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After the 'Organic Industrial Complex': An ontological expedition through commercial organic agriculture in New Zealand

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A B S T R A C T

This article uses the evolving understandings of commercial organic agriculture within two research programmes in New Zealand to address three problematic claims and associated framings that have underpinned analysis of the political economy of commercial organic agriculture. These three framings are: 1) that recent commercial developments in organic agriculture have become organised around a grand binary of large-scale, corporate, industrialised organic agriculture that is inhabited by pragmatic newcomers to the industry, against a small-scale, local, authentic remnant of the original organic social movement. This grand binary is most popularly recognisable in the claim by author Michael Pollan of the existence of an 'Organic Industrial Complex' that is slowly subsuming authentic organic agriculture. This relates to claim 2) that commercialisation creates inevitable pressures by which organic agriculture becomes 'conventionalised'. Finally, claim 3) positions organic agriculture alone as the only option for enabling improved environmental outcomes in agriculture. The *Greening Food* and ARGOS research programmes in New Zealand have studied the emergence of commercial forms of organic and other 'sustainable' agriculture in the period since 1995. A series of key engagements are highlighted in the unfolding history of these two programmes which demonstrate moments of transition in understandings of commercial organic, particularly in relation to situations of engagements between the research team and wider actors in the organic sector. These key engagements establish a clear sense in which the three major framings around the political economy of organic commercialisation could not explain the unfolding dynamics of the New Zealand organic sector. Rather, engagement with diverse actors enabled a whole new set of theoretical questions that opened up new areas of politics, contestation and elaboration of commercial forms of organic agriculture – particularly around shifts in power to the retail end of the agri-food chain, around new forms of agri-food governance, and around the politics of new audit systems. Within these shifts, the ontology of some of the researchers within these projects underwent parallel transformation. These transformative influences operated in two simultaneous directions. While the engaged research strategy of the two programmes clearly discomforted the researchers' underlying assumptions for framing the major trajectories of commercial organic development, the presence of the two research programmes also had an important enactive power in the sector by both rendering 'thinkable' particular trajectories and economic experiments and also by reinforcing a 'metric-centric' tendency in the evolution of global environmental audit systems. Seen in this light, these engagements open up new questions about the research programmes themselves in terms of the emerging politics of what Philip Lowe describes as a more 'enactive' rural sociology and help direct attention to an emerging 'ontological turn' in the practice and politics of research.

1. Introduction

This special issue of the *Journal of Rural Studies* examines the contributions of iterative research strategies to both the study of sustainability, and the pursuit of relevant and valuable outcomes for the non-academic stakeholders in projects led by rural sociologists and geographers. The implications and challenges of this methodological approach were accentuated by Philip Lowe in his keynote address to the *European Society for Rural Sociology* in 2009. He contended that, in the process of conducting research and engaging with stakeholders, the 'social sciences enact novel realities' partly through the way in which they 'create phenomena through the procedures they establish to discover them' (Lowe,

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2009). He went on to argue that this process is not uni-directional. That is, social scientists are similarly acted upon and influenced by their research partners, dialogues and engagements – with often unexpected and, potentially, very creative outcomes.

This article elaborates exactly these kinds of unexpected and creative outcomes as they occurred over a 15-year engagement with the agriculture sector initially focused on commercial organic production in New Zealand. These outcomes are evident in the shifting research emphases and approaches adopted within two successive research projects. In the following narrative, we discuss the transformation of a highly theory-driven and categorically structured appraisal of the political economy of organic agriculture in New Zealand through a series of key engagements between the researchers (including the authors) and research participants. These engagements effectively discomforted explanatory certainties, re-worked research objectives and altered the project methodologies. In this process, some of our original theoretical categories were significantly revised or completely discarded. Thus, this reflective narrative establishes the potential benefits of recognising both the importance of iterative/dialogic research strategies and the parallel recognition of the ontological politics of research practice. Both these, with the benefit of hindsight, enabled (and enacted) a more open and critical recognition of the influence (and its consequences) of the relationships with stakeholders that transformed and (hopefully) enlightened our narratives around the organic agriculture sector in New Zealand. We further hope to contribute to the ontological journeys undertaken by colleagues who are similarly seeking more compelling and relevant explanations of the condition of the rural as well as the role of the organic sector within it.

Philip Lowe's challenge to perform a more 'enactive' rural sociology forms one key starting point for this article. In addition, the narrative builds on the arguments in a recent article in this journal (Rosin and Campbell, 2009a). In that article, we concluded that despite 12 years of attempts to interpret the emergence of commercial organic agriculture according to the theoretical canons of agricultural political economy, new theoretical and methodological approaches were both asserting a serious challenge to prior approaches and providing an opportunity to engage in more nuanced and complex analyses of organic agriculture. Rosin and Campbell (2009a) outlined the potential to open up new dimensions and dynamics to the theoretical interpretation of organic agriculture through the perspective of convention theory. By comparison to that primarily theoretical narrative, this article takes the discussion into the parallel terrain of how the acknowledgement of the multiple sites, processes, methodologies and research practices which generate and reproduce knowledge about organic agriculture contribute to a better understanding of both the constitution of organics in commercial settings as well as the appropriate methodologies which can be deployed around the examination and constitution of 'sustainable' agriculture.

In so doing, this article draws on the work of scholars like Law and Urry (2004) in calling for a greater centring of 'researcher ontologies' as they structure and enact realities, and yet are also potentially transformed by the research objects they encounter. The shift towards recognising (or simply to include) ontologies has a useful recent history in environmental sociology (eg. Carolan, 2004, 2009) both in terms of understanding the complex interpenetration of ecological and social dynamics (and the prevailing Western ontologies that have striven to categorically separate them), as well as in the practices of research itself.

The call by Philip Lowe for rural sociologists to grasp an understanding of 'enactive sociology' falls clearly within this new framing of the politics of research processes themselves. Similarly, researchers like Le Heron and Lewis (2011) made the call in a recent Editorial in *Geoforum* for research practices, ontologies and enactments to be re-centred in our academic thinking – suggesting that there is a performativity to research which has been too often ignored. Our article falls squarely within this 'ontological turn' in understanding the consequences of our research processes and practices.

Reflecting on the processes, engagements, and enacted framings of research into organic agriculture in New Zealand demonstrates how the research process unfolds in ways that shift researcher ontologies in unexpected ways: making thinkable what was previously framed as unthinkable thereby opening up possibilities of outcomes and understandings that were previously excluded by strong theoretical framing or methodologies. Seen in this light, the existence of *Greening Food* and ARGOS enabled both a critical reframing of academic constructions of organic development as well as an enacting and reinforcing role in particular development trajectories themselves.

2. Researching commercial organics: between capitalism and utopia?

Strongly held normative claims attributed to organic agriculture establish a considerable challenge to the distillation of more open-ended ontological approaches to organic agriculture. This challenge is rooted in two distinct aspects of organics as a field of enquiry. First, the study of commercial organic agriculture commenced (as did the upsurge in organic commerce itself) at a time when the critical sociology and geography of agricultural change in the North was struggling to emerge from several decades of adherence to structuralist Marxist theorisation. The initial manifestations of the research programmes reported in this article were no exception. Because of this theoretical baggage, any move beyond narrowly focused political economy approaches to embrace a more contingent, multi-sited and open-ended account of the commercialisation of organic agriculture involved, in part, an ontological journey by the researchers themselves.[1] If our experience is any indication, such a journey is partly facilitated by a process of research engagement with new commercial actors in the organic industry.

The second challenge is the result of the value-creation and exchange dynamics associated with organic agriculture that are different to most other forms of agricultural commerce (with the exception of other niche, labelled and certified products like Fair Trade). To a large degree, the distinctive nature of organic food is derived from its participation in wider realms of normative aspiration about sustainability. In this discursive arena, it is partly formed and re-formed by the actions of a wider social movement. As a result, the meaning of organics (and the varieties of practice that comprise the multiple dimensions of the organic food chain) extends beyond a broadly defined model of industrial praxis to act as what Paul Ricoeur (1986) described as a 'utopian perspective' from which to critique the established ideology of the global food system. In this sense, a pure form of organics should not necessarily be considered an achievable reality (especially given the contingencies of temporal, spatial and social context). Rather, as a utopia, organics defines a desirable condition that is the basis for a normative critique of the legitimacy of the practices, ethics and conventions that support the contemporary agri-food system.

[1] On a much broader theoretical and methodological canvas, Gibson-Graham (1996) advocated for the need to move away from the doom-laden narratives of capitalist political economy and search for new methodologies beyond the culture of despair that pervaded much study of capitalist history and change. A similar move is signalled in Richard Le Heron's use of the term 'post-structural political economy' in the context of his work with Wendy Larner and Nick Lewis (see Le Heron, 2003, 2007; Larner and Le Heron, 2002a, 2002b; Larner et al., 2007).

This article addresses three categorical assumptions (among many) through which particular framings of organics – or, in the more extreme case, an entrenched and definitive binary – have become essential to organising key claims about organics and sustainability. In our experience, these framings are undermined through actual engagement with the practices and practitioners of commercial organic production. Thus we argue that recognising these categories, binaries or untested assumptions about commercial organic activity is crucial to our ability to carry out meaningful critical and academic analysis of organics. In each of these three cases a participatory approach to research – or at the very least an honest attempt to engage with the views of actors operating in seemingly problematic sites of knowledge production (like corporate organics) – was important in discomforting and often re-configuring both the key ontologies structuring much of the academic debate as well as the wider categories of action organising activity around, political engagements with and the creation of meaning about organics.

The categorical framings and claims we address in this article are:

1. The tendency within political economy inspired analyses to assume a binary between global/corporate organics and a more local/small scale and social movement inspired praxis of organics. This binary has clear normative qualities with large/corporate organic being bad and small/local organic being good.
2. The 'conventionalisation' thesis that suggests a one-way set of influences between conventional and organic agriculture.
3. The tendency for organics to be discursively mobilised in a range of contexts as the sole vessel of virtue for sustainable practice in agriculture, thus obscuring the wide range of experiments currently underway that are making 'thinkable' alternative options within agricultural systems – particularly around 'third way' systems like Integrated Pest Management.

Taken together, these three framing assumptions about the status and future direction of commercial organic agriculture operate in concert and mutually reinforce each other. The result is a predetermined and strongly negative framing of a commercial organic sector that is compromised and subject to co-option and subsumption by conventional agriculture. This framing, we argue, also negates organics' continued potential to enact a more sustainable agriculture. In the following sections we briefly trace the emergence and rise to prominence of these assumptions in the academic and popular literature.

2.1. The grand binary - towards the organic twinkie

There are many claims and assertions around organics that conform to what we consider to be the grand binary of organic activity: i.e., that between normatively undesirable, large-scale and global organic commerce as undertaken by predominantly corporate actors versus the normatively more desirable, social movement inspired, local and small-scale organic agriculture which operates through a range of more 'authentic' actors. Michael Pollan's 'Behind the Organic Industrial Complex', (a 2001 feature in *The New York Times Magazine*, 5/5/2001) most clearly articulates this binary, which was re-stated and elaborated in his later book *The Omnivore's Dilemma* (Pollan, 2006). Both of these pieces trenchantly denounced emerging trends in organic agriculture including: the industrial organisation of trade; the scale of commercial activities; the dubious quality claims of processed and 'synthetic' food products; the loss of a 'human face' through impersonal global production chains; and the edging out of more 'authentic' small scale and philosophically-inspired food producers. Pollan (2001) argued that the new 'Organic Industrial Complex' had subsumed authentic organic to the extent that he would completely ignore organic labels, claims and markets and simply develop his own, personalized relations with local food producers (organic or otherwise) – a pursuit that became the subject of the later book (Pollan, 2006).

While Pollan's work is intentionally populist in character, he drew on a range of academic sources – particularly the highly influential analysis of Californian organic agriculture by Julie Guthman (see Guthman, 1998, 2000, 2004a, 2004b).[2] Consequently, his analysis acts in loose dialogue with the operation of the same grand binary that has organised wider academic constructions and categorisations of organic agriculture and food.[3] The influence of the binary in the academic literature is most easily identifiable in the emergence of the term 'bifurcation' – suggesting two opposed trajectories of organic development emerging between corporate organic and the persisting organic social movement – as an explanatory concept (see Moore, 2006; Constance et al., 2008; Dantsis et al., 2009).[4]

2.2. Supping with the devil - conventionalising organic agriculture

One of the key organising assertions of both Pollan's critique of Industrial Organic and wider academic discussion of organics is that contact between organic and mainstream commerce automatically leads to a one-way set of influences that will shift organics as an 'alternative' paradigm towards greater conformity to mainstream practices and processes. Some of Pollan's key informants for both works suggested that ex-hippie businesses like Cascadian Farms had transformed to a corporate business model. Statements like: "Organic is becoming what we hoped it would be an alternative to" and "The whole notion of a 'cooperative community' we started with gradually began to mimic the system" (Pollan, 2001: no page) describe a trajectory of change that has degraded and deracinated the original ordering logic of organics as an alternative to conventional agriculture. The same sentiment informs some of the agri-food scholarship into the political economy of organic agriculture. Constance et al. (2008) review a growing body of literature that has posited, since the foundational argument of Buck et al. (1997), a process of 'conventionalisation' of organic agriculture and organic farmers (Hall and Mogyorody, 2001; Jordan et al., 2006; Kratchovil and Leitner, 2006; Constance et al., 2008; Best, 2008). The continued relevance of this perspective is evident in its use as the guiding framework for special sessions of the *European Society for Rural Sociology* conferences in Keszthely in 2005 and Vaasa in 2009.

Campbell and Liepins (2001) contested the seeming claim of inevitability and linearity that pervades much of this literature; but there are strong precedents within theoretical debates in the political economy of agriculture supporting the idea of 'inevitable trajectories' of decline and subsumption. In the 1970s, rural sociology became energised by the re-discovery of classic Kautskian Marxism (Buttel et al., 1990). The resulting upsurge of critical Marxist-inspired thinking in the late 1970s and 1980s was designated as the 'New Rural Sociology' and initiated powerful and insightful engagement with rural society as a production space characterised by the capitalist transformation of agriculture. Key

[2] Although Guthman is not completely comfortable with Pollan's use of her material (Guthman, 2007).

[3] For example, see Fromartz (2006).

[4] 'Bifurcation' is the foundational binary that is contested in Rosin and Campbell (2009a, b).

texts informing the New Rural Sociology (eg. Buttel and Newby, 1980; Buttel et al., 1990) devoted attention to assessing the potential for family farming as a production form to survive the process of capitalist elaboration of agricultural production forms – after the classical work of the early Marxist theorist Karl Kautsky – or to eventually be 'subsumed' into capitalist production forms (Buttel et al., 1990). While played out over a tableau of farming issues beyond the focus in this article, the Kautskian 'Agrarian Question' pitted family farms against capitalist agriculture in a similar way to the opposition constructed between organic agriculture and corporate agribusiness. Seen within this guiding theoretical heritage, the seemingly inevitable conventionalisation of organic farming mimics the same logic as that espoused by those who posited the inescapable subsumption of independent farmers mobilised in family farm survival debates of 25 years earlier. The consequence is not only the reproduction of the categorical binary between 'conventionalised' industrial and 'authentic' organic, but also an implicit assumption that over time one will be subsumed by the other. Rosin and Campbell (2009b) specifically critique this framing through an exploration of the impact that organic agriculture has had on accepted practice in 'conventional' agriculture (referred to as 'organification') to demonstrate that influences between the purported categories actually operate in multiple directions and between more than the two poles.

2.3. Organics contra mundum – exceptionalist tendencies in alternative agriculture

The final assumption underpinning the categorisation of key activities in alternative agriculture with specific reference to organics is that – among the many and variant ways of performing agriculture – a binary emerges between 'organic' and 'conventional' as categories of action. From this binary perspective, organic fulfils the role of the virtuous 'other' to the problematic tendencies of conventional agriculture. The reference to organic as the exclusive 'exception' to the homogenous category of environmentally-degrading conventional production leaves some key silences in the narrative. Campbell et al. (2009b) argue that posing a simple binary of organic and conventional production frequently conceals highly relevant variations, heterogeneity and outcomes that reside within both the spectrum of 'conventional' producers and the wide variety of alternative systems (in addition to organic). Integrated Management Systems, for example, offer a very significant and increasingly widespread alternative to mainstream agriculture which receives almost no attention in the agri-food analysis of alternative agriculture compared to organics. The same can be said of the clear variations emerging in analyses of organic development in different countries around the world. Constance et al. (2008) talk of a 'New Zealand Model' and 'Californian Model' of organic development. Attention to the European and Developing World literature would suggest there are such a multiplicity of regional-scale variations in organic development and commercialisation as to render the entire notion of both grand binaries and country-scale models somewhat problematic.

This article will go on to address how close and reiterated methodological engagement with a range of agricultural and food practitioners revealed the full extent of the performative consequences resulting from an overly simplified and narrow binary of organic versus conventional production systems. The following sections take each of these three assumptions and re-examine them in the light of a series of research projects in New Zealand that have attempted to understand the actual outcomes of commercial organic agriculture in the context of a highly export-oriented, agricultural economy. These projects – comprising multiple food sectors, many different methodologies and spanning 14 years of research – trace an ontological journey by the authors as key researchers in these programmes moving towards more dialogic engagement with a range of economic actors in the organic industry. It re-engages with key moments in the history of these two programmes to identify they ways in which the preformative dynamics of research engagement enacted a key process of reframing for both the researchers and the organic sector itself.

3. The *Greening Food* research programme and corporate organic food exporting

New Zealand is frequently selected as a research case study within the political economy tradition due to its particular recent history of agricultural reform strongly influenced by the neoliberal political project. One outcome of the crisis that followed the reform of New Zealand agriculture in 1984 was a major diversification of farm activity, loss of confidence in some old farming models and industry structures and experimentation with new production styles and products. One small part of this was the emergence of organic agriculture in the late-1980s as an alternative niche export sector. While organic agriculture had been present as a tiny local niche for several decades, sudden rapid growth in organic production was triggered by the entry of large corporate exporters and monopoly Producer Boards into organic production after 1991 (Campbell, 1996a, 1996b). After several years of elaboration of organic production techniques, some large exporters also began to invest in the development of export horticultural products using Integrated Pest Management (IPM) to guarantee residue-free produce (McKenna and Campbell, 2003). The resulting revolution in environmental production in New Zealand horticultural exporting saw high-profile industries like the kiwifruit sector move from highly intensive production in 1990 to a profile of 96% IPM and 4% organic in 1998 (McKenna and Campbell, 2003). Following the kiwifruit model, other exporters also moved the majority of their product into market categories that emphasised 'sustainability', or 'environmental qualities' in their products. At the same time, large entities like the kiwifruit monopoly exporter – Zespri International Ltd – positioned themselves at the forefront of the emergence of new global food governance systems like EurepGAP/GlobalGAP (Campbell et al., 2006a, 2006b; Rosin et al., 2007).

This recent history – and the simultaneous academic attempts to explain what was happening in New Zealand – provided a unique setting for the early stages of the *Greening Food* research programme in New Zealand that ran from 1994–2002 and was based at the University of Otago in the South Island of New Zealand. *Greening Food* was a research programme that was explicitly framed in the emerging dynamics of commercialisation of organic (and later IPM) systems in New Zealand horticulture; taking as its key case studies the development of organic and IPM programmes for processed vegetables by Heinz Watties NZ Ltd (a subsidiary of H J Heinz and Co.) and for kiwifruit by Zespri International Ltd. (the corporatized version of the prior New Zealand Kiwifruit Marketing Board).

The early stages of this project took shape a few years prior to the creation of key analytical terms around the political economy of organic agriculture – like conventionalisation and bifurcation – and thus took most of its theoretical direction from two key sources. The first was a wider theoretical discussion occurring in the New Rural Sociology about the capitalist transformation of agriculture. Given that all the early researchers in *Greening Food* (particularly from 1994–98) were embedded within the dominant theoretical tropes of the New Rural Sociology – which included a heavy focus on understanding wider shifts in the capitalist political economy of agriculture – the fact that the upsurge in organic and IPM-based exports was inspired by large corporate agribusiness firms

provided strong grounds for suspicion as to the sincerity, integrity and ultimate end-point of such developments. The initial research focus, which involved interviewing farmers and orchardists who were signing up to contracts to supply new corporate exporters of organic fruit and vegetables, was directed (as the New Rural Sociology suggested it should) towards the dynamics of contracting, the potential subsumption and loss of autonomy over decision-making by growers, and exploitative activities by off-farm capital in the form of corporate processors and exporters. Similarly, the structure of the investigation was based around Friedland's Commodity Systems Analysis (Friedland, 1984), and wider interpretation of the significance of the results was couched in terms of the regulationist-inspired Food Regimes approach to understanding shifts in global agriculture (see Campbell, 1996a).

The New Rural Sociology was not the only key influence on the *Greening Food* programme. The second area of influence was the florid state of internal politics within the international organic agriculture movement itself – particularly as the global integration and alliances behind the International Federation of Organic Agriculture Movements (IFOAM) were taking shape. The political actors, activists and commentators in the sustainable agriculture social movement actually shared a great deal with the normative expectations of the New Rural Sociology. Each shared a deep distrust of agricultural capitalism and looked with concern on the activities of agribusiness corporations in agriculture.

This meeting of political minds was most evident in the mid-1990s. At the earliest stages of the *Greening Food* project – in late-1994 – the IFOAM quadrennial world congress was held in New Zealand. The event was held at Lincoln University, Canterbury at the epicentre of the new Heinz Wattie organic pea export programme. There was open and widespread scepticism expressed by European delegates to the conference as to the authenticity, sustainability and overall desirability of the kinds of organic export programme taking shape in New Zealand during that period. One of the key challenges that was raised at the conference was that the newly converted organic export producers were simply pragmatists seeking profits rather than 'authentic' adherents to organic philosophy (thus prefiguring the later bifurcationist account of organic commercialisation). Similarly, the general expectation was that new corporate exporters would inevitably seek to 'water down' organic standards to create the conditions for industrial-scale organic food exporting (a purported dynamic that would later be described as conventionalisation). Finally, there was an explicit assumption that New Zealand's Ministry of Agriculture and Fisheries (MAF) should act as the guardian of integrity of organic standards – something that was formalised by IFOAM's request in subsequent years for MAF to operate a scheme accrediting all organic exporters to IFOAM minimum standards.

These concerns merged with the broader expectations of the New Rural Sociology to create a set of assumptions behind the initial questions asked in the *Greening Food* programme:

- That organic agriculture would be subject to same subsumptionist pressures afflicting other growers operating in contracted supply relationships with large agribusiness.
- That the organic sector had fractured into new 'pragmatic' organic growers who were distinctly different, less philosophically organic and more profit-oriented than longer term 'authentic' adherents to the organic social movement.
- That the entry of large-scale corporate agriculture into organic agriculture would lead to an inevitable downgrading of the key points of difference between organic and conventional agriculture – commencing with the integrity of the organic standards.
- New entrants would use scale and size to rationalise organic supply chains and force out smaller growers and companies.
- That governments were the key institution that could, in alliance with the organic social movement, prevent these negative outcomes from happening.

The next few years of research could be described as something of an ontological journey by the researchers away from the initial assumptions guiding the project. This can be most clearly demonstrated in the way in which key encounters, interviews and dialogues that emerged between the research team and the wider organic sector began to challenge and then undermine the comfortable certainties that existed at the outset of the project.

The first stage of the *Greening Food* project comprised an in-depth interview programme with a wide range of participants in the new (and old) organic sector in New Zealand. One benefit of using Friedland's Commodity System Approach is that it created a structure to the interview programme that encouraged contact with the both the 'good' and 'bad' actors in the commercialisation of organic agriculture – at least as normatively prescribed by the initial assumptions behind the project.

Key Engagement 1: Interview with the organic supply and procurement manager for a corporate exporter.

An interview with the manager responsible for recruiting new organic growers to supply vegetables under contract took place in 1995 as part of the research that was published as Campbell (1996a). Throughout the researcher's best attempts to uncover the assumed exploitative nature of 'farming under contract' the manager became increasingly exasperated. He finally responded with incredulity at the notion of his company trying to exploit their new organic suppliers. First, the initial organic shipments to Japan were: 'some of the most lucrative in the history of the company. They made a lot of money!'. The subtext being that they didn't need to exploit their organic growers to create value for the company. Second, technically skilled organic producers were: 'rare as hen's teeth' and subject to predatory recruitment from rival companies. He suggested that he treated his organic suppliers 'like his children' to make sure that they weren't lost to the organic supply programme. Finally, he said, that his key challenge was getting enough organic supply that met quality criteria. The slightest hint of exploitation would be disastrous to achieving that goal.

Even the early publication of findings from *Greening Food* (see Campbell, 1996b) struggled to fulfil the theoretical (and normative) assumptions listed above. An early casualty was the strongly negative expectations about the outcomes of farming under contract. As Campbell (1996b: 159) reported, the premiums being paid by Heinz Wattie Ltd to secure organic supply were actually very high compared to conventional supply contracts. Competition was rife between processing firms to capture the loyalty and ongoing commitment of very skilled suppliers who could rapidly develop and secure organic production styles leading to top organic growers being courted and feted by agribusiness corporates (see Key Engagement 1). The new organic producers hardly seemed to fit the New Rural Sociology's victimology of growing under contract, in fact, quite the opposite. What these contracts seemed to be operationalising was the locking in of elite food chain participation with significant empowerment for those growers skilled and experienced enough to comply with contract requirements. This

would later transition into the new kinds of agri-food governance arrangements characterised by the likes of EurepGAP/GlobalGAP that emerged after 1999.

Key Engagement 2: The Mongolian Feast.

One of the authors was invited, in 1997, to a restaurant dinner at the *Mongolian Feast* where the Certified Organic Kiwifruit growers Association (COKA) was having its monthly social gathering. The dinner had the atmosphere of a service club or religious event. Many growers spoke to the meeting about how desperate their circumstances had been before they converted to organics ('it was organics or the chainsaw for my orchard') and how, since trying organic production, they'd moved from initial scepticism (or outright financial opportunism) into become zealous advocates of wider organic philosophy and practice. It became clear that the binary between 'authentic' growers who had roots in the organic social movement and financially-motivated pragmatists who were simply using organic as another form of product demarcation could not provide an explanation for the behaviour of new organic kiwifruit growers in New Zealand. The diners at the *Mongolian Feast* were neither long term organic or new pragmatists. While many had started organics out of pragmatism or desperation, a new, highly motivated and committed organic grower subjectivity was being created in these new organic sectors.

A second early assumption was that new entrants into organics were primarily motivated by profits or pragmatism and thus failed to demonstrate the necessary level of philosophical commitment to organic agriculture. Text Box 2 describes a more complex sociology of organic conversion which recognises the kinds of complex relationship between adherence to organic philosophy and engagement in organic farm practice. Seen in this light, the assumptions that guided questions around 'old/authentic' and 'new/pragmatic' participants in organics began to unravel.

One early tension that emerged in the organic sector was around European government threats to deny market access to certified organic products that didn't have local government accreditation (see Text Box 3). This request was based on the clear assumption that governments were the appropriate agency to act in safeguarding the integrity of organics – particularly in the face of new corporates who might undermine organic standards.

This conflict demonstrated that there were very unusual alliances emerging on the ground in New Zealand. On one side, the long term organic movement, the certifier Bio-Gro NZ and corporate exporters, all allied in conflict with the Ministry of Agriculture and Fisheries. The key insight to emerge from this engagement was that corporate exporters were becoming increasingly concerned about, and much of their development strategy was dominated by, emerging market access barriers and retailer requirements to secure access into lucrative market niches (see Text Box 4).

Faced with the fairly rapid collapse of many of the initial assumptions behind the project, the second phase of *Greening Food* took a different methodological approach and specifically began to probe these theoretically confounding results. In a series of interviews with key corporate decision-makers, and through a process of iterative production of final reports on each industry sector, the voice of participants working in the organic sector began to create a very different, and important, picture about the emerging politics

Key Engagement 3: Joint Action Group meeting to develop export accreditation for organic standards.

In 1996, a Joint Action Group meeting (including two *Greening Food* researchers) was convened by Trade and Enterprise NZ (a government agency) to facilitate the establishment of a government accreditation system for organic standards. This was being strongly urged by European countries who considered that private-sector derived standards needed regulation by local governments to provide some assurance that they weren't being manipulated or 'watered down' by corporates. As the meeting unfolded, there was some disagreement as to the need for the New Zealand government – still in its strongly neoliberal phase and somewhat lukewarm about organics – to accredit what the local organics organisation – Bio-Gro NZ – and corporate exporters considered to be strong organic standards. A senior Ministry of Agriculture and Fisheries manager responded to this scepticism by suggesting that MAF would have much more sympathy with organics if Bio-Gro NZ would significantly 'water down' their livestock standards to make them more accessible to average New Zealand pastoral farmers. A vigorous debate saw key corporate exporters line up firmly in alliance with Bio-Gro NZ in arguing that organic standards had to be challenging to maintain a quality edge in export markets.

of organic and IPM food exporting. Their argument was that the key defining feature of the long term survival of agro-exporters in a 'free trade' environment (particularly in a country like New Zealand which relies on high value exporting) was not the ongoing rationalisation and reduction in unit cost per item of agricultural produce. Rather, it was the ability to secure and maintain the quality parameters needed to gain access to key niche markets in regions like the EU, Japan and the USA – primarily through the elaboration and harmonisation of new private-sector derived audit systems.

Key Engagement 4: Interview with Global Kiwifruit Marketing manager.

In 1997, as part of the research on the kiwifruit industry that was published as Campbell et al. (1997), the Global Marketing Manager for the NZ Kiwifruit Marketing Board was interviewed. His view of the challenges of the next five years was compelling. He described the industry's attempts to work with the rapidly proliferating array of supermarket-generated standards for kiwifruit production: 'It's driving us crazy. We are sometimes working with between 30 and 40 different sets of subtly different standards'. He pointed with some hopeful anticipation towards the efforts of the Euro-Retailers Working Group: Produce (EUREP) to harmonize all these individual supply-chain standards into a coherent, unified body of practice. In the years after that interview, EUREP published the EurepGAP harmonized standard for fruit and vegetable exports into Europe in 1999, paving the way for the emergence of the powerful GlobalGAP audit alliance. This interview shifted the whole focus of *Greening Food* away from searching for government imposed market access barriers to towards the rapid emergence of private-sector standards and audits as part of a power shift in global agri-food governance (see Le Heron, 2003; Larner and Le Heron, 2004).

Two publications from *Greening Food* (Coombes and Campbell, 1998; Campbell and Coombes, 1999) signalled a transition in the way that we understood commercial organic food products as signalling a wider set of shifts in agri-food systems. This was in line with a greater understanding of the emerging relocation of power from the production to the consumption end of agri-food chains (see Lawrence and Burch, 2007), the increasing influence of market access barriers to food exporters, and the way in which particular agri-food product chains were elevating themselves into privileged positions (thus elevating the situation of everyone in the chain from producers through to retailers) relative to their competitors using complex quality control criteria, third party audit and certification (see Campbell et al., 2006a, 2006b). In short, the engagement of *Greening Food* with the actual insights and understanding of corporate exporters in the mid-90s helped contribute to a wider reframing of the way in which theorising within the traditions of agricultural political economy shifted towards a more subtle and nuanced understanding of agri-food chain dynamics and processes by the late-1990s.[5] What is potentially more interesting, however, when retrospectively examining the impact of the *Greening Food* programme was the extent to which the existence of an engaged research programme was itself enactive for the emerging organic sector. Text Box 5 identifies some key ways in which *Greening Food* was, aside from its direct research results and publications, an undeniable participant in the way in which the sector was being transformed.

For *Greening Food* as a dynamic participant in the transition from an *organics contra mundum* to a multi-pathway strategy, there is evidence that the presence of a research programme looking into these issues had played a part, for better or for worse, in legitimising and reframing the overall direction of the sector. *Greening Food* both studied and participated in the discussions that opened up space for a 'third way' option for greening horticultural exports. No matter what the actual research results were, the actual existence (and ongoing 'performance') of the research project made 'thinkable' for some actors the notion that organic and IPM options were a valid strategy for mainstream industry rather than a wishful alternative proposed from the naïve fringes of agricultural strategy in New Zealand.

At a more theoretical level, the revised focus and analysis of *Greening Food* also produced results that discomforted the grand organising binary that framed much analysis of commercial organic production. The result was that the grand binary between corporate agribusiness (normatively bad) and small-scale 'authentic', locally-embedded organic producers (normatively good) was profoundly challenged. While all the problematic dynamics of profit-seeking, undermining of production standards, exploitation of vulnerable growers and fraudulent claims of organic status were identified in the New Zealand setting by the *Greening Food* research, these dynamics stubbornly refused to line up on their correct sides of the normative binary between corporate and small-scale producers. Large corporate exporters were the most trenchant supporters of maintaining a high level of integrity in organic production standards (to secure difficult market access and retailer requirements) as against government officials from MAF and more locally-scaled organic businesses that sought to cut costs and sometimes treated their organic suppliers in undesirable and exploitative ways. The result was an alliance between large corporate exporters and the long term organic organisation (and later certifier) Bio-Gro NZ battling to preserve the 'integrity' of organic systems (Campbell and Liepins, 2001).

What results is that New Zealand's commercial organic sector does possess all the key dynamics, power and contestation that early commentators had so powerfully articulated to us at the Lincoln University Conference of 1994, but that they were distributed quite differently across agri-food chains, governance dynamics, and according to vastly different modes of integration in the world food economy. The fact that the normative assumptions that had united the *Greening Food* researchers with organic activists in 1994 quickly disintegrated demonstrated the importance of genuine and reflective engagement with a range of new economic actors in the emerging world of commercial organic food.

Key Engagement 5: Opening Space for 'Third Way' Systems

In late 1996, members of the *Greening Food* team were called into a closed session of the NZ Kiwifruit Marketing Board (soon to become Zespri International Ltd.) and questioned closely about the draft results of our interviews with kiwifruit growers (later to be published as Campbell et al., 1997). Later comments from Board members were that our contribution was important to the decision taken later at that meeting to roll out the KiwiGreen programme to all suppliers over the next two years. We didn't determine the final outcome, but we provided the missing information the Board needed to evaluate the potential response of growers to new environmental requirements. The result was a wholesale endorsement of an IPM-based scheme that late was assimilated into the EurepGAP/GlobalGAP audit system. This was one of numerous moments between 1996–2000 when industry groups (particularly in closed workshops organised by the Organic Products Exporters Group) invited *Greening Food* researchers to provide input into strategic discussions. Looking back on that period, the key intervention made by *Greening Food* was to confirm to each individual exporting organisation, by the mere presence of the research team in multiple sectors, that the transition towards audit, new environmental and food safety requirements and new production protocols was happening to ALL the horticultural exporters and not just in their own supply chains. By 2000, the potential antagonism that had existed between organic and IPM-based systems (which had initially been seen as a compromised competitor with organic for the status of 'green' alternative) had given way to a multi-pathway strategy for greening across whole industry sectors.

4. The ARGOS research programme - deconstructing the organic and conventional binary

The *Greening Food* project delivered a range of findings that helped create a more sophisticated understanding of some of the chain and agri-food dynamics that were emerging around commercial organic food. It also helped identify the emerging dynamics of market audit and certification systems that were forming part of Le Heron (2003) observed shift in agri-food governance mechanisms and politics. The emerging understandings also enacted an intellectual environment within which non-organic production under environmental audit systems could be considered a legitimate alternative to 'conventional' agriculture.

[5] This process of elaboration continued beyond the life of *Greening Food*. Le Heron (2003) cited the *Greening Food* work as one of the cases he used to substantiate his argument for a greater attention to the politics of emerging governance in agri-food systems. Campbell et al. (2009a) situate this as part of a wider transition in the understanding of export economies like New Zealand as having shifted from value-creation at the point of production to value-creation through gaining and securing access to markets protected (both by regulators, retailers and private audit) by increasingly challenging sets of quality criteria.

What followed *Greening Food* was a much more intensive engagement of organic production at the farm and grower level through the Agriculture Research Group on Sustainability (ARGOS) Project. ARGOS is a nine year longitudinal study of farms and orchards engaging in different styles of production in New Zealand. It commenced in 2003 and is focused on the kiwifruit, sheep/beef and dairy sectors, studying predominantly family farms engaged in commercial-scale organic, IPM-based or 'conventional' production for export. The project includes 107 farms and orchards that have joined the project for an indefinite (and reasonably long) term. The research team is drawn from multiple disciplines and, alongside social research, the ARGOS farms are subject to ecological monitoring as well as production, farm management and economic research. The structure of the research team offers many advantages towards a more comprehensive assessment of the condition of sustainable agriculture, although the contribution and role of social science, as well as the constructs it has enacted, were subject to debate early in the project's development as will be discussed below.

ARGOS emerged at a time when the grand binary and other framings used to categorise key actions and positions around the commercialisation of organic agriculture were taking shape in wider academic and public discourse. The main objective of the project was to understand the dynamics of commercialised alternative agriculture at exactly the time that Pollan was denouncing the Organic Industrial Complex. It also commenced in a theoretical context that now included key terms like conventionalisation and bifurcation of organic agriculture. Around these new terms (and in the wider context of populist claims by the likes of Pollan) the grand binary organising much analysis and claims-making about new styles of organic agriculture was now fully operational. The extent to which such perspectives framed understandings of alternative agriculture severely challenged the growing legitimacy of audited best practice schemes based on IPM and animal welfare in New Zealand. This created an environment within which engagement with stakeholders in the project forced the reassessment of social science approaches and practice.

The ARGOS Project, while primarily constructed as a large-scale, transdisciplinary, empirical engagement with organic and other styles of farming, also can be used to furnish two key insights about the value of dialogic and iterative research strategies. The first is the way in which a broad, consultative and dialogic approach to research design ended up strongly reinforcing a transdisciplinary research design. The second is the tendency for normative categorisation of groups of growers to break down on closer analysis.

The initial framing of the call for proposals by the Government funding agency that eventually approved the ARGOS funding application was written in openly transdisciplinary language, with a well defined and ensconced opening for social science research methods. In practice, the development of the bid encountered significant constraints in terms of implicit hierarchies between 'real' and 'social' science approaches towards agricultural issues.[6] The role and relevance of the social scientists, however, received unexpected support from the industry groups – in many cases large agribusiness exporters – that were helping develop the bid (see Text Box 6). The resulting influence of a range of economic actors during initial negotiations around the development of the ARGOS project provides evidence of the iterative strengthening of social science positions within the wider transdisciplinary scope of ARGOS.

Key Engagement 6: Interviews with growers, industry and sector representatives when designing the ARGOS Project.

The team that commenced the ARGOS Project in 2003 had spent the previous 18 months working closely with growers, industry and sector representatives and scientists from a range of disciplines when designing the research protocols, approach and content of the ARGOS Project. What was surprising in this process was the degree to which industry and sector representatives strongly recommended the deployment of social scientific research methods in the project – thus strongly boosting the impetus for a more transdisciplinary approach in ARGOS. These representatives argued that they already had markets for organic and IPM products, they had most of the technologies they needed and they basically understood the farming systems they were deploying. What they didn't understand were the social dynamics among farmers. Why did some adopt organics and others show no interest? How could alternative farming systems be designed and presented to appeal to new growers? What were the learning styles that might work? And what were the social dimensions of sustainable practice that might be incorporated as marketable criteria in new audit schemes?

As a result of the strong interest that industry stakeholders expressed in achieving insight from social research, the project included an intensive engagement with participating farm households. Each farm household's participants were interviewed (usually by the same researcher) in two in-depth qualitative interviews during the first three years of the project, and also participated in numerous surveys on a range of farm activities. The initial farm interview was exploratory and open-ended around some key themes. Subsequent engagements with households have tended to be more driven by the requirements of the wider research team, including a series of interviews on climate change issues conducted with participants in the pastoral sectors.

This process has had highly interactive moments around the early interview, ongoing dialogue between ARGOS's full time field officers in each sector and the participating households, and annual workshops with stakeholders from each sector. The latter activities facilitate debate of the emerging results and promote feedback on future key issues and topics. Despite this continued engagement with stakeholders, it would be an overstatement to claim an iterative quality to all ARGOS research. Given the necessities of a multidisciplinary research team, much of the research has to be highly structured around scientific monitoring protocols and the more flexible disciplines – like the social scientists – tend to work around such structures. After six years of such data-gathering, the ARGOS project has generated an enormous depth of material on each of the participating farms and households that has few rivals internationally in the comparative study of organic and other farm management systems.

Within the scope of this article, it would be impossible to summarise the results of the ARGOS Project (see www.argos.org.nz to access the 30 research reports and 45 research notes produced to date). By focussing on one of the more provocative findings of the social research within the project, however, we are able further trace the ontological journeys of two of the project's social researchers. Thus, the following section elaborates on a key moment at which our existing understandings of sustainable agriculture and its practice were challenged by the response or feedback of stakeholders in the ARGOS project. The key insight is drawn from unexpected results that emerged from interviewing ARGOS farmers about the role of agriculture in climate change and

[6] For a broader review of these dynamics in New Zealand see Campbell et al. (2009a).

the ensuing responsibility of farmers to undertake greenhouse gas mitigation actions. These surprising engagements helped elaborate a more nuanced understanding of the frequently uncontested categories of 'organic' and 'conventional' that populate either side of the organic/conventional binary (and its adjunct dynamics around 'conventionalisation').

4.1. Contesting responsibility for global climate change

One of the insights of the ARGOS project to the binary between environmentally conscious organic farmers and exploitative conventional farmers is the identification of a group of green conventional farmers (Fairweather et al., 2009). While this insight is not necessarily unique (see Bell, 2004; Warner, 2007), the tendency for the binary to reinforce expectations of poor environmental performance among conventional farmers remains a strong element in popular and academic discourse. More recent research within the ARGOS project on the response of pastoral farmers to government efforts to regulate greenhouse gases has exposed a corollary to the green conventional insight (Rosin et al. 2008). Namely, that while organic farmers generally display a greater willingness to incorporate environmental limits within management decisions, there is also a limit to the extent of responsibility they are willing to assume.

> Key Engagement 7: Finding climate change sceptics among organic sheep and beef farmers.
>
> New Zealand is the first country to attempt to include the agricultural sector within its efforts to meet obligations for greenhouse gas reductions under the Kyoto Protocol, incorporating the sector in the proposed emissions trading scheme (ETS). Inclusion in the ETS will eventually require pastoral farmers to obtain carbon credits to compensate for the carbon liabilities associated with ruminant farming systems. The estimated cost of carbon credits to offset such liabilities would severely diminish the economic viability of pastoral farming in New Zealand. This policy orientation essentially forces farmers to assume responsibility for their purported contributions to global climate change with only implausible suggestions that such costs can eventually be passed on to consumers. Given their strong commitments to environmental conservation and improvement in other situations, we were surprised to find many of the organic farmers among the most adamant of climate change sceptics. In fact, the most vocal of these farmers employ arguments – e.g., that climate change is merely part of a natural cycle, that there is no evidence of anthropogenic drivers – generally associated with anti-environmentalist positions.

The observed contestation of climate change responsibility by organic farmers (presented in Text Box 7) suggests that the common attribution of a stronger environmental orientation to this group may be overly simplified. Much as it is possible to distinguish a range in the environmental orientation of 'conventional' farmers, it is also necessary to recognise that deference to environmental concerns in farming practice varies among organic farmers. This finding does not discount observations that organic farmers are generally more willing to accept some constraints on production that involve the pursuit of environmental benefits. It does, however, raise the intriguing issue of where they perceive the limits of responsibility to lie. Furthermore, it suggests that the association of commercially inspired organic practice with weakened environmental or social standards lacks strong explanatory power with the implication that other social features of farmers may provide more appropriate explanations of the assumption of responsibility for environmental impacts that extend beyond the scale of the farm.

The intensive engagements with ARGOS participants emphasise the dubious value of operating within an organic/conventional binary. Other ARGOS social research findings – including responses to environmental identity issues, environmental practice, attitudes to quality attributes that used organic or environmental criteria and strategic engagement with new climate change measures – all provided the means to differentiate among the ARGOS participants. However, while the organic group did generally tend to demonstrate the most favourable orientations towards environmental qualities in production, this was by no means exclusive. The presence of both climate change sceptics among the organic growers and distinctly green-oriented producers among the 'conventional' growers discomforts the binary between organic and conventional production. Clearly organic is not operating as a sole vehicle of environmental virtue in agriculture and while there are multiple cross-cutting influences among the ARGOS groups of producers, these do not conform to the expectations of the conventionalisation thesis that such influences only operate to the detriment of organic practices.

4.2. Enacting New audits: Performing Metrologies

ARGOS was able, through its particular collaborations, partial attempts at transdisciplinarity and key engagements with industry and sector partners to provide a strong counter to the dominant understanding of organic as represented by the three key framings outlined at the outset of the article. However, it would be deceptive to position ARGOS as simply the passive recipient of new research insights. Rather, ARGOS clearly involved a research group that was dynamically engaged in contemporary politics of defining potentials and framings around organic and sustainable agriculture. Text Box 8 describes some key ways in which ARGOS was, without overt intention, a participant in enacting outcomes for the wider sector.

Of particular interest is the way in which a 'metrology-based' approach to auditing claims about sustainability – of the kind that legitimates the protocols of audit alliances like GlobalGAP – was unintentionally empowered by the presence of ARGOS. Throughout the life of the project, there was considerable debate within the ARGOS team about the value of a metrology-based approach to sustainability audits and how this might be superseded. To what extent was the fetishisation of numerical measures of sustainability excluding the possible utilization of less enumerable measures within audit systems? As Text Box 8 demonstrates, the sheer presence of the ARGOS database was enacting and enabling particular outcomes and trajectories in the auditing practices of the industries that the project was working with. Just as Law and Urry (2004) identified how the practice of research helps enact particular social realities (like the invention and deployment of GDP measures by economists), ARGOS was helping enact a particular metrological approach to auditing sustainability. Just as the *Greening Food* project had help enact new economic formations by making alternative practices 'thinkable' for industry actors, ARGOS was similarly enactive by making alternative practices 'measureable'.

5. Discussion and conclusion: reframing and enacting

At the outset of this article, it was claimed that this kind of analysis and reflection on the processes and consequences of long term research projects fits within a wider ontological turn in our understanding of the consequences of our research. The importance of this 'turn' has been demonstrated through both 1) the influence of research subjects (and iterative or dialogic research

Key Engagement 8: Empowering Audit Metrologies.

Much of the formal dialogue and interaction between industry, sectors and the ARGOS group from the outset of the programme concerned the deployment of a large number of measures of 'farm performance'. This fitted the expectations of environmental scientists and, as long as multiple social dynamics and economic measures were also being collected, the expectations of the other disciplinary participants in the team as well. Over time, however, some key moments clearly demonstrated that the existence of ARGOS and its large database of 'measures' was helping industries and growers enact particular political strategies and negotiations in a way that was having important consequences. Within a few years of the commencement of monitoring within the ARGOS farms and orchards, multiple industry sectors (including Sheep/Beef, Kiwifruit and Wine) 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. Put simply, industries tend to be more confident about allowing audit systems based on enumerating potentially contestable metrologies of sustainability to become embedded in their respective industries and supply chains if there is a large research project at hand which is generating exactly these kinds of numbers and making them available. 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 which demonstrates they way in which new audit metrologies enacted more than just technical outcomes, but also became part of what Rosin (2008) described as a new 'Spirit of Farming' in these sectors.

strategies) on changing the deeper assumptions and framings of researchers, as well as 2) in the way in which the very existence of large, long term research projects had their own 'enactive' power in the settings in which they were participating.

5.1. Reframing key assumptions- after the organic industrial complex

The consequences of the first of these dynamics – the value of iterative and dialogic strategies on discomfiting the underlying assumptions and ontologies of researchers in the projects themselves – are important and are worth briefly summarizing. In considering the two periods of research engagement discussed in this article, there is clear evidence that both farmers and industry proved to be a source of creativity, surprise and contestation in generating new academic knowledge about commercial organics. Seen as elements of the same emerging research trajectory, the combined findings of *Greening Food* and ARGOS discomforted the assumptions on which they had been founded as well as the grand binary that organised both academic and popular discussion of organic agriculture. Thus, the iterative process of engagement with these stakeholders facilitated an ontological journey that contributed to the enactment of a research environment in which organic retained its capacity to operate as a critical utopia and yet other alternative practices were also considered to be potentially legitimate means towards sustainable agriculture.

The first of these assumptions is the construction of a clearly demarcated binary between good, authentic and social-movement-embedded organic farmers and their opposite – financially-motivated, pragmatic, corporate, and global scale organic commerce. It is the pitting of the idealised and heroic former group – *real organic* – against the evils of the Organic Industrial Complex that gives Pollan's critique so much weight. In Pollan's narrative, in fact, the latter completely subsumes any potential benefits derived from organic practice as a whole. This binary is also the guiding logic behind what Constance et al. (2008) describe as the 'bifurcationist' position in organic research with its implicitly normative sympathies for the non-corporate half of the bifurcation divide.

The *Greening Food* programme commenced with its theoretical agenda firmly in line with the theoretical categories and expectations that would later be described as 'bifurcation'. In addition to an academic positioning within the anti-capitalist framing of the 'New Rural Sociology', this also aligned *Greening Food* with the wider political scepticism of corporate activity in agriculture held by the organic social movement. However, as the above discussion elaborated, breaking down this binary proved the only way forward when confronted with the evidence of the real world development of commercial organics in New Zealand. The reconfiguration of the project not only uncovered the key dynamics shaping the elaboration and development of commercial organics, it also enabled a set of insights that guided wider agri-food analysis of governance changes in global food systems. In particular, it established that these changes involve a new politics of audit systems and alliances, the emerging power of new metrologies of environmental management in food production and retailing, and the complex positioning of new economic actors working in these emerging market niches. This alternative, and more complex, world of emerging commercial agri-food chains around organic agriculture in no way abandons the critical engagement or insight that guided earlier research. Rather, it re-orders the political lines of contestation around new actors, assemblages and conflicts. In the process the social research within *Greening Food* has enabled the more informed consideration of the legitimacy of dynamics within the commercially driven adoption of organic practice rather than simply categorically dismissing them as unthinkable.

The second assumption posits a particular trajectory of relations between organic and other growers that inevitably feeds into the purported dynamics of 'conventionalisation' (the one-way influence from the non-organic to the organic category) or serves to disguise progressive environmental practices in which a range of different growers are engaged. In our opinion this second assumption is not entirely unrelated to the same dynamics identified as emerging in a confounding way around the grand binary – the same audits, standards and market-derived mechanisms for demarcating quality claims to service market niches like organics. The ARGOS project represents over six years of analysis of the ways in which organic and other labels (or even the broad and less-than-useful category termed 'conventional') actually construct and map onto environmental practices and farmer subjectivity among export agriculturalists. What becomes clear in our engagements with farm households is that the binary between 'organic' and 'conventional' is not tenable and disguises a far more complex set of social dynamics operating at the farm and orchard-level (for a fuller discussion of this see Campbell et al., 2009b). Seen in these terms, organic agriculture (as a set of practices demarcated by a market audit system) does convey some sense of environmental practice; but exclusive emphasis on this relationship excludes many other heterogeneous dynamics operating across and around any artificial boundary between organic and conventional.

5.2. Towards enactive research

The second dynamic that become apparent is that we need to give more attention and recognition to the particular politics and consequences that emerge through the sheer existence of large research programmes like *Greening Food* and ARGOS. This was the clear intent of Philip Lowe's injunction to recognise and perform a more enactive rural sociology.

Greening Food, on reflection, became enactive in ways that were, at best, tangentially related to the overt research aims or published results of the project. While the published results of that project used the particular 'New Zealand pathway' of commercial organic agriculture to demonstrate the importance of new governance and agri-food chain dynamics at a global scale, it was also contributing to creating that outcome in multiple ways. The presence of a (relatively) large and long term project, funded by the New Zealand government and staffed by university researchers both created legitimacy for what was, at that time, a highly experimental and potentially fragile set of developments, as well as introducing to the discussions, dialogues, reflections and evaluations of the industry and sector actors themselves a set of ideas and terms (like 'Third Way' environmental management, 'Greening', 'Two Tier Greening', 'Green Protectionism', and many others) that helped organize and legitimize industry discourse and understandings of the broader emergence of new food experiments like certified organic. By helping individual sectors locate themselves with a wider 'legitimised trend', *Greening Food* made the greening trajectory more thinkable for industry actors and thus helped enact those new industry ontologies.

At an even more specific level, ARGOS not only made particular outcomes thinkable – especially in the New Zealand dairy sector where certified organic was in its earliest experimental phase in the industry –it also became a key agent in enacting particular metrologies in the sector. By providing the kinds of scientifically legitimated sets of measures (ranging from farm financial measures through to soil fertility measures and biodiversity scores) that are the automatic product of research programmes, ARGOS participated in enacting a particular trajectory of audit processes. Aligning with wider dynamics in the world of environmental-auditing, ARGOS made abstract claims about sustainability 'measurable' and thus contributed to the 'metric-centric' trajectory in the development of global audit systems.

Clearly, large research programmes are participants in enacting particular outcomes whether they intend to be or not. Thus, it is imperative to follow Philip Lowe in being openly reflexive and engaged about research settings, choices and their outcomes. If Constance et al. (2008) are correct in naming a particular New Zealand pathway of development of organic agriculture, then *Greening Food* and ARGOS have both – for better or for worse – been overt and covert participants in shaping that particular pathway.

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