

Review of perspectives applied in the assessment of organic food networks

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Abstract:

Value is a key concept for understanding how organic food networks function because values are the foundation of the organic production practice, thus value must be given a significant role in assessing and balancing the effects of organic food networks. At the same time value is a loose concept, widely used and with various meanings in different scientific perspectives, in which ontological difference produces different perceptions of what values are. Assessing organic food networks is thus a complicated process, since the perspective which is chosen has important implications for the analysis and for the outcome of the assessment. This paper reviews five perspectives which predominate in the assessment of food networks, 1) Food Science, 2) Discourse Analysis, 3) Phenomenology, 4) Neoclassical Welfare Economics and 5) ANT. The perspectives are compared with regards to how the food network is assessed, how value is measured and how organic is understood. It is concluded that the perspectives focus analytically on different aspects of the same phenomena and differ in terms of where value is found, but also in the degree of reductionism applied, which factors are included in the analysis and whether or not the analysis focuses on the individual actors or the network as a whole.

1 Introduction

Organic food production and consumption is a practice which is based on value and organic food must meet certain standards to be considered organic. These standards are based on the four organic principles (IFOAM, 2009):

1. **Principle of health** Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.
2. **Principle of ecology** Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.
3. **Principle of fairness** Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.
4. **Principle of care** Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Organic food production therefore cannot be seen as a predetermined end state, but as a process of continuously optimizing the production to meet the organic principles. In order for the organic producers to maintain the credibility and trust they must continuously optimize their production in line with the organic principles (Alrøe & Halberg, 2008). This is a complicated process since the principles cannot be directly applied, but need to be translated into a practice and sometimes the principles are conflicting.

Assessing organic food production and consumption is thus also a complicated process, because the outcome of an assessment is conditioned by the methods, concepts, data, etc. employed. The assessments are however of great importance, since they influence how consumers,

producers and policymakers view organic food networks and in turn act in relation to the network. The purpose of this paper is to review how the understanding of value influences how the different scientific perspectives assess the effects of organic food networks.

This paper is based on a perspectivist approach to the understanding of the production of knowledge (Giere, 2006). A scientific perspective only describe a particular aspect of the world, and all observations and thus also scientific claims based on these observations only apply to this particular aspect. Similarly the methods and concepts used in the production of science are closely tied to the perspective (Giere, 2006). The assessment is interesting because the phenomena is the same, but each perspective assess the network based on what is seen as valuable, and an analysis of the assessment process thus reveals how different perspectives understand what value is and where it is produced in the food network. Focus in the analysis is given to three central questions 1) how the food network is assessed, 2) how value is measured and 3) how organic is understood.

The different perspectives will be discussed in relation to how value is understood. In scientific discourse value is found either with the objects, within subjects or in the relation between subject and object.

- An example of values found with the objects is seen in the (Skinner, 1971) conception of value as a reinforcing effect of objects. *“Things themselves are studied by physics and biology, usually without reference to their value, but the reinforcing effects of things are the province of behavioral science”*. In this understanding value is entirely associated with the objects.
- (Schwartz, 1999) on the other hand define value as *“conceptions of the desirable that guide the way social actors (...) select actions, evaluate people and events and explain their actions and evaluations”*. Values in this regard is seen as intrinsic to the mind and detached from any object and thus entirely within the subjects or intersubjectively.
- Pirsig on the other hand focuses on the relation as the source of values in his conception of Quality: *“Quality occurs at the point at which subject and object meets. Quality is not a thing. It is an event”* (Pirsig, 1999). In this definition value is not seen as detached from either subject or object, but is seen as the event where they meet.

2. Method

In this paper five different perspectives will be reviewed 1) Food Science, 2) Discourse Analysis, 3) Phenomenology, 4) Neoclassical Welfare Economics and 5) ANT. The perspectives have been chosen because they predominate in the assessment of food networks and because they represent different analytical positions, in order to have a wide selection of diverse understandings of value. The different perspectives are reviewed based on their theory of science, examples of studies, concepts employed and scholar's reflections of the approach. Since the perspectives are quite different they will be described and analyzed separately and discussed in the end of the paper.

The five perspectives study the same phenomena, namely organic food networks. According to Jarosz (2008) alternative food networks, like organic food networks, are defined in four major ways. 1) shorter distance between consumers and producers, 2) small farm size and holistic farming methods, 3) by the existence of food purchasing venues 4) by commitment to the social, economic and environmental dimensions of sustainable food production (Jarosz, 2008). This broad and generic definition of food networks will be applied, to select studies for the review, since it allows the review to comprehend the difference between perspectives.

The studies which are selected in this paper cover different geographical areas and times, but are chosen because they are ideal typical exponents of a certain perspective. There might be newer assessments of organic farming as such, but the aim has not been to shed light on the field or conclude which perspective best fulfills the task of assessing the organic food network. Rather the intention has been to analyze how the perspectives assess food networks and which insights the different perspectives provide in relation to understanding and assessing organic food networks.

3. Food Science

The Food Science perspective 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 & Hotchkiss, 1995). Scientists within the field of Food Science are interested in the food products in terms of the physical, chemical and microbiological properties as well as the processes which the food undergoes in production and processing. Food Science can then be seen as a perspective where value is found within the objects, because the objects and object properties are the only aspect 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 in 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 science based quantitative 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 assess based on whether or not they modify the products in a desired way (increase the content of beneficial substances and reduce the content of the harmful ones, enhance the longevity of the products or secure the products from being contaminated by pathogens).

Food Science thus assesses the food network by 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. 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. The Food Science perspective provides a description of the product in terms of certain indicators. In that sense Food Science understand everything as an object.

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 thus done by comparing these with conventionally produced products. This is again interesting because the indicators as such are meaningless; they become meaningful only in a comparison. 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. Therefore a huge production of statistically significant and peer reviewed knowledge is required before any conclusions can be drawn. With regard to organic farming it is also challenging because there is a great variation in products, because the farming conditions and farm management differs (Alrøe & Halberg, 2008).

4. Discourse Analysis

Rooted in a post-structural tradition, Discourse Analysis is focused on the symbolic representation of food and how linguistic structures influence the meaning formation of food for the subjects enrolled in the network. 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 produced (Esmark et al., 2005). Since Discourse Analysis entirely focuses on the social 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, two studies illustrate the approach.

- (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) analyses the values ascribed to organic food in Denmark by analyzing the discourses of organic food in the media and particularly he focuses on a period in the beginning of the 1990s where the market for organic produce expanded rapidly. It is concluded that organic is a floating signifier, a concept to which different subjects ascribe different meanings. The meaning ascribed to organic also varies with the 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 (i.e. I choose organic because I care for animal welfare), 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 govern the food network, how a specific understanding of organic come to dominate, and the analysis is therefore applied to a macro level. Discourses are seen as a feature, which evolve over time, and the analysis is thus often applied to historical periods.

In this perspective the food network 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 perception of what organic is, is incoherent along the commodity chain, Discourse Analysis must separate producers and consumers in the food network analysis (Larsen 2006). This is interesting because it allows for a dichotomy to be drawn between consumer/producer and commodity/perception of commodity.

Discourse Analysis understand organic as a contested concept, the object of a controversy and Discourse Analysis provides a perspective on how to understand the evolution of organic as a concept and the multiple factors influencing how a certain understanding of organic come to dominate, or as Campbell and Liepins (2002) put it: "*The New Zealand case clearly demonstrates that by 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 meaning become associated with organic, a process in which many actors on many different scales contribute. In order to understand the food network it is not enough to focus on the actors which directly handle the food in the network, it is also necessary to include the actors, which influence the discourses governing food production and consumption (Campbell & Liepins, 2001).

5. Phenomenology

Phenomenology is investigating how objects are represented in the 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 lifeworld of subjects, how meaning is ascribed to these situations and how identities are created and maintained in the social practice. Value within Phenomenology is therefore also found with the subjects. In relation to the assessment of the organic food networks, 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 studies illustrates this approach.

- (Kaltoft, 1999) analyze the values on nature in organic farming practice and knowledge 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 there exist four incompatible paradigms of knowledge that the farmers use to evaluate their practice. Organic farming is thus not a singular phenomena, but is a variety of different practices existing simultaneously.
- (Hjelmar, 2011) analyses how consumers form a meaningful shopping practice regarding organic food and how attitudes towards organic food are formed by social interactions within the household. The methodology is qualitative interviews with 16 families focusing on what motivations and concerns lie behind their 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 of balancing the different and sometimes conflicting concerns against one and another. The study also finds that the social interactions in the family, mass media and personal experiences play a part in the formation of a shopping practice.

Value is measured using qualitative social science methods like deep interviews on a microscale, to gain a holistic understanding of how the different elements of the food network interact with and appear to the subjects. Deep 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 network. 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 assess the food network based on how it appear to a single individual and on the individual considerations, values and meanings which is used to form a meaningful practice. The formation of a practice is complicated and the individuals often must choose between many different and conflicting considerations and the resulting practice then implies balancing these considerations. Within this perspective this balancing is individual, and the insights of the studies are thus also tied to the specific context.

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. The studies above illustrate that the practices which are created by the subjects is a form of identity or role influenced by many different factors, to manage the everyday situations which they encounter. Organic in this relation is understood as a symbol or a "requisite" for these practices and it can be used to show how the individual perceive itself and its surroundings. In this understanding food labeling becomes important as a form symbolic communication, which can assist the consumers in forming a practice which is meaningful for them in the interactions they are a part of.

6. 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 & 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 this is a relational perspective. Research conducted in this tradition focuses on understanding how the consumers act in the market for organic products, and what influence their behavior. Two studies illustrate the perspective:

- (Wier et al., 2008) compares 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. The study also concludes that there is a large variation across countries in the valuation of the perceived qualities of organic products. In North America consumers tend to prefer organic products for their perceived better sensory qualities like taste, while European consumers tend to prefer organic products safety and environmental concerns.

Value is measured as preferences and they are within welfare economics translated into “willingness to pay” (WTP), a monetary indicator of 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 general 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 of the different attributes of the organic products that are preferred by the consumers.

Within welfare economics the market is the fundamental basis for the assessment of the food network. At 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 between that each person has limited resources and therefore needs to prioritize between the different preferences (Mäler & 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 the factors influencing the food network.

In this perspective, organic is understood as an aggregate of different food attributes, produced under certain conditions. A challenge using this methodology is that the food network is reduced to components which are valued by the market, other properties are not considered or as Randall puts it, WTP captures total economic value, but not necessarily the totality of value (Randall, 2002). The production of organic food, produce many externalities, which are only included in the consumers’ willingness to pay, if sufficient information is supplied and if the complexities of the food production are comprehended. Often product information is limited or opaque and in Europe there are a growing number of food illiterates and then it becomes difficult to measure the consumer preferences (Holt & Reed, 2006).

7. 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 contribute to the formation of a network. 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 try to explain how actors come together in a network and act as one (Latour, 2005). In relation to the assessment of organic farming ANT has especially been applied to understand the relations that condition the agency of the organic actors and the global networks that a fraction of the organic food production is a part of. Two studies illustrate the approach:

- (Smit et al., 2009) assess the opportunities and constraints for conversion to organic dairy farming in the Netherlands. The methods employed are analysis of statistics, policies, documents and interviews. At the network level the market for organic dairy products is growing, there is a positive disposition for organic farming in the network and there are environmental benefits if farmers are converting. Barriers to conversion are found on different levels in the network. To convert, actors at farmers level, must form new relations with suppliers and buyers, face possible negative financial consequences and though the market is growing it is still fairly small. At chain level actors do not see a great environmental impact of a conversion. At the same time the structural reforms may result in lower prices for conventional produce, and thus stronger competition.
- (Lockie, 2002) examines how people are mobilized as organic consumers in order to understand the governance and agency within the production-consumption network in Australia, using data from focus group interviews. The article discusses how the increased prominence of the organic sector and the knowledge that people have of food

has contributed to an increase in the meanings which can be ascribed to organic and non-organic food. Consumers therefore must be ascribed more agency, than how they are usually perceived. This sense of consumer reflexivity poses a specific challenge to the large retail companies who are responsible for most of the food sales since they are undermining their bases of trust as the production becomes increasingly invisible to the consumers. The supermarkets on the other hand fail to notice the apathy among the consumers since they understand the consumers through the “consumer demands” measured in product sales and therefore have a stereotypical understanding of the organic consumer as “yuppies”, “greenies” and “health nuts”.

A plethora of methods like interviews, analysis of texts and policy documents, are used in the assessment of the actors’ relations and what condition their actions in the network. As illustrated by these studies ANT, the relations and actors at both micro and macro level are integrated in the analysis.

As illustrated by these studies ANT assess the food network based on the relations of the actors and what conditions the actors in the networks and the complexity of the relations, which are holding the network together. What constitute and act as an actor at one level might unfold a network at another and in that sense ANT is a very descriptive account of the network, but at the same time it provides a holistic perspective of the network integrating many aspects of what is influenced by the food production and consumption. The first study is a good example of this approach, since all actors along the commodity chain are conditioning the farmers’ decision not to convert the farming practice to organic. The actors are all interlinked and if one farmer is changing his practice the whole network will also have to change accordingly, and thus the network that the farmer is a part of is making it difficult for him to act.

Organic from the ANT perspective is also seen as a form actor-network to which meaning and agency is ascribed by other actors in the network. ANT uses the term “black box” to denote the folding of the complexity of relations in the network into an actor and it can be used as an illustration of how organic is understood in an ANT perspective. The organic principles can be seen as a black box formed by actors in the organic food network. The principles attain agency because they are continuously performed since actors within the food network refer to these principles in assessment of the organic production. The ANT perspective thus provides an understanding of how multiple factors, including material and social actors, influence how organic is understood.

8. Discussion

Table 1, next page, summarizes the main features of the different perspectives reviewed in the paper. Scholars within the field of food network research all seem to acknowledge the obvious fact that food has a materiality which is influenced by the biophysical environment. However this does not imply that all perspectives looking at food networks perceive value as something which is found with the objects. Interestingly value is found both with the subjects, the objects and in the relation, for the five perspectives under review. The perspectives also differ in how value is measured, how organic is understood and how organic is assessed. The five perspectives consider the same phenomena of organic food networks, but by applying a perspective to the phenomena, the whole organic food network is not included in the analysis. Applying a perspective always implies reducing the complexity of the phenomena in order to describe it analytically, taking some aspects into considerations and leaving others out. From the review it is clear that the different understandings of value produce a different analytical focus. The five perspectives essentially do not consider the same aspects of the phenomena in their analysis.

Tabel 1: Main conclusions

Understanding of organic	Assessment of food network	Measurement of value	Location of value	
As a possible difference in the physical and chemical composition of food items	Based on the physical properties of the objects	Measured as food quality, meaning a higher or lower content of specific substances	Object	Food Science
As a contested concept that different actors try to dominate with conflicting meanings	Based on the discourses governing the food network	Qualitative social science based methods applied at a macro scale	Subject	Discourse Analysis
Requisite which can be used by the individual in identity formation	Based on how the network appear to the individuals and in their daily practice	Qualitative social science based methods applied at a micro scale	Subject	Phenomenology
Product attribute to which preferences can be displayed	Based on how food is exchanged at the market and the factors influencing the price formation	As preferences using willingness to pay	Relation	Neoclassical Welfare Economics
Actor-network mobilized around a common interestment in food production	Based on how the actors are related and what condition their actions	Measured using interviews, analysis of texts and policy documents	Relation	ANT

It is interesting that value is understood similarly for perspectives which in many other ways differ. Value is found with the subject for both Discourse Analysis and Phenomenology and these perspectives differ in many aspects. Phenomenology focuses on the individual and the many considerations which have to be taken into account in relation to forming a daily practice. On the other hand Discourse Analysis places emphasis on discourses as structures which exists intersubjectively in a group of individuals. Similarly, value is found in the relation for both ANT and

Neoclassical Welfare Economics, one of the differences between these perspectives is the degree of reductionism which is applied in the analysis. Within Neoclassical Welfare Economics all aspects of the food network is reduced to the market and the relations are be converted to a monetary unit. Within ANT the same degree of reductionism is not applied and the relations are not converted to a unit, but instead described. Studies inspired by an ANT framework therefore tend to produce conclusions formulated more vaguely than studies from within the field of Neoclassical Welfare Economics.

Value is not only understood differently in the five perspectives, but is also measured using different methods. Food Science and Neoclassical Welfare Economics are dominated by quantitative studies. Phenomenology apply qualitative methods, but at different analytical scales, and ANT uses a wide range of different methods, integrating qualitative and quantitative methods.

When the perspectives assess the organic food network the assessment is centered on assessing activities which has an impact on what is seen as valuable within each perspective. From a Food Science perspective for instance only actions which have the potential of influencing the food quality are considered relevant and assessed, other actions are left out of the analysis, and so it is with each perspective. The perspective which is chosen thus has implications for the management of the network, because inherent within the perspectives are an understanding of how the network functions, the problems that must be addressed and how these can be alleviated. Understanding where value is found thus provide a framework to understand the analytical focus of the perspectives and what is seen as valuable. Applying a perspective does not necessarily imply that the scholars within the field ignore the aspects which are not considered by the perspective, just that they do not have the tools to assess them.

The different understandings of value also have implications for the understanding of what is seen as organic within the different perspectives, both in terms of the number of factors influencing what organic is and in the role that the materiality plays. Food Science includes few factors only related to the material properties of the food items, in its descriptive account of organic food. The understanding of organic is complicated because the organic quality needs to be compared to other qualities to make sense. In Discourse Analysis multiple social factors are included and the materiality is included only based on how it is discursively constructed by the actors, which can often be the cause of controversy. Organic is here then understood as the conventions which affect the organic production practice. In Phenomenology it is to some degree the other way around since organic is assessed as one factor among other factors influencing the daily life of the individuals. In Neoclassical Welfare Economics organic is understood as a product attribute among other attributes which are and can be exchanged at the market, and the materiality is included as a part forming this attribute. Organic is here understood entirely based on the part of the phenomena which are transferred at the market, other aspects are not considered. ANT includes and integrates multiple social and material factors in its assessment of organic.

9. Conclusion

The purpose of this paper was to review how the understanding of value influences how the different scientific perspectives assess the effects of organic food networks. As indicated above, the different understanding of value produces different assessment of the food network is assessed and how organic is understood. The different perspectives thus focus analytically on different aspects of the same phenomena. The perspectives not only differ in terms of where value is found, but also in the degree of reductionism applied, which factors are included in the

analysis and whether or not the analysis focuses on the individual actors or the network as a whole.

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