

Observing the observers – uncovering the role of values in research assessments of organic food systems

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ABSTRACT: Assessing the overall effects of organic food systems is important, but also a challenge because organic food systems cannot be fully assessed from one single research perspective. The aim of the article is to uncover the role of values in assessments of organic food systems as a basis for discussing the implications of combining multiple perspectives in overall sustainability assessments of the food system. We explore how values are embedded in five research perspectives assessing organic food systems, 1) Food Science, 2) Discourse Analysis, 3) Phenomenology, 4) Neoclassical Welfare Economics and 5) Actor-Network Theory. The article shows that value has various meanings in different scientific perspectives, and that a strategy for including and balancing different forms of knowledge in overall assessments of the effects of food systems is needed. Based on the analysis, we propose five recommendations: 1) Elucidate values as a necessary foundation for research assessment across perspectives. 2) The choice of perspective is decisive and should be openly discussed 3) Formulate common goals which can be translated into the different perspectives and 4) Consider assessment of food system sustainability a learning process and design it as such.

INTRODUCTION

Assessments of the overall effects are important for the continuous development of organic food systems, and such assessments influence how consumers, producers, and policymakers view and in turn act in relation to the food systems. Organic food systems are complex because they are based on the organic principles of health, ecology, fairness and care which are a diverse and sometimes incommensurable set of ethical norms (IFOAM 2009). Many different research perspectives are describing specific aspects of organic food systems, but due to their complexity, organic food systems cannot be fully assessed from one perspective and the organic principles do not detail how the food system should be assessed

Facts and values become entangled during the production of knowledge (Putnam 2002), and assessments are fundamentally founded on values (Bossel 1999: 25, Binder et al. 2010). Therefore, we explore how values are embedded within the different research assessments of organic food systems because we see underlying values as a fundamental distinction between different assessments. The aim of the article is to uncover the role of values in assessments of organic food systems as a basis for discussing the implications of combining multiple perspectives in overall sustainability assessments of the food system.

We base this article on a perspectivist understanding of scientific knowledge production (Giere 2006, Alrøe and Noe 2011). A perspective entails observing from a certain position and rejection of a privileged or absolute observation point (Bourdieu 2004). In this understanding, phenomena are coupled with the apparatus applied in the observation of the phenomenon. Knowledge production depends on humanly produced artifacts, both

material and abstract, such as laboratory equipment, models, methods and concepts. These all incorporate a built-in perspective on the world and consequently, the scientific practice embeds the perspective into the knowledge produced (Giere 2006). A perspective only describes a particular aspect of the world, and observations and scientific claims only apply to this particular aspect. Perspectives can also be considered a mental model, a cognitive structure upon which reasoning, decision making, and behavior is based (Lynam and Brown 2012).

In the following, we will first detail our methodology, second explore how different assessments of organic food systems differ and third discuss: Which implications the differences in values of multiple perspectives have for the ambitions to conduct and combine research assessments of organic food systems using multicriteria assessments as an example?

METHODS

Our methodology is to “observe the observers”, to describe in neutral terms and without commenting how five different perspectives assess organic food systems. The methodology is chosen because we do not intend to project our understanding of value on each perspective, but rather intend to understand how value is understood and practiced in different contexts. We focus on five different perspectives 1) Food Science, 2) Discourse Analysis, 3) Phenomenology, 4) Neoclassical Welfare Economics and 5) Actor-Network Theory (ANT).

To guide our inquiry and have a comparable basis for discussions, we observe how each perspective relates to three central aspects: 1) How is value fundamentally understood? Hereby we address how the perspective fundamentally perceives the world. We follow Pirsig (1999) and distinguish between three fundamentally different understandings of value, value found either with the objects under study, within subjects studying the objects, or in the relation between subject and object. 2) How is value measured? Hereby we address what the perspectives use as the basis of their assessments, or what concepts etc. are used as scales to assess the food system. 3) How is organic understood? Hereby we address how the subject matter is constructed in each perspective and what is included in the construction.

The three questions are addressed separately for each perspective by looking into the core concepts and researchers’ reflections of the perspectives. For every perspective, we have selected two cases as illustrations and identifications of the core concepts and rationale of each perspective. There might be other assessments of organic farming, but the aim is not to provide a comprehensive overview of the field, but to explore which type of insights the different perspectives provide.

RESULTS

In the following, we present the five perspectives; the result of these presentations are condensed and summarized in table 1.

Food Science

Food Science is grounded in a logic-empirical, scientific tradition and is an umbrella for research within fields such as biology, chemistry, microbiology, food engineering, conducting quantitative based science studies with food as the object (Potter and Hotchkiss 1998). Scientists within the field are interested in the food products in terms of the physical, the chemical and the microbiological properties, as well as the processes which the food undergoes during production and processing. Food Science can, therefore, be seen as a perspective where value is found within the objects, because the objects and object properties are the only aspects considered. Two recent publications illustrate this approach:

- Barrett et al. (2007) assesses the “*Qualitative and Nutritional Differences in Processing Tomatoes Grown under Commercial Organic and Conventional Production Systems*”. Samples of tomatoes produced in different production systems are analyzed for water content, color, acidity and so forth. It is concluded that there is a large variation between the producers, but that the organic products have a higher quality in relation to the selected indicators.
- Rosen (2010) reviews the research behind the claim that organic products have a higher content of nutrients than conventionally produced products. According to this review, it is not valid to claim that organic products have a higher content of nutrients, because it is only backed by studies which are not peer reviewed or statistically significant.

Within Food Science, value is measured as food quality, meaning a higher or lower content of specific substances which have an impact on the human organism. Value is thus measured using quantitative, science-based methods. Human health is important for the research in the field, and human health is seen as something which can be improved by altering the physical properties of the food products (food equals nutrition). Actions are then assessed based on whether or not they modify the products in a desired way (increase the content of beneficial substances and reduce the harmful ones, enhance the longevity of the products or secure the products from being contaminated by pathogens).

Food Science thus assesses the food system by examining the food items and thereby reducing the production process to the food in itself. In the first study, focus is on the concept of quality understood as the sensory quality and factors related to the processing of tomatoes whereas the second study focuses on quality understood as content of nutrients. The Food Science perspective provides a description of the product in terms of certain indicators. Interestingly neither one of the two studies discusses the quality indicators in any great detail; it is implicit that these are important indicators of quality.

Organic is discussed in terms of whether or not the organic production process has an influence on the products. Assessment of the organic products is done by comparing these with conventionally produced products. It is only relevant to know that a product has a specific amount of substance if it is compared to other products, or if you know the effect it has on the human organism; otherwise, it is just an insignificant number - indicators become meaningful only in a comparison. Consequently, a huge production of

statistically significant and peer reviewed knowledge is required before conclusions can be drawn.

Discourse Analysis

Rooted in a post-structural tradition, Discourse Analysis is focused on the symbolic representation of food and how linguistic structures influence how meaning is constructed for the subjects enrolled in the system. In this perspective, discourses are thus important in understanding why we act the way we do and they are closely related to questions of power, governance, and how understandings of the world is constructed, exposing the structures is an important undertaking in this perspective (Fairclough 1992, Hajer 1995). Since Discourse Analysis entirely focuses on the social structures, it can be seen as a perspective where value is found with the subjects. Discourse Analysis has been applied to the contested concept of “organic”, what constitutes organic food and how the understanding is produced, as illustrated by the following selected two studies:

- Campbell & Liepins (2001) analyze the evolution of organic standards in New Zealand as a discursive field using qualitative stakeholder interviews and incorporating social movements, consumers, food scares and regulatory politics, in the analysis. It is concluded that initially local organic pioneers, organizational links to organic agriculture in Europe were influential in initiating a desire for standards, but that the formulation of standards was dominated by corporate exporters and producer associations. This has produced two ways of performing organic farming, one which is “certified” and export oriented and another which is “trust-based” and focused at the local market.
- Larsen (2006) analyze the values ascribed to organic food in Denmark by looking at the discourses of organic food in the media. It is concluded that organic is a floating signifier, a concept to which different meanings are ascribed. The meaning ascribed to organic varies with time, in the 1980s the organic discourse was associated with “environmentally friendly” production and “alternative lifestyle”, whereas from the middle of the 1990s these discourses have gradually been supplemented or replaced by organic as “animal welfare”, “health” and “gastronomy”. The discourses not only become arguments for justification of behavior, but also as the underlying basis for assessing the standards for organic farming.

Within Discourse Analysis, value is measured using qualitative social science methods like analysis of texts, policy documents and interviews. The objective is to understand who or what governs the food system, how a specific understanding of organic has come to dominate, and therefore, the analysis is applied to a macro level.

In this perspective, the food system is assessed based on how the subjects perceive organic food and by the meaning they ascribe to the food, and no attention is given to the material products. The food system is thus assessed as discursive structures which govern how food is produced and consumed and not the food system in itself or the concrete effect it has on people. It is not enough to focus on the actors which directly handle the food in the system, it is also necessary to include the actors that influence the discourses governing food production and consumption (Campbell and Liepins 2001).

Discourse Analysis understands organic as a contested concept and provides a perspective on how to understand the evolution of organic as a concept, or as Campbell and Liepins (2002) put it: “...*applying Discourse Analysis to a specific region or country the explanatory outcomes are not entirely idiosyncratic. There are broad commonalities and explicit linkages – the global organic social movement, harmonizing export standards, global food scares and world market demand – between New Zealand and other regional spaces constructing organics*”. How we perceive organic and what we choose to eat is thus a complicated process where certain meanings become associated with organic - a process in which many actors on many different scales contribute.

Phenomenology

Phenomenology investigates how objects are represented in consciousness and how phenomena appear to subjects (Moran 2000). Research inspired by this tradition is generally focused on social interactions and situations which appear in the lifeworld of subjects; how meaning is ascribed to these situations and how identities are created and maintained in the social practice. Therefore, value within Phenomenology is found with the subjects. In relation to the assessment of the organic food systems, research is focused on the role of production and consumption in identity formation and how this identity is maintained through practices in the social system. Two selected studies illustrate this approach.

- Kaltoft (1999) analyzes the values about nature in organic farming practice and how the values form different farming practices. The methodology employed is qualitative interviews with 6 farmers, ranging from biodynamic producers over family farmers to rationalistic and academically trained large scale producers. It is concluded that the ideology and the organic institutionalization is forming the farming practice and that four incompatible paradigms of knowledge exist, which the farmers use to evaluate their practice. Organic farming is thus not a singular phenomenon, but it is a variety of different practices existing simultaneously.
- Hjelmar (2011) analyzes how consumers form a meaningful shopping practice concerning organic food and how attitudes towards organic food are formed by social interactions within the household using qualitative interviews focusing on motivation in the shopping practice. It is concluded that the decision to purchase organic produce is influenced by factors such as availability, price, perceived quality, family considerations, political/ethical concerns, and health concerns. The resulting shopping practice is, therefore, the outcome of a complex reflexive process balancing different and sometimes conflicting concerns.

Value is measured using qualitative social science methods like in-depth interviews on a micro scale to gain a holistic understanding of how the different elements of the food system interact with and appear to the subjects. In-depth interviews are used in order to gain an understanding of the individual concerns of the subjects and the lifeworlds, practices and rituals established in order to give meaning to their daily lives, or as (Halkier 1998) puts it: “*consumption is part of the social space in which people participate in creating and reproducing meanings about the occurrences of everyday life by attempting to knit together the experiences and roles they encounter daily*”. The assessment of organic is thus centered on the individuals and on the situations they take

part in to gain a holistic understanding of the motivations that drive the individuals in their daily lives and the complexities surrounding how they interact with the food system. In this perspective, the values function as a guiding principle for the individuals and in the strategic decisions they have to make regarding how to organize their daily lives.

The phenomenological analysis assesses the food system based on how it appears to a single individual and on the individual considerations, values and meanings which are used to form a meaningful practice. The formation of a practice is complicated and often the individuals must choose between many different and conflicting considerations. The food system cannot be assessed outside the context that it is a part of for the individuals.

Like in Discourse Analysis the perception of organic is at the heart of the analysis, but unlike the structural focus of Discourse Analysis, Phenomenology has a focus on the individuals and how they perceive organic. Organic is here understood as a “requisite” in the everyday practice and it is used to show how the individual perceives itself and its surroundings.

Neoclassical Welfare Economics

Neoclassical Welfare Economics provides a perspective on the exchange of goods and services on a market influenced by prices, output and income (Mäler and Vincent 2005). The marketplace is seen as the meeting place of producers (supplying the goods) and the consumers (buying the goods), no market without one or the other and thus Neoclassical Welfare Economics applies a relational perspective on values. Research conducted in this tradition focuses on understanding how the consumers act in the market for organic products, and what influences their behavior. Two selected studies illustrate the perspective:

- Wier et al. (2008) compare the character of demand in the mature organic markets of Denmark and Great Britain by conducting qualitative surveys of the stated preferences of the consumers and their registered purchasing behavior. The organic market is sustained by labeling schemes and mainly organized around large supermarket chains, which secure effectiveness, abundant supply and low price premiums. The article also concludes that there is a discrepancy in the stated and registered behavior (people state that public good attributes matters the most, but act according to private good attributes).
- Yiridoe et al. (2005) review the international literature in welfare economics on consumer perceptions and preferences. They conclude that consumer preference for organic food is based on the general perception that organic food has more desirable attributes than their conventionally grown alternatives. At the same time, studies point to inconsistencies regarding the understanding of what organic actually is. There is also a large variation across countries in the valuation of organic products. North American consumers prefer organic products due to better sensory qualities, whereas European consumers prefer organic products because of safety and environmental concerns.

Value is measured as preferences and they are within welfare economics translated into “willingness to pay” (WTP), a monetary indicator for how much a person is willing to pay to meet the preference, and thus also indicating the intensity of the preference.

Willingness to pay is generally measured by a multitude of different quantitative methods either directly (by registering purchasing behavior) or indirectly (through questionnaires and surveys). It is thus an aim within the perspective to produce conclusions that are valid to a larger population, and to understand which attributes are preferred by the consumers.

Within welfare economics, the market is the fundamental unit for assessing the food system. In the market, people display preferences towards certain food attributes over others and these preferences are the main focus of welfare economics. It is assumed that there is a range of different options to choose among that each person has limited resources and needs to prioritize among the different attributes (Mäler and Vincent 2005). The preferences are influenced by producers, consumers, state, media etc. so in that sense welfare economics provides a perspective that captures a whole array of factors influencing the food system.

In this perspective, organic is understood as an aggregate of different food attributes, which are valued by the consumers. This methodology only includes components of the food system which are valued by the market; other properties are not considered. Externalities from the organic production practice are included in the consumers' willingness to pay if information is supplied and if the complexities of the food production are comprehended by the consumers.

Actor-Network Theory

Actor-Network Theory (ANT) is a constructivist approach to social theory, often described as “material semiotic”, since both human and non-human actors can contribute to the formation of the network. Analysis within ANT can both include material actors (e.g. physical properties, technology or infrastructure) and social actors (e.g. for instance persons or organizations). In ANT, agency is neither located in the actors nor the objects, but in the relation between them and a central objective of ANT research is to explain how actors come together in a network and act as one (Latour 2005). In the assessment of organic farming, ANT has been applied to understand the agency of the actors, the networks that organic food production is linked with and though the ability to account for the material dimension, however, ANT is not always applied to elucidate this dimension. Two selected studies illustrate the approach:

- Roe (2006) explores how things become organic food. The author attempts to map the stages in the transformation from vital materiality to organic food and reflect on the actors that are mobilized in the transformation. The methods employed are observation of participants in a workshop, a focus group interview and analysis of a video diary with a consumer preparing and consuming potatoes. The findings contribute to a debate about how quality and consumption practices are embodied in an intimate connection between human and non-human actors.
- Smit et al. (2009) assess the opportunities and constraints for conversion to organic dairy farming in the Netherlands. The methods employed are analyzes of statistics, policies, documents and interviews. Barriers to conversion are found on different levels, at farm level actors must for instance form new relations with suppliers and buyers, face possible negative financial consequences and the market is still fairly small. At chain level actors do not see a great environmental

impact of a conversion and structural reforms may result in lower prices for conventional produce, and thus stronger competition.

ANT assesses the food system based on how actors are mobilized to be a part of the system and the relations which upholds the system. What constitutes and acts as an actor at one level might unfold a network at another and in that sense, ANT is a very descriptive account of the food system, but also one that integrate many different elements of the food system. The second study provides an illustrative example, since all actors along the commodity chain are conditioning the farmers' decision not to convert to an organic farming practice. Actors are all interlinked and if one farmer changes practice, his relations with all other actors in the network must be renegotiated, the network thus provides opportunities and constraints for certain actions.

A plethora of methods like interviews, observations and personal accounts are used in the assessment of the actors' relations. As illustrated by the studies, the actors at both micro and macro levels are integrated in the analysis. Within ANT, each actor negotiates its position with all the other actors in the network when enrolling, and value within an ANT analysis is, therefore, measured in terms of how an actor is related to other actors and influences their actions. This means that every organic food item attains values as a negotiation with the other actors in the organic food actor-network.

From the ANT perspective, organic is seen as an actor network to which meaning and agency is relationally negotiated with the other actors in the food system. The network can be composed of both social and material actors and the ANT perspective thus provides an understanding of how these actors influence how organic becomes organic and is performed by the different actors in the food system. Organic cannot be defined a priori, but is something that food becomes as a property of the network it is a part of.

DISCUSSION

In the article, we have observed five different research approaches to the assessment of the organic food systems. Table 1 summarizes the analysis of the main features and differences of the five perspectives. The following discussion is split into two sections, the first detailing how the assessments observe the organic food system and another discussing which implications the differences in values of multiple perspectives have for the ambitions to develop approaches to assess food system sustainability using multicriteria assessments as a specific example.

Observing the organic food system

As we have demonstrated, value is not a singular phenomenon, but can be understood as something found either with the subjects, the objects, or in the relations between subject and object. This is a fundamental difference in perception which is important since it directs the inquiry to different locations in the food system, e.g. looking at food or looking at actors. Value is understood similarly for several of the perspectives; still assessments of the organic food system are quite different. A consequence of the different understandings of value is different approaches to measure value. These approaches only observe the aspects which are valued and exclude all others. Food Science for instance include only the physical properties of the objects, but exclude the social practices associated with the objects. This is a general challenge with a perspective as it enables the

researcher to observe a specific part of the food system, but it also develops blind spots towards other parts. Therefore, the underlying value and measurement of the value in the assessments e has practical implications since the perspective implies a certain way to observe and analyze the food system. The differences between perspectives explain why it is difficult to combine insights from one perspective with another. Conclusions are fundamentally grounded in different understandings of value and cannot be transferred across perspectives without losing some of the meaning.

Organic is understood in multiple ways in the five perspectives, as physical properties, a social phenomenon influenced by discursive structures, identity, meaning and economy, respectively. Within each perspective, an understanding of organic is embedded as a concrete outcome of the underlying understanding of value. Neoclassical welfare economics for instance understand organic as “product attributes” which is relational and can be measured using willingness to pay. It would be convenient if there was one correct understanding of organic, but there are multiple ways in which organic can be understood. Each perspective contributes with aspects relevant for understanding the organic food system. In relation to the development of organic food systems, it is important to include the different dimensions of organic food and not optimize only according to one understanding of value.

The challenge of combining assessments

The article has shown that food systems are a complex phenomenon that can be perceived from many different perspectives, each providing different insights. In the following, we will look into some of the practical implications of combining multiple perspectives when developing assessments of food system sustainability, first in general and afterwards more specifically in relation to multicriteria assessments.

Problems which occur in the food system are not necessarily associated with one perspective, but will transgress the traditional disciplinary boundaries and are interpreted differently across perspectives. This, of course, accentuates the need to combine and balance assessments. “Observing the observers” provides a framework for qualifying how the assessments differ and which view on the subject matter each perspective places, which is fundamental for understanding the assessments. However, it still remains a challenge that a claim in one perspective has no validity in another. Elucidating the underlying value does not secure a good combination of assessments; it merely clarifies where and how perspectives are incompatible.

Perspectives enable communication among scientists within perspectives and secure the rigorous safeguarding and development of research methodologies (Giere 2006). Consequently, perspectives are necessary for science in developing questions and producing answers. However, the perspectives cannot be reduced to each other, or combined in one perspective in the assessment without the loss of meaning (Alrøe and Noe 2011). A prominent task in doing multicriteria assessments is to organize multiple sources of information of a complex subject matter like organic food and thereby provide knowledge and support for decision making (Belton and Stewart 2002, Recchia et al. 2011). This is difficult due to the different understandings of values. If multicriteria assessments should function as decision support tools for the continual development of

food system sustainability, then they must be able to deal with multiple understandings of values. If this is not taken into consideration, multicriteria assessments will become a power struggle over the assessment criteria. A way forward will be to abandon the turf wars so common between scientific perspectives and instead focus on formulating common research goals (Youngblood 2007). The common goals should be formulated so they can be covered by different perspectives, thereby ensuring that the multicriteria assessments become a complementary dialogue rather than competing monologues.

Viewing multicriteria assessments as a combination of multiple perspectives requires a radical break with the tradition of conducting multicriteria assessment from one hegemonic perspective. Instead of insisting that multicriteria assessments should provide us one answer, we should instead embrace that they can provide us multiple answers to different questions. This, of course, increases the complexity of decision making, but also guard against rash actions by reminding us of the complexity of a sustainable food system and facilitates participation because it requires different stakeholders to be part of the decision making process (Norgaard 1989). In particular, scientists need to be self-reflective of how values are embedded within the perspective they are representing, acknowledging that everything cannot be explained from one perspective (Lélé and Norgaard 2005). This requires the multicriteria assessment to also be designed as a mutual learning process for the researchers involved in the process of conducting the multicriteria assessment.

According to Dodgson et al. (2009) multicriteria assessments involve the exercise of judgment, it is thus important to note that a judgment is exercised already in the choice of assessments. Choosing perspectives is a complex process and requires a thorough understanding of the knowledge that each perspective provides in relation to the subject matter and how the different perspectives supplement each other in the decision making process. It should also be recognized, that the production and selection of knowledge is also related with power (Flyvbjerg 1998). The selections of perspectives, therefore, also need to be acknowledged as a part of the political process and included in the decision making. Decisions on sustainable development will in many cases involve trade-offs between several desirable outcomes in the spheres of the environment, society and economy (UN 1987). Consequently the division of labor between researchers and decision makers need to be clear and well considered to ensure that research is not used merely as justification for policy, but also to ensure that decision makers are supplied with a sound scientific basis detailing consequences of different courses of action. Multicriteria assessments should be seen as one step in the decision making process and democratic ideals like, transparency, inclusion and reflectivity must be prominent in the assessment process.

CONCLUSION

In the article, we have observed the observers of organic food systems in an attempt to uncover the role of values in research assessments of organic food systems. Values are central for understanding how the food system is assessed, the five perspectives included in the article are based on different understandings of value and focus is placed on different aspects of the organic food system. The perspective enables the researcher to

observe specific parts of the food system, but it also develops blind spot towards other parts and results from different perspectives are incompatible.

If multicriteria assessments should function as decision support tools for the continual development of food system sustainability, then they must be able to deal with multiple understandings of values. There is consequently a need for approaches which are able to combine and balance knowledge from different perspectives on both human and ecological systems in the continuous development of sustainable food systems.

Furthermore, we have discussed the challenges developing such an approach and based on this discussion, we propose five recommendations for coping with the challenges of working across perspectives in the assessments of food system sustainability. 1) Elucidate values as a necessary foundation for research assessment across perspectives. 2) The choice of perspective is decisive and should be openly discussed 3) Formulate common goals which can be translated into the different perspectives and 4) Consider assessment of food system sustainability a learning process and design it as such.

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