

Ecological Modernisation and 'Our Daily Bread'

Variations in the transition of the food sector

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Abstract: *Is ecological modernisation solely an economic and political regulatory strategy, or could the societal transformation or switchover also be explained by way of cultural processes? The switchover, which can be defined as the growth of environmental awareness in society and its institutions, elicits different responses from industrial actors. Bottom-up strategies of innovation, communication and the development of mediating institutions to support and build on the subjective commitments of actors in the production chain, may well be effective policies for the ecological modernisation of society. Cultural environmental politics could focus on the empowerment of ecologically reflective practitioners and their network relationships as a democratic means of progressing ecological modernisation. In the context of a transition to organic in the Danish food sector, these themes of cultural politics are discussed, with specific reference to case studies in bread production.*

Key Words: Ecological modernisation, food industry, cultural politics, organic food

1. Introduction

Ecological modernisation is a belief system current among institutions in the industrial-liberal world, it holds that economic development and environmental protection are compatible, and focuses on the positive role of green corporate managers and consumers. Environmental management, inter-active environmental policy, cleaner technologies, and institutional greening may be seen as some of the core elements in this dominant discourse. The dogma or story line of ecological modernisation is, in short, that current industrial societies may be guided, through the prevailing institutions of markets, politics and cultures, towards reconciliation with nature in a sum plus game (Weale 1992, Hajer 1995, Gouldson & Murphy 1997, Low & Gleeson 1998).

Ecological modernisation has been studied in terms of a general discourse and strategy trends of ecological integration and communication among societal systems at a *macro level*, and at *micro level* by way of case studies of green firms. In line with Mol (1995) we find the *meso level* of systems and actors within a trade sector worthy of study as it can provide insight into the sectoral or *filière* dynamics (see R. Kemp, 2000) of ecological modernisation, both concerning institutional and corporate relationships. The systemic and institutional level of a sector (R&D units, trade organisations, trade regulations etc.) situate the interpretative development and realisation of hegemonic policy strategies and ideas – such as ecological modernisation. The trade sector is most often the arena for networking among semi-public/private institutions and corporations. Thus, it is here that the efforts for

converging and mediating between business strategies and public authorities concerning technology and environment policies. In the paper we discuss this sectoral ecological modernisation process taking our departure in the transition to organic products in the food industry.

Studies of ecological modernisation usually pay attention to the role of economic incentives, technological search processes, new eco-management tools, and the role of more reflexive or interactive regulatory means. In this paper, we will be concerned with the relational dynamics between culture and institutions, and among the very different actors in the business sector. How are innovations and ideas communicated and mediated at an inter-organisational level, within the market and the public sphere? We will highlight the institutional features and cultural dynamics, which have led to the development and diffusion of ideas and technologies of organic food production. We find it especially important to acknowledge the variations and the internal dynamics in the trade, ranging from the small networks of idealistic producers and consumers to the widespread adoption of organic products in the food sector. It is very important to acknowledge the varying motives and discourses in the practice and attitudes of the actors when we want to know about the fundamental cultural dynamics or politics that promote ecological modernisation development at the ground level.

The paper draws on insights from case studies of Danish bread manufacturers.¹

2. Ecological modernisation and cultural politics as the basis of environmental transition

At the core of ecological modernisation is the idea that modern society has the capability to establish institutions and develop technology that may solve the ecological crisis. This belief is due to the understanding that a new form of modernisation can unify economic growth and environmental improvements whereby environmental problems become an impetus for improved economic growth. Environmental problems are solved by technological and institutional innovation. Thus, as Martin Jänicke, the inventor of the concept of ecological modernisation, has stated, ecological modernisation is a strategy or belief system of moderate, incremental adjustments to institutions and behaviour in industrial societies. In this way, eco-modernisation differs from radical belief systems such as *structural change* or *sustainability strategies* like Factor 10.

Generally, disputes about what fuels eco-modernisation are primarily centred on the relative roles of the state and market in terms of rules, regulation and management. Joseph Huber saw ecological modernisation as a historical phase of modern society (referred from Hannigan 1995), where business were to be modernised by sub-systemic communication and self-observation arising from an environmental code which were produced in the public sphere and by consumer preferences. This means that business becomes engaged in environmental management and profiling by organisational and communicative adaptation. The typical policy stand within eco-modernistic literature builds on top of this approach, as emphasis is on the role of voluntary and communicative means, stressing the need to incorporate stakeholders and target groups for consultation, co-production of collective images, and negotiating agreements on performance and measures (Leroy 1997). In Beck's terms: weakening rule-directed and strengthening rule altering arrangements (Beck 1995). Geus (1996) finds that environmental problems are to be approached by the state via the creation of situations and conditions that will make it attractive to make environmentally

¹ *Sustainability at Work*, a Roskilde University project with the authors together with Kurt Aagard Nielsen and Hanne Meyer-Johansen, in the research unit COMET headed by Andrew Jamieson, within CESAM - Centre for Social Science in the Environment, Aarhus Denmark.

positive choices, that is to say regulation through a contextual or procedural shift, rather than the more traditional coercive measures. These perspectives on regulation build upon the theory of institutional reflexivity (Murphy, 2000, Mol, 1995). This is described as a process in which modern society and its institutions develop by attaching specific meanings to the (environmental) problems and build up a capability to reflect on the social causalities and to give adequate responses (Beck, 1995). It is an important part of this understanding that in this reflexive process both the institutions and ways of reflection are changed. Changes occur in the roles and relationships of firms, industries, governments and agents (such as NGO's). This place the focus on how the environment is perceived, how it is communicated, on which agents are involved, and how different agents reflect, act and communicate environmental issues. Nevertheless, it is interesting that within ecological modernisation theories, attention is seldom given to the role of lay people's discourses or communicative adaptation of the everyday life aspects of markets and workplaces (though, see Spaargaren, G. 2000). Taking our departure in institutional reflexivity, ecological modernisation does not come about by merely economic profit anticipation or obeying rules. However, what then makes the reflexive process develop? What become meaningful triggers among the communicating parties? In Marteen Hajer's description we find a reflective-constructivist approach that presents some interesting ideas relating to these kind of questions (Hajer, 1996). From Hajer's perspective, eco-modernisation may be understood as *cultural politics* that is a non-deliberative social narrative, a storyline: a compelling social construction of the environment, nature and society that forms institutions and policies, providing preferences and privileges for some coalitions, while suppressing others. In this 'cultural politics' approach, attention is on the social order and the social impact of constructing technical or scientific definitions of environmental problems. Thus the dominant articulations of ecomodernisation - institutional learning, technocratic planning - are storylines forming institutions and activities that maintains an expert-laity dichotomy, the predominant consumption-production pattern, and the alienation of the lifeworld experiences of social need and struggle in the handling of the environment as an externality.

2.1 The cultural politics approach

Hajer's discussions of cultural politics form a normative position for criticising institutional learning, the critics of technocracy or any other realist projects. As such, it tends to serve as a classical critical sociological discussion about northern domination of the south, western emancipation efforts and capitalist internalisation whereby e.g. green counter-cultures lost their anti-growth politics to ecomodernistic forces. However, this binary storyline is somewhat insensitive to the ongoing cultural incentives and discourses that prevail as a lively and innovative promoter of social creativity among business-networks, researchers, consumers, entrepreneurs and NGOs.

The benefit of the cultural politics approach is that it basically relates to an embedding of normative claims and rationalities within a civic society where everyday life experiences and values are coherently present in preferences and practice (see e.g. Lash et. al 1996). Focal points are diversity, plurality, temporality, situations that may produce a number of responses embedding environmental issues into local cultural politics of the good life, critiques of growth, consumerism etc. (Hajer & Fischer, 2000). The cultural politics approach thus may be used to stimulate the curiosity as to the motives and identities of the various entrepreneurs, business persons and producer-consumer cultures, their mutual reflective practice and their institutionalisation in networks, production chains and in the public sphere. That is the subject positions of actors within institutions, their constellations and discursive anticipations. Thus, cultural politics gives attention to how individuals, groups and discourse coalitions form interpretations of situations, conflicts and norms by the active shaping of narrative meaning - storylines. This places a spotlight on how the environment is

perceived and how it is communicated, the agents that are involved, and how those agents reflect, act and communicate environmentally.

According to institutional policy science (see i.e. Andersen, N.Å 1996) societal renewal can be segmented into the following phases: the emergence of new ideals (greens) that condense into powerful discourses (environmental protection), then become institutionalised (regulation, R&D) before being adopted by organisations and furthered in society. In Hajer's understanding, cultural politics could positively form discourse coalitions and storylines that enter the institutional level of sectors and becomes gradually a new institutional field. These institutions deliberately and incidentally (cultural politics), co-shape the market place and the public sphere, and provide a spur to reflexive reactions among businesses and institutions, e.g. incorporating environmental profiles as the new normality. Institutionalizations of cultural politics are subsequently diffused (in social fora, markets, and commodities). Hajer would surely maintain that in order to be democratic institutionalisation would have to be open to local social productive interpretations of environmental issues.

2.2 Cultural politics and empirical studies of transition

By taking an analytical approach to cultural politics, we do not share Hajer's assumption that institutional learning is solely a system-preserving discourse representing a story about negative internalisation of radical greens into a non-changing social order. It may also be a positive articulation of a broad green preference that actually succeeds in being maintained and diffused throughout society.² However, the story of the expelled and a critique of the closure of politics is needed. In an everyday life perspective, this story is a story of dilemmas and ambivalences in daily practice, be it in the supermarket as a consumer choice of green or dirty products, in the household as daily practice (Halkier, 1998) or in the workplace as professional practice (Nielsen, 1996).

In our study, we have focused on the role of cultural processes in the transformation of the food sector, exemplified by the transition to organic production of bread. We have undertaken case studies of three distinct examples of transformation, where we have carried out interviews with workers and management at different levels, and representatives of network related to the transition. Furthermore, we have arranged workshops concerning future visions of bread production with different actors in the bread production network. The aim of the studies was to reveal the role of the actors, their subjective perception, and action in the change processes and to study the cultural dynamics of communication and development of the reflections and visions of sustainable breads production.

We have paid special attention to Hajer's discussions about the 'cultural dimension' where actors are viewed as being embedded in social meaning and discursive fields, which have been shaped by policy institutions. Here, it is possible to emphasise the importance of those discursive processes in which specific ways of perceiving and communicating 'the environment' are given preference based on discourse coalitions and struggles (Hajer, 1995). A core element of our study is the question of how the enterprise, as a focal agent embedded in networks and strategic schemes, interprets and acts in relation to environmental problems within given institutional frameworks. Thus, the interplay between enterprises and institutional frameworks concerning levels of environmental concern is understood as being contingent, leaving scope for enterprises to manoeuvre, dependent upon their internal capabilities, strategic interpretation, and the network, in which the enterprise is embedded (Hansen, Søndergård and Meredith 2001).

² Hajer also admits that „... [in some] case institutional learning produce cultural politics and opens the possibility for more broadly defined reflection on the sort of problem the ecological crisis „really“ is.“ (Hajer, 1996, p.262)

3. Normalising organic food production in Denmark

In recent decades, industrialised food production has given rise to growing concern over the impacts on the environment, soil quality, rural community, health, and bio-diversity. Since mid 1970's biodynamic/organic farming and food processing has been practised as an overall response to hyper-industrialised food, nutrition and soil deterioration among a still growing green producer and consumer culture. In the last decade, organic food has expanded its market share in Denmark considerably among a broader consumer culture and organic principles have become more widespread as a political and consumer response to the broad range of negative impacts from conventional agriculture (Ministry of Food, Agriculture and Fisheries, 2000).

The development of organic agriculture policy in Denmark can be described, following the four stages of developments that occur according to institutional history (see i.e. Andersen, N.Å 1996):

- 1) From the 1970's to prime 1980's: The initial stage, where *values and ideals* on alternative food production were culturally developed and practised among entrepreneurs and farmers.
- 2) Organic becomes a political topic by the awakening of *discourses* on non-toxic food and the market based right to have guaranteed organic food provisions.
- 3) From mid 1980's to mid 1990's: *institutionalisation* of organic discourses. The State issued subvention schemes for organic switch-over, provisions of raw materials, and established the Ø-mark (state organised organic label), norms and principles in R&D, advisory councils and groups.
- 4) From mid 90's and on: *organisational restructuring*; the integration of organic farming principles and practise into other policy areas; food quality, land-use, drinking water, public purchasing etc. Strategic efforts for enhancing organic food production by business innovation policies and policies for European market expansion.³

The results of the farmer, regulatory and consumer driven efforts have been that consumer interests in organic products remain strong and have been increasing over the last decade. The number of organic farmers have in ten years grown from 672 to 3466 ultimo 2001, or app. 6% of all farms and farm land (Plantedirektoratet, 2001). Some 47 per cent of Danish households buy organic products either frequently or occasionally; of these, 15 per cent consistently buy organic products when they are available. Among basic food supplies organic market shares are: eggs 13%, milk 20%, wheat flour 11%, and rye flour 22% (Thrane et.al., 2001).

The development of organic food and farming in Denmark is thus, to a large extent, the result of strategic action undertaken by the public, agricultural and retailing sectors, the green NGOs, research institutions and other important interested parties, all working in coalition and united by a seemingly shared storyline. New actors and interests have been activated (retail companies, food industry, public purchasers, research institutions, etc.), resulting in a considerable widening of the arena for the discussion on organic food, but the outcome has also been a commodification of the pluralist cultures of alternative farming. The process has led to the exclusion of a number of principles that initially and still has been related to organic agriculture (Kristensen & Nielsen, 1998). The shared storyline contains no energy related or transportation related requirements, no integration of agriculture into local community, no sectoral change of industries, of impacts on working life and so forth.

³ Currently, April 2002 a new right-wing government has made a general attack on environmental policy, including cuts in organic farming subsidies and promotion policies. The results in the public sphere and on the market are not yet foreseeable.

Is this story of development of organic agriculture a success story of inclusion of the principles of organic production in normal agriculture? Or is it a story of exclusion of broader sustainability requirements and of living democratic and experimental dialogue on agriculture and food production? Instead of regarding the development as a one-dimensional process of ecological modernisation, viewed as either inclusion or exclusion of basic principles, we try to investigate the development as differentiated interpretations and responses to the ecological and health problems of agriculture and food production.

4. Ecological modernisation in bread production – pioneer, front runner, and follower

Bread production may serve as an example of a sector within food production. Bakeries may connect consumer demands for good and healthy food with agricultural production principles of ecologically sound production. In this sector, different strategic positions towards environmental problems can be identified. Many producers have no explicit environmental profile; bread, pastry, cakes are produced and consumed with no discussions about the environmental and health consequences. Other producers have in some respects integrated environmental considerations in their production strategy. Often a minor part of the product range is presented as organic, produced from “environmentally sound flour” or is special “natural” in other respects. Health perspectives in different types of bread and in ingredients such as seeds, grains, fibres etc., are often promoted in the trade. In Denmark, organic bread production is a widespread strategy to satisfy consumer demands for environmentally sound and healthy products, but most often only as a limited part of the sale.

In our case studies, we have been interested in firms with explicit environmental strategies, but also with different positions in the trade. In Denmark, four industrialised bread factories dominate the market for packaged bread, half-baked and frozen bread. The biggest industrial company has approximately 2,200 employees – in Denmark a big company with several divisions also in neighbouring countries. Besides the industrialised bread, there is a market for fresh bread, covered by a large number of small bakeries, of which some are organised in chain stores, and others are part of supermarket chains. Most Danish bakeries, however, are small units with 2-8 bakers and 3-10 sales assistants (part timers). The bakery sector is in strong competition with bake-off products that is industrially produced, frozen, half-baked products that may be finished in ovens in supermarkets, tank stations or at home. Some bakeries survive because they are highly specialised, selling quality products. We have investigated three firms (Holm & Stauning, 2000, Holm et. al. 1999, Meyer-Johansen & Stauning 2001) that may be described as three archetypes in the modernisation process:

1. *The pioneer*: the eco-radical reflective pioneer making unique goods and forming their own institutionalised market - Aurion.
2. *The frontrunner*: non-risk oriented, bulk goods provider that makes a product quality differentiation- Kwickly.
3. *The follower*: business-as-usual follower that incorporates eco-demands as normalisation. - Schulstad.

The three firms have all incorporated an environmental strategy into their business plans, and all have developed an organic bread-production line, but these changes have occurred in very different ways, both internally and externally. They represent, within the trade, three approaches to the transition towards organic production.

4.1 The pioneer – innovations and shared values

The pioneer Aurion (established in 1978) is a small firm, consisting of a flourmill and a bakery. Initially, a group of people formed an organisation of organic food producers and consumers in 1974. This group was inspired by and sought to adhere to the biodynamic principles outlined by Rudolph Steiner. The organisation ran two shops, handed out literature on nutrition and food and health, held meetings and tried to realise an idea of a community of producers, retailers, and consumers, dealing in products that were healthy, and grown following biodynamic principles. The firm is thus a link in the production chain, connecting the contracting farmers who supply the biodynamic grain under contract with the retailing outlets and their customers. This linkage represents a shared ideology, as well as providing practical working relationships and economic interdependence. The farmers are dependent on the chain to sell their harvest, as it is more expensive than traditionally grown grain, and the shops are dependent on the bakery to have good, wholesome, tasty and trust-worthy products to sell.

For a couple of years, these close connections made a small niche production possible, making room for experiments both in farming principles and in recipes for bread and other bakery products, so innovations could be developed. The products were labelled with marks controlled by an association of biodynamic farmers, the Demeter and the Biodyn mark⁴.

In 1987, the Danish State organised label for organic products, the Ø-mark, was settled and consequently the market for organic products grew. This made it more difficult for the biodynamic producers to differentiate their products, and as their production demands were more expensive to meet, they had a financial crisis. The bakery had to modify its strategy to survive. It chose to produce under both labels, and to aim at quality products, innovations and consolidating their production.

In the 90's, the firm experienced both a growing interest and demand for its products, which provided an opportunity for expansion, and increasing competition from producers with more efficient production systems, providing similar products at lower cost. The bakery insisted on maintaining the close relationships to producers and consumers and on its small-scale craftsman-like production, where biodynamic principles and quality could prevail. As a result, demand increased and production rose three-fold. To maintain this position in the trade, the bakery was forced to continue to be innovative, and to be able to respond when competitors copy its products. It has been able to do so by building up a broad network and developing close relationships with farmers who experiment with new grain-cultivation and harvesting techniques, as part of Aurion's continuing experiments with baking quality. Institutional consumers have weekly contacts, and provide responses on taste, quality and other aspects of the bread, and consumers are invited annually to a baking seminar at the bakery.

In close connection with actors in this network, Aurion has been the first on the market to experiment with the use of the old species of wheat, spelt and emmer. This involves contracting with farmers directly for the supply of the grain, the use of agricultural seed researchers for testing and experimentation, the provision of new products to the retailing shops, and finally the bakers themselves, who experiment with recipes and techniques to suit these 'new' species.

The bakery has made an effort to communicate with and inform consumers, through the provision of recipes, articles, product information leaflets, and arranging baking courses for interested people. They thus establish and dissipate a discourse of care for nature diversity and quality that serves specific nutrition, health and taste values. Taste is a matter of sensing the natural qualities of the grain, recognition of the transformations from grain to the bread,

⁴ Control of agricultural products amongst others. That they are grown according to bio-dynamic principles for at least 2/3 years with 100 % natural manure

respect for the quality of raw materials and, also, careful use of resources in the processes. They address not only actors with a completely shared ideology, but with shared values of nature, health and humanism. This discourse also governs the process technology and the skills and practices of bakery and milling for example in the use of stone mills to preserve the taste of the grain, the low energy ovens, the handling of the bread, the recipes of tasty bread with natural ingredients. In addition, the firm has established green accounting procedures within an environmental management regime, focusing on waste, spillage, and the use of renewable energy.

This case shows how the pioneer is connected to a close web with not only other actors in the specific production chain, but also a cultural community of people more or less sharing values and orientation. The cultural community is important, not only to give economic stability by providing a market, but also to give inspiration to new ideas and for the possibility of experiment and research. There is an active dialogue on recipes, research, new agricultural methods, milling processes, that is, an ongoing innovative process in the network. This dialogue reaches far beyond the narrow cultural community and involves researchers, farmers and bakers adopting ideas, people buying bread or trying the recipes now and then and many more.

Aurion thus functions as a laboratory for a form of social learning concerning the use of natural processes and ingredients in baking products. The firm may be regarded as a nodal point for the development of a discourse of care, taste, and the reconciliation of man and nature, and setting new standards and new examples of taste, variety and ecological production. Thus, the firm also influences a broader public and enhances its understanding of quality standards in a market without standards for neither bread nor flour.

4.2 The frontrunner – organic production as business strategy

Supermarket chains dominate the Danish grocery market, of which FDB (Forenede Danske Brugsforeninger, United Danish Cooperative Supermarkets) is dominant with 40 % market share. FDB is a big consumer association or co-operative and consists of a number of relatively independent chains and warehouses.

FDB has a long tradition for a profile of promoting consumer interests in terms of quality and cheap and safe products. In the 80's, they added an environmental profile, and started selling organic products as part of their range. In the 90's, the promotion of organic products became an important part of their business strategy, and they have played an important role in the growth of the market for organic products in Denmark

Kvickly is one of the FDB chains, which has 72 big supermarkets, all with a small bakery connected to the shop, selling fresh, homemade bread and cakes. On the 28th October 1998, all these bakeries made a transition from traditional bakery products to all organic products – retaining the same prices for the products. From that date all breads, cakes, dairy products etc. in the bakers shop had to be able to bear the Ø-mark. The co-ordinators placed in the central administration of FDB had worked on this transition for two years, to ensure that all suppliers were able to deliver the necessary ingredients, and that quality, ecological demands and price were controlled and negotiated. Recipes were tested and new methods were developed as required.

The interesting point is that a transition to organic baking products of that scale can form part of a business strategy. The transition was initiated as a response to the problem of getting pure ingredients, for example maize flour free from genetically modified organisms, grains without pesticide remnants and straw shortener, eggs without salmonella etc. It was difficult to find suppliers that were able to guarantee non-risk products, free from unwanted elements, - the easiest way to get pure products seemed to be to “go organic”. However, there was also a need for a new revival, a new strategy to differentiate the craftsman-like bakeries from other bakeries in town and from industrial bread – and to attract quality-

minded, non-risk-oriented customers to the supermarket.

The high product turnover and the centralisation within the retail chain for supplier negotiations concerning price and technical requirements made it possible to keep prices on organic raw materials low. The scale of Kvickly's purchasing of organic raw materials and products had a great impact on the market concerning lower prices and availability of goods. Whilst the conversion appeared as a strategic advance, the sourcing of organic raw material from Danish suppliers was not so easy. Thus, Kvickly made great efforts to find new suppliers or co-operated with some Danish suppliers in innovating new organic products. Suppliers such as the Danish Sugar Factories were not interested in a product line with organically grown sugar beets, which resulted in a media debate, and stimulated organic production of beets in Sweden.

Our case studies of local bakers and labour show a very high degree of loyalty and commitment to the organic strategy (Meyer-Johansen & Stauning, 2001). This loyalty ensued despite the fact that the period of transition was turbulent with many production problems arising, and the control and registration requirements of the Ø-mark resulting in an increased workload. The employees expressed empathy with the idea of organic bread, and said that they had begun to reflect more over health and environmental problems in food products. However, they have not been involved in the decision and in learning processes which might have provided an opportunity to develop shared visions and ideas of environmentally sound and sustainable bread. Their visions of 'the good bread' were thus vague, involving different ideas and knowledge of environmental problems.

The bakers stressed the cultural values of working in organic production as the possibility to "do things from the bottom". The craftsmanship, the skills, the innovative capability, the pure ingredients and the good (tasty and nice) result seemed important elements in their visions of the good bread. Whereas the sales assistants met the customers' questions concerning allergies and ingredients, and the demands of the Ø-mark. To them, the visions of good bread were connected with trust and the guarantee of non-risk ingredients and healthy bread.

A raising of the public awareness and reflectivity over environmental problems and alternative methods can be seen as a result of the transition, both among the employees and among the consumers. This is certainly not the result of a specific policy within the firm's strategy, but could be described as side effects from a cultural politics point of view. The communication from management of values and ecological principles was rationalised to a question of complying with the Ø-mark and securing a proper registration and control. The firm has made no effort to spread an ecological discourse of care for nature, taste and preserving natural resources. The maintenance of the status as a trustworthy food supplier prohibited any critical articulation of conventional agriculture, such as pesticides, chemical fertilisers etc, as that would have implications for other product lines on the shelves of the supermarket. Instead, the discourse communicated was rather a modernisation to maintain a normal production (all organic bakery products look the same as their predecessors) whilst reducing consumer risk.

This front runner case study illustrates organic production on a large scale, integrated into a normal business strategy. The scale of operation means that pressure can be brought to bear on suppliers to encourage innovation. But the transition in big business has shown little concern to everyday orientation among employees, though revealing the potential for using the reflectiveness among the networks of employees and customers. Within these networks, where values and visions of health, taste, skills, natural ingredients, responsibility and trust are shared and connected to work and product, further change may evolve as part of modernisation.

4.3 The followers – organic production as a segment

The largest Danish bread factory (Schulstad) may, in our study, be characterised as a follower. Whilst they do manufacture an organic bread line to satisfy a segment of customer demand, there has been no specialised development of organic bread, and no special recipes for this bread, other than the necessary changes of ingredients. The organic bread is produced in the same way as the other bread, in an automated line with dough-making, raising, forming, baking all being automatic processes, with the ingredients being the only differentiation between organic and non-organic. Furthermore, the company does not have any environmental policy or environmental management system. They have plans for such, but as yet, they have not been implemented. However, there have been many initiatives to satisfy organic preferences and to respond to new environmental demands among consumers. The company has implemented a very organised and detailed quality management system, so as to be able to react and to make immediate changes if some of the ingredients used should suddenly appear ‘under the spotlight’. There is also a risk-management group at top management level, where policy questions of public interest and risk are discussed. An organic product line was launched fairly early in the development of the organic market, in the early 1990’s, when the company participated in a development project for an organic bread type. This product was not however a success. With the growth in the organic food market during the 90’s, the company then began marketing organic varieties of their bread assortment, especially so as to satisfy the demands of their largest customer, FDB. Secondly, all “unnatural” ingredients have been removed from the bread lines, and the recipes seek to include natural ingredients such as yoghurt, carrots, malt and seeds to provide flavour as well as to give certain characteristics to the bread. Thirdly, potentially ‘risky’ ingredients, such as maize have been abandoned, as the suppliers could not guarantee maize free from genetically modified organisms, and the manufacturer did not want to run the risk of a ‘consumer-storm’ over genetically modified maize.

The employees of this factory did not have a great say in the planning and the development of this firm, and they do not have very much influence over the automated/ assembly line processes. There is no ecological communication with customers or with other network actors, and workers’ ecological commitment is limited due to the non-existence of a ‘public space’ within the work environment for the development and confrontation of these issues. The communication of the organic profile of this firm is, as with FDB, silent about environmental or biodiversity care, and relates simply to the fulfilment of customer demand on the bulk market. The interesting thing about this case is not the discourse of the firm, but the actions of customers, reflecting the discourse in society concerning a perceived risk of conventionally produced food and the health claims of organic bread. The supplier, relying on a quality profile, is forced to follow these concerns so as to retain market share. This is particularly the case with FDB as the main retail trade customer.

Thus, this case illustrates the diffusion of values of good bread and reflections on risk and health among the public, and the process of responding to and adapting innovations and strategies of production to these discourses in firms. In this way, even the big industrial firm without an explicit environmental profile, participates in the ecological transition of the bread industry. However, it is obvious, that most of the basic values of organic production and sustainability are excluded from the way organic production is practised in this firm.

5. Conclusions

Taking a departure in ecological modernisation theory, we have studied the effects of cultural politics as discussed by Hajer, within the market and the business world. More particularly, we studied the values, norms and entrepreneurship of innovative actor-proponents in the corporate eco-modernistic milieu, and the social side effects of specific corporate strategies,

management and performance. The main point has been to re-embed the cultural politics discussion within the discussion of the market, which normally is studied from general strategic or micro economic outlines. We have tried to identify the different storylines and discourses among the business actors, employees and network partners, so as to reveal how environmental matters are embedded in social norms and the proponents of social change. The integration of Beck's methodological concept of interpretative mediation, and reflexivity taken from Beck, Giddens and Murphy have been useful in this sense.

We have discussed how Hajer's binary storyline of either inclusion of cultural politics as paralysis or radical break with cultural imperialism etc. is somewhat insensitive to the ongoing cultural incentives and discourses in the baking trade. The various health, risk, trust, quality discourses prevail as lively and innovative promoters of social creativity both among business-networks, researchers, consumers, entrepreneurs and NGOs. On the other hand, as we reveal what have been expelled from the concepts of "ecological" and "organic", we criticise theoretical studies made by Huber, Mol, and Gouldson that tend to see a smooth integrative capacity of industrial societies for ecological modernisation.

The cases show a difference in positioning in the trade and in the ecological modernisation of the trade, where all positions contribute to the development of ecological reflectivity and orientation. Cultural politics evolve as ecological principles and discourses of health, taste, and skills get integrated in the daily work and communications among customers. This integration is ambivalent though, and eco-modernisation may find hidden minefields if looking for permanent motives in the ambivalence of modern culture – it is too risky.

The cases show a great variety in the responses to the institutional and public discourses and sources, and thus give impetus for more studies of the dynamics of the *filière* (Kemp, 2000). The *pioneer* takes advantage of subvention schemes in grain innovation and quality development, and presents itself as being an excellent business in the organic-biodynamic-health-green trade, and as being more deeply and honestly informed and involved. The *frontrunner* takes advantage of the institutionalised market of organic food as a new non-risk market field for a quality differentiation. It actively used rules on organic food processes in making demands upon its suppliers and business network partners. It has communicated a normalisation profile, being modernised up to the risky conditions that the conventional food industry has taken us into. Finally, the *follower* has used the institutional milieu and public discourses for maintaining a market position of being *the* Danish industrial bread supplier. What has come out of the various transitions is a cultural politics side-effect, where a new commitment in work relations and development of skills and pleasure for good taste and quality is related to engagement and sub-political dialogues.

From our studies we would like to suggest deeper studies of sector related ecological modernisation that take up Hajer's and other cultural politics analysts into a process study of the differentiation and sharing of values and meanings in a reflective orientation among actors. This is meant to supplement studies of state intervention and market calculations by for example Jänicke and Mol, (Jänicke & Weidner 1997, Mol 2000), so as to find the socio-cultural drivers beneath the studies following aggregated concepts of sub-systems, state apparatus capacity or environmental management strategies.

References

- Action plan II Developments in organic farming. English summary. Ministry of Food, Agriculture and Fisheries, Danish Directorate for Development. January 1999
- Andersen, N. Å. (1996), *Selvskabt forvaltning, Nyt fra Samfundsvidenskaberne*.
- Beck, U. (1995): *Ecological Politics in an age of risk*, Polity Press

- Geus, M. de (1996): The ecological restructuring of the state. In B. Doherty & M. de Geus 1996 (eds.): Democracy and Green Political Thought. Sustainability, rights and citizenship. Routledge. pp. 188-211.
- Gouldson, A. & J. Murphy (1997): Ecological Modernisation: Restructuring Industrial Economies. In M. Jacobs (ed.) (1997): Greening the Millennium. The new politics of the Environment. Blackwell Publishers. pp. 74-86.
- Hajer, M. A. (1995): The politics of Environmental Discourse. Ecological Modernization and the Policy Process. Oxford University Press.
- Hajer, M. A. (1996): Ecological Modernization as Cultural Politics. In Lash, S., B. Szerszynski & B. Wynne (1996, eds.): Risk, Environment & Modernity. Towards a New Ecology. Sage.
- Hajer, M. & F.Fischer (2000): Beyond Global Discourse: The rediscovery of culture in environmental politics, in Hajer, M. & F.Fischer (eds.): Living with nature, Sage, Oxford
- Halkier, Bente (1998): Miljøhensyn i forbrug. Erfaringer og forhandlinger i daglig praksis. PhD-dissertation, Dep. Of Environment, Technology and Social Studies, Roskilde University Centre
- Hannigan, J.A (1995): Environmental Sociology – a social constructionist perspective, Routledge
- Hansen, O. E., Søndergård, B. and Meredith, S., (2001): Environmental innovations in Small and Medium Enterprises, in Technology Analysis & Strategic Management, 14 (1), October 2001
- Holm, J. og Inger Stauning (2000) : Økologisk omstilling - Kvickly's bagerier. Et case-studie fra projektet Bæredygtighed på Arbejde, CESAM, RUC, Institut for Miljø, Teknologi og Samfund
- Holm, J. et.al. (1999): Ånd, miljø og brød, Forskningsrapportserien nr. 33, Bæredygtighed på Arbejde (Sustainability at Work), CESAM, RUC, Institut for Miljø, Teknologi og Samfund
- Jänicke, M. & H. Weidner (1997): National Environmental Policies. Springer.
- Kemp, R. (2000): How should we study the relationship between environmental regulation and innovation? in Hemmelskamp et. Al. (eds.): Innovation-oriented Environmental regulation, ZEW Economic Studies, 10
- Kristensen, N.H. & Thorkild Nielsen (1998): From Social Movement to Food Industry the Metamorphosis of Organic Food Production. Paper for the joint meeting of ASFS and AFHVS. Departement of Technology and Social Sciences, Technical University, Denmark. 1998
- Lash, S., B. Szerszynski & B. Wynne (eds.) (1996): Risk, Environment & Modernity. Towards a New Ecology. Sage.
- Leroy, P. & J. van Tatenhove (1997): New Directions in the Organization of Environmental politics, working paper.
- Low, N. & B. Gleeson (1998): Justice, society and nature. An exploration of political ecology. Routledge
- Meyer-Johansen, H & I. Stauning (2001): Bæredygtighed på arbejde – en ny social og faglig orientering i arbejdet. In: Arbejdsliv 3/3 p.43-64
- Ministry of Food, Agriculture & Fisheries (Ministeriet for fødevarer, jordbrug og fiskeri) (2000): Forskning i økologisk jordbrug 1993-97. www.strukdir.dk
- Mol, A. P. (1995): The Refinement of Production. Ecological Modernization Theory and the chemical industry. Utrecht: Van Arkel.
- Mol, A. (2000): The environmental movement in an era of ecological modernisation, Geoforum, 31 (1), 45-56.
- Murphy, J. (2000): Editorial - Ecological modernisation, Geoforum, 31 (1), 1-8. Natur og miljøpolitisk redegørelse, 1999
- Nielsen, KA (1996): Arbejdets sociale orientering . Forlaget Sociologi. København.
- Plantedirektoratet (2001): Økologiske Jordbrugsbedrifter, Ministry of Food, Agriculture & Fisheries, Denmark
- Spaargaren, G. (2000): Ecological modernization theory and domestic consumption, in Journal of Environmental Policy and Planning, Vol.2, Issue 4, 2000

Thrane, M. et al (2001): Den Økologiske Landbrugssektor, POET projektserie, Delrapport 1, AUC

Weale, A. (1992): The new politics of pollution. Issues in Environmental Politics. Manchester University Press.