The Wild Side of Agro-food Studies: On Co-experimentation, Politics, Change, and Hope

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Michael S. Carolan

Abstract

Noting that the field of agro-food studies has undergone numerous 'turns' over the years, this article first seeks to make sense of this evolving literature by examining aspects of the metaphysical foreground upon which this 'turning' takes place. Doing this highlights a coalescing of sorts within the field; a movement the author describes as being less toward a specific theoretical framework as it is around a general way of doing agro-food scholarship. This style of scholarship embraces relationality, process, and multiplicity while emphasising the generative capacities of what agro-food scholars do for enacting novel political, ontological, and normative practices. The reminder of the article co-experiments with what it means to be open to these productive capacities as researchers, in terms of making the un-thought thinkable and un-doable routine. In doing this the article offers an account of agro-food imaginaries that is hopeful precisely because it is unsettling.

The field we know today generally as agro-food studies has a rich past, dating back at least 100 years to studies like that conducted by famed African-American sociologist W.E.B. DuBois (1898, 1901, 1904) where the plight of black Southern rural labourers and farmers were examined. Since then the field, as noted elsewhere (Buttel *et al*. 1990; Goodman 2003; Carolan 2012), has undergone numerous 'turns', in terms of its methodologies, theoretical frameworks, and analytic orientations. Yet the thing about 'turning' is that there is the presumption of a foreground – you cannot 'turn' in a void as the very concepts of motion, directionality, and position simply do not exist. In the case of agro-food studies, this points to the existence of a metaphysical ground from which those aforementioned orientations spring and against which different ones can be measured. So what are some of those metaphysical assumptions and what, after bringing them 'up' to the discursive surface, can we learn from them?

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This question, I admit, makes the article out to be more adventurous than it actually is. I have no interest in offering an exhaustive philosophical treatise on agro-food studies. Nor will you find in this article a comprehensive literature review that documents and analyses all the twists and turns alluded to above. Instead, think of this article as an act of co-theorising with a motley crew of (human and non-human) characters from within and without the field. While impossible to say exactly what this is, as it is not meant to be any-thing at all, this article is ultimately and irrevocably productive. It reveals what we do to be more real than perhaps some of us know (or even wish) it to be.

Agro-food scholars, like all scientists, are metaphysicians through the simple fact that in order to study the world certain assumptions have to be made about it. But this article is not just about the assumptions we make as scholars. If it were I would not recommend reading any further. This article is not just about first philosophies, or methodologies, or epistemologies – or, at least, not just about any one of these phenomena in isolation. The productive nature of this article lies in its unwillingness to be disciplined – or you might say tamed – by what Whitehead (1967a, p. 197) called the 'grooves' of habit, practice, and thought.[1] Not that I am alone in wanting to misbehave. Others have already noted how social scientists, in their doings as researchers, give shape to the very reality they are charged with understanding (Law 2004a; Law and Urry 2004; Lowe 2010).

The article begins by speaking about some of the metaphysical terrain that lies beneath agro-food studies with its constantly evolving theoretical frameworks and analytics. While this exercise is of limited scope (minus a God's eye it has to be) I believe it is instructive as it keeps us mindful of where these frameworks stand, in terms of their background assumptions, which in turn helps us better understand what they are capable of illuminating as well as their blind spots. Doing this highlights what appears to be a coalescing of sorts within the field. This movement is not much toward a specific theoretical framework as around a general way of doing agro-food scholarship, one that embraces relationality, process, and multiplicity while emphasising the generative capacities of scholarship for enacting novel political, ontological, and normative practices. We can think of this as the wild side of agro-food studies.

Before moving on I would like to say a little more about the term 'wild'. The concept can evoke a sense of individualism; a bourgeois ethic of freedom, popularised in particular by Thoreau, as opposed to, say, the mutualism and relationalism of Leopold's land ethic.[2] This is not the wild I have in mind. The wild I am referring to speaks to that which does not fit neatly into either cambers, as Latour (1999) calls them, of Science or Politics: that which is sufficiently adulterated to never be True and sufficiently more-than-human to never be Political (see Hinchliffe *et al*. 2005). This wild is reminiscent of Latourian Things – 'much too real to be representations and much too disputed to play the role of stable, obdurate, boring primary qualities, furnishing the universe once and for all' (Latour 2000, p. 119) – without the baggage that comes from being mistaken as mere 'things'. Thus, rather than engaging in doings that tame, and therefore practice a scholarship of subtraction, the future of agro-food research appears to lie increasingly in multiplication, of creating more entanglements not less. And there is something distinctly hopeful, as I note momentarily, about that.

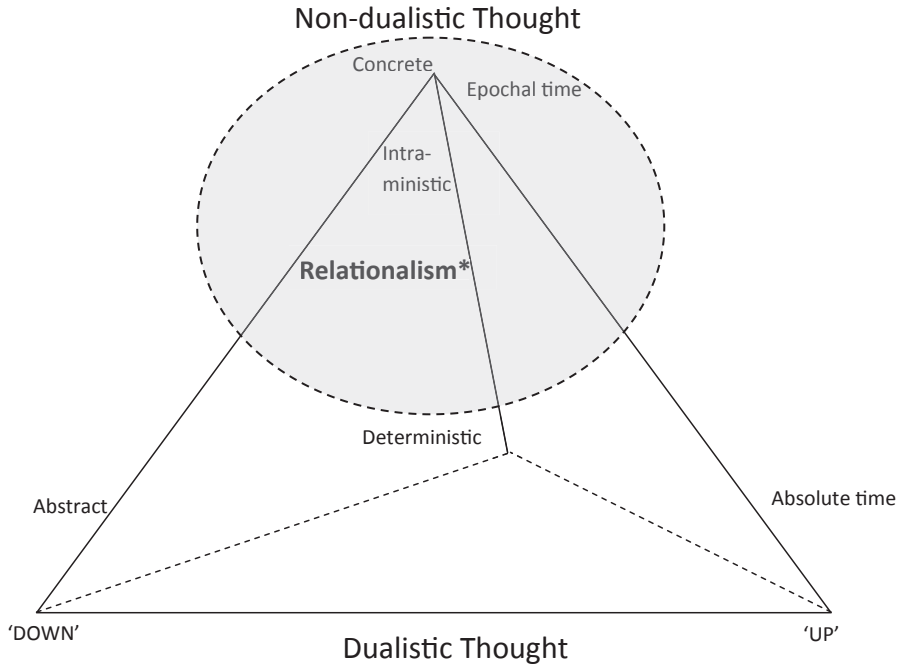

Figure 1: *A non-exhaustive foray in the metaphysical ground*
Note: The figure is an image of a 3-D triangle. The four solid lines represent the four continuums highlighted in the text. The two dashed lines were added to enhance the 3-D effect. I am well aware of the risks with creating such representations (e.g., the implied moralism when some things are located 'higher' than others). Such figures also run the risk of diminishing the wildness of the categories highlighted. Instead, I view the figure as an attempt at co-experimentation, as it affords us the ability to break from disciplining grooves. In that respect it is wild and productive.
* The bolded 'Relationalism' foreshadows material to come

Some of the metaphysical terrain

It is common in the social sciences to talk about how an orientation is either dualistic or non-dualistic (usually the former is criticised while the latter exulted). While this approach can be useful, in that it helps locate frameworks within alternative philosophical traditions, the resolution it provides into the background assumptions of theories and analytic frameworks is undeniably low. Figure 1 starts with this distinction and digs down. As noted earlier, whether we realise it or not, the very act of studying the world requires that we all make assumptions – analytic, conceptual, and philosophical – about things. Figure 1 focuses on some of those assumptions by giving form to four continuums: abstract/concrete, down/up, deterministic/intramistic, and absolute time/epochal time. As noted in the figure, most of these continuums also figure prominently in the dualistic/non-dualistic distinction alluded

to routinely in the literature (see e.g., Murdoch 1997; Goodman 2002). This section involves the bringing together of literatures that might at their face seem disparate but which actually have a considerable amount in common. While I will speak about each continuum in turn, space constrains keep me from engaging in an exhaustive overview of the agro-food literature and how its various 'turns' correspond with the metaphysical terrain illustrated in the figure. Be aware, however, that some of this philosophical discussion and its entanglements with agro-food scholarship make an appearance later in the article. Keeping discussion short in this section therefore minimises redundancies later.

Concrete/abstract

My use of the terminology abstract and the concrete comes from Alfred North Whitehead. Whitehead (1967a) argues that western cosmology is guilty of mistaking the abstract for the concrete, giving rise to what he terms the 'Fallacy of Misplaced Concreteness' (Whitehead 1967a, p. 51). More specifically, Whitehead notes that the method of analytically dicing up the world creates conceptual (abstract) constructs that are then mistaken for reality. Whitehead (1934, pp. 32–33), for example, sounding much like a contemporary Science and Technology Studies (STS) scholar, notes that the concept of the deterministic gene is an abstraction that has since been mistaken for what is:

> For example, when geneticists conceive genes as the determinants of heredity. The analogy of the old concept of matter sometimes leads them to ignore the influence of the particular animal body in which they are functioning. They presuppose that a pellet of matter remains in all respects self-identical whatever be its changes of environment.

It is easy to be seduced by these abstractions. The world, after all, is populated with nuclear power plants, lasers, and genetically engineered organisms – artifacts made possible precisely because of this ability to abstract. As a mathematician, Whitehead knew the value of abstraction, 'for mathematics is the science of the most complete abstractions to which the human mind can attain' (Whitehead 1967a, p. 34). Yet he also recognised that neither science nor mathematics offer portals to all of reality. 'Each science', rather, 'confines itself to a fragment of the evidence and weaves its theories in terms of notion suggested by the fragment' (Whitehead 1938, p. 178). As Isabelle Stengers (2005, p. 38) notes, experimental 'success' in science comes by way of disentangling an article from an otherwise highly entangled world (Paul Feyerabend (2001) makes a similar argument when discussing the richness lost when we abstract from the universe's great 'abundance'). For Whitehead (1967b, p. 154), 'the certainties of Science are a delusion. They are hedged around with unexplored limitations'. The fallacy of misplaced concreteness lies in the misappropriation of these delusions. It lies in an act of forgetting. And if left to stand, this 'one-eyed reason, deficient in its vision of depth' (Whitehead 1967a, p. 59), we risk accepting as real what was originally meant as a proxy.

The ontological states so widely accepted in earlier agro-food scholarship have gotten a lot messier. For example, the literature from the 1950s marks a clear turning point in rural sociological circles toward the social psychological, defined largely by its embracing of the adoption-diffusion research tradition (Carolan 2012). Buttel *et al.*

(1990, p. 44) describe this period as the 'social psychological-behaviourist era of rural sociology'; an era that 'would remain unchallenged in rural sociological studies of agriculture until the early to mid-1970s' (Buttel *et al.* 1990, p. 46). Today, the once concrete states of mind, body, and society are being understood for the abstractions that they really are. Humans, in the words of Richard Le Heron (in press) are, 'co-journeying' with food and agriculture across multiple spatial scales and institutional settings. In doing this, we are not only constantly remaking new agricultural and food relations but also ourselves (see e.g., Goodman and Sage 2013). Thus, while contemporary agro-food scholars still utilise abstractions to think and talk about the world they have become increasingly sensitive to the unsettledness of these 'things' – from scale, to local, global, human, and quality – that earlier scholarship largely took for granted. Even the phenomena of alternative food networks, environmental sustainability, economic viability, and social justice are being shown for the abstractions that they are. As opposed to being 'static objects or sets of relationships they emerge from political, cultural and historical processes' (Jarosz 2008, p. 242). This is not to suggest, however, that more cannot be accomplished in this area. As others note, there remains room to grow in the spaces currently given in agro-food scholarship to examining the relationality that constitute such phenomena as food security (e.g., Carolan 2013; Minkoff-Zern 2012), ethnicity (e.g., Slocum 2007; Alkon and McCullen 2011), justice (e.g., Allen 2010; Alkon and Agyeman 2011), and gender (e.g., Cairns *et al.* 2010).

Down/up

As previously discussed by Kwa (2002) and Law (2004b), the metaphors of 'down' and 'up' speak to the orientation of the analyst. I am uncomfortable using the more conventional micro/macro distinction, though this categorisation has clear parallels with this continuum. In looking 'up' scientists see emergent wholes or global systems. Those looking 'down' see an aggregate of ontologically independent bits.

Yet the very notion of up-ness and down-ness (as real ontological states) is an artifact of dualistic thinking; an understanding of the world that privileges being (states) over becoming (process). Agro-food literature began to turn away from this scale-centric form of theorising in the late 1980s with the rise of the commodity chain analysis and food regime scholarship. In doing this, relations began taking descriptive and explanatory priority over states and things (see e.g., Stringer and Le Heron 2008; Le Heron and Lewis 2009; Raynolds 2012). In the words of McMichael (2009, p. 281) the term food regime is a bit of a misnomer, as it 'is not about food per se, but about the relations within which food is produced, and through which capitalism is produced and reproduced'. (On that note, the name *global* commodity chain analysis is somewhat unfortunate as this approach is explicitly relational and therefore rejects the ontological given-ness of things like local and global.) This also explains the staying power of frameworks like the commodity chain analysis and food regime framework. Their focus on relationality affords them tremendous flexibility, versus, say, the rather linear trajectory that was widely thought to be contained in earlier conceptual frameworks like the Mann and Dickinson (1978) thesis (for such a critique see, for example, Mooney (1987).

Other examples of where scale is understood relationally come from scholars engaged in the practice of decentring neoliberalism (see e.g., Larner 2003; Larner and Craig 2005; Li 2007; Wilson 2012). Wendy Larner (2003, 2011), for example, has argued for the creation of new methodologies and concepts that have broken free from assumptions concerning neoliberalism and globalisation as atemporal and monolithic phenomena. To support her case she details how in addition to being undeniably destructive these tendencies can also be productive, such as in the case of New Zealand where the destabilisation of prevailing approaches to knowledge generation around things like agriculture simultaneously opened up opportunities and potentialities for new styles knowing and doing (see also Campbell 2011). Or, to take one more example, note Tania Murray Li's (2007) study of community forestry management programmes. Rather than working from the assumption that this is just another case of nature being subsumed by the logics of global capital, she details how a diverse array of 'things (trees, logs, non-timber forest products, tools, documents), socially situated subjects (villagers, labourers, entrepreneurs, officials, activists, aid donors, scientists), objectives (profit, pay, livelihoods, control, property, efficiency, sustainability, conservation) and an array of knowledges, discourses, institutions, laws and regulatory regimes' (p. 266) came together to constitute the (wild) process she witnessed to be community forest management.

Deterministic/intramistic

This category centres on the question of where explanation resides. In highly deterministic views of the world, explanation lies 'out there' in naturalistic laws that lie beyond our grasp. At the other end of the spectrum lie intramistic views of causality. Here explanation resides solely within the confines of each event, in the relationships that are formed through the various actors enrolled (Latour 2005) and enacting (Law and Urry 2004) that takes place. Intramism references a third way to speak about causality; something that lies between the extremes of a complete fatalism, based on simple and linear causal relations, and complete indeterminism, in which causality plays no role and chaos reigns supreme (thus while my own neologism it speaks to something not captured by existing terms).[3]

There were concerns that the theoretical arguments that dominated much of sociology of agriculture scholarship in the 1980s were – or at least were interpreted as – painting a linear understanding of agrarian change (Mooney 1983, 1986, 1987; Marsden 1989; Carolan 2012). Much of the 'agrarian question' literature from the 1980s ignored issues of historical, spatial, and social contingency, leaving us with a single-arrow understanding of the future in its relationship to the past. For example, Mooney (1987) by the late 1980s, as evidence of a rejection of this linear theorising, began to move away from his initial objective of theorising the 'detours' to (inevitable) capitalist development, seeking instead to 'undermine the notion that capitalist development need flow in any particular direction' (p. 293).

A more recent example of non-linear theorising lies in food regime frameworks. While considerable agreement exists among scholars around the first and second food regimes there is remarkably little consensus as to where we are at today. Friedmann (2005, p. 229), for instance, has pointed to an emerging 'green capitalism'

regime: 'a new round of accumulation [...] based on selective appropriation of demands by environmental movement, and including issues pressed by fair trade, consumer health, and animal welfare activists'. Campbell (2009, p. 309) writes of something similar in his discussion of an emerging 'food from somewhere' regime, which he characterises as 'having denser ecological feedbacks and a more complex information flow in comparison to the invisibility and distanciation characterising earlier regimes as well as contemporary "Food from Nowhere" '. McMichael (2009, p. 285), conversely, asserts that we have entered a 'corporate food regime', where the goal is no longer about providing labour with cheap food but 'rendering [...] the peasantry increasingly unviable' as all remaining barriers – to land, nature, labour, capital, etc. – are eliminated for the benefit of agro-business. David Burch and Geoffrey Lawrence (2009, p. 277) write about a financialised third food regime, pointing to the intensifying trend of 'finance institutions becoming increasingly involved in the agro-food system while agro-food companies come increasingly to behave like financial institutions'. More recent still, Gabriela Pechlaner (2012, p. 75) details an emerging third 'American-led neoliberal food regime, undergirded by corporate agricultural biotechnologies'.

Those who embrace a worldview that privilege being over becoming would interpret this divergence as proof that the food regime framework lacks explanatory value. After all, this indecisiveness is clear evidence that the food regime approach ought to be discarded for something that if not predictive at least allows its practitioners to reach a consensus about the state of the food world – right? The problem with this assertion is that the abovementioned food regime scholars are not looking at the same thing and therefore consensus is not realistic (and I would go so far as to argue that such a goal is improper). By understanding that explanation and causality lie within the event we are valuing each of the aforementioned food regime interventions on its own terms and allowing for the very real possibility that multiple 'things' are going on simultaneously. This, I admit, makes for a rather untidy view of the world. Yet, to circle back to a concept from earlier, conceptual, methodological, and causal tidiness are but abstractions we would do well not to mistake for the concrete.

Absolute time/epochal time

Absolute time was central to classical physics. Newton (1966, p. 1) refers to this understanding of time as follows: 'Absolute, true, and mathematical time, of itself, and from its own nature, flow equably without relation to anything external'. According to this view, time flows at the same rate for all things, independent of all things. While perhaps adequate from an everyday point of view, we know, thanks in part to modern physics, that this understanding of time is yet another abstraction. Again I return to Whitehead (1938, pp. 145, 146): 'There is a fatal contradiction inherent in the Newtonian cosmology [...] Now assuming this Newtonian doctrine, we ask – What becomes of velocity, at an instant? Again we ask – What become of momentum at an instant? These notions are essential for Newtonian physics, and yet they are without any meaning for it'. Rather than being a part of the nature of actualities, time is conceived, under Newton (and still by many scholars today), as a substantial entity in its own right; as some-thing that requires nothing but itself to exist (Wallack 1980,

p. 129). This objectification of time has been traced back to the origins of western thought, subsumed in the 'belief that becoming can be reduced to being, process to substance, time to the timeless, *events* to *things*' (Capek 1961, pp. 384–385, emphasis in original).

Opposed to absolute time is epochal time. This vision of time holds that events, while temporally thick, are not temporally divisible within themselves. Accordingly, time cannot be cut up because it is not an 'it'; it is not a substance or a thing but a process of becoming tied to subjective aim (e.g., epochal) (this view of time also efficiently does away with Zeno's paradox). In Whitehead's (1978, p. 69) words:

> The conclusion is that in every act of becoming there is the becoming of something with temporal extension; but that the act itself is not extensive, in the sense that it is divisible into earlier and later acts of becoming which correspond to the extensive divisibility of what has become.

Why does this matter to the social scientist? Our understanding of time underlies our understanding of how the world works. A social world, for instance, where attitudes and feelings can be recorded and where such understandings are believed to correspond to actual behaviours will give way to certain methodologies and theoretical frameworks – certainly such a worldview helped legitimise the earlier-mentioned the 'social psychological-behaviourist era of rural sociology' (Buttel *et al.* 1990, p. 44) of the 1960s and 1970s. An epochal view of time, conversely, where events 'are in some sense all-at-once' (Felt 2002, p. 24), directs attention to the process itself, the network, the assemblage. Rather than giving *a priori* existence to individuals, things, or emergent entities an epochal view of time understands that becoming precedes being. This is an orientation of mounting influence within agro-food studies thanks the growing influence of relational geography (see e.g., Le Heron and Lewis 2009; Larner 2011; Heley and Jones 2012), enactive scholarship (Lowe 2010; Campbell and Rosin 2011), and performative and embodied theorising (Busch 2007; Carolan 2008, 2011). The goal of this research is less about correspondence and representation, where essentially the aim is reduction, and more about learning how events come together. In a word it is about multiplication.

From co-theorising to co-experimentation

The previous section was an attempt at co-theorising, with absent presences, an emerging relationalism within agro-food studies. The literatures highlighted appear to overlay the metaphysical terrain identified in the previous figure (Figure 1) by the shaded cloud, identified by the bolded 'Relationality'. In the space remaining I wish to discuss what this emergent metaphysical coalescing around relationality might mean for the future of what we do as agro-food scholars. I do not wish for this section to be mistaken as prescriptive. It is inquisitive and experimental, as it plays on some of the potential consequences that come with doing scholarship as we do.

It is time to introduce one more concept: co-experimentation. While admittedly new to agro-food scholarship in name the term is not new in spirit. By evoking co-experimentation I am referring to an understanding of social change that fits with how agro-food scholars increasingly seem to view the world; a view that is active (you

could even say enactive), that works toward a knowing around rather than a knowledge of, and that is not afraid to take risks (as by definition to experiment is to never be quite sure of the outcome). Co-experimentation, as I understand the term, speaks to the generative force of enrolments, even those enacted over the course of doing research; a process that involves wilding as well as some mutual taming (more on this in a moment). To give some empirical flesh to this concept I briefly identify a handful of literatures, with particular attention given to that from agro-food scholars, which take particular care to be reflexive about their co-experimental nature.

Participatory, affective, and enactive research

A growing body of research shows how science involves more than just learning how to be objective. Indeed, the objectivity of the scientist, it appears, is coloured by affectivities. This is what Latour meant when we wrote science involves 'learning to be affected' (Latour 2004, pp. 226–227). Deleuze (1988, p. 27) makes a similar point:

> If you define bodies and thoughts as capacities for affecting and being affected, many things change. You will define an animal, or a human being, not by its form, its organs, its functions and not as a subject either; you will define it by the affects of which it is capable.

In other words, to start off by putting it rather crudely, scientists have to be tuned to their instruments if they are to ever understand them. Harry Collins (1974) made this point decades ago when writing about the transversely excited atmospheric laser, noting how scientists had to first learn to be affected by the laser (though he used the term 'tacit knowledge') before they could reproduce it in other laboratories. The same holds, for example, for farmers (e.g., Lyon *et al*. 2011), soil scientists (e.g., Ingram 2008), and plant breeders and geneticists (e.g., Carolan 2010) – what they know is an artifact of what they do.

Hinchliffe *et al*. (2005, p. 647), where I draw the idea of 'experimentation' from, investigate individuals who are being trained in 'water vole writing'. Becoming entangled with a group of researchers studying water voles in central Birmingham (UK), the authors describe the process whereby a gradual development of skills are acquired to trace these animals and read their 'writings'. This learning to be affected involved, among other things, identifying vole tracks, acquiring a 'nose' and an 'eye' for vole excrement, and an ability to read certain angles of rushes as indicators of water vole activity. Learning to be affected by water voles was a process of being open to other registers of communication, non-human writing, and traces (e.g., scents) that cannot be codified or visually captured with a picture or diagram.

Carolan (2011) engages in a similar form of affective theorising when discussing how bodies become 'tuned' to food. According to Carolan, our understandings of food and food production are fully sensual, embodied events. Pushing around a shopping cart in the shape of a train as a child, playing at a McDonald's Playland for one's birthday, weeding rows of corn in the heat (and humidity) of a US Midwestern summer, eating Kraft Macaroni and Cheese at grandma's house ... Food is so much more than the 'things' we grow, buy, peel, cook, consume, and learn about in nutrition class. More representational knowledge (e.g., educational campaigns) directed at getting people to 'think' differently about food is therefore like moving one's hand

against the current of a mighty river in the hopes of getting that river to reverse course. This tactic ignores the countervailing assemblages of embodiments directing individuals toward certain knowings and doings around food. What social change requires, according to Carolan, cannot be adequately captured in talk about structures, resources, power, or more education (in the conventional sense). To make bodies think differently you have to have them do differently. And that requires co-experimentation. As Carolan (2011, p. 13) explains,

> Social change requires bodies not only endowed with resources, like social, economic, cultural, and political capital – an important take home message provided by a political economy approach. Social change also requires bodies that think social change *ought* to occur. How do bodies become tuned to the status quo (or to alternatives)? What makes bodies *want* change? These are important questions; yet they go largely unanswered in the agro-food studies literature. Lest we forget, at the heart of change/status quo are living bodies (emphasis in original).

Conventional understandings of science not only have a problem of missing mass, by ignoring the multitude of relations the make science possible (Latour 1992). They also suffer from a lack of address, in that they fail to situate scientists in living, breathing, enacting bodies. Correcting these deficiencies will go a long way in resolving tensions that otherwise appear wicked and unresolvable. Charles (2011), for example, in attempting to account for some of this missing mass and address, alerts us to the ethical complexities that are inevitable in research. Looking at community supported agriculture schemes in the north of England, Charles describes an example of how to do research where all participants – researchers included – are explicitly treated as subjects with their own particular concerns. Doing this might complicate the so called research process but the results co-produced tend to be more meaningful for all involved and therefore more relevant from the standpoint of making a difference.

Elsewhere, we find research that highlights the generative capacities of fieldwork (see e.g., Le Heron *et al.* 2006; Cook *et al.* 2007). Take Cook's (2000) description of his collaboration with artist Shelley Sacks. The project involved Sacks handing out to individuals bananas from the Windward Islands on the condition that they ate them on the spot and returned the skins. In exchange they were given a card with a number on it. The number directed individuals to a box at an exhibit where they heard the voice of workers from the plantation that grew the banana they had just consumed. Workers, on this six minute loop of continuously running tape, spoke candidly as to their experiences and emotions about producing food for export. Cook (2000, p. 342) is careful to note the risky as well as ontologically unsettled nature of the experiment:

> This isn't about connective aesthetics. It *is* connective aesthetics. [...] It's not Shelley Sacks's creative work. Alone. It's the creative work of all of those who have been in touch with these skins. In an immediate sense, that's Shelley Sacks, the people who helped her to give out those bananas in Nottingham and to collect the skins, the people who helped to dry, cure and stitch those skins into panels, the 20 St Lucian banana growers, and all those people – politicians, business people, extension officers and others – who helped her to find them. [...] Of bananas and plenty of other things. [...] Including you, and me. It's all over the place.

It is important to keep in mind that 'success' in co-experimentation is not about winning or losing or about producing better or more accurate representations.

Instead, it is about changing engagements and making new configurations of people and things possible (Hinchliffe *et al.* 2005). By locating ourselves within the experiment – hence the term co-experimentation – we can begin to better understand our role in making worlds possible. And in doing this, we can become more mindful of the worlds we partake in creating.

This leads the discussion to a small but growing literature in agro-food studies around the enactive capabilities of research (see e.g., Lowe 2010; Campbell and Rosin 2011; Le Heron and Lewis 2011). There is a performativity to our research – indeed all research – that is often denied. Studying the emergence of commercial forms of organic and other 'sustainable' agriculture in New Zealand (see e.g., Campbell and Coombes 1999; Campbell and Liepins 2001; Campbell *et al.* 2006), Campbell and Rosin (2011) detail how their research helped enact the very emerging organic sector the team was charged with investigating. Of particular significance was how the 'metrology-based' approach to measuring sustainability was not only legitimised but also altered by their actions as social scientists. Campbell and Rosin (2011, p. 359) describe their roles in this co-experimentation as follows:

> Much of the formal dialogue and interaction between industry, sectors and the ARGOS (Agriculture Research Group on Sustainability) group from the outset of the programme concerned the deployment of a large number of measures of 'farm performance'. [...] Within a few years of the commencement of monitoring within the ARGOS farms and orchards, multiple industry sectors began to use ARGOS results in reviews and reconfiguration of their audit systems. This was, on the surface, exactly the kind of outcome that the ARGOS group had sought. However, the presence of a large database of ARGOS derived measures was also reinforcing the particular way in which audit systems more generally were being practiced. [...] While ARGOS was set up to study the introduction of new audit systems, it was, unexpectedly, influencing not only the content and authentification of audit measures, but the very architecture of the audit process itself. At the same time, the farmers and orchardists themselves used ARGOS results to reinforce their emerging identities as audited subjects [...].

Earlier I mentioned the importance in co-experimentation of changing engagements and making new configurations of people and things possible. Part of the significance of these novel entanglements resides in their ability to make the un-thought thinkable. That is what is being described in the above block quote by Campbell and Rosin. The presence of the ARGOS research team made present new modes of thought and ways of being that would not have existed had the research never occurred. That is a profound – and remarkably sobering – realisation.

Agro-food imaginaries and a wilding of politics

If we can live with the risks that go with co-experimentation – all researchers take them so it is a matter of recognising or denying them – we will quickly find the aforementioned 'sobering' realisation to also be a source of tremendous hope. While the Mann-Dickinson thesis was criticised heavily in the 1980s for its perceived linear understanding of social change (see e.g., Mooney 1987), the metaphysical spirit of linearity still lurks in places within the agro-food literature. One such space where some of this is found is in the conventionalisation of organic agriculture thesis (for a

superb review of this literature see Constance *et al.* 2008). Campbell and Rosin (2011) suggest that this research tradition is not so much wrong as it is incomplete. While not evoking the term, Campbell and Rosin's (2011) 'ontological expedition' through the commercial organic agriculture sector in New Zealand suggests that the conventionalisation literature may have succumb to the fallacy of misplaced concreteness. They found that by taking a more reflexive, situated, and relational approach they were able to disrupt assumptions underlying 'the grand binary that organised both academic and popular discussion of organic agriculture' (p. 359) and in doing this replace the arrow of linearity (and implied inevitability) with possibility, multiplicity, and perhaps even a little hope.

Another area of (inherently hopeful) scholarship, where the arrow of linearity has been replaced by an entanglement, can be found in the so-called post-structural political economy literature (see e.g., Gibson-Graham 2008; Le Heron 2009; Larner 2011). The path-breaking work performed by such scholars as Gibson-Graham (1996) reminds us that capitalism is not operated by any command centre. It has no brain that needs to be re-wired or chopped off entirely (depending upon the level of change desired). Because neoliberalisms (plural) express themselves in many different ways, depending upon the networks and human/non-human actors involved, it is important to treat each space according to its unique event-ness (Certeau 2011). Which brings us back to the process of co-experimentation.

Paralleling recent turns in related fields, such as STS (see e.g., Lynch 2013), agro-food scholarship has slowly moved to merge epistemology, ontology, ethics, and aesthetics. Another way of putting it is to say that these long-privileged concepts are (finally) being historicised and situated. Agro-food scholars have gotten really good at inventorying the furniture of the world and the food in our pantries and at showing how these 'things' are artifacts of a material relationality. Yet, while dissolving the metaphysical aura that have shrouded these seemingly timeless terms agro-food research presently seems at a crossroads as to what to do next. It can remain content thinking it is just inventorying and describing. Or it can embrace its radical material relationality and all that comes with it.

The literature coalescing around relationality is telling us that we do not just study the aforementioned event-ness, we help constitute it. Thus, whether we like it or not, we play a role in giving shape to agro-food imaginaries (Carolan, forthcoming). This brings me back to the point of making the un-thought thinkable and the un-doable routine. Through this process of co-experimentation, agro-food scholars can help give form to new (hopeful) agro-food imaginaries. Julie Guthman (2008, p. 1242), for example, in her research into the organic movement in California, explains that 'stakeholders played a constitutive role in producing the neoliberal outcomes of the project, in part because their input reflected already-developed notions of the possible within the current climate of neoliberalism'. As Busch (2010, p. 345) later remarks, commenting specifically on this finding: 'Petitioning the state for legal redress was not merely absent from the discourse; it was beyond the imaginable!' Yet the fact that we are now writing about what was once 'beyond the imaginable' is evidence that something has changed. And the more we write about it, discuss it with our students, and practice co-experimentation by how we choose to 'enliven' (Carolan 2009) the world the more that becomes imaginable and the more that will continue to change.

Isabelle Stengers (2011), evoking Whitehead's (1978, p. 13) 'leap of the imagination', reminds us of why it is important 'to experiment with the effects of that leap: what it does to thought, what it obliges one to do, what it renders important, and what it makes remain silent' (p. 22). We have long known in sociology the power of experiments for challenging conventions and opening up new modes of thinking and ways of becoming. I am referring to the experimental techniques for researching everyday life articulated by Harold Garfinkel (1984) and his disciples in the 1960s. These so-called breaching experiments challenged social conventions by rendering them 'visible', such as, for instance, by having individuals stand too close to others during conversations or by having students address their parents as strangers over breakfast. Yet the experimentation suggested by Garfinkel targets only social conventions, from informal norms to the tacit rules that govern interpersonal communication. Why stop there? Imaginaries, as others have detailed (though often utilising different terms (e.g., Foucault 1982; Ricoeur 1986; Bourdieu 1997; Taylor 2004)), are rooted in practice. The risk of course lies in letting any imaginary assume a taken-for-grantedness, which gives rise to, and helps us to become tamed into following, those aforementioned 'grooves' that worried Whitehead.

The co-experimentations I have in mind should not be limited to making visible only norms but the very processes, practices, and habits upon which 'conventional' relationalities rest. This can take many forms. Earlier I mentioned Cook's (2000) collaboration with artist Shelley Sacks, which is one example. Another is found in the work of Noortje Marres (2012). In her research with sustainable living experiments and eco-show-homes, Marres writes of 'object-centered' co-experimentation, where the focus is on material habits and the ontological and normative effects – or what Mol (2012) calls 'ontonorms' – that emerge out of these entanglements. Many of the practices described in Carolan's (2011) book *Embodied Food Politics* are also co-experimental in nature, where numerous diverse entanglements with food are detailed as are their varied generative effects.

This is not to say we ought to do away with examining stabilities and order, which in many respects has been the bread and butter of agro-food scholarship since at least the 1970s with the emergence of what was then called New Rural Sociology (when Marxism and shortly thereafter Durkheim and Weber were 'discovered' by rural sociologists) (Buttel *et al.* 1990, p. 75; Carolan 2012, p. 4). The trick is to remain critical without becoming trapped in 'a kind of structuralist paranoia, inadvertently reproducing the self-same dominant order that it seeks to critique' (Gibson-Graham 2008, p. 62). When practicing co-experimentation, therefore, the aim is to look for novelty rather than just domination which then lead to investigations into the performative effects of the newly expanded socio-spatial horizon. In other words, co-experimentation involves looking for how certain networks attempt to, literally, capital-ise upon the novelties generated by events, something agro-food scholarship is already quite keen in doing, while also taking care to understand if and how fields of 'the possible' and 'the doable' become enlarged by these interventions.

Then there are our own generative capabilities in all of this, as, again, there is no 'innocent' research absent a God's eye view. Of course, it is impossible to predict precisely what those effects will be. (The closest relationalism gets to prediction is by noting how alleged predictive frameworks, such as those found in economics

(see e.g., Callon 2009; Mitchell 2008), have in some cases enacted the very reality they claim to be representing – a.k.a. prediction-as-self-fulfilling-prophesy). As those generative effects are going to happen regardless of whether we want them to we better be mindful of this performativity. After all, choosing to be blind to them is not without consequence, as it risks enacting the very stabilities we pride ourselves in being critical of while interfering with the performance of other realities (Law and Urry 2004, p. 404). In helping to enact novel styles of knowing and doing – such as by playing a role in making something once unimaginable imaginable – my hope is that our part in these co-experiments will help facilitate the production, maintenance, and enlargement of spaces of possibility. Think of it as being involved in a breaching experiment, where the 'breach' is not allowed to become routinised, rationalised, and closed.

Acts of co-experimentation are therefore inherently political. I am not talking here about doing Politics with a capital P, just as I am not talking about doing social Science with a capital S. It is a messier type of politics. You might even call it wild, though not quite. The politics you see going on in these spaces, while unwieldy, involves some degree of mutual taming. We can think of this along the same lines as how Latour (1999, p. 247) envisions cosmopolitics, in so far as he likens it to 'fermentation through which the people brews itself toward a decision – never exactly in accordance with itself, and never led or commanded or directed from above'. There is therefore direction in all of this. Yet as this direction is generated from within (an example of intramistic causality), rather than shaped by, say, procedural rules dictated from without, it is not for me, or anyone, to prejudge, predetermine, or predict what the outcomes will be. Nevertheless, as those aforementioned spaces of possibility become enlarged, and as agro-food scholars begin to view themselves as a part of (rather than apart from) this 'within', we can at least be hopeful about them.

Since this is not the ideal Politics of wholly disembodied reason and rationality we also have to ask the question of who (and what) can participate? Research into device-centred public participation radically de-centres–or more accurately un-subjectivises – what it means to do politics (Marres 2012). Recent research into, for example, face-to-face interviews (Callon and Rabeharisoa 2004), focus groups (Lezaun 2007), and PowerPoint presentations (Girard and Stark 2007) bring into view the power of what Thrift (2008) refers to as 'technologies of participation': artifacts that embody empirical and experimental methods of engagement that help create articulations between domains (e.g., politics, the economy, science, and the like), or what Callon (2009) calls a politics of co-articulation. This is not a politics of addition, where the goal is to figure out how to add bodies according to a predetermined set of unchanging procedures, but one of reconfiguration. The very act of doing co-experimentation changes the politics being done and those involved in the processes.

Every time I engage with the agro-food literature I continually come away with something novel and different. You could say that every reading constitutes, in its own way, a co-experimentation, at least to the extent they have a cascading (and multiplying) effect upon how others think about and with food and agriculture. Even this article: each reading, at least for me, feels like its own unique flight of experience – a collection of affective encounters that generates feelings of possibility that prefigure a

broader collective politics (Massumi 2002). This is the spirit, following the equally flightful scholarship of my contemporaries, in which this article has been written. Not to replace one representation, groove, truth, or method with another but to offer some suggestive comments in the spirit of discovery. For discovery implies, 'each time, a becoming that transforms both the person doing the describing and what is described' (Stengers 2011, p. 249). The world is richer – and more hopeful – when we engage in this practice. So let us get wild.

Notes

[1] In Whitehead's (1967a, p. 197) own words, 'Professionalized knowledge [...] produces minds in a groove. Each profession makes progress, but it is progress in its own groove. Now to be mentally in a groove is to live in contemplating a given set of abstractions. The groove prevents straying across country, and the abstraction abstracts from something to which no further attention is paid'.

[2] I would like to thank an anonymous reviewer for reminding me about this cast of 'wild' that exists in western cultures.

[3] It could even be said that indeterminism is not a statement of causality, as it speaks to a type of acausality. Therefore, on a continuum of causality, it is not on the opposing end relative to determinism.

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