'nature' to the scientists alone and by aiming for a rule of the social that is solely determined by social mechanisms and discourses, understood only by those who engage these mechanisms and discourses in theory and practice. In Latour's words (*ibid.*, 33),

the idea that “nature does not exist”, since it is a matter of “social construction”, only reinforces the division between the Cave and Heaven of Ideas by superimposing this division onto the one that distinguishes the human sciences from the natural sciences.

As Connolly (2017: 10) puts it in a related critique of what he calls ‘sociocentrism’, it is falsely assumed that ‘cultural interpretation and social explanation can proceed without consulting deeply nonhuman, planetary forces with degrees of autonomy of their own.’

Instead, Latour aims to bring down the existence of the houses altogether, by giving external (natural) reality a (new) place in the work of the collective (ibid., 10). Rather than questioning the very existence of ‘objective external reality’, as the constructivists do, we should argue for the existence of *more* reality – a reality, however, that is never ‘definitive’. Not because we do not yet know enough about it, but because it is ever-changing, depending on what human associates with what nonhuman at one particular moment in time. On the side of nature (as on the side of the social) we have ‘countless imbroglios’ that always already presuppose human participation (in the way nature is made sense of, for example, in laboratory experiments, in observation, in sampling etc.) (ibid., 20). For Latour (ibid., 89), the new collective should consequently be understood as ‘an ever-growing list of associations between humans and nonhuman actors’. This does not mean (and this is important, particularly regarding my previous critique of the New Materialist literature) that we should consequently strive for an indefinite openness towards embracing ever-new actors and human-nonhuman-associations. What we have to be open for, Latour maintains, are the *claims* for inclusion that are made by new associations that ‘find themselves mobilized, recruited, socialized, domesticated’ (ibid., 38), claims that the collective has to deliberate, but might well decide to turn down.

What the collective needs is an ‘explicit procedure’ in which decisions about collectivity, unity and in- or exclusion can be made together (ibid., 41). What it cannot do is simply ‘adding together . . . nature and society’ (ibid., 57). Everything needs to be thrown into the air and reassembled anew – which is a very slow process. Indeed, one of Latour’s key messages in *Politics of Nature* is the need to slow things down, and to properly recognise everyone’s right to fight for her/his/its own conception of ‘the good common world’: ‘Nothing and no one must come in to simplify, shorten, limit, or reduce the scope of this debate in advance’ (ibid., 130) – neither by asserting that the facts have been (scientifically) established, nor by asserting that nonhumans (and their scientific spokespersons) have to be excluded altogether.

However, despite creating space for the provision of ‘right’ over ‘might’ in a concrete political procedure, Latour is still unable to solve the problem of coloniality. Indeed, although Latour himself remarks at one point that the two-house logic is a specifically modern one in which ‘[n]on-Western cultures’ have never been interested (ibid., 43), this argument remains at the level of statement: it is not accompanied by any analysis of how and why this logic had become dominant (in

other words, it is not accompanied by an analysis, or even an acknowledgement of the need for an analysis of colonial exploitation). The politics of the collective remains an ideal scenario that is detached from any actual history of injustice and exploitation, or any concrete configurations of power. Falling once again prey to binary thinking, Latour opposes the *new* to the *old*, the *ideal* to grim *reality*. In the ideal scenario, decisions about inclusion or exclusion of particular propositions are justified if they follow 'due process' (ibid., 91). Does this mean, in practice, that propositions about, say, the need for reparations for past colonial exploitation can be excluded from public life if the deliberation of that proposition has been sufficiently 'slow'? Latour (ibid., 117) emphasises that the collective needs to recognise everyone's right to fight for the sort of collective world and life s/he/it desires, and that controversies should not be solved too quickly. At the end of the process of deliberation, the collective divides the world into 'friends' and 'enemies', and without that element of 'closure' it would not 'be able to learn' (ibid., 146). But all learning, reflection, judgement and decision-making remains internal to the collective, and though particular propositions themselves can point to questions of history, power and inequality, in theory the collective is still free to disregard history, exclude claims related to it and label them as 'enemies'. Of course the inability to judge from the outside is exactly what Latour thinks is desirable, and it is in line with my previous critique of those strands of critical scholarship that judge actually-existing political struggles against given theoretical schemata. However, as Harman (2014) well puts it, Latour's commitment to this sort of immanence 'verges on a commitment to victory' that is not interested in seeking justice for the 'losers of history' (ibid., 13–14). This is intolerable from a decolonial position, as it fails to recognise how modernity could only come about through being co-constituted with coloniality.⁷

In order to tackle this problem I want to argue that Latour's perspective needs to be complemented with a decolonial one, which, in contrast to the former, takes the existence of historical, differentiated structures of injustice and oppression as a starting-point for the critique of modern (binary) thought and for the development of alternatives. In other words, from a decolonial perspective questions of ontology are grounded in a (primary) analysis of history, though, as the next section will show, the latter inevitably points at the need for basing strategies of transformation in alternative 'outside' ontologies.

Starting from historical oppression: the problem of colonial difference

For decolonial scholars the colonial project has to be understood as co-constitutive of the project of modernity as such. Drawing on the philosophy of Enrique Dussel, Quijano introduced the term 'coloniality of power' in his 1989 foundational text (which was translated and published in English in 2007) in contrast to the term 'colonialism' that is meant to describe 'an explicit [historical] political order' (Quijano, 2007: 170). The concept of coloniality signifies the 'extension of Western capitalism' and the parallel 'extension of Western epistemology' to the

non-European world, having started in the fifteenth/sixteenth centuries with the conquering of the Americas and 'the emergence of the Atlantic commercial circuit' (Mignolo, 2002: 58–9). Importantly, it is continuing to the present day as 'the most general form of domination in the world' (Quijano, 2007: 170). Because of the process of co-constitution, the beginning of modernity 'proper' likewise needs to be located in the fifteenth/sixteenth centuries and not, as it is often done, in the eighteenth century. Otherwise 'coloniality' becomes merely 'derivative'; serving to reaffirm modernity's claim to be all-inclusive and universal, erasing or relegating the 'Iberian foundational period of capitalist expansion and coloniality . . . to the Middle Ages as the Black Legend' (Mignolo, 2002: 61).

Because of the crucial epistemological dimension of the modernity/coloniality project, decolonisation needs to include decolonising knowledge, which for Mignolo (2007) needs to happen through an epistemic 'de-linking' of the Global South.⁸ For this argument Mignolo draws on Latin American dependency theory, which he defines as 'a political statement for . . . social transformation of and from Third World countries' (in contrast to world-system analysis which Mignolo uses as well, but which he defines as 'a political statement for academic transformation from First World countries') (Mignolo, 2002: 63; emphasis added). The decolonising task lies in a move towards 'the reconstruction and restitution of silenced histories, repressed subjectivities, subalternized knowledges and languages performed by the Totality depicted under the names of modernity and rationality.' (Mignolo, 2007: 451)

In short, for decolonial scholars we need different, non-Western ('de-linked') epistemologies that are able to go beyond modern (binary) categorisation because of the actual, historical (colonial) forms of oppression that have brought about the latter. This is what makes their argument relevant for the purposes of this book. In order to move beyond modern/colonial binaries in environmental activism, it is not enough to think beyond modernity from within the inside of European modernity itself. In other words, it is not enough to engage in 'intra-modern' (Escobar, 2007: 180) or 'Eurocentric' critique (Dussel, cited in Mignolo, 2002: 57). Instead, new thought has to emerge from the other side of what Mignolo calls the 'colonial difference', which is the 'difference between center and periphery, between the Eurocentric critique of Eurocentrism and knowledge production by those who participated in building the modern/colonial world and those who have been left out of the discussion' (ibid., 63). To paraphrase Gurminder K. Bhambra (2014: 130), rather than an endogenous understanding of the development of European modernity, Europe should have an exogenous one that acknowledges how it has evolved from the oppression of 'other cultures [that] constitute the ground of European self-realization'.

Besides decolonising knowledge, we also need to decolonise Being – which brings us back to the realm of *ontology*. The term 'coloniality of Being' was initially used by Mignolo and then taken up and further developed, as a concept, by Nelson Maldonado-Torres (2007). While 'coloniality of power' refers to 'the interrelation among modern forms of exploitation and domination (power)', and 'coloniality of knowledge' to colonial modes of knowledge production as

previously outlined, 'coloniality of being' is about 'the lived experience of coloniality' of those who have been subjected to it (ibid., 242). Drawing among others on Emmanuel Lévinas, Maldonado-Torres critically interrogates the exclusionary dimension of ontological thinking as a 'philosophy of power' when it is taken 'as foundation or ultimate end'. Critiquing Heidegger, Lévinas argues that the problem of a focus on ontology is that it 'gives priority to an anonymous Being over and beyond the [ethical] self-Other relation'. Consequently, as seen in Heidegger, the yearning becomes one for 'authenticity' rather than 'radical responsibility' (cited in ibid., 258).

Due to understanding being (matter) as always exceeding any capture, and as disrupting any sense of coherence or identity, which, it could be argued, leads to an *extension* of responsibility towards the Other rather than a neglect, this critique does not fully apply to New Materialists. As Mario Blaser (2013: 551) has pointed out, the 'foundational' (and thereby exclusionary) claim of ontology can be avoided if we go beyond *both* a notion of ontology as a mere heuristic device, *and* as the making of a foundational claim. Rather, Blaser (ibid.) argues, we should regard it as a 'heuristic device' that contributes to 'enact[ing] the "fact", which allows us 'to articulate a foundationless foundational claim.' In other words, we do stick to the idea of there being a 'reality out there', but, similarly to the New Materialists (on whom Blaser indeed draws as well; ibid.), we do not regard this 'reality' as ever graspable with one definite set of concepts or categories. Ontology then becomes 'a way of worlding, a form of enacting' a reality that nevertheless, in some sense, *is* – but as 'always in the making through the dynamic relations of hybrid assemblages' (ibid., 551–2). Because this involves, for Blaser, 'a certain political sensibility' that contains some normative commitment to enact reality as a 'pluriverse', Blaser (ibid., 552) calls this *political ontology* (see Chapter 2 for more details).

However, taken on its own, this still does not get us away from the question whether *some* 'enactments' of ontology should be prioritised over *others*. In other words, before we move to the *pluriverse*, we need to come to terms with the colonial difference that has led to the dominance of the (modern) *universe* in the first place. Coming back to Maldonado-Torres's Lévinasian question about 'radical responsibility', what the New Materialist approach does not offer is the ability to reflect on *concrete* responsibility towards *concrete* others, resulting from the analysis of a *concrete* history of oppression and annihilation. This is precisely why we need the decolonial approach: it asks for what Mignolo (2002: 63) calls a 're-construction and restitution' of the knowledge and, indeed, 'being' (as lived experience) of those who have been silenced. This does not mean that there is something ontologically 'original' that needs to be restored (like an original pre-colonial ontology) (Escobar, 2007: 186). Instead, decoloniality functions as 'an invitation to think modernity/coloniality critically from different epistemic positions and according to the manifold experiences of subjects who suffer different dimensions of the coloniality of Being.' (Maldonado-Torres, 2007: 261)

Mignolo (2007: 452) is keen to distinguish the *de-* from the *postcolonial* critique by emphasising the more fundamental 'fracture' that the former introduces

into a Eurocentred modernity. For Mignolo (*ibid.*), postcolonial theorists remain too wedded to European thought (particularly European postmodern perspectives) and are insufficiently radical when it comes to the need for transformation beyond the academy and the realm of culture. However, though there has so far been little attempt to bring them together, both perspectives are not mutually exclusive (Bhambra, 2014: 119). As I will show in this book (particularly in Chapter 3) a postcolonial perspective is able to tackle the latent assumption in some decolonial work that social movements from the Global South think and act from the 'outside' qua definition. This is related to the problem that foundational decolonial texts often base their core arguments in a rather sweeping, 'easy' historical and geopolitical account in which a clear (geographical) demarcation is made between the 'inside' and 'outside' of modernity, at least when it comes to practical examples (decolonial scholars are more successful in avoiding this problem in their conceptual work). As Julia Suárez-Krabbe (2016: 17–18) has pointed out, a related problem is that decolonial scholars take their own (scholarly and activist) work as coming from a position of subalternity simply by the fact that they are located or have roots in the 'South', without further reflection on how Latin American 'elites' (including scholarly elites) have been constituted as part of the continent's own, complex colonial trajectory. We might need the 'pessimism' of postcolonial scholars, who are often more critical in relation to what is going on in social movements in the Global South itself, in order to counter the sometimes overly euphoric, liberation-affirming 'optimism' of the decolonial critique.⁹

In line with a more postcolonial approach, this book continues to engage the concepts and epistemologies of European thinkers: in particular, as already mentioned, the thought of Bruno Latour, but also the philosophy of Gilles Deleuze. Like Latour, Deleuze is guilty of not linking the problems of modernity as well as his (alternative) metaphysics of non-binary transformation explicitly to the project of coloniality, and of once again pursuing the development of philosophical alternatives utterly unrelated to actually-existing 'other' philosophies. In order to avoid the reproduction of the coloniality of knowledge as much as possible while still drawing on these two thinkers, I will only consider Latour and Deleuze to the extent that their ontologies, epistemologies, concepts and methodologies are supporting thought and practice from the 'outside' of modernity, which will be established by bringing them into dialogue with the de- and postcolonial thought of Sylvia Wynter, Gayatri C. Spivak and María Lugones, as well as anti-GMO argument and activist at both European and non-European sites. Out of all this will emerge different, decolonised ways of understanding nature, nonhumans, humans, the sciences, 'voices' and (global) political activism – moving through and then beyond modern/colonial binaries.

Chapter outline

In Chapter 2 I will analyse the arguments of anti-GMO advocates at the site of science itself. I will show how the activists' drawing on complexity science in order to reject the technology of GE has the potential of challenging modern/colonial

binaries more generally, by questioning the central modern distinctions between subject and object, mind and matter, human and nonhuman. However, I will also argue that relying on science does not take us far enough in our attempt to overcome modernity/coloniality, because even those advocating alternative scientific approaches continue to regard science as the privileged site of providing information about the objective 'truth' of nature. This leaves the crucial nature/society dichotomy intact. In order to address this problem, I will transform some of the claims made by anti-GMO activists, as well as the claims made by their opponents, into what Latour (2004) calls *propositions*. Propositions, contra to facts, arise out of particular human-nonhuman-associations. They make a claim for inclusion into the *collective*, with the latter deliberating these claims in 'due process' (ibid., 91) without short-cutting discussions by referring to facts. Analysing the claims of five propositions – 'survival machine' (proposition 1), 'sea abyss descendants' (proposition 2), 'emergent relationality' (proposition 3), 'controllable possession' (proposition 4) and 'dancing whole' (proposition 5), I will outline the 'ontological conflict' (Blaser, 2013: 548) that is taking place among them: some propositions affirm modern/colonial binaries, others are able to move away from them at least to a certain extent. Drawing on Blaser's concept of political ontology, I will show that using the procedure of Latour's collective in this way is already in itself a means of contesting the universalist claims of modern/colonial (binary) ontology, by 'shrinking' the latter and making it just one particular ontological 'enactment' among others (ibid., 553). This particular 'method' puts my chapter in line with the general thrust of decolonial critique and ethos. Moreover, concerns over coloniality enter the 'story' (ibid., 552) of the collective in this chapter through the introduction of various 'witnesses' and 'spokespersons' that speak on behalf, or against, various propositions; shedding light, for example, on the coloniality of proposition 1 'survival machine' (which is based on Richard Dawkins's claim about the gene as 'selfish' and the organism as a 'survival machine'; cf. Chapter 2). All of this will lead me in the end to affirm, from a decolonial position, those propositions that more fundamentally question modern/colonial binaries, such as proposition 5 'dancing whole' (which depicts the organism as a self-coordinated dance that cannot be fully understood, let alone controlled). However, further drawing on Latour's concept of the spokesperson, I will also argue that in order to fully decolonise science-based anti-GMO arguments, activists need to give up the idea of being able to 'truthfully' represent nature as one harmonious entity. Instead, as I will show based on a concrete example, they need to start measuring the 'faithfulness' of their own testimony by looking at the extent to which nonhumans are able to resist and transform the questions activists ask of them.

Chapter 3 will engage with the anti-GMO argument that agricultural biotechnology is yet another means used by MNCs, international organisations and Western states to push through their neocolonial and neoliberal agenda. Taking the controversy around Bt cotton in India as example, I will analyse the binary logic that underlies the argument of prominent environmentalist Vandana Shiva, who distinguishes between the modern, neoliberal, neocolonial way of doing agriculture on the one hand, and a traditional, authentic, Indigenous way on the other.

The same logic is found, as I will show, in the argument of Shiva's principal opponent, Ronald J. Herring, who understands Bt-adopting farmers as rational agents making decisions about what to plant on the basis of 'what works'. I will argue that both sets of argument neglect to what extent the actual 'voices' of farmers are shaped by particular historical-colonial conditions – not just socioeconomically, but also at a deeper, onto-epistemological level. Drawing on Spivak's famous essay 'Can the Subaltern Speak?' (1988) and bringing the latter's take on representation into conversation with Latour's understanding of spokespersonship, I will develop a new understanding of how to give an adequate 'voice' to both sub-altern humans *and* nonhumans that are involved in the Bt cotton controversy. This will be fleshed out further with the help of Deleuze, particularly his concept of the 'statement' (Deleuze, 1999) and of the notion of 'regimes of signs' that Deleuze developed together with Guattari (Deleuze and Guattari, 2004). Deleuze, I argue, enables us to move towards an alternative understanding of reality that can only be accessed through *sense*, rather than through a narrow focus on and rational processing of what is actually 'said' or 'done'. Based on the example of the Bt controversy, I will argue that we need to develop new 'statements' about GMOs and environmental protest. These 'statements' emerge, on the one hand, out of having to endure the *silence* that we find in relation to alternative onto-epistemologies, a silence that is related to India's particular postcolonial history that, in relation to the role of science, progress and political economy, has emerged out of *continuity* with its colonial history. On the other hand, new 'statements' also arise out of the 'noise' of Indian anti-GMO activism. As I will show, GMOs have become part of particular historical-social-natural-economic assemblages that have rendered unfamiliar those objects that neoliberal forces of globalisation have previously (successfully) rendered too familiar to contest. However, I will also critique the ongoing activist fixation on the ontological properties of GMOs as intrinsically 'dangerous', the continuing strong reliance on scientific 'facts', and the affirmation of an (imagined) traditional, familiar, authentic identity that risks cutting down the human-nonhuman-assemblage to a form that once again correlates with what I will call the modern/colonial apparatus of Man/gene/State.

Chapter 4 is interested in the connections that anti-GMO activists from various political, geographical, socioeconomic and cultural backgrounds make with each other in order to transform their protest into a 'global' one. In order to achieve this activists tend to focus on the shared desire for global justice, the rejection of neoliberalism and the opposition to the global strategies of agrobusiness. The academy often understands the spatiality of 'global' resistance as being either one of networked connection, or of protest taking place within specific, locally bounded spaces that are purposefully designed as 'living the change' for which activists fight (see for example the Occupy protests). I will use Lugones's (2003) work in order to disrupt and decolonise these spatial imaginaries, drawing on her understanding of resistance as having to take place from the site of the multiple, 'impure', 'world'-travelling self against oppressions that need to be understood as enmeshed. Based on that approach, I will critique the coloniality of one particular historical example of global protest: the 1999 Intercontinental Caravan (ICC) with

which several hundred Indian farmers and other non-Western activists travelled around Europe together with European activists in order to protest at the sites of international organisations and corporations. The coloniality of this protest manifests itself, I argue, in the way that activists seek harmony and ‘sameness’ among themselves with regard to their identity, objectives and overall strategies, as well as (relatedly) the particular expectations that European activists had in relation to the ‘true’ peasant identity of non-Western participants. Using Lugones’s concepts of the pilgrimage and the streetwalker, the chapter will then develop alternative, decolonial understandings (and spatial imaginaries) of the potential for resistance of the ICC (and global protest movements more generally). I will argue that giving greater space to nonhuman realities enables us to make better sense of oppressed experience, and to subordinate our thinking about objectives and strategies to the understandings that emerge out of long-winded, intersubjective, (human and non-human) body-to-body encounters. The latter, I maintain with Lugones, have the potential of challenging our (colonial) frames of understanding domination, our own identity and, most importantly, our perception of the Other.

Finally, given that this book has emerged out of a project in transition (cf. the Preface), the Conclusion will serve to provide a retrospective reflection on the themes that have come to the fore while writing the book. It will make new connections between those themes, both in relation to anti-GMO argument and practice, and in relation to the different conceptual resources that I have used throughout. Because this book also serves to make practical suggestions about how to concretely move forward in environmental/anti-GMO activism, the Conclusion will end with a seven-point activist ‘manifesto’.

Notes

- 1 That said, a 2014 YouGov poll showed that 41 percent of the British population remain sceptical about GMOs, with only 17 percent being openly in favour (Jordan, 2014). Similarly, according to UK Government polling in 2015, only one in three of the British public supported nuclear power at that point, which was lower than in previous years (Department of Energy & Climate Change, 2015). However, what interests me is the particular reasoning that environmentalists such as Monbiot and Lynas provide, not to what extent this belief is anchored in the beliefs of the general public.
- 2 I use the term ‘non-modern’ as it is employed by María Lugones (2010). Drawing on Juan R. Aparicio and Mario Blaser, Lugones defines ‘modern’ as denying ‘the challenge of the existence of other worlds with different ontological presuppositions’ (ibid.: 749). The ‘non-modern’ is precisely what is denied and yet becomes co-constitutive. Lugones uses that term in contrast to the concept of the ‘pre-modern’, which, she says, is already subject to the modern, categorising logic (ibid.: 743).
- 3 It needs to be acknowledged though that Chandler and Reid’s (forthcoming) article rightly critiques the problem of focusing *solely* on Indigenous knowledge as a question of ontology. Chandler and Reid very well point out how such an approach is in danger of ignoring the actual state of dispossession, dependency and brokenness of Indigenous communities, caused by decades of exploitation. However, decolonial scholars are well aware of that – they do not confine their analysis of power to the cultural realm but precisely argue that the coloniality of power is about the intertwining of epistemological and socioeconomic oppression in the project of modernity (see e.g. Quijano, 2007).

- 4 The generality and metaphysical dimension of this challenge is precisely what other scholars interested in new understandings of matter/materiality and nonhuman agency critique. See for example Bruce Braun and Sarah Whatmore's (2010) questioning of what they call Jane Bennett's metaphysical vitalism, which they contrast with the suggested need for an analysis of the 'specificity of the matter at hand' (ibid.: xxix–xxx). See also Abrahamsson, Bertoni and Mol (2015) for a similar critique. However, though this is a worthwhile and interesting controversy, my aim of challenging the coloniality of knowledge makes me turn to precisely those scholars who are interested in wider philosophical development rather than ethnographic specificity.
- 5 It needs to be said that in *Facing the Planetary: Entangled Humanism and the Politics of Swarming* Connolly (2017) engages in great detail with forces of domination, and also draws in an exemplary manner on non-Western thought and perspectives for that purpose. His book overall provides an impressive, successful attempt to tackle the problem of human exceptionalism and what he calls 'sociocentrism' that is found in both those approaches that see planetary forces as an 'environment' for human existence as well as those environmentalists that disregard the autonomy of nonhuman forces beyond human impact. However, various problems remain. One of them is Connolly's occasional tendency to reify and take as authoritative the truth-claims of scientific 'discoveries' and 'new' scientific knowledge. Secondly, despite Connolly's attempt to reach out to non-Western scholars and knowledges, it is striking that this is largely confined to the last two chapters in which he fleshes out the practical implications of his politics of swarming. Indeed, the conceptual work in the first four chapters remains confined to an engagement with largely Western scholars and Western scientists – despite the overlaps that much of Connolly's writing here has with indigenous thinkers such as E. Richard (Umeek), Vine Deloria Jr, Taiaiake Alfred, or Paula Gunn Allen. Zoe Todd's (2016) critique of Latour as failing to engage any indigenous conceptions of 'Gaia' applies, in that sense, also to Connolly's concept of 'entangled humanism'.
- 6 Some scholars might object that the concept of 'spokespersonship' once again focuses too much on human agency.
- 7 I am grateful to Andrew Barry for a very interesting conversation about how Latour's enthusiasm about the new Constitution is potentially related to the general French enthusiasm about constitutionalism, which again needs to be seen against the background of the overall French inability to atone for its past imperialism. Cf. Barry (2005).
- 8 'De-linking' replaces Mignolo's earlier emphasis on the need for 'border thinking'. For the latter see Mignolo (2000).
- 9 I am grateful to Rahul Rao for putting it that distinctly in a conference panel discussion.