Farming from a Process-Relational Perspective: Making Openings for Change Visible

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Abstract

The theoretical debates in sociology have highlighted the strengths, but also the limitations of perspectives building on, anthropocentrism, essentialism, or structural determinism. One school of thought that strives to overcome such limitations is relational sociology. The aim of this article is to explore how a process-relational perspective can offer a new conceptual framework for farm-level studies in rural sociology. It is an invitation to view the world as a tissue of interactions, of dynamic and often unpredictable processes. By injecting a dose of new materialism and thereby extending agency to nonhumans, the liveliness of nature and technology is also taken into account. Yet, reconceptualising farming in relational terms is not just a theoretical but also a political project: it spurs different imaginations, making other worlds thinkable. This would enable to show ever-present openings for more socially just and environmentally friendly farming practices.

Keywords

farmer decision-making, post-humanism, new materialism, relational sociology

Introduction

Farm-level studies in rural sociology tend to focus on understanding why farmers do what they do, i.e., how and why they make the farming choices that they make, in particular identifying why farmers (do not) engage in economically profitable, socially inclusive or environmentally friendly practices. While it is hard to do justice to the wide diversity of theoretical approaches to conceptualising the farmer in rural sociology, many build on a humanistic understanding, where the farmer is active, making choices that shape the farm, while the farm itself is seen as passive (e.g., Hendrickson and James 2005; Dessein and Nevens 2007; Marr and Howley 2019; Milone and Ventura 2019). Certainly, provisions are made for the fact that the farmer cannot make the farm as she would wish, for her plans tend to be unsettled by unruly

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plants, diseases appearing against her will, machines breaking down despite careful maintenance, or the need to take into account financial implications (e.g., Stock and Forney 2014; Schewe and Stuart 2015; Suess-Reyes and Fuetsch 2016). Provisions are also made for the fact that while it may be labelled 'farmer decision-making', choices may be less the result of one individual's rational reflection, but of deliberations between various family members (e.g., Danes and Lee 2004; Price and Evans 2006; Seuneke and Bock 2015; Contzen and Forney 2017; Chiswell 2018). And many studies point out how a broad range of societal structures constrain farmer agency, be it traditions and social norms that define the characteristics of a 'good farmer', the power of supermarkets or the food processing industry to impose certain practices, or the incentives offered by agricultural policies (e.g., Duram 2000; Morgan and Murdoch 2000; Burton 2004; Vanclay and Enticott 2011).

However, the humanistic assumptions underlying these understandings have been questioned by what has been termed the 'ontological turn' in sociology, which among other has held to questioning the usefulness of the social/natural dichotomy and whether humans are the only ones having agency, whether human choices are primarily guided by cognitive processes, and what role unpredictability plays in the unfolding of events. The turn has triggered alternate theoretical perspectives in a number of agro-food studies (see Goodman 2009; Carolan 2013; Le Heron *et al.* 2016; Sarmiento 2017), arguing e.g., for a focus on difference rather than dominance (e.g., Wilson 2013; Beacham 2018), for the usefulness to understand Alternative Food Networks as multiple and emergent, as performative orderings, always in the making, rather than already constituted systemic entities (e.g., Whatmore and Thorne 1997; Stock *et al.* 2015; Le Velly 2019); for taking into account more-than-human agency (e.g., Dwiartama and Rosin 2014; Phillips 2016; Dwiartama 2017), or for analysing the expansive webs of relations through assemblage theory (e.g., Jones *et al.* 2019). These conceptual developments are instrumental in rethinking the significance of alternative food networks, in understanding their dynamics as unpredictable, and their nature as heterogeneous, i.e., as extending from social relations through material artefacts, to bodies, subjectivities, talk and knowledge.

These alternate theoretical perspectives have strengthened agro-food studies, and they could also enliven work done at farm-level (see e.g., Carolan 2005, 2016; Higgins 2006; Ferguson *et al.* 2016; Herman 2016). Indeed, much research effort goes into understanding what enables family farms to persist, how and why farmers select production practices that may be more environmentally sustainable, or how they perceive options to respond to changing social demands such as the increasing concern for animal welfare or climate change. How these issues are discussed and what insights are generated depends not least on the theoretical and methodological choices made by researchers. Many conventional sociological approaches tend to focus on how powerful social forces constrain farmers, preventing change. While they acknowledge that some farmers resist these pressures, that they change their on-farm practices or engage in collective initiatives, analyses tend to point out that these changes are limited in their impact, or that they tend to be co-opted by the powers-that-be.

However, while the overwhelming dominance of powerful forces would suggest a reduction of diversity and standardisation, in most regions farming is neither homogeneous nor progressing along a stable trajectory. The question then is, whether

conventional research approaches conceal openings for change, whether they are ill-suited to capture dynamics and ever-evolving diversity. As it is the theories that guide how we define research questions, what data we collect, and what we look for in this empirical data, new insights might be gained from building on theories that conceptualise farming as a dynamic and relational phenomenon, rather than the farmer and the farm as fairly stable and discrete things-in-themselves. If change is ubiquitous and the world a tapestry of fluid relations, such theories may enable us to better capture it.

In this article I focus on opportunities to reconceptualise farm-level studies in a way that would allow to better capture the manifold sources of activity and change, first by questioning farmers as autonomous individuals engaged in rational choices, and understanding them as always-already enmeshed in relations of interdependency with their material and social environment; and second by questioning the passivity of the farm and understanding it as having agentic capacities, as being lively and affective. To ground the theoretical discussion, I start by clarifying the characteristics of conventional sociological approaches used in farm-level studies. I then briefly present the processual-relational perspective, which proposes an anti-essentialist and anti-deterministic approach[1] and explore how it can enliven farm-level research. Focusing on farming as the unfolding of underdetermined relational processes allows new conceptual openings, in particular a re-focusing on the ever-present possibility of change. Moreover, taking into account the agency of nonhumans, highlights how the interactions with both nature and technology affect human subjectivities and how they contribute to the unpredictable dynamics of becoming. In the last section, I draw out some methodological challenges and opportunities, for a processual-relational approach also involves an awareness of the performativity of research practice. I conclude by pointing out how a process-relational perspective, by emphasising that the potential for change is ubiquitous, can contribute to alternative world constructions.

The conventional conceptualisations: Farmer and farm in the ontological turn

To remain brief in the characterisation of concepts underlying many conventional theories (Table 1), I necessarily take a broad-brush approach that does not do justice to the many nuanced approaches and conceptualisations. While this risks to be caricatural, I hope to capture some essential aspects, as a good caricature would.

Firstly, regarding the farmer, studies in rural sociology have amply shown that the image of the utility maximising individual – which usually underlies studies in agricultural economics, and is implicit in recommendations derived from plant production or animal husbandry (see Edwards-Jones 2006; Galt 2013) – tends to be tampered by personal values, attitudes, perceptions, interpretations, as well as social norms. This has led to work done from a constructionist point of view, highlighting the representations and meanings farmers give to e.g., soil protection practices (e.g., Schneider *et al.* 2010) or farm succession (e.g., Fischer and Burton 2014). In these conventional approaches in rural sociology, the farmer is conceptualised as a humanistic subject, thus privileging reason and reflexivity, assuming farmers to be knowing, rational, stable, unified, and coherent (see St. Pierre 2004, 2008). This allows for

Table 1: *Various ontological and epistemological positions and alternate conceptualisations that have resulted from the various 'turns' in sociology*

Traditional sociological perspectives	Implications	Limitations, critiques	Alternate conceptualisations
Essentialism	Things have a fixed, stable essence, which is more fundamental than any variation	The world is not predetermined from the real; there is no essence independent of context and of interaction with other things	Anti-essentialism: reality does not have an inherent essence, is not stable, is always becoming; the world as emergent, engaged in ongoing differentiation
Anthropocentrism, human exceptionalism	Only humans are seen as having agency; focus is on humans because only they have cognitive abilities, intentionality, and can initiate action	Matter is not passive but 'lively', 'affective'; matter is not an inert substance subject to predictable causal forces	Post-humanism: production of the real through manifold relations linking human and nonhuman agents; New materialism: attention to materiality through practices, relations, embodiment, performance
Dualism	World as tidily segregated in binaries, e.g., subject/object, nature/culture, mind/matter, science/practice, modern/traditional, rational/emotional	Creates strong separations and clear distinctions; often one pole of a binary opposition is privileged at the expense of the other	Hybridity challenges the purity of categories; rejects the *a priori categorisation of things; focus is on hybrid socio-material assemblages*
Determinism/ reductionism	Search for universal (causal) mechanisms; focus on social structures such as norms and roles; Search for a principle of determination, e.g., genes, capital, institutions	Overemphasis on social continuities and stability; builds on the Western dream of an ordered and rational society	Complexity: the world as contingent, uneven, ephemeral; relations develop in unpredictable ways around actions and events

(Continues)

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Table 1: *(Continued)*

Traditional sociological perspectives	Implications	Limitations, critiques	Alternate conceptualisations
Constructivism	Highlights the role of human interpretation and meaning-making, and the impacts of those meanings	One-sided emphasis on discourse; does not account for the agency of nonhumans	Post-constructivism: Things matter, as do the relations between the biophysical and the social/cultural
Representationalism	Claims correspondence between concept and object; language is a reflection of the conscious mind, represents the world in a more or less transparent manner; privileges reason and reflexivity	Interview subjects are not passively and dutifully re-presenting their world; ignores the role of social construction, and the influence of context	Nonrepresentational theory: focus on embodied experience; attention to doings, practices, performances, rather than discourse and re-presentation; explore the affective and performative ways of sense making

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methods that build on the assumption that a farmer can provide an accurate account of why he has made specific choices, such as adopting agro-environmental measures (e.g., Burton *et al*. 2008) or investing in a milking robot (e.g., Butler and Holloway 2015). Farmers are also assumed to be fairly stable in their preferences, due to e.g., the influence of their habitus. Yet, these conventional conceptualisations have been questioned, as humans are known to be ambivalent and contradictory (e.g., Smelser 1998; Berliner *et al*. 2016), thus focusing on the cognitive dimension of choices may underplay the influence of emotions and embodiment (e.g., Carolan 2008; Pile 2010; Castro 2018).

Secondly, conventional sociology tends to focus on culture, social norms, power, discourse, and language as shaping the farmer's choices. This tends to neglect the materiality of the farm (see Escobar 2010, p. 97). Indeed, the farm is mostly seen as a pliable resource for material agricultural production or for its social construction (see Alaimo and Hekman 2008, p. 4). This is partly linked to the boundaries that are foundational for mainstream sociology, i.e., the clear distinction between social/natural, with sociology focusing on the social and cultural aspects, leaving nature and matter to natural sciences (Goodman 1999; Fox and Alldred 2018). As a result, many conventional sociological perspectives take humans, human meaning-making, and social structures as the sole constitutive force, neglecting the nonhuman forces at play in our world (Hultman and Lenz Taguchi 2010, p. 539). Approaches such as Actor Network Theory and new materialism have established the notion that nonhumans have agency. Yet, although farming is fundamentally situated at the interface between society and nature, between humans and technology, the materiality of the farm is rarely taken into account. To understand farming fully, it might then be important to find ways to combine social construction with an understanding of the agency of the material world (see e.g., Ferguson *et al*. 2016; Herman 2016; Phillips 2016; Legun and Henry 2017). This would allow to link farming to a wide variety of forces, including physical interactions, biological processes, social encounters, reflective thoughts, revisited memories, emotional desires, and bodily feelings (see Alaimo and Hekman 2008; Anderson and Harrison 2010; Fox and Alldred 2018).

Thirdly, many accounts in rural sociology emphasise continuity over change, predictability over surprise, constraints over possibility. This is partly tied to an implicit essentialism. Traces of essentialism can be identified in studies that look for specific attributes of a farmer (age, gender, education, part-time occupation, attitude) or a farm (size, crops, types of animal rearing) and use these as indicators of some essence, some characteristic that determines how likely this type of farmer is to behave in a certain way (e.g., Andrade 2015; Milone and Ventura 2019). The essential characteristics can be used to define typologies and to make distinctions, allowing to convey clarity in an analysis. Yet, studies have been keen to expose the limitations of binary oppositions such as old/young farmer, modern/traditional, small/large farms, conventional/organic, pointing out hybridities and fluidity (Whatmore and Thorne 1997; Burton 2006; Rosin and Campbell 2009; Sutherland and Darnhofer 2012; Lamine 2015; Le Velly and Dufeu 2016; Lamine *et al*. 2019; Lehtimäki 2019). These studies point out that distinctions between types of farmers or types of farms may be less clear-cut at any point in time. Replacing sociological dualisms and the superficial

clarity of typologies with multiplicities would acknowledge the emergent character of the world and all the possibilities this implies.

The emphasis on continuity over change is also partly tied to a focus on structural constraints. Indeed, many studies highlight the limitations of farmers' agency, e.g., in the face of social norms or the power of market actors. For example in the debate around the conventionalisation thesis, market forces were held to systematically undermine the alterity of organic farming practices (Guthman 2004). Such top-down, determinist conceptualisations of social structure and of power strive to identify causal social mechanisms, enabling predictability and allowing to derive policy recommendations. Yet, they also tend to overemphasise social continuities and stability at the expense of flux and possibility (Fox and Alldred 2018). Alternative approaches have argued that patterns of connection are not reducible to interests lying outside or above them, that they are performative rather than structural. Any pattern is thus uncertain, a contested process, the result of on-going work. It is stabilised – and can be destabilised – through the creative, collective practice of the intentionalities of many and diverse inter-dependent actors (Whatmore and Thorne 1997).

Conventional approaches in sociology clearly have strengths, and have been used to provide a rich characterisation of a wide variety of phenomena. Yet, alternative conceptualisations may allow for different insights into farming, by going beyond a humanistic view of actors, taking into account the agency of nonhumans, and emphasising the possibility of novelty over continuity in a set trajectory. Such conceptualisations have been taken up by a range of disciplines, with specific sensibilities in response to different empirical and theoretical problems. They include non-representational theory (Thrift 2000; Anderson and Harrison 2010), (new) materialist feminism (Barad 2003; Alaimo and Hekman 2008; Coole and Frost 2010; Dolphijn and van der Tuin 2012), feminist post-humanism (Åsberg and Braidotti 2018), and assemblage theory (McFarlane 2009; DeLanda 2016; Le Heron *et al*. 2016; Jones *et al*. 2019). Each of these conceptual efforts are diversifying as work on them is on-going, a continual process of rethinking the human, the nonhuman, the material, and emphasising fluidity, relations, processes. It would seem useful to explore how the insights they have generated can be integrated and applied to generate a new conceptualisation of farmers and of farms.

A process-relational perspective – a different worldview

Relational sociology is an umbrella term for a disparate and loosely connected body of thought which shares common concerns but has a diverse intellectual history and includes a multitude of perspectives.[2] What they have in common is that they prioritise relations over the entities, thus emphasising interdependence (Emirbayer 1997; Dépelteau 2018a). For some perspectives, relations are concrete network ties between individuals or groups, thus the focus is on the interactions between pre-existing entities. For others, all social phenomena are constituted through relations, thus individuals are not pre-existing subjects, but themselves configurations of relations (Powell 2013; Burkitt 2015; Dépelteau 2018a).

I build primarily on the latter perspective, specifically a 'radical relationalism' (Powell 2013) or 'process-relational' perspective (Dépelteau 2018b). Dépelteau (2018b, p. 510) defined process-relational sociology as focusing on 'the analysis of the emergence, the transformation and the disappearance of multiple smaller and larger dynamic social fields happening through interactions between human and non-human interactants'. The process-relational perspective thus strives to move beyond social (co-)determinism, which explains human action as the effect of causal powers by external social forces (e.g. social structures, culture, institutions), or as the interactions between these social forces and the agency of actors. It thus recognises only one 'level' of social reality: the interaction between interactants, and as such is based on a 'flat' ontology (Dépelteau 2018b, p. 516). For example, in the process-relational perspective, agricultural policy has no causal power over a farmer, since the farmer cannot interact with it. Indeed, agricultural policy does not exist as a 'substance', it is a social process, i.e. an effect of relations between many human and nonhuman interactants.

A process-relational perspective implies a move away from seemingly solid, stable or permanent things, facts and structures, towards concepts such as relations, associations, assemblages, networks, interactions, transactions (Dépelteau 2018a). While these concepts are all nouns, they should not be mistaken for something that 'is', static and unchanging (Elias 1978; Carolan 2013). Rather, a relation, a network, an association, an assemblage requires constant work to be maintained, a work that can be done by humans, animals, plants, or objects (Powell 2013). It would thus be more accurate to use verbs: relating, associating, assembling, networking, interacting, communicating, transforming, practicing, farming.

The focus on work, on processes, gives analytic priority to what human and nonhuman actors do, how they make, maintain, or restrain space for change (see Carolan 2013). In this perspective, the world is not made of states and things; there is no unchanging essence, no stable society. Social phenomena are the products of interactions between multiple interdependent humans and nonhumans. They all contribute to produce, change, destroy or maintain social patterns, and are themselves changed through the interaction. Everything is evolving, moving, becoming, often precariously. This leads to ubiquitous dynamics, marked by complexity, i.e., the unpredictable effects of interactions. Indeed, process-relational sociology takes seriously that the world we live in is complex (Cilliers 2005; Urry 2006; Pyyhtinen 2017). As we do not control the outcomes of our actions, we can expect unwanted, unpredictable chains of interactions, as well as the inevitable unintended consequences. Yet, at the same time, this relational instability also creates openings for new doings (see Gibson-Graham 2008). These openings can enlarge what is perceived as 'possible' and 'doable': new doings, an altered routine can lead down a path where the once un-thought becomes thinkable (Carolan 2013). Herman (2015) uses the notion of enchanting agriculture to convey the notion that a brief rupture might provoke a farmer to re-evaluate the known and the everyday, allowing her to imagine a different world, one in which she can flourish.

There is thus no structure that stands behind and determines action (Dépelteau 2008). Similar to Actor Network Theory, process-relational sociology rejects any sense of social forces or structures working 'behind the scenes', replacing these

entirely with localised, short-lived interactions or associations (see Latour 2005, p. 65–6). Ruling out any recourse to overarching 'social structures' or 'systems' or underlying 'mechanisms' as explanations of continuity or change means that the task of sociological inquiry is no longer to reveal the hidden social forces at work in farming, agronomic research, agro-food value chains or elsewhere. Rather the analysis of relations, of power and resistance, focuses on the immanent, relational micropolitics of events, activities and interactions themselves (Fox and Alldred 2018, p. 320–21). Doing away with structures does not mean that there are no durable orders, but that the resulting orders are open, provisional achievements. Indeed, these orderings are multiplicities, composed of complex and shifting relations (Whatmore and Thorne 1997; Anderson and Harrison 2010).

A process-relational perspective thus offers a different worldview and allows to reconceptualise farming as a dynamic socio-material process. Given the important role of nonhumans in farming and to refine the conceptualisation of the agency of nature and of 'things' more generally, I integrate insights of new materialism and post-humanism (Latour 2005; Barad 2007; Haraway 2016). To take into account the role of embodied experiences in understanding farming practices, I integrate insights of non-representationalism (Thrift 2000; Anderson and Harrison 2010). And to emphasise that the world is always becoming, an on-going differentiation, not a collection of static relations, I integrate elements of Deleuzian philosophy (Deleuze and Guattari 1987).

Reconceptualising the farmer and the farm

A process-relational perspective allows reconceptualising the farmer as an individual beyond the body/mind duality and as interdependent with her environment, thus integrating insights of anti-essentialist, post-humanist, post-constructivist, and nonrepresentational positions (see Table 1). It also allows reconceptualising the farm from a new materialist understanding, as being lively and affective.

The farmer is reconceptualised in two moves. The first move is to overcome the body/mind duality. Thus, the cognitive is not understood as primary, as emotions and the materiality of the body are taken seriously, i.e. the farmer is understood as a being who thinks *and* senses. Farmers are certainly understood as having conscious aims and intentions, but these processes are influenced by a broad range of 'background' interactions, which we do not consciously notice (Anderson and Harrison 2010).[3] Indeed, much of the time, we engage in actions without thinking about them, and if asked about, we may struggle to explain. For example, many farmers will carefully observe the plants and animals they care for (see e.g., Singleton and Law 2013). They could not say what they are looking for, yet, they would feel if something is 'off' with an animal, finding it difficult to explain why it is 'off'. Yet, if much of everyday life is unreflexive and not necessarily amenable to introspection, then our understanding of farmer decision-making needs to be reconceptualised. Building on the insights from nonrepresentational theory, the root of action is not conceived primarily in terms of willpower, rational thought, conscious deliberation, or cognitive processes, even if we allow for these to be influenced by values and assigned meanings. Rather, the farmer's actions are seen as guided by mind as well as body, senses, emotions, affect; they

are influenced by past experiences and revisited memories, by embodied experience tied to various farming practices in a specific place (see Thrift 2000; Carolan 2008; Anderson and Harrison 2010). In short, farmers are not just deliberative minds, but have bodies, thus much more attention needs to be given to the influence of embodied movements, precognitive triggers, practical skills, affective intensities, enduring urges, sensuous dispositions (see Lorimer 2005; Maclaren 2019).

The second move is to no longer see the farmer as separate from her surroundings, which she tries to influence in a somewhat unidirectional way. Rather the farmer acts in an external world, but is also acted upon, is in constant relations of modification and reciprocity with her environment. For example Herman (2015) proposes to see farms as complex moral economies, where the social entangles human and nonhuman actants in dynamic and contextual webs of power and responsibility. As a consequence, action is not understood as a one-way street running from the actor to the acted upon, from mind to matter, but as relational phenomena, i.e., all action is interaction (Anderson and Harrison 2010, p. 7; Dépelteau 2018a, p. 18). Thus the farmer is not an independent being who engages in voluntary action, based on known cause-and-effect relations, leading to a fairly predictable outcome. Rather, the farmer is involved in a diverse and changing set of dynamic relationships with a host of human and nonhuman entities, whose responses are often uncertain, leading to outcomes which always have unexpected (side-)effects. Indeed, the farmer co-evolves in a complex, dynamic world: extreme weather events, new diseases or pests becoming more prevalent due to climate change, machinery becoming 'smart', internet-based technology enabling new forms of cooperation, marketing partners desisting, her body growing old, family composition changing, ambiguous regulations being reinterpreted, a new venture with untried partners, memories being revisited in light of new developments, unripe ideas evolving, and conflicts with neighbours are all part of everyday life. A farmers never acts in a vacuum, she is clearly not free. Rather, the farmer, an interdependent being, is only comprehensible in this unstable tapestry of fluid relations, past and present (Mitchell 1988 in Dépelteau 2018a).

The farm too is reconceptualised. Building on insights from new materialism, agency no longer privileges human action (Latour 2005; Higgins 2006; Barad 2007; Bennett 2010), and the farm is understood has having agentic capacities. The humanistic notion of agency is replaced by 'affect', where all matter is 'affective – it possesses a "capacity to affect and be affected"' (Deleuze and Guattari 1987 in Fox and Alldred 2018, p. 318). Thoburn (2007, p. 84) defines affect as 'an experience of intensity – of joy, fear, love, sorrow, pity, pride, anger – that changes the state of a body, that has concrete effects on individual and social practice'. Pile (2010, p. 8) distinguishes emotions from affect, and points out that affect is 'beyond cognition and always interpersonal'. Being pre-cognitive and pre-conscious, it is inexpressible, i.e. unable to be brought into representation. It refers to the capacity of a body to modify another in some way, as such affect connects bodies, it circulates, it matters. This implies a radical openness of a body to other bodies, human and nonhuman. Everything takes-part, everything acts, everything is involved in the co-fabrication of worlds.

The material bodies of the farm take many forms, including tools, machines, animals, trees, crops, texts, images, chemicals. Of course, these different bodies have different agentic capacities, affect differently. They have different styles of

becoming, depending on the qualities by which they actively differentiate themselves (Colebrook 2002, p. 84). For example the soil, which is part of the relational web that produces the 'farm', is not an inert matter, but dynamic and lively (Schneider *et al*. 2010; Ferguson *et al*. 2016), it will affect the farmer and be affected by him. Thus, what looks like a stable farm emerges out of multiple, disparate, and often divergent events. Understanding the farm as dynamic allows us to investigate conditions of possibility, de-essentialising phenomena, treating them as contingencies to be explained, as expression of human and nonhuman agency, as relations that can be investigated historically (Powell 2013). Importantly, the farmer's desires and plans are not the only things active in the world, but rather the farmer, the soil, the animals, the machinery are understood as being equally affective, involved in their on-going becoming (see Anderson and Harrison 2010, p. 11).

Farming as relational: conceptual openings

Conceptualising the farmer as constituted through relations and as intra-acting with the world, conceptualising the farm as being lively and affective, and conceptualising the farmer and the farm as intertwined in an open process of becoming, invites a shift towards farming as a hybrid relational process. Farming can thus be studied in terms of the constitutive processes and relations – biological, material, social, cultural, political, discursive – that go into its making. Farming is understood as situated action, as a series of events that take place in particular contexts and unfold in time (see Whatmore and Thorne 1997; Alaimo and Hekman 2008, p. 7; Vanderberghe 2018). From a processual-relational perspective, it is solely the various affects within individual events that promote or constrain farming, and the processes are continually challenged by new relations and affects that may de-stabilise practices and introduce different patterns of interactions (see Fox and Alldred 2018).

Recognising that much of farming is a response to expected as well as unexpected phenomena, farming is reframed not so much as invariable routine and continuity, but as a series of events that never repeat themselves in exactly the same way. Farming does not exist unaltered over time or outside of the connections made, it is always reassembling in different ways. Routines are processes, i.e., they are not understood as sameness and simple repetition, but as dynamic and requiring on-going work (Feldman *et al*. 2016). Farming is thus a fluid, vibrant, and evolving process, a precarious effect of relations, emerging from and transformed by manifold interactions, contingent and ephemeral (see Barad 2007; Coole and Frost 2010). Farming emerges from the micropolitical forces deriving from interactions within events. As the outcome of these events is never guaranteed in advance, assemblages of relations develop in unpredictable ways, leading to an emphasis on becoming, a radical openness to change.

If farming is not seen as a fixed 'thing' but a set of constituent practices which are bundled in different ways through time, then three aspects come to the fore and deserve additional research attention when striving to understand farming practices and orderings. The first aspect is the ever-present opening for change given the contingency of any ordering. The second and third aspects are linked to the integrated view of the agency of humans and nonhumans, i.e. the agency of nature, which are

fundamental in farming, and how technology both expresses and stabilises modes of ordering.

First, rather than looking at what 'is', the conceptual and analytical focus shifts onto processes, onto the manifold interactions, seeking to understand how orderings are maintained and why and how they are changed. The emphasis on the contingency of order is linked to an explicit concern with the new, with the ever-present opportunities for creativity, for relating differently. Indeed, the primacy of process shifts the central attention to the question of change: how are orders disrupted, how do orders fail, how are new orders coming into being, if only momentarily? (Anderson and Harrison 2010). The assumption is thus no longer that farmers are constrained by some form of overpowering structure (e.g., social norms in agriculture, agricultural policy incentives, technological progress, market pressures, the power of supermarkets), and that to achieve change, we need to identify ways to resist, contest, change these structures. While the influence of such orderings and stabilised relations should not be underestimated, the emphasis is on how relations are being stabilised and on opportunities for change. Thus any 'structure' that seems permanent is understood as a momentary crystallisation, which is subject to change with little notice or predictability.

The focus then shifts from seemingly static and overpowering structures towards events, towards the micropolitics of local interactions. Each event is a new beginning, and brings with it new potentialities for being, doing, thinking (Anderson and Harrison 2010). Each event potentially leads to a surprise that breaks the specific configuration of a social-material assemblage. The question is: how to extend the potential that an event opens up, the sense of promise that it may hold? (Anderson and Harrison 2010; Carolan 2016). How to create turning points in the here and now? How to explore possibilities to function differently? How do interdependent human and nonhuman actors attempt to shape various and fluid social processes (Dépelteau 2015)? How are differences made (in)visible and how are alternative imaginings of the possible strengthened or foreclosed (Legun and Henry 2017)?

Importantly, the complex interactions underlying change make it unpredictable. This questions the notion of a pre-set trajectory, of a directed development or any seeming imperative inherent to modernity (e.g., the 'get big or get out' dictum in agriculture). Rather, given that the 'world could always be otherwise' (Law 2004, p. 152), empirical diversity and the plurality of approaches to farming is here to stay (van der Ploeg 2017; van der Ploeg *et al.* 2019). This approach highlights the flexibility of farmers (Cheshire *et al.* 2013), the range of experiments farmers engage in to adapt their farming to address their own needs (Brédart and Stassart 2017), and how they 'tinker' with technology to respond to societal demands (Higgins *et al.* 2017). It would also draw attention to the impact of diversity and difference, which might be looked at over time, e.g., how farming changed and what enabled these changes; or in space, e.g., to understand the interrelations between the diversity of practices within a territory and what they enable (Lamine *et al.* 2019).

Second, relational sociology encourages a re-conceptualisation of human-nature relations, towards an integrated view of the agency of humans and nonhumans. Although modernisation aimed at controlling biological processes, farming may be better conceptualised as a collaborative effort where farmers and the local agroecology shape and are shaped by interactions. Indeed, a process-relational perspective is

much more than a call for studying relations between humans and Nature 'out there'. It is a worldview insisting on our interdependency, on the web of interrelated process of which humans are part (Dépelteau 2018a). It would follow Escobar's (2018) call to overcome the duality of a dynamic culture that manipulates an inert nature, by tuning into the radical interdependence of all life, a dynamic mesh of relations involved in world making, or as Haraway (2008) put it, the 'lively knottings' between humans and nonhumans. In this effort, a process-relational approach to farming could learn from the worldviews of indigenous societies, such as Andean cosmology where both humans and nonhumans are 'earth beings' engaged in mutual relationships of care (de la Cadena 2010); Aborigine cosmology, where reality is not prior, but interactively remade and enacted (Law 2004); or Inuit knowledge systems and how they approach the complexity of environmental processes (Berkes and Berkes 2009).

Third, a process-relational perspective can enable different insights on the role and influence of technology, e.g., in the context of robots, 'internet of things', but also of social technologies such as standards. It undermines a view of technological determinism as well as one of human control over hapless things (Higgins 2006). Indeed, while humans transform matter, matter is also granted active agency in transforming farming practices and human subjectivities (see Alaimo and Hekman 2008; Coole and Frost 2010; Hultman and Lenz Taguchi 2010). Technological materialities are seen as actors alongside humans, with vitalities irreducible to the meanings, intentions, or symbolic values humans invest in them (Bennett 2010). For example Rosin *et al*. (2017, p. 90) show how metrics have agency in the agro-food system, in that they 'initiate change beyond the expectations, intent and control of humans'. A process-relational perspective on farming not only gives agential qualities to humans, animals, plants, diseases, but also to buildings, machinery, and regulations. It points towards the affective intensities and agential capacities of objects. It draws attention to questions such as how objects under analysis establish conditions of action, how humans incorporate and improvise with objects, what imaginaries objects rely on and establish, how objects may enable to escape normalising discourses and habituated acts, opening new conditions of possibility (see Lupton 2018).

Methodological considerations

While in theory an emphasis on relations and taking into account the agency of nonhumans is well debated and engaged with, Dowling *et al*. (2017) point out that in research praxis the implications are not always carried through. We need new sociological imaginations, not only to develop new perspectives, but also to re-imagine our methods (Law and Urry 2004; Pyhhtinen 2016; St. Pierre *et al*. 2016). And indeed, the process-relational perspective presents a range of methodological challenges, which are also opportunities to innovate. The challenge is to shift the analytical attention from nodes, objects, and subjects, to events, work by humans, affects by nonhumans, highlighting how relations are made, maintained, transformed, abandoned. In doing so it is important to challenge the anthropocentric view on subjectivity and interpretation, by de-emphasising subjective human traits such as reason, meaning making, and imagination (Cresswell 2012).

The question is to what extend we can address these concerns within established methods such as interviews, which are the primary mode of data collection in many farm-level studies. In conventional methodological practice, work with interview-based data tends to be based on the assumption that voice makes present the truth, and reflects the meaning of an experience (St. Pierre 2008). The underlying assumption is that interview data is an interpretation of the real, is the 'truth' of the farmer, a faithful re-presentation of why he chose a particular course of action. Conventional interpretation thus risks to fall into the representational trap of trying to figure out what the interviewee really means (Jackson and Mazzei 2012), as well as risks to fall into the structuralist trap of trying to figure out which overpowering forces constrains the farmer, whether or not he perceives them.

In a process-relational perspective, the farmer is neither conceptualised as just a self-aware conscious subject, nor is action conceptualised primarily as the result of deliberate reflection and sense-making. Rather than being a disembodied rational decision-maker, the farmer is understood as influenced by non-conscious affective processes. Thus, more attention is given to emotional expressions as well as to affective experiences stemming from relations, to bodies affecting and being affected by each other (Lenz Taguchi 2012; Buser 2014). More attention is also given to bodily sensations, which may arise from the manifold relations in which the farmer is entangled, as well as from her interactions with machinery, animals, nature. As Carolan (2008) showed, farmers can experience the tractor as an extension of their body. It implies an exploration of the affective, emotional and embodied relationships between farmer and farm, the processes through which people come to care for the land, for the animals, for the plants, for the machines (see Singleton and Law 2013).

Moreover, by de-centring the human, the data can be reimagined through a more-than-human lens. Rather than privileging the anthropocentric point of view, the focus is on the interdependence and co-existence of bodies in the world (Lenz Taguchi 2012). This would highlight the reciprocal relations on the farm, the entanglement of human and nonhumans, showing how nonhumans have the very real capacity to shape and constrain the farmer by affecting her. In an interview about soil management practices, this might be expressed in how the farmer felt the urge to engage in a certain action as a result of how the smell and look of the soil affected her. This action might be an opportunity to revisit a routine, be an opening to imagine a different way of doing, thus leading to unexpected outcomes. Rather than focusing on human agency, and on interpersonal interactions, the aim is to look for, identify, and acknowledge the constitutive force of matter (Barad 2003; Law 2004). This allows to show how meaning and action emerges not in the isolated mind of the farmer, but from manifold interactions between humans and nonhumans. By highlighting the agency of animals, plants, machines, and rules, we can pay attention to entanglements, and raise questions about human control. The relational perspective thus discourages the tendency to think of humans as elementary units of analysis, and encourages us to look at farmers within the broader constellation of relations with other humans and nonhumans in which they are imbricated (Powell 2013; Buser 2014).

The emphasis on processes within relational sociology also means paying particular attention to terms that convey 'lively and energetic imaginaries such as fluidity, contingency or instability' in the stories told (Buser 2014, p. 234). More attention

should be paid to ambiguities and contradictions, as an indication of various imbricated processes, of co-evolution, of multiplicities, of struggle between different relations, of multiple orderings of reality (see Berliner *et al.* 2016). Indeed, farming is conceptualised as an ongoing and open process of transformation, involving manifold humans and nonhumans who are themselves conceptualised as processes connected to other processes. The aim is thus to identify and better understand how relations and constellations enable or impair transformation and change, how these relations are constantly made and remade, stabilised or undone. It allows to shed light on the shifting relationships, on the movements between bodies and objects, on a quasi-autonomous dynamic that 'emerges from and is constructed by relational encounters between human and non-human bodies' (Buser 2014, p. 234).

Beyond interview-based data, new methods need to be developed that are better able to capture relations difficult to express in words. The challenge is to think otherwise, away from rigid methodological norms, by opening up to new encounters and engagements (Hayes-Conroy 2010; Lenz Taguchi 2012; St. Pierre *et al.* 2016). It is an invitation to move away from the formulaic, to risk, to experiment and be creative, with greater regard for the particularities of the specific context. Whatmore (2006, p. 606) called it the 'experimental imperative', i.e., the urgent need to supplement the familiar repertoire of humanistic methods that rely on generating talk, with experimental practices that amplify other sensory, bodily, affective registers.[4] Indeed, there tends to be a one-sided focus on textual presentations by research participants. Yet, while it can be argued that we think through words, we do not feel through words, and there 'is always more than what we can put into mere words' (Gunder 2011, p. 201). These engagements may enable to go past a focus on what 'is' towards understanding the fluidity of processes, the unpredictability of change, the presence of diverse possible futures. This methodological experimentation might take many forms. For example Stirling (2011) has been advocating the use of methods that make differences visible. Darnhofer (2018) explored the use of comics, as a form of visual data that is open to interpretation and involves the viewer emotionally, enabling participants to discuss the differences in their feelings, experiences, understandings, associations, visions. Van Oudehoven and Haider (2015) have experimented with using a recipe book and photographs as a way to capture and value farmers' embodied knowledge about cultural biodiversity and heirloom varieties.

Importantly, the methodological challenge is not limited to finding better ways to capture the processes and relations that make up farming as the topic of research. It extends to the researchers themselves, inviting us to make explicit our own implication in the contents of scientific accounts of the world (Powell 2013). It has been a while that Donna Haraway (1988, p. 581) has denounced 'the god trick of seeing everything from nowhere', where researchers position themselves as the knower of classic positivist empiricism. STS scholars and Actor-Network theorists such as Bruno Latour, Michel Callon, John Law, Annemarie Mol have amply shown how scientific accounts emerge through interactions, negotiations, struggles between scientists and their nonhuman objects of study. The knowledge that emerges from such struggles is neither the pure projection of a disembodied consciousness onto a passive world, nor the pure reflection of a human-independent world on the passive mirror of human consciousness (Powell 2013).

The need for reflexivity is widely recognised, inviting researchers to acknowledge that they are part of the production of data and of its analysis (Popa *et al.* 2015). However, it is rarely acknowledged that data analysis is a process in which the body-mind of the researcher engages and interferes with the data (Alaimo 2008). Thus, rare are reports such as the one by Hultman and Lenz Taguchi (2010) who present the analysis of visual data as a relational encounter between a researcher and data. Similarly, Lenz Taguchi (2012) proposes an embodied engagement with the materiality of research data. In this she encourages researchers to go beyond the idea of reflexivity and interpretation as mental activities, where the mind of the researcher is understood as separate from her own body and from the data. Instead of asking 'what does this text mean?', she asks 'what does it produce?' on its own, but also when 'plugged into' other texts (Lenz Taguchi 2012, p. 268). The researcher thus allows the data to affect her, is attentive to pressure, tension, excitement that emerge when she engages with data. In this process of becoming-with the data, the data are understood as a co-constitutive force working with and upon the researcher. This challenges sociologists to do sociology differently, by not just analysing data 'from a distance' but by acknowledging how they engage, imagine, sense, perform.

The challenge of acknowledging what it is that researchers really do when they analyse data are directly linked to the challenge of appropriately (re)presenting research results. Here sociological imaginations face several challenges. The first is common with other perspectives in rural sociology, i.e. the need to find ways to report results beyond the norms of classic positivist empiricism. The practice is still dominant in many farm-level studies, possibly because disciplinary or institutional pressures entice researchers to present their results as if they are 'objective knowledge', framed in such a way as to be useful for policy makers (see Lowe 2010). This ideal of objectivity, asks of us researchers to erase 'from all accounts of our research, our subjectivities and our bodies along with the messy trial-and-error adequation of actual scientific practice' (Powell 2013, p. 206).

The second is how to appropriately re-present relations, including feelings, emotions, affects, materialities (Hayes-Conroy 2010; Maclaren 2019). This may be explored by using other media than words, e.g., in the form of a photo essay such as Swanton (2012); or by writing in ways that 'decenter human authority' (Dowling *et al.* 2017, p. 827). This includes giving a voice to nonhumans, and conveying the thickness and dense multiplicity of intra-activities that any event constitutes (Lenz Taguchi 2012; Jackson and Mazzei 2012). Highlighting diversity and multiplicity implies going beyond giving one answer in our writings, offering multiple perspectives, diverse possibilities, understanding that none is primary.

It also implies openly acknowledging in our writings that the aim is not to uncover the essence or truth of the data, as that there are always multiple interpretations possible. This is linked to reconceptualising the role of sociologists, which should not be reduced to 'the position of "interpreters" between concerned publics and natural scientists' (Whatmore 2006, p. 606). The purpose of research is then not to bring forth *the* story as may be intended by the interviewee, but *a* story that helps bring about a different viewpoint (Lenz Taguchi 2012; Byrne 2017). As such, our choice of the stories we convey is a political act, and we need to explore what we bring forth, and what

difference it makes, i.e. whether we emphasise possibilities or inevitabilities, what openings we contribute to making visible, which worlds we make thinkable.

Process-relational sociology thus builds on STS and post-structuralism in highlighting that knowledge contributes to making the world in profound ways (Law 2004; Latour 2005). Indeed, our choice of methods to collect and analyse data, how we choose to write, how we choose to present and communicate our results, how we choose to engage with participants or in public meetings, are all performative elements, through which we engage, participate, intervene in the world (see e.g., Campbell and Rosin 2011; Daniel 2011; Law and Singleton 2014; Popa *et al*. 2015). Our choices affect, they make differences, they enact realities, they can help bring into being what they also discover (Law and Urry 2004; Lenz Taguchi 2012). Process-relational sociology can thus contribute to escaping from dominant habits of mind, from taken-for-granted normalised thinking, and contribute to transformation and change.

Conclusion

Taking a process-relational perspective reconceptualises the farmer and the farm. It allows to go past the farmer/farm, human/nature, active/passive binaries to conceptualise farming as a relational process, as a material-discursive intra-activity, shaped by a host of human and nonhuman performative agents. By injecting insights from post-humanist and new materialist understandings, it invites us to move, ontologically, from identifying bodies as separate entities with distinct borders towards thinking in terms of processes of interdependence, of entanglement of ideas and materialities, of 'intra-action', i.e. the mutual constitution of all objects and agencies in an undivided field of existence (Barad 2007; Lenz Taguchi 2012). This reconceptualisation enables new understandings by moving from analysing how things 'are' to how they are becoming, how ever-present possibilities for different futures are enacted or current arrangements stabilised.

It proposes an anti-essentialist and anti-determinist perspective, so that the world shifts from being static, rigid, structured, controllable, predictable, to one that is dynamic, changing, unpredictable, emerging. It contributes to rethinking our world beyond clear causalities towards open processes, conceptualising farming as a dynamic socio-material formation engaged in an undetermined becoming. By highlighting the multiplicity of dynamic processes and the resulting messiness, a process-relational perspective can contribute to a more realistic representation of the world, marked by tumultuous processes of confusion, disjoint, disorganisation, rupture, failed reorganisation, anomie. The perspective highlights unpredictability. Indeed, it conceptualises the 'structures' of the social as never as stable and solid as they appear to us or as we wish them to be (Dépelteau 2018b). Rather, each moment offers an opportunity for change, for doing things differently. Many configurations do not just enable or constrain, they also provide undetermined opportunities for action, for innovative practices (Powell 2013).

Thus, rather than highlighting the many constraints faced by farmers, be it from economic rationality, power constellations, social norms, regulations, technological

change, research could highlight possibilities for other doings, emphasise diversity in farming practices, the creativity of farming emerging from the agency of humans and nonhumans involved in farming. Indeed, process-relational sociology is not just a theoretical project, it is also a political project to make other worlds possible (see Gibson-Graham 2006), to spur different imaginations, to enable a shift towards actively envisioning and contributing to alternative world constructions.

As such, a process-relational perspective is also an invitation to make visible the active role of researchers in collecting and interpreting data, and to increase the awareness of the performativity of our research practices. It is an invitation to researchers to explore new methodological practices, that might be better able to capture and to communicate the openings, the possibilities amidst the complexity and unprecedented connectivity of our modern world (Pyyhtinen 2017). It is an invitation to show the world in its 'unfinished making' (Phyyhtinen 2017, p. 306), to make visible the manifold openings for change, to highlight that it could always be otherwise.

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Notes

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1 I make no claim that a processual-relational perspective is the only way to address some of the limitations of conventional conceptualisations. I only argue that it does offer interesting conceptual openings. I see the processual-relational perspective as part of a larger ecosystem of theoretical perspectives in rural sociology, each of which has strengths at revealing important aspects, while obscuring others.

2 The purpose here is not to review differences between schools of thought within relational sociology (see e.g., Crossley 2010; Donati 2010; Donati and Archer 2015; Powell and Dépelteau 2013; Dépelteau 2018a; Papilloud 2018; Guy 2019), but to explore how this perspective allows to reconceptualise farming.

3 The extent to which we consciously control our thoughts and actions is also being debated in the neurosciences, given the large amount of non-conscious information processing going on in the brain, see e.g., Gazzaniga (2012).

4 The focus here is on the bodily sensations, emotions and effects of the farmer, not of the researcher, as would be the case when taking an auto-ethnographic approach, which integrates the personal experiences of the researcher.

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