

Theories on motivation and their implications for supporting communication, learning and decisionmaking in relation to organic food systems

Jeppe Læssøe and Anders K. Ljungdahl, Department of Education, Aarhus University; Peter Kastberg, [navn på nyt institut], Aarhus University; Egon Noe and Hugo F. Alrøe, Department of Agroecology, Aarhus University; Tove Christensen, Alex Dubgaard, Søren B. Olsen and Niels Kærgård, Institute of Food and Resource Economics, University of Copenhagen¹

Abstract

Efforts to promote communication, learning, decision making and change of individual and/or collective practices in relation to sustainability issues require more or less explicit theories on agents and what motivate them to act. The aim of this paper is to open for an interdisciplinary discussion on how different approaches to motivation make sense or not when focusing on how to develop tools aiming at supporting communication, learning and decision-making related to organic food systems. We present four quite different approaches to motivation – an economic, an approach challenging conventional understandings of motivational change, a psychosocial, and a relational – and open for a discussion on how these approaches relate to each other and whether it is possible to apply and distinguish between different ways of using the concept of motivation when we cross disciplinary borders in order to cooperate on developing tools for multi-criteria assessment and communication.

Introduction

Efforts to promote communication, learning, decision making and change of individual and/or collective practices in relation to sustainability issues require more or less explicit theories on agents and what *motivates* these agents to act. Social science offers a body of alternative theories which may help to explain the motivations and behaviour of the various agents affecting the organic food system. E.g. what motivates consumers to buy organic food? One line of inquiry, offered by economic theory, focuses on consumer's preferences and needs in order to explain their differing reasons for choosing, or not choosing, to buy organic food. Economic theory thus presupposes a *need*, understood as a *deficiency*, i.e. something that consumption aims to satisfy. Other theories understand motivation as *relations* between various social actors, between agents and products, and/or as psycho-social dynamics. In other words, these differing theories are based on different understandings of human subjectivity, the relation between person and context, and the role of motivation in processes of social change.

The aim of this paper is not to confront these different theoretical approaches in order to come closer to a general interdisciplinary theory on motivation. Rather we would like to contribute to a clarification of the utility of different approaches to motivation when developing tools aiming at

¹ All authors take part in 'Multicriteria assessment and communication of effects of organic food systems' (MULTI-TRUST), an interdisciplinary research and development project funded by the Green Development and Demonstration Programme, Ministry of Food, Agriculture and Fisheries, Denmark.

supporting communication, learning and decision-making related to organic food systems. The following questions are meant to guide the discussion in the symposium:

1. Where do the different approaches to motivation complement each other, where do they conflict, and where are they eventually without any relation?
2. How can we apply and differentiate the concept of motivation in a consistent and productive way when we cross disciplinary borders in order to develop tools for multi-criteria assessment and communication?

Before we present the different theoretical approaches a few clarifications are needed. First and foremost we need to add some further information on the issue of the interdisciplinary research project that we, as authors, are part of, and that form the background and focus of this paper. Secondly, we would take a step further by describing the agents we have as our target group and relate to when we reflect on the issue of motivation.

Multicriteria assessment and communication of effects of organic food systems (MULTI-TRUST)

MULTI-TRUST is a three year research and development project aiming at providing analyses, methods and prototypes of multicriteria assessment, to help organic actors and stakeholders develop, document and communicate balanced overall assessments of the effects of organic food systems on society and nature. In the first phase of the project a number of disciplinary research reviews have been made in order to feed interdisciplinary collaboration on generation of knowledge and guidelines targeted the subsequent phase on method and prototype development. The expectation is to develop a prototype of an IT-media tool that, by use of visual and animation techniques, is able to help users in concrete situations to better overview, reflect, communicate, learn and decide on how to cope with the complex issues of organic food systems.

Target groups and focus of this paper

Here in the first phase of the project we are imagining the prototype, we are going to develop, as a device adaptable to different relevant target groups: Politicians, journalists, farmers, retailers and consumers. However, in order not to make our explorative exercise on motivation too complicated, we have decided, in this case, to relate to consumers as a target group. Although this indeed is a heterogeneous category, and the issue of motivation will include a number of specific aspects in relation to each of the above mentioned target groups, we do not think this level of complexity is needed in order to reflect on the two questions we have raised.

With this focus in mind we will now present four different inputs regarding the concept of motivation and how it might make sense in multicriteria assessment and communication.

Four inputs on motivation

The four inputs on motivation below are first and foremost different as they represent different theoretical approaches. We will start by presenting a neoclassic economist view. It is the most well established and empirically embedded of the four approaches. As such it has a clear theory on what motivates consumers to buy or not buy products. At the same time, however, it is not fully able to explain it, when it comes to organic food products. This dissonance opens a space for the subsequent approaches.

Economic theory of consumer motivation and behavior²

From an economic perspective producers, distributors and consumers of organic food products are agents acting in a market where the price mechanism determines supply and demand. The focus of this section is on the motivations behind consumer behaviour in markets for organic food

² This part is written by Tove Christensen, Alex Dubgaard, Søren B. Olsen and Niels Kærgård.

products³. The point of departure will be the traditional economic man approach to the description of consumer behaviour in neoclassical economics.

We will define consumers' motivations as the reasons for their market behaviour based on needs and wants. In traditional economic theory it's the assumption that consumers' needs and wants are reflected in a set of preferences ordered in such a way that consumers will make rational choices between alternative bundles of consumer goods. Rationality in this context means that consumers will choose a combination of consumer goods which will maximize their utility (satisfaction of needs and wants) given the constraint represented by the available budget (Mas-Colell, 1995). This consumer behaviour model was extended by Lancaster (1966) who argued that consumers' demand is defined over the characteristics of a good (e.g. nutritional characteristics, taste, colour etc.) rather than the good as such. The characteristics of a good (often denoted attributes) can also comprise public good characteristics associated with the production of the good, such as the absence of chemical pesticides in organic farming or enhanced animal welfare. Differences between organic and non-organic food products are often related to differences in individual attributes ('organic is better for your health, for the environment and for animals'). Therefore, the Lancasterian approach is often used in economic analyses of the demand for organic food products.

It is a standard assumption in traditional economic theory that consumers act exclusively as self-interested economic agents who maximize their utility. This implies that consumers will not feel incentives to pay for public goods such as reduced pollution, enhanced animal welfare etc., which will therefore not be supplied in sufficient quantities compared to what can be considered as the social optimum. This is the so-called *free-rider problem* in economics. In relation to the demand for organic consumption this implies that public good characteristics of organic products would not affect consumers' demand and willingness to pay for organically produced food.

However, empirical evidence indicates that this approach does not fully describe consumer behavior when it comes to organically produced food products (Mas-Colell 1995; Slovic 2000; Munroe & Hanley, 2006; Denver & Christensen, 2010; Morrison & Brown, 2009; Andersen 2010). In other words, consumer preferences are not always exclusively private (selfish). It seems that some consumers also have public preferences revealed in their willingness to pay a price premium for organic food products with public good characteristics.

Understanding the relation between consumer preferences, their motivations to maximize utility and the role of economic incentives is crucial when the question is whether consumers prefer and choose to buy organic food compared to non-organic food. However, to further explain why some consumers prefer organic food products, and also why some do not have this preference, other approaches might supplement this view. In the following we will present three other partly overlapping, partly different approaches to the question of motivation that either complement or conflict with an economic approach. The first makes an important distinction between two appreciations of motivational change.

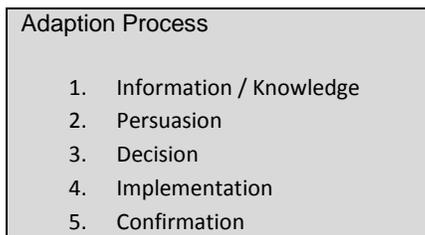
Motivating Organic Consumption: Two Appreciations of Motivational Change⁴

Motivation, according to Aristotle's *Rhetoric*, is the result of an "appetitive" function; i.e. that we as human beings tend to have appetites for real and apparent goods, as it were. Appetites, which,

³ The economic principles can also be used to guide political decisions in two important ways. First, by helping to define priorities as to which aspects of animal welfare should be promoted. Here economic approaches can be used to capture and synthesize the perspectives of all the stakeholders in a transparent and systematic way. The *second* way is by helping to ensure that incentives are set up in the right way. Where the benefits and costs of improving animal welfare initially are distributed unevenly across stakeholders so that a socially desirable situation will not automatically develop, or be implemented, basic economic principles may help to set up incentives which correct this situation (Christensen et al. forthcoming).

⁴ This part is written by Peter Kastberg

in turn, trigger the movement (etymologically) inherent in 'motivation'; an action, as it were, the successful outcome of which is satisfaction. It hardly comes as a surprise that in this light an isolated motivational event can be appreciated as a three-phased action along the lines of: 'state of deficiency', 'procedure of improvement', 'satisfactory state' (adapted from Bremond 1970). Motivation, thus, is the point of entry to a movement or a process that consists of the following elements: motive-action-satisfaction. Even if such motivational actions may be triggered by a wide variety of different appetites, there is typically but one outcome of (successful) motivation, namely that of change – be it cognitive change, action change, behavioural change, value change etc. (adapted from Kotler 1982). While there may well be other and equally relevant changes, this short list demonstrates that change is not just change. If we opt for behavioural change in connection with motivating consumers (as is the case in e.g. Jackson 2005), the Rogers' adaption process (1983) is seemingly ubiquitous:



While such a chrono-logic depicts the process of change in intuitively enticing incremental phases, such a model is not unproblematic and certainly no panacea. If we, therefore, with a general reference to Simon (1957), problematise the hegemony of chrono-logic rationality, we also open up a Pandora's Box of idiosyncrasies. Agreeing with Law, however, I hold that "[...] if much of reality is ephemeral and elusive, then we cannot expect single answers. If the world is complex and messy, then at least some of the time we are going to give up on simplicities" (2004). Or to rephrase it positively: we would take into due consideration what Lewin formulated as $B = (p,e)$, i.e., that a person's behaviour (and possible behavioural change) is a function of said person and his/her environment. A line of thought that neo-Lewinians have labelled the Attitude-Behaviour-Constraint, i.e. the behaviour (B) is an interactive product of personal sphere variables (A) and contextual factors (C) (Stern 2000:415).

Therefore, the question is, should motivation be understood negatively as a subject's hedonistic desire (appetite), i.e. as an internal condition of 'lack' or deficiency, which could then be satisfied through actions in a simple, linear process of change? Or should we attribute more weight to the relation between the subject and the environment, with the risk of introducing a complexity of factors that shape consumers' motivation? The psycho-social approach, that we will now present, concords basically with this Lewinian view on motivation and can be described as a possible extension of it.

Motivation as psychosocial dynamics⁵

There exist several approaches to psychology and, among these, several more or less explicit theories on motivation (Reber 1985; Schnack 2002). In the following we do not conceive of motivation as a singular cause behind specific behaviours but as a combination of drivers behind our actions. These dynamics are not purely psychological but constructs made in the relation between the individual, as life-historical created subject, and the present societal context (Illeris 1978). They are generated and embedded both in the complex psychology of the individual and in the complex social interaction around social and material practices. Thus, when it comes to consumer's motivations for organic products we are not focusing on expressed preferences as explanatory elements but on some of these dynamics that may support or block the move from information to action in issues that, like organic products, are highly characterised by risks and

⁵ This part is written by Jeppe Læssøe

complexity. We assert that to identify these psychosocial dynamic structures may be helpful for communicative and educational efforts to promote consumer participation, learning and actions related to organic food products.

The following findings draws on a review of research literature covering the fields of cognitive psychology, psychodynamic psychology, micro-sociology and educational studies (Læssøe et al. 2011). To keep it brief we have only selected and summarized a few key findings from this study:

- **Mental models:** Information is always filtered and interpreted through already established mental models. These basic beliefs and orientations influence the perceived message stronger than the perceived message influence the existing beliefs and orientations (Spanheimer 1977; Dunwoody 2007; Moser and Dilling 2007; Hulme 2009: 142ff). One motivational problem here occurs if the consumer's mental models are too narrow to perceive and cope with the many aspects related to organic food systems and especially with the uncertainty and complicated relations between them. Another motivational dynamic has to do with existing beliefs and attitudes, e.g. political discourses/ideologies that may strengthen or weaken the motivation to receive information and act in accordance with it. Especially in cases with complex, new information and thus uncertainty, people tend to overlook available information and perceive and react based on interpretive shortcuts and existing mental models (Baron 2000; Matlin 2005; Forgas 1995; Ellsberg 1961)
- **Subjective risk perception:** The risk perception of consumers is multi factorial (Slovic 2000; Breck 2001). In general the abstract, invisible and complex character of environmental risks impedes motivation for action. Furthermore, especially when threats are growing slowly, and with consequences far away from the consumer, the motivation to act decreases.
- **Ambivalence:** It has often been described as a paradox that consumers do not act according to their environmental consciousness. However, ambivalences are normal and it should rather be regarded as a psycho-pathological extreme if people act totally inflexibly and without taking care of the social context (Leggewie and Wetzler 2009: 74f). One aspect of this is that we are struggling with different goals. Normally hedonistic goals are more powerful than moral concerns, and this tendency increases if the issue is marked by ambiguity (Lindenberg and Steg 2007). Another important point relates to ambivalences between personal experiences and scientific data. Here it is well known that sensuous emotional experiences are very powerful in guiding practice and often trump the same persons intellectual knowledge (including received science information) (Dunwoody 2007: 94). A third type of ambivalence goes between knowledge about the need for changes of practice and fear for the future implications of the alternatives (Læssøe et al. 2011: 23). Last, but not least, ambivalences can be regarded as a cognitive dissonance where the tensions either can be released by changing practice or, if it is experienced as too difficult, by applying defence mechanisms like simulations (Blühdorn 2002) or floating standards (Foster 2008: 30ff). In a motivational perspective it is crucial how these dynamics are handled. To understand this, micro sociological studies of consumer's self practices make sense as they describe a number of different coping strategies (cf. e.g. Læssøe 1995; Halkier 1999; Ljungdalh 2012).

Although this approach, like the Lewinian, emphasise the relation between person and context as crucial for understanding motivation, it still operates with a subject as a carrier of orientations, values, experiences and coping strategies that are dynamic parts of the motivational structure. The last input is more radical in the sense that it applies a purely relational approach:

A relational approach to motivation: Choice and change in organic food systems⁶

The following text is an analysis of motivation from a relational perspective based on semiotics (Peirce 1992, Nöth 2011) and relational metaphysics (Pirsig 1999, Oliver 1981). The objective is to contribute to the understanding of how choices are made and changes happen in organic food systems, for instance choices to buy organic, decisions to enter into organic production, or decisions to change the production processes of organic food systems.

In a relational perspective, values neither belong to the subject, nor the object – values are relational. Value relations are primary entities that constitute secondary entities such as objects and subjects. Motivation is a certain way of looking at values, focusing on values as the cause of action. That is, motivation is about how value relations lead to actions. Seen from this perspective, it is clear that there are other approaches to motivation. Motivation is often placed in the object, speaking of someone being motivated by somebody or something and of motivating and de-motivating events. Or, contrary to this, motivation is considered to belong to the subject, speaking for instance of agents and their motivation to act. In the following we present a few accentuated examples of this.

In relation to consumption of organic products, a common market strategy is to motivate consumers to buy organic (and thereby support growth of the organic market) by way of making better products, increasing product quality, introducing more attractive packaging and shelf presentations, etc., and making this visible to the consumers through information, advertisements and campaigns. In this approach, motivation (the cause of action) is found in the object (the products).

In consumer research there is a quite opposite approach to motivation (e.g. Jensen et al. 2008). Here, the consumers' way of thinking is investigated in relation to their actions in form of buying, preparing and eating organic products, in order to determine the dimensions that are decisive for their consumer choices in terms of whether they buy organic or not. And these dimensions are then used to divide consumer into different types. Here motivation (the cause of action) is found in the subject (the consumers).

More generally, C. Wright Mills investigates how we attribute motives to each other and to ourselves in various social situations, because '(t)he differing reasons men give for their actions are not themselves without reasons' (Mills 1940: 904). We constantly attribute or infer motives to ourselves and each other, and this discursive practice serves a specific role in our everyday communication and situated actions. When a mother says to her child: "do not do that, it is greedy", she not only teaches the child what to do, and what not to do, but she also provides the child with standardised motives, which promote prescribed actions, and dissuade those proscribed (Mills 1940: 909).

In relational approaches to motivation, the focus is on how motivating relations are created and how they are influenced by communication, dialogue, negotiation, knowledge, structural conditions, etc. Cases where the relational character of motivation is quite easily observed are community supported agriculture such as the French AMAP projects.

A relational approach to motivation can provide a deeper focus on the dynamic and time bound aspects of motivation. For instance, the explanation of consumer choice by way of consumer types in Jensen et al. (2008) is not well suited to map changes in motivation. The relational approach also gives a different angle on the very concepts of choice and change. Is the choice actually placed in the consumer? And in what ways can decisions on consumption and production of organic products be studied as relational?

From a relational perspective, decisions to change the production processes in a more desirable direction (e.g. more sustainable, more in accordance with the organic principles) is not something that agents make independently, or something that is determined solely by knowledge of the

⁶ This part is written by Hugo F. Alrøe and Egon Noe

consequences of the present production system and of different possible future systems. Consequently, if we finally look at how overall multicriteria assessments might influence motivations in organic food systems and how these motivations can shape the development of the system, it is clear that such assessments should not be made solely to create more expert knowledge about the organic food system, or solely to support the decision processes of the organic actors. The role of such assessments must be to influence the relations that make the agents organic actors and the system an organic system. And this perspective puts certain demands on how the assessments should be constructed and how they should be performed.

Reflections and questions for discussion

Based on the four brief inputs we will now turn to the two questions we raised in the introduction: How do these different theoretical perspectives complement and/or compete with each other? And how useful are they in relation to multicriteria assessment and communication on organic food systems?

The intention with this paper has been explorative – to open for reflections and more explicit and differentiated use of the concept of motivation. Therefore we will focus on identifying key issues and aspects that have to be taken into account.

Key issues and questions on the relations between the approaches:

Looking across the four inputs at least four issues can be identified:

The sources of motivations: Motivations can be described as drivers of action. But is there something behind the motivations that drives them? The economic approach talks about a set of needs and wants behind a set of preferences. Motives, in this sense, are a kind of hunger or desire. The psychosocial partly share this perspective as the person is regarded as containing inner motives, but here they are not described as stable preferences, rather as dynamic tensions between different internalized discourses, emotional experiences as well as between the person and the present social context. The relational approach shares the last part while it abstains from including needs or the individual history as explanatory elements, or rather it sees the 'individual history' as a relational history. The source behind motives is, in this approach, to be found in the relation.

Rationality: Economic theory approaches the question of consumer preferences, and how to influence these preferences, as a matter of rational choice. Given a certain need/want they act rational in order to gain the most valuable buy. As mentioned in the second input this implies a (contestable) linear approach for communicating with, and influencing, consumers. The second approach thereby pluralises the very concept of rationality, by stressing the fact there is a multiplicity of reasons (or motives) that constitute human behaviour, because behaviour is a product of a person in relation to his or her environment. The psychosocial perspective stresses a complex of dynamics that transcend pure rational considerations, and the relational perspective emphasises the complex of social relations as the key to understanding individual motives. Importantly, these latter approaches do not advocate a distinction between rationality and irrationality (cf. the title of Amartya Sen's essay 'Rational Fools'), but rather introduces a multiplicity of interrelated aspects of social life necessary for understanding individual reasons (or motives) for their actions. In other words, they pluralise the very concept of rationality.

This raises the question whether there is a possibility for a middle ground between rigid rationality, on the one hand, and rampant relativism, on the other, when it comes to appreciating the what, the how, and the why of motivating organic consumption? Are these different conceptions of rationality and motivation incommensurable or could they be compared fruitfully? Or, are these different conceptions complementary?

The responsibility of the individual consumer: What role is ascribed to the individual consumer? This is discussed in different ways in the four inputs: In the economic approach a distinction is made between private and public goods. From the individual consumers

point of view this implies a combination of personal hedonistic motives and ethically motivated choices. From a psychosocial perspective this can be described as an ambivalence forced by an individualising social context. The relational approach explicitly offers an alternative to the trend of placing responsibility on the individual subject.

Different knowledge interests: The approaches to motivation are based on different knowledge interests. From an economic point of view the knowledge interest is to clarify how consumers make choices between alternative bundles of consumer goods. Focus is on the buying situation: What is the motivation behind different consumption behaviours? Empirical research demonstrates these preferences. The dynamics, described in the psychosocial and relational approach, might be inspiring for economists but they are not focused on consumer choices as static preferences, rather on how motives develop and change over time, and in different situations. This perspective is embedded in an interest in research on communication, learning and social change. In this sense we use the same concept – motivation – but with different purposes.

Panel discussion

As stated in the introductory part of this paper, the aim of this paper is not to confront the different theoretical approaches in order to come closer to a general interdisciplinary theory on motivation. Rather we would like to contribute to a clarification of the utility of different approaches to motivation when developing designs aiming at supporting communication, learning and decision-making related to organic food systems. This stance, as well as the above four issues, which we have derived from it, are the topics which we would like to discuss in this panel. Both the stance and the four key issues are prompted by the fact that we, in the MULTI-TRUST project we do not only need to explore the motivation to choose organic instead of conventional products. Motivation is also an issue when we want to design a communication tool to support assessments and learning. Here we need to include knowledge on what might motivate consumers to participate in communicating about organic products, to reflect and learn to cope with an increased complex of information, and to assess and clarify their opinions. In order to do so not only do we need to be aware that the information regarding organic food production is complex, and that there are multiple and sometimes mutually exclusive criteria involved in the process of assessment concerning the standards of organic food. We also need to be aware of the complexity that shapes consumers' motives – not just that there are many different motives (or preferences), but also that these motives are shaped and changed in variable ways.

References

- Andersen, L.M. (2009). Documentation of CONCEPTS questionnaires. FOI, University of Copenhagen <http://orgprints.org/15741/1/15741.pdf>
- Baron, J. (2000). Thinking and deciding (3d ed.). Cambridge University Press.
- Blühdorn, I. (2002). "Unsustainability as a frame of mind - and how we disguise it: the silent counter-revolution and the politics of simulation". *The Trumpeter* **18**: 59-69.
- Breck, T. (2001). Dialog om det usikre. Akademisk Forlag, København
- Brémond, Claude (1970). Morphology of the French Folktale, *Semiotica*, (2): 247-275.
- Christensen, T., Lawrence, A., Lund, M., Stott, A. & Sandøe, P. (forthcoming). How can economists help to improve animal welfare? *Animal Welfare*, Special issue 2012.
- Denver, S. & Christensen, T. (2010). Dokumentation af valgekspertiment og spørgeskema. FOI, University of Copenhagen <http://orgprints.org/16699>
- Dunwoody, S. (2007). "The challenge of trying to make a difference using media messages". In S. C. Moser and L. Dilling (eds.) *Creating a Climate for Change*. Cambridge, Cambridge University Press.
- Ellsberg, D. (1961). "Risk, ambiguity, and the Savage axioms". *Quarterly Journal of Economics*, **75**, 643–699.
- Forgas, J. P. (1995). "Mood and judgment: The Affect Infusion Model (AIM)". *Psychological Bulletin* **117** (1): 39–66.

- Foster, J. (2008). *The Sustainability Mirage: Illusion and Reality in the Coming War on Climate Change*, Earthscan.
- Halkier, B. (1999). *Miljø til dagligt brug?* Forlaget Sociologi, København
- Hulme, M. (2009). *Why we disagree about climate change*. Cambridge, Cambridge University Press.
- Illeris, K. (1978). *Motivation i skolen*. Munksgaard, København
- Jackson, Tim (2005). *Motivating Sustainable Consumption – a review of evidence on consumer behaviour and behavioural change. A report to the Sustainable Development Research Network. Centre for Environmental Strategy. University of Surrey*
<http://www.c2p2online.com/documents/MotivatingSC.pdf>
- Jensen, Katherine O'Doherty; T.B. Lund, L.M. Andersen, [V.T. Christensen](#), S. Krarup, T. Christensen, S. Denver, H. Bossen, H. Hindborg, T. Roland and G. Øllegaard (2008) *Hvorfor køber forbrugerne økologi? [Why do consumers buy organics?]* In: Alrøe, Hugo Fjelsted and Niels Halberg (eds.), *Udvikling, vækst og integritet i den danske økologisektor*, ICROFS, Tjele.
- Kotler, P. (1982). *Marketing for Non-profit Organizations*. 2nd edition. Prentice Hall.
- Lancaster, K. J. (1966): *A New Approach to Consumer Theory*, *Journal of Political Economy*, 74 (2): 132-157.
- Law, John (2004). *After Method*. Routledge.
- Leggewie, C. and H. Welzer (2009). *Das ende der Welt, wie wir sie kannten*. Frankfurt am Main, S. Fischer.
- Lewin, Kurt (2008 [1936]). *Principles of Topological Psychology*. Munshi Press.
- Lindenberg, S. & Steg, L. (2007). "Normative, Gain, and Hedonic Goal Frames Guiding Environmental Behavior". *Journal of Social Issues* 63 (1): 117-137.
- Ljungdalh, A. K. (2011). *Patho-Episemology*, Ph.D. dissertation, Department of Education, Aarhus University
- Læssøe, J.; F. Hansen, M.S. Jørgensen. (1995). *Grønne Familier - Miljøvenlige levemåder - og mulighederne for at støtte udviklingen af dem*. Danmarks Tekniske Universitet.
- Læssøe, J.; S. Breiting, A. K. Ljungdalh and K. E. Nielsen. (2011). *Håndtering af kompleks information. Multi-Trust report 2.3*. <http://orgprints.org/19936/2/19936.pdf>
- Mas-Colell, A. (1995). *Microeconomic Theory*. Oxford University Press.
- Matlin, M. (2005). *Cognition*. John Wiley & Sons, Inc.
- Mills, C.W. (1940). *Situated Actions and Vocabularies of Motive*. *American Sociological Review*, 5(6): 904-913.
- Morrison, M. & Brown, T.C. (2009). *Testing the Effectiveness of Certainty Scales, Cheap Talk, and Dissonance-Minimization in Reducing Hypothetical Bias in Contingent Valuation Studies*. *Environmental and Resource Economics* 44(3): 307-326
- Moser, S. C. and L. Dilling (eds.) (2007). *Creating a Climate for Change*. Cambridge, Cambridge University Press
- Munroe, A. & Hanley N. (2006). *Information, uncertainty and contingent valuation. Valuing environmental preferences* (eds. Bateman, IJ & Arrow, KJ). Oxford University press.
- Nöth, Winfried (2011) *From Representation to Thirdness and Representamen to Medium: Evolution of Peircean Key Terms and Topics*. *Transactions of the Charles S. Peirce Society*. Vol. 47, No. 4, pp. 445-481.
- Oliver, Harold H. (1981) *A relational metaphysic*. The Hague: Martinus Nijhoff Publishers.
- Organic Denmark (2011). *Organic market shares [Økologisk markedsnøt]*, January 2011. Organic Denmark. http://www.okologi.dk/media/1272098/markedsnotat%20m_forside%20-%20endelig.pdf
- Peirce, Charles S. (1992) *The essential Peirce - Selected philosophical writings*, Vol. 1. (Eds. Nathan Houser and Christian Kloesel). Bloomington: Indiana University Press.
- Pirsig, Robert M. (1999) *Objects, subjects, data and values*. In: D. Aerts, J. Broekaert and E. Mathijs (eds.) *Einstein Meets Magritte – An Interdisciplinary Reflection: The White Book of 'Einstein Meets Magritte'*, Dordrecht: Kluwer Academic Publishers, pp. 79–98.
- Reber, A. S. (1985): *Dictionary of Psychology*. Penguin Books, London
- Rogers, E. M. (1983). *Diffusion of Innovations*. 3rd edition. Free Press.
- Schnack, K. (2002)(Ed.): *Psykologisk opslagsbog*, Christian Ejlers' Forlag, København

- Sen, Amartya K. (1977). Rational Fools: A Critique of the Behavioral Foundations of Economic Theory. *Philosophy and Public Affairs* 6 (4): 317-344 Blackwell Publishing
- Simon, Herbert (1957). *Models of man - social and rational; mathematical essays on rational human behavior in society setting*. Wiley.
- Slovic, P. (2000). *The perception of risk*. Routledge.
- Spanheimer, L. (1977). *Kunsten at gøre sig forstået. Om kommunikationens psykologiske barrierer*. København, Hans Reitzel.