

The Perceptions of the Human-Nature Relationship among Organic Farmers in Minnesota¹

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Keywords: Organic farming, resilience, human-nature relationships

Abstract

Evidence suggests that organic farmers have clear views in how they speak about and practice their relationships with nature. We begin exploring this relationship through discussions with organic farmers about their reflections and practices of their individual human-nature relationships through three farmer focus groups in the Midwestern region of the US. In this preliminary paper, we identify the specific relationships between ethical frameworks and human-nature relationships, which we then correlate to farm resiliency practices. We conclude by suggesting what consequences this might have for individual farms as well as how to proceed with this study.

Introduction

Farmers interpret and construct their relationships with nature based upon the various values that they attach to nature (Glaeser, 2001). It is these relationships between humans and nature in which we explore among organic farmers in Minnesota. In an age of many disturbances, some of which are unprecedented in human history—i.e. climate change, resource shortage, and global financial crisis—organic farming, as a key proponent of the sustainability movement (Pugliese, 2001; Rigby & Caceres, 2001; Bellon & Lamine, 2009), needs to adjust to such change, also affecting smaller scales such as at the farm level, through cultivating resilience. Farmer practices—informed from a variety of influences including their ethical viewpoints—can influence the resilience of their individual farms by enhancing the ability of an organic farm to adapt to change without jeopardizing the organic system in play. In this article we therefore examine the importance of the various environmental ethical backgrounds of farmers, and how these backgrounds influence the practices and the reflections of organic farmers.

In this paper we posit that farmer's ethical views on nature influence their relationship with nature, in which this understanding ultimately affects the resilience of their individual farms. Organic agriculture can be expressed through understandings and practices in which the natural system (ecosystem) and the social system are related to each other (Brand & Jax, 2007). In order to recognize how these understandings between farmer and nature are expressed and what practices are taking place we identify organic farmers' ethical views. In understand farmers' human-nature relations resulting from their ethical views, we use their reflections and refer to their concrete practices. According to the preliminary framework we use in this paper, we accept normative values as part of what create these reflections and practices. We categorize their relationships by using practice theory²—focusing on daily routines and the reproduction of actions and reflections—which enable us to obtain empirical information on the relationship of

¹ This work is in its preliminary stages, we hope that discussion will generate ideas and suggestions for analysis of a complete data set in a PhD project

² Practice Theory, originally presented by Pierre Bourdieu has been recently tackled and expanded by a whole slough of interested parties, see additionally: (Giddens, 1987; Bourdieu, 1990) and (Reckwitz, 2002)

specific farmers and nature through their practices, i.e. doings and sayings. Based upon these practices and reflections, we begin to examine how farmers' human-nature relationships influence the resilience of their farms.

Due in part to sets of regulations and standards, organic farmers practice and reflect upon a set of human-nature relationships that are distinct from those of non-organic farmers (Beus & Dunlap, 1990). These differences are supported by diverging understandings of how humans should interact with nature in agricultural systems, and are thus founded upon different ethical frameworks (Alrøe & Kristensen, 2000). Farmers draw upon these human-nature relationships to form a holistic view of their agricultural practices and reflections (Beus & Dunlap, 1990; Abaidoo & Dickinson, 2002; De Wit & Verhoog, 2007). Current conventional agricultural ethics support the objectification of nature—with increasing yield and profit with lower prioritization of ecosystem, animal, and even human welfare—and therefore, the separation and division of nature from society (Goodman, 1999). Since its beginnings, the organic farming movement has been defined by human-nature relationships which recognized humans' complex interactions with nature, and therefore respected linked human-nature dependencies, such as upon the soil and other ecological processes (Conford, 2001). This maintenance / improvement of soil remains a core tenet of organic agriculture today, because this is believed to sustain both plants and animals (including humans) (Kaltoft, 2001).

The consideration of nature in organic agriculture is influenced, to varying degrees, by the ethical and moral viewpoints of farmers, and may therefore differentiate organic agriculture from other similar systems (Kaltoft, 2001): the understanding of "...ecology changes our values by changing our concepts of the world and of ourselves in relation to the world" (Callicott, 1982, p. 174). The organic movement adds to the agricultural system an ethical stance that moves away from an individualistic ethic, and focuses instead upon family, community and global issues; including other forms of life such as animals, plants and ecosystems as a whole (Alrøe & Kristensen, 2003). Such an ethical stance illustrates the important influence ethics have on farmers and their relationship to nature, guiding their practices, and to the development of organic farming (Mansfield, 2004). It is, therefore, important to understand these specific relationships, of farmers' ethical viewpoints and how they affect their relationships towards nature through practices, in detail.

Even though unified under one name and assuming similar standards, organic farmers' views of human-nature relationships do vary and are often conflicting, as shown by the debate over organic certification for aquatic animals (Mansfield, 2004). Many farmers - as well as organizations, certifiers (e.g. Bio Austria, IFOAM, Demeter, Oregon Tilth, etc...), and consumers - develop their own definitions of organic which include ethics of reduced human-nature division (Greger, 2007). Thus, organic farmers' views of nature cannot be summarized simply and coherently in a single ethical framework. Furthermore, organic farmers' relations to nature frequently lead to a wide variety of often contradictory reflections and practices of human-nature relationships, which are composed of individual classification schemes (Kaltoft, 2001; Mansfield, 2004).

The various human-nature relationships, which are products of individual ethical frameworks, lead organic farmers to practice and reflect upon organic in diverse ways. The organic agricultural system therefore develops in a non-linear fashion (Goodman, 1999; Van Der Ploeg, 2000), which allows farmers the freedom to adapt to and change without jeopardizing the organic system at work and thereby maintain the resilience of individual farms (for specific resilience criteria see

section 3.2 and Table 2). In the remainder of this article we identify the specific ethical views individual organic farmers hold about nature, which helps explain the farmers' human-nature relationships in the form of doings and sayings. Furthermore, we begin to examine how this interplay generally influences the overall resilience of their farms.

Objectives and methodology

Our main objective is to learn how organic farmers reflect upon and practice their relationships to nature, and how this may affect the resilience of farm systems. We divide this objective into three working steps:

- The identification of the ethical foundations of farmers' human-nature relationships
- The identification and interpretation of empirical cases of farmers' doings and sayings on nature and the ethical underpinnings of these doings and sayings.
- Preliminary interpretation of farmer doings and sayings related to resilience

Our working steps are as follows: Based upon a literature review, we first (in section 3) give an overview of relevant environmental ethical concepts (Table 1) and systemic resilience that serve as our theoretical background. In section 4 we present on our empirical research showing how organic farmers reflect upon and practice their human-nature relationships. We examine six farmers (Table 3) from farmer focus groups conducted in Minnesota, in the Midwest region of the US, which were purposively chosen in order to convey a spectrum of environmental ethics. The farmers' doings and sayings were inductively analyzed using grounded theory. Drawing upon practice theory (Schatzki, 2010), the individual farmers' doings and sayings were used to categorize their relationships with nature according to existing categories of environmental ethics (Table 4). In section 5 we begin to discuss the effects of the identified farmer-nature relationships upon the systemic resilience of the farm (Table 5), and finally in section 6 we conclude with findings and suggestions for deepening the initial findings.

Identification of theoretical foundations

Environmental ethical concepts

In this section we provide a brief overview of four widely acknowledged Western environmental ethical concepts that are relevant for interpreting the relationships of farmers to nature (Table 1). While there is a broader debate over the diverse interpretations of these and other ethical concepts, in the context of this analysis these four concepts offer an important variety to interpret the main farmer-nature relationships and their effects upon the resilience of organic farms (Folke, 2006). In the following chapters we will use these concepts to categorize farmers' ethics.

Table 1. Four common human-nature relationships and how they may be practiced in agriculture

View/s of Human-Nature Relationship	
Anthropocentric	Humans take hierarchical precedence over nature; The value of nature is mainly instrumental (Nash, 1989; Elmore, 1996)
Theocentric	Nature and all that lies within is God's creation, and humans are to act as stewards of those creations (Schaefer, 2009; Gudorf, 2012).
Biocentric	Non-human value of nature is recognized in plants and animals (Nash, 1989; Kirchmann & Thorvaldsson, 2000)
Eco-holism	A non-anthropocentric belief, which blends ecocentrism and holism in which non-human value of nature is recognized as holistic systems i.e. ecosystems and the benefits soils and minerals have in such systems, as well as the intrinsic value of nature (Nash, 1989; Sterba, 2003; Hay, 2010)
Practices of Human-Nature Relationship (In Farming)	
Anthropocentric	Intensive systems, high-yielding crops and livestock for as little investment (time and money) as possible
Theocentric	Farmers need to manage God's creation, to use but not abuse
Biocentric	Focuses on closing the cycle by producing own inputs and using outputs; high focus on the soil
Eco-holism	Closed-cycle focus; recognizing the importance of soils and diversity and integrating that in practices;, using nature as a model to grow polyculture crops and healthy animals

Resilience

In this section we seek to correlate the concept of resilience with specific reflections and practices of organic farmers that are based upon their human-nature relationships and rooted in their ethical frameworks. Thus, we will show how particular human-nature relationships could strengthen the resilience of an organic farm.

Because of the joint history of resilience and ecological systems research, resilience has been limitedly researched in relation to farming systems, not to mention organic systems (Milestad & Darnhofer, 2003), with almost no empirical examples (exception: Milestad & Hadatsch, 2003), and not in connection to farmers' ethical viewpoints. With this research we intend to add to the few examples of theoretical organic farm resilience linked with empirical examples.

Resilience is the capacity of a system to adapt to and absorb disturbances while essentially retaining the same function, structure and identity (C. Holling, 1973, 1996; Walker et al., 2002; Milestad & Darnhofer, 2003; Walker et al., 2004; Folke, 2006). Finding resilience in complex systems³ such as organic agriculture can ensure a future more stable system by remaining flexible for possible uncertainties that are difficult to forecast. Three important features are considered to maintain stability (including flexibility) of a system during change (Carpenter et al., 2001; Walker, et al., 2002; Berkes et al., 2003; Milestad & Darnhofer, 2003; Folke, 2006):

- The ability to absorb change—including the amount of change a system can handle to maintain stability
- The capability of a system to self-organize and network—in which the ability to control such networking determines the fate of the system

³ Systems including non-linear dynamics, thresholds, uncertainty, gradual and rapid change and their exchange, as well as systems that cross temporal and spatial scales (Folke, 2006).

- Capacity building for learning and adaptation—allowing for diverse inputs of knowledge supported by feedback from their use

Table 2 takes these three important features in maintaining stability within a system and gives examples of each in context of farm resilience.

Table 2. Three features of resiliency and examples on farm level

Features of Resiliency		
The ability to absorb change (Carpenter, et al., 2001)	The capability of a system to self-organize and network (Milestad & Darnhofer, 2003)	Capacity building for learning and adaptation (Berkes, et al., 2003; Milestad & Darnhofer, 2003)
Features of Farm Resiliency		
-Diversity: crops, animals, markets, customers (Berkes, et al., 2003) -How disturbance was handled in the past (C. S. Holling, 2001) -Innovation (here, not necessarily technological)	-Balance of external (institutional) and internal (farmer exchange) knowledge (Morgan & Murdoch, 2000) -Marketing networks -Independence from external inputs (Milestad & Darnhofer, 2003)	-Learning capacity -Feedback capacity

In this preliminary study, we argue that ethics must be considered an underlying foundation for these features of resilience. Farmers’ varying environmental ethics influence their farm practices, which in turn affect the resilience of their farms. Direct connections between farm practices and the above three resilience criteria are shown in Table 5.

Identification of farmer doings and sayings and their ethical underpinnings

In this chapter we describe the relationship of the six farmers to nature. All the interviewed farmers are involved with organic agriculture though not all are certified organic. One farmer mixes organic and conventional practices. Similarities between the farmers’ practices and reflections (see Table 3), rooted in their human-nature relationships, and the four common western ethical views (see Table 4) introduced in section 3 are examined.

Table 4 is examined using practice theory as a theoretical framework to understand the ethical orientations of these diverse farmers through their doings (practices) and sayings (reflections). Practice theory incorporates practical knowledge—an expression of every-day common actions, happenings, doings and sayings, which are reproduced into habitual and embodied routines, depicting human life (Warde, 2005; Schatzki, 2010). By examining our farmer focus groups through Schatzki’s (2010) notion of doings and sayings, we can see what physical practices and materialities align with farmers’ reflections of their ethical frameworks.

Table 3. Farmer and farm characteristics from empirical samples

Farmer Characteristics					Farm Characteristics				
Farmer	Age	Gender	Years Farming	Relevant Beliefs expressed	Farm size	Type of farm	Certified Organic	Specific practices	Markets
A	59	M	39 conventional	Likes to 'mix old (technologies) with the new' e.g. green manures and highboy sprayers	600 acres	Row crops, Wine	No, uses sustainable practices	GMOs; Heavy machinery used, participates in gov. programs which pay to leave land fallow	Conventional
B	51	M	30 overall, previously conventional 22 certified organic	His Christian religion affects his practices, concerned about health,	250 acres	Row/Cash crops	Yes	Family farm; Just meets organic standards, does not participate in gov. soil programs	Traditional outlet
C	60	M	35 years organic; 10 years certified organic	Very conscious about soils; and focused on education of the public	480 acres	Converted family dairy farm to free-range beef herd	Yes	4 grass plus creeping alfalfa grazing mix; rotational grazing; 50 head of cattle	Cooperative stores; wholesale; restaurants
D	49	F	8 certified organic	Conscious about environment, sustainability as a result of soils; and on the local farm board so that organic is represented	75 acres	Turkeys Maple syrup Vegetables	Yes	Integration of diversity, and small scaling, including soil conservation	Schools; farmers markets; local stores
E	55	F	31 organic 22 certified organic	Previously an environmental educator, integrates her ecosystems knowledge into farming	410 acres	Dairy farm	Yes	Closed system, raising own stock and feed for 65 milk cows, environmental buffers; smaller field sizes	Organic Valley cooperative; farmers' market
F	54	F	38 organic	Nature as a religion; keen on converting more land	100 acres	Vegetables Cash crops	Yes	Working on educating young farmers, incubator projects	Cooperative markets, road-side stand

Table 4. Organic farmers' reflections and practices connected to ethical views

Farmer	Human – Nature – Relation		Related Ethical concepts
	Supporting quote or 'sayings'*	Supporting practices or 'doings'	
A	"I use this technology, these GMOs, I use round up... I ah use modern technology, I am very conservative to my approach to farming as far as ah when adopting technology, I weigh the risks of bio technology versus what is it going to do for me, ultimately am I gonna gain by this? and as fuel and energy prices rise, how is this gonna change how we do things now?... I've seen this in herbicides and you know, pesticides, it gets overused overused, and nature always wins, I mean it usually wins, it beats you..." 02:11:49-1**	Applies modern technological solutions to farming often, uses GMOs, uses some sustainable practices such as diversity of crops, for mainly what is seen as publicity and marketing, i.e. holding a vineyard; focused on profit	Anthropocentric
B	"well God gave us this earth to subdue it, and by the sweat of our brow we are gonna make a living off of it....my religion is very very central to my functioning on a daily basis, I believe that both God the father the son and the holy spirit are truth... TRUTH is what I base my farming on, that's sustainability, if its not sustainable, it's not in God's truth." 0:30:46-3**	Believes that God gave him the land he is working on with a role of steward, but also the expectation to work it and feed others, he partakes in minimal 'organic' practices, not going above and beyond normal organic regulations to care for environment or animals	Theocentric, Anthropocentric
C	"...we're certified organic, I have yet to find out how long this will continue without adding fertilizer ...I'm more focused on being satisfied with where we're at and letting/working with mother nature and living with what we receive from that instead of trying to climb the next mountain and get the highest yield or whatever and I think that it is very doable." 0:54:47-1**	Rotational grazing, observes when the best time is for grass to be grazed by his cattle, focusing on limiting herd size; environmental ideas are very centered around his farming system	Biocentric
D	"I think this whole idea of of organic and sustainability and community and family, its really about doing things right... Its really about doing right by people and by the land and by NATURE... you have to find a way to work WITH nature to work with the natural systems and and that means as far as" human ecology and animal ecology..." 1:05:17-2**	Using very diverse markets, diverse products and staying very connected to the organic community	Biocentric, Eco-holistic
E	"...once you understand the interdependence and the relationships that go on between the human resources and the natural resource base that's at the foundation of our food system, really all those other pieces of organic aren't so critical to me anymore because you're talking about your food and your water and you're talking about social health and animal well being and ALL of those things that are at the core of organic..." 2:07:39-2**	Has a naturalist background and applied this when taking over her father-in-law's farm looking at how natural systems work and how to farm with them; she also started many community efforts such as a co-op and farmers' market	Eco-holistic
F	"I am totally behind organic, but what I really care about is environment... I had a strong relationship with the wild crops that grew on any land that I was near as a child... that I think I really developed nature as a religion for myself as a young child." 1:27:45-2**	Changing crop land into perennial pasture, bringing it 'back to nature', sharing expertise and environmental values and work ethic with others interested	Eco-holistic

*Selected representative reference quote

**Three focus groups were conducted, recorded and transcribed. The time noted here corresponds to the point in time in which the quote was taken from its various focus group. Focus group 1, conducted on February 11th, 2011 in Minnesota. Focus group 2, conducted on February 28th, 2011 in Minnesota. Focus group 3, conducted on March 2nd, 2011 in Minnesota.

Interpretation of farmer doings and sayings related to resilience

Table 4 allows comparison of different farmers and farm characteristics of the six cases, which used with a representative 'saying' and a summary of 'doings' from each farmer, was able to help identify which ethical concept each farmer correlates to. This information and identification aids in determining the connection of the ethical views of farmers and the resiliency of their farms.

Literature concerning resilience and farming systems are predominantly preoccupied with deepening resilience's theoretical concepts, rather than it's practical application and the analysis

of empirical data (one exception for organic farming systems is Milestad & Hadatsch, 2003). In this initial study, however, we show an empirical connection to resilience theory. To understand what our farmers' doings and sayings tell us about resilience, we compare them to the criteria important in maintaining the core stability of a system during change (see section 3.2, Table 2) (Berkes, et al., 2003; Milestad & Darnhofer, 2003). These three features of resilience illustrate how individual farming systems, due to farmers' specific reflections and practices rooted in their ethical views, differ in their potential for resilience.

In Table 5 four farmers from our preliminary empirical study have been chosen to represent the four common western ethical viewpoints described in section 3.1. We compare these ethical concepts with concrete examples of practices to the resiliency features of Table 2, in which the three features of resiliency are broken down into criteria that are applicable to individual farms. We use the comparison of these practices and the criteria of Table 2 to illustrate the diversity of resilience among organic farmers due to environmental ethics, which determines the type of ethical viewpoint that leads to the most resilient system.

Table 5. Connecting farmers' environmental ethics to farm resilience through practices and reflections

	Features of Resilience		
Example from Farmers	The ability to absorb change	The capability of a system to self-organize and network	Capacity building for learning and adaptation
Anthropocentric (Farmer A)	Reduced diversity in crops and markets, no animals; uses high-tech machinery—not linked to innovation systems	Limited marketing network; Dependent on inputs for GMO crops	N/A
Theocentric (Farmer B)	Little diversity, only row-crops; not involved in new innovations	Limited marketing network; less external inputs	Not involved in many external groups for learning and feedback
Biocentric (Farmer C)	Diversity is high with a rotating grazing herd of beef cattle, and many acres of grass/legume mixes and also feed crops; Disturbance from dairy farm to beef herd handled well; innovation high	Involved in high farmer exchange of knowledge; multiple marketing networks including local; independence from external inputs due to rotation and organic nature	Heavily involved in external farmer, environmental and consumer groups
Eco-holistic (Farmer F)	A diversity crops as well as markets; Housing development pushed them from their family farm, and an oil pipeline threatened their second—disturbance was handled with remarkable outcomes; innovation is high with farmer incubator programs, working with cooperatives on the farm and buying more land to regenerate past ecological systems	High farmer and institutional exchange; many marketing networks including local; independent from external inputs due to crop rotation	Heavily involved in external farmer, environmental and consumer groups; leading a consulting business for organic farmers

*It is important to note that we are not making general statements about different types of farming, instead these examples represent specific cases of a small number of farms chosen from our focus groups.

In connecting farmers' ethical backgrounds to resilience, this table shows a spectrum of resilience within organic farming, in which the more anthropocentric farm holds significantly less resilience towards possible disturbances than the eco-holistic farm, due to the criteria of Table 2. This raises the question of whether farmers with a more anthropocentric ethical orientation are in general, part of a less resilient system. Such a system would have a lower diversity of crops and markets, poor handling of disturbance, low use of innovation, relying heavily on information from few sources, little to no local marketing networks, dependence on farm inputs, reduced learning

capacity, and limited chances to receive feedback (see Table 2). If this is the case, their farms may be at risk. In contrast our data showed that those farmers with a more eco-holistic ethical orientation, were part of a highly resilient system—i.e. farms that can handle change or risk (Milestad & Darnhofer, 2003). The next steps for this research will be to deepen our theoretical and empirical understanding of the connection between ethics and resilience through further case study research into farmer ethics, human-nature relationships, and practices and reflections.

Conclusion

In this paper we first examined various organic farmers' human-nature relationships – shown by their reflections and practices - and correlated these with different categories of environmental ethics. This was followed by a preliminary investigation of how farmers' environmental ethical concepts are connected to the resilience of their individual farms. This was achieved by comparing farmers' ethical backgrounds and practices to the resilience criteria in Table 2. The initial results showed that organic farms tended to be less resilient in times of change or disturbance when their ethical backgrounds are anthropocentric, and meet more of the resilience criteria as they approach an eco-holistic ethical stance.

This study recognizes the importance of farmers' environmental ethical backgrounds in forming farmers' doings and sayings, through which farm resilience is enhanced or lessened. However this study is a preliminary exploration of these relationships and their importance for the resilience of farms and possibly the organic movement as a whole. This study found initial evidence of the impact of human-nature relationships upon farm resilience, and we therefore look to deepen and strengthen our understanding of this relationship as this research progresses.

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