

ALTERNATIVE AGRICULTURE MOVEMENTS AND RURAL DEVELOPMENT COSMOLOGIES*

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INTRODUCTION

Do movements for alternative agriculture contribute to sustainable development? If so, how do they do so? Should they be seen solely as movements for technical change (change in the forces and means of production and consumption to make these less damaging to nature), or can they be understood more broadly as movements for rural regeneration and the recreation of community within rural spaces? In Habermas' (1984, 1987) terms, do they articulate instrumental-strategic or communicative forms of reason as the basis for social and for society-nature relationships? This paper draws on ongoing research into the organic food and farming movement in Ireland (see also Tovey 1997, 1999) to explore some aspects of these questions. It argues that much recent discussion of rural development overlooks the significant part which can be played in this by social movements, and as a result, underestimates some key elements in processes of change, particularly around the reconstruction of rural civil society.

The concept of sustainable development has been subjected to severe critique (see e.g. Adams 1995; Baker et al (eds) 1997; Becker and Jahn (eds) 1999; Redclift 1997; Torgerson 1995). As long as it is defined purely in terms of ecological sustainability, or the maintenance of the ecological conditions necessary to sustain human life over several generations, its meaning and application may be fairly clear. But as Becker and Jahn note, the main interest which social scientists have in sustainability is not conservation of nature but rather 'the viability of socially shaped relationships between society and nature over long periods of time' (1999: 4). In turn this raises questions about equity and legitimacy in social arrangements and about how societies manage processes of change. Thus discussions of sustainable development necessarily involve normative claims and political programmes as well as scientific analysis, to a point where, they suggest, we should treat the term not as a well defined concept but 'a contested discursive field', whose main contribution has been to 'introduce to environmental issues a concern with social justice and political participation' (1999: 1).

Efforts to preserve what is useful in the concept while reducing some of its ambiguities lead some authors to talk of 'sustainable livelihoods' rather than 'sustainable development' (Chambers 1995; de Haan 2000). De Haan explains a sustainable livelihood as a way a person makes a living for themselves, using their capacities and assets, which meets their (self-defined) essential needs and can resist shocks and stress over time. The move from 'sustainable development' to 'sustainable livelihoods' at first seems to substitute a clear economic definition of sustainability for the ecological clarity which initially underpinned it, but it quickly becomes apparent that the 'capabilities and assets' required for sustainable livelihoods include more than just economic resources. For example, the tenth World Congress of the International Rural Sociological Association in Rio de Janeiro in August 2000, which was centered on the theme of 'sustainable rural livelihoods', elaborated this in terms of three elements: 'building communities', 'protecting resources', 'fostering human development'. De Haan similarly links sustainability in livelihoods to the presence of natural, human and social (as well as physical and financial) capital. The problem then becomes that of knowing whether or how these different dimensions or 'capitals' fit together. Does a social group or society which possesses an abundance of 'social capital' necessarily convert that into the sorts of development practices which will lead to sustainable rural livelihoods? What additional factors might be needed for that to happen? Also, how do groups acquire 'social capital' in the first place, and sustain it over time?

The concept of 'social capital' refers us to what sociological discussions have often treated as the presence of 'community' within groups undergoing or needing to undergo development. Social capital is measured through the quality of relations between individuals, in terms of trust, neighbourliness and reciprocity; the quantity and extent of relations, in terms of access to or incorporation into networks, groups and institutions; and a shared culture which offers relatively stable and accepted rules for behaviour and common frameworks for orienting to the future. If 'community' is a difficult and contested concept, 'social capital' also has problematic aspects, including, for some sociologists, its associations with Rational Choice Theory and its recent enthusiastic adoption by the World Bank (see Fine 2001), and for others, the 'reifying' (Sachs 1999) effect of reducing everything, whether or not it can be measured quantitatively, to forms of capital. Research has often been narrowly targeted on social capital as relations of 'trust' between members of a collectivity, and on voluntary associations as the major transmitters of and occasions for the development of trust (van Deth et al 1999). The emphasis on voluntary associations seems unnecessarily limiting, given that crucial experiences in relation to trust occur in relationships either with the state or with the market. It seems attributable primarily to the interest which social capital analysts have in theorising 'civil society', understood simply as that domain of interactions and relationships which is neither private/domestic, nor structured by the imperatives of either economics or politics. Social movements generally enter into research on social capital only to the extent that they encourage or promote the establishment of voluntary associations (Siisiainen 1999), overlooking the possibility that they might be a source of social capital in their own right.

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The conceptual transmutation of 'sustainable development' into a combination of 'sustainable livelihoods' and 'social capital' represents one way of trying to overcome the normative associations of sustainability. It moves the debate to an empirical investigation of how attempts to achieve social arrangements which are (relatively) socially inclusive, egalitarian, and/or politically participative, may (or may not) be related to attempts to institutionalise long-term natural resource management to meet human needs. As such, it has some advantages but also some limitations. An alternative move is to drop the term 'sustainable' and return to a renewed concept of '(rural) development'.

The value of 'sustainable development', for many rural sociologists, was that it revealed the deficiencies of economic understandings of development as 'growth' or as 'economic modernisation'. Once understood, these deficiencies may be best dealt with through terms such as 'whole development' (Sachs 1999), or 'rural development practices' (van der Ploeg, Renting and Minderhoud-Jones 2000). Van der Ploeg et al (2000) characterise contemporary rural development as a multi-faceted array of practices - landscape management, conservation of nature, agri-tourism, organic farming, the production of high-quality region-specific foods - which represent the responses of rural households themselves, out of their own 'well-understood self-interest' Van der Ploeg et al (2000: 404), to the fact that rural development policies and ideologies, which still largely articulate modernisationist conceptions of development, are making their livelihoods more and more unsustainable. 'Time and again we see that Rural Development is about: the construction of new networks, the revalorisation and recombination of resources, the co-ordination and (re)-moulding of the social and the material, and the (renewed) use of social, cultural and ecological capital' Van der Ploeg et al (2000: 400). This paper also explores rural development understood as everyday rural practices, rather than as policy or social scientific paradigm. However it asks how the notion of resisting the modernisationist development paradigm and creating new livelihood practices may be introduced as a realistic possibility into rural localities at all, particularly localities which have been marginalised and demoralised by the collapse of farming under agricultural development policies over the past thirty or so years. It suggests that here, in some cases at least, alternative agriculture movements may play a critical role.

A considerable body of sociological research exists on rural community development in Ireland. But this has focussed almost exclusively on associations or groups who are officially and self-labelled as community development agents, detailing their developmental life-cycles, their history, values and management styles, impact on local economies, relations with the state and the European Union particularly in terms of discourses of 'partnership' and 'participation' in 'bottom-up' development strategies, and their increasing 'professionalisation' (see e.g. Cawley and Keane 1999; Commins 1985; Cuddy 1991; Curtin 1996; Curtin and Varley 1991, 1995; Devereux 1991, 1993; Mernagh and Commins 1997; Shortall 1994; Varley 1999). Two issues have dominated: how agencies established for community development goals might involve themselves in setting up economic enterprises and in creating viable livelihoods; and the importance of 'empowering' local actors, or developing organisational structures which will generate a sense of efficacy and self-reliance within the local community which is undergoing development. Looking at alternative agriculture activists as developers of rural community means starting from the opposite end of the spectrum. Their primary concern is not community development as such but economic innovation - the attempt to generate an alternative livelihood within the countryside. Nevertheless their economic entrepreneurialism appears to carry with it some 'empowering' non-economic impacts and dimensions. I link this to the fact that many of the alternative agriculturalists involved in organic farming in Ireland are not just individual entrepreneurs, but members of an alternative social movement.

Within such movements, the issue of finding and maintaining the appropriate balance between instrumental and communicative relations with other humans and with nature is a critical dilemma for members. There are strong pressures from both commercial and political sources to define organic and other alternative agricultures as matters of technical change alone - the development and application of different, or non-conventional, techniques for managing nature in order to produce food (Tovey 1999). Technical innovation, moreover, is typically of great interest to alternative food producers themselves, and a dominant feature of the character of alternative agriculture movements. But such movements are about more than inventing alternative ways of producing food. They follow a holistic vision of reality, in which technical methods of food production are thought of as embedded within interactions with *both* nature and society, and cannot be evaluated separately from evaluation of their impacts on humans, on other species, and on the forms of social organisation which underpin a sustainable rural community.

Rural and agricultural sociologists have generally not evinced much interest in social movements perspectives (an exception is Mooney and Majka 1995), being concerned more with the analysis of macro-structures shaping food systems and regimes than collective (or individual) agency. Equally, social movement theorists have generally lacked any interest in, or have been downright dismissive of, the notion that rural or agrarian social movements could be empirically or theoretically fruitful to study (Mooney 2000). I hope to show that social movements theorising can yield some insights into the dilemmas and contradictions embedded within projects for sustainable development; and simultaneously, that the dilemmas facing rural movement activists can be analysed in ways which advance social movements theorising in general. In particular, I want to use my case-study of Irish organic producers as unofficial community development activists to present the cognitive approach to social movements, associated particularly with Eyerman and Jamison (1991), which has, I believe, been undeservedly neglected by other social movements theorists.

It is appropriate to end this section with a brief note on the data used in the paper. It comes primarily from 20 interviews with organic horticulturalists and livestock farmers, conducted over the past 2-3 years as exploratory work for an anticipated larger study. The subjects were located by the snowball method, where each person interviewed suggested other

relevant people who could also be included, so they can be seen as more or less well-integrated members of an existing network or overlapping networks. Their high levels of community development activities may thus be partly the result of selection bias. However, I believe that this does not invalidate exploring the meanings of that activism for them. I should also note that the interviews were intended primarily to study the issue of technical innovation, since it was this which was most engaging my interest in organic farming in Ireland at the time: I wanted to find out whether these proponents of alternative farming saw themselves as inheritors and re-valuers of farming practices which have been widely categorised - and castigated - as 'traditional' or 'peasant' ways of farming, or whether they saw themselves as the bearers of a new science of farming to replace the productivist type of agricultural science which has been widely accused of damaging natural systems. That in spite of this focus, community or 'social capital' development emerged as such a significant issue for nearly all of those interviewed lends some weight to my interpretation of its importance for understanding alternative agriculture movements. Nevertheless, the data used in the paper are clearly limited in both spread and depth. I do not claim much more for it than that it helps to illustrate and bring to life an argument which at present remains theoretically rather than empirically based.

THEORETICAL PERSPECTIVES ON SOCIAL MOVEMENTS

Since I am emphasising the importance of thinking of alternative agriculture movements as social movements, I start with a brief outline of social movement theorising in sociology more generally, and locate my own approach within this wide and differentiated field. The definition of a social movement is a contested issue in the contemporary sociological literature. That literature has been shaped by two quite different traditions of theorising about social movements, and (more recently) by attempts to generate interaction and dialogue between them. On one side is the predominantly American tradition which emerged historically out of critique of the functionalist 'strain' theory of Smelser and others (Alexander 1996; McAdam, McCarthy and Zald 1988; Scott 1990, 1992; Zald and McCarthy 1987) and which focuses on social movements as rational actors pursuing political goals through strategic mobilisation of resources; on the other is the predominantly European tradition, influenced by Critical Theory and its meditations on the consequences of the incorporation of the working class into modern capitalism, which addresses social movements as possible bearers (and products) of new societal orders (Clark and Diani 1996; Scott 1990, 1996). Despite vigorous interchange between the traditions over the past decade, the distinction between two more or less opposed ways of analysing social movements persists in the literature, constantly reappearing in reworked forms. It is now more likely to be expressed as a distinction between 'political' (or Resource Mobilisation) and 'cultural' (or 'identity-oriented') perspectives than in terms of geographically-based traditions of theorising, and the emphasis is more on finding ways to integrate than to differentiate the perspectives (Cohen 1996; Maheu 1996). Nevertheless, the historical formation of contemporary debates about social movements has produced competing ways of defining or conceptualising them, which continue to shape interpretations of empirical movements.

'Political' perspectives understand social movements as realised primarily in their formal organisational manifestations, whereas 'cultural' perspectives are more likely to understand them as loosely inter-related informal networks of actors. Resource Mobilisation Theory (RMT), widely used as the main exemplar of the 'political' approach, does not ignore the pre-formal-organisation stage of social movement development (McAdam et al 1988). But its particular strength lies in analysing Social Movement Organisations (SMOs) and problems of social movement organisation (Mayer 1995; Scott 1992). This can make social movements hard to distinguish from their representing organisations, and in extreme versions produces an 'instrumentalising and decontextualising' approach to analysis which treats even the ideologies of the movement as little more than rhetorical 'strategies for mobilising masses' (Alexander 1996: 209). On the other hand, 'cultural' theorists like Touraine (1995) and Melucci (1989) strongly resist reducing a social movement to the formal organisations that claim to represent it or to articulate its ideas. Melucci argues that social movements have their most enduring existence within 'cultural networks'. These are not merely a source of recruits to be mobilised into demonstrations and political protests when the occasion demands, but are ongoing 'cultural laboratories' in which new lifestyles and forms of social relations can be developed. 'Cultural' theorists shift the focus of attention away from organisational characteristics and concerns onto forms of everyday living, arguing that social movements are concerned with values and life-styles as much as with demands for the inclusion of excluded groups and categories in the policy formation process. Indeed, the goal of social movement activity is often to alter and extend the boundaries of political discourse itself (Mayer 1995). Social movements seek change through cultural as well as political innovation - reconstructing values, personal identities and cultural symbols, and contributing to the emergence of alternative life-styles. 'Membership' in a movement or movement organisation is a matter of informal networking and grass-roots mobilisation - displaying interest, turning up at events and occasions, participating in the alternative lifestyle - rather than paying a standardised subscription and receiving in return standardised privileges and services. Movement actors may, indeed, express considerable suspicion of the formal and hierarchical types of organisation typical of representative democracy (Scott 1990: 30).

My discussion to this point emphasises the difference between these two theoretical perspectives on social movements, the 'political' and the 'cultural' (Alexander 1996) or 'instrumentally rational' and 'identity-oriented' (Cohen 1996). However, there have been a number of attempts to bring the two perspectives into some sort of dialogue. One which has been widely discussed suggests that rather than treat these as competing theories of social movements, we see them as descriptions of movements which are temporally distinct. 'Political' orientations and strategies are the dominant characteristic of 'old' social movements or the movements of pre-reflexive modernity; when 'cultural' concerns dominate, this tells us that we are looking at a 'new' social movement. This distinction between 'old' and 'new' social movements was

itself originally a key feature separating the 'American' and 'European' traditions of theorising: American theorists rarely invoked it, European ones constantly did. In America, interest in social movements developed out of an interest in understanding collective action in general, and the aim was to identify the characteristics of social movements, as a subset of collective action, in terms that transcended particular historical or cultural conditions. Among European theorists, the influence of Marxist and Critical Theory generated a preoccupation with linking types of movement to types of societal epoch, for example in Touraine's (1995) attempt to identify and contrast the social movements found in Industrial and in Post-Industrial or Programmed Societies.

If the classical social movements of industrial society differ from those new forms emerging in late modernity, then collective action is undergoing a historical change in character - becoming less formally organised (Plotke 1990; Scott 1990), less involved in the pursuit of 'emancipatory' political goals (Giddens 1991), more concerned with meaning, culture and the elaboration of alternative values (Goldblatt 1996) and in particular with the articulation and defence of new or marginalised social identities. This shift from 'instrumentalising' to 'expressive' (Rucht 1990) collective action demonstrates, for New Social Movement theorists, that a real transformation has occurred in contemporary society as a whole. But the historical accuracy of the argument has been challenged by a succession of researchers who point out that workers' movements in the 19th century, or feminist movements of the mid-20th century, both of which might be considered to be examples of 'old' movements, contained elements of both instrumental and expressive action (Cohen 1996; Scott 1992).

A second attempt at reconciliation produces what is called the 'stage' or 'lifecycle model' of social movement development (Cohen 1996: 199). The stage model, found in authors as far apart theoretically as Przeworski (1985), McAdam et al (1988), and Jamison (1996), says that the 'political' and 'cultural' designations do not refer to different theoretical perspectives on movements, nor to movements located in historically separated periods, but to the different stages of development through which individual movements characteristically pass. All social movements, it is suggested, undergo a developmental process in which they pass from non-institutionalised, mass protest forms of action to institutionalised and routine interest group or party politics. Features often attributed to 'new' social movements, such as the presence of loose network forms of organisation and the absence of distinctions between leaders and followers, members and non-members, simply indicate that the movement is in an early developmental stage. This inevitably gives way to a second stage of movement activity when action shifts from the expressive and solidarity-creating to the instrumental and strategic: 'The logic of collective action at this stage is structured by the politics of political inclusion', and social movements undergo 'a learning process involving goal-rational adaptation to political structures' (Cohen 1996: 200).

A major problem of the stage model is its linearity. Cohen (1996) argues that rather than assuming social movements undergo linear patterns of evolution, we should recognise that many, perhaps most, contemporary movements have had 'a dual organisational logic' from their inception. Tendencies towards rationalisation, formalisation and institutionalisation exist and may be particularly marked at certain points in time, but they never entirely exclude co-existing tendencies towards decentralisation and democratisation, the proliferation of cultural networks and alternative lifestyles, and activities oriented towards collective identity construction and new knowledges. Cohen (1996) says that contemporary social movements have a 'double political task': they must engage in a 'politics of influence' in the political sphere, and simultaneously in a 'politics of identity' in the life-world or civil society sphere. Another way of putting this is to say that social movements target both political and civil society. For Cohen, this insight is the undoubted contribution of 'cultural' theorising about social movements: 'Contemporary collective actors consciously struggle over the power to construct new identities, to create democratic spaces within both civil society and the polity for autonomous social action, and to reinterpret norms and reshape institutions. It is incumbent on the theorist to view civil society as the target as well as the terrain of collective action...' (Cohen 1996:181).

Stage models recognise that social movements target both, but treat them as 'either/or' orientations, assuming that the normal history of a movement is to pass in a linear fashion from one to the other, and that this represents some sort of learning or maturing process. Cohen's (1996) 'dual logic' approach insists that movements are continuously engaged in acting on both civil society and polity/economy, even if one or the other may have greater significance at particular times. More importantly still, she insists that the dualism be seen as belonging to the movements themselves, rather than to theorising about them: the presence of two different ways of understanding movements in the theoretical literature is a response to the presence of divergent activities and goals within movements themselves. It reflects the different praxes utilised by movement actors at different points in the life-history of the movement. This seems to me a very important argument. Although Cohen herself does not take this step, being apparently content to treat duality within social movements as an unproblematic source of strength, it does open up the possibility that the choice, at any one time, between 'cultural' and 'instrumental' action is not just a function of the movement adapting to changing circumstances: it may in fact be a hugely problematic dichotomy which actors within movements themselves have to confront and somehow manage in their movement lives.

The idea that movement activism is shaped by the constant need to manage and balance instrumental and cultural goals is central to my own approach to studying organic farming as a social movement in Ireland (Tovey 1999). To develop it here, I draw particularly on that version of a 'cultural' approach to social movements which has been elaborated by Eyerman and Jamison (1991) and Jamison (1996). Their work offers a useful way of elaborating the 'political/cultural' dichotomy which opens it up to empirical observation and analysis. Although they themselves do not do so, we can use

their conceptual framework to uncover the extent to which social movements like the organic farming movement and other movements for sustainable development confront and struggle with a 'duality' of aims and values that place problematic choices constantly before the actors concerned.

Eyerman and Jamison (1991) broaden the notion of 'culture' to include not just symbolic and expressive dimensions of collective behaviour, but also and most importantly, the cognitive dimension. They see social movements primarily as *cognitive actors*, engaged in the construction of new sorts of knowledge and in attempts to produce cognitive change in society. Social movements are collective knowledge innovators - 'breeding grounds for innovations in thought' or 'bearers of new ideas' (Eyerman and Jamison 1991: 3) which can transform our understanding of the age we live in and of its future possibilities. The cognitive aspect of social movement activity tends to be ignored by perspectives which see social movements primarily as political organisations whose main concern is to mobilise resources and act as vehicles for particular political campaigns (Jamison 1996: 238). But it has equally been underplayed by identity-oriented perspectives, which treat social movements as engaged primarily in the creation of collective identities, and thus overlook the central role of collective cognitive praxis in constituting distinctive movements.

Eyerman and Jamison's (1991) development of the notion of cognitive praxis has been particularly shaped by Habermas' conception of 'knowledge-constituting interests'. Thus, they identify three distinct dimensions of cognitive praxis: *cosmological* - the basic assumptions and beliefs which are taken for granted by movement activists and which enable them to create and express a distinctive world-view (e.g. ecological holism, in the case of the environmental movement); *technological* (which includes both the specific techniques and artefacts against which movement actors are protesting, and the alternative techniques, as in biodynamic agriculture or renewable energy, which they are trying to develop); and *organisational*, which includes in particular their visions of how knowledge should be produced and disseminated. This usually involves insistence on greater democratic participation in decision-making, and the rejection of conventional distinctions between 'experts' and others (Jamison 1996: 239), but it can refer more broadly to any ethics of human relationships. Eyerman and Jamison (1991) do not say much about this third dimension, but what they do say points us towards exploring movement actors' ideas about appropriate ways of organising social relations to put technological innovations into practice. The social management of technology - or the social relations which are developed in the course of applying new techniques for acting on the external world - is thus indicated to be as important an issue to movement activists as is technological innovation itself. The three dimensions echo Habermas' (1971) distinctions between emancipatory, instrumental, and communicative 'interests', which underpin the constitution of what he saw as three very different bodies of knowledge: critical, scientific, and hermeneutic. This is why 'organisational praxis', in Eyerman and Jamison's (1991) discussion of it, is not just to do with innovating techniques for organising people so to achieve instrumental successes, i.e. subsumable within the 'technical' dimension - although without the link back to Habermas, why that should not be so is not always clear.

Eyerman and Jamison (1991) discuss the fact that social movements face serious problems in trying to maintain the integration of all three dimensions of knowledge over time. Other social actors or institutions (particularly state or corporate groups) will bring very strong pressures to bear on movements, trying to single out those elements of the cognitive praxis which most interest them (usually, these are the innovations in technical knowledge), so that they can incorporate these individually within their own knowledge sets, while discarding the rest. It is thus inevitable that social movements are impermanent and transient sources of what may be permanent and far-reaching political and cultural change. Social movements define themselves in the process of creating, articulating and formulating new knowledge, but once this new knowledge has become formalised and accepted, whether within the scientific world or the established political culture, then it has 'left the space of the movement behind' (1991: 60).

This is an interesting argument which could be developed further, but for the moment I want to stress how, in emphasising it, Eyerman and Jamison (1991) leave other possibilities largely unexplored. They do not address the possibility, for example, that relations between the three dimensions of knowledge may be incoherent or contradictory within a single given movement, or that there may be a constant tension between the cognitive praxis which actors develop around one dimension, and the praxes manifest in the other two. The assumption is that tension and confrontation occurs between movement and outside institutions, not within the movement itself, between or within individual members. But it is also possible that actors' interests in innovating technologically run up against absolute values articulated in their cosmology. How do movement actors come to recognise this sort of contradictory outcome from their work as activists, and how do they respond to and deal with it when they do recognise it?

RURAL DEVELOPMENT AND THE ORGANIC MOVEMENT IN IRELAND

Eyerman and Jamison's model of the cognitive project of a social movement draws largely from one specific case: the environmental movement of Western Europe from the 1970s on. The argument that movement actors display a marked interest in technical issues and forms of knowledge should be seen in that context; it may be less evident in other types of movement at other times, which are less concerned about science and its uses. The organic movement itself is sometimes characterised as a movement so narrowly preoccupied with technical change in the process of food production that it scarcely merits the label of 'environmental social movement' at all (e.g. Buttel 1994). The data presented here suggest that, while innovating in methods of food production is of passionate interest to many Irish organic farmers and growers, they also live within and take for granted a cosmology which prevents them from considering techniques of production in isolation from their effects on both nature and social relations.

The dominant feature of the members of the movement to emerge from interviews was that they see themselves as people engaged in trying to establish or maintain innovatory forms of livelihood connected with food. They understand natural-resource-exploiting forms of activity as absolutely central to the survival of 'rurality' in contemporary Europe (see also Curtin, Haase and Tovey 1996). They argue that with the loss of small farming, rural Ireland is becoming 'suburbanised' (Interview 7); or that living in a countryside in which productive work on nature is not encouraged is like living in 'a huge museum' (Interview 4). Livelihoods based on food can be innovatory in a range of different ways: in the methods used to grow or rear it, or the social relationships through which labour is made available to produce it, or the way linkages between growers and processors are organised, or the methods used to sell to consumers, or the connections created between local forms of food and other dimensions of local 'heritage' and identity, or the conferring of economic value on local food-producing knowledges and skills through the establishment and policing, for example, of systems modelled on 'appellation d'origine controllee'. The Irish organic farmers interviewed were most prepared to speak about the first of these; but as the discussion went on, it became increasingly clear that other forms of innovation, particularly around social relationships with labour or with consumers, were also a key concern.

Thus, for example, they spoke at length and enthusiastically about new strategies they have developed to deal with pests on their vegetables without using chemical protections; about ways in which they have been able to overwinter numbers of cattle on grass without either overgrazing the land or starving their cattle; about rotating their use of land to avoid a build-up of worms in the animals; about selecting the right breeds of animal and right species of grasses to survive and thrive under organic conditions; and so on. Their interest in and emphasis on creating technical responses to problems was so marked that it would be easy, on a superficial reading, to attribute to them a discourse of organic farming which is almost purely technicist, with little environmental or social content. I argue that that would seriously misrepresent their position. A brief focus on three other strands also evident in the interviews help to illustrate that. These are: a holistic vision which sees nature and society as intertwined (and food, or food production, as a significant mediator between the two); an insistence that organic farming is inseparable from rural development; and an interest in innovating organisationally as well as technically.

A number of those interviewed said explicitly that environment, food production and community are intertwined and cannot be dealt with separately:

I'd see it as being part of a very wide thing really and I think, I mean everything in the countryside is interconnected to some way or another anyhow so from that point of view, yeah, I'd say its like a network really. People who are kind of environment conscious tend to belong to a lot of different organisations even though I don't personally but I would support a lot of different causes like that as well (Interview 1).

It's environment, it's organics, it's community. The very way we're running the farm, which incidentally developed rather than was planned, we have a consistent flow of people through the farm. Most people come to learn as well as work and wherever possible we give them as much backwards...(Interview 3).

I suppose partly why we are organic farmers, it's not just the environmental thing, there's a bit of a no nonsense approach in a way. We like to do things in a way in which we consider the right way to do it. And I'd be terribly concerned about what's happening to rural Ireland and I'd be terribly concerned about food production, all that and keeping people here.... (Interview 6).

The influence of an ecological holism was evident in many interviews, where the organic farmers made initial connections between producing good food and environmental conservation, and then went on to include people, social relations and community as well. Nearly all made some connection, implicit or explicit, between organic farming and rural development, because, as one said:

There's so much going on at the minute with so many going out of farming and farming becoming such a business, and needing business managers more than farmers. And because it is not easy for that to happen in the West [of Ireland] and because you wouldn't want it to happen anyway and we would be keen to keep family farms going and greater diversity of activity on the farms which is the organic thing. And we would also see it as a community development thing, to try and feed a community from within a community as much as possible. But realising as well that we'd export and import things too. And seeing opportunities there for export, for niche markets in organic... (Interview 13).

The connection mentioned by most was with the labour-intensive nature of organic production - that it ought to be a good source of employment for rural people which would help to keep them in the locality. In practice, most conceded that its potential for generating local employment had not been realised so far, but they were still optimistic that it would become significant, over time.

Most of those interviewed were not originally from the locality in which they were farming. Some had previously farmed elsewhere, but many had had distinctive career histories which involved working with innovative groups before they turned to organic food production, such as helping to administer a vegetarian whole-food co-operative and supporting its producers, or editing an alternative magazine and working with its writers. In their contemporary farming lives, many are committed to selling their food through relations which are personal as well as economic - particularly through direct selling to food consumers at local markets or via the box system, but also through building up a good relationships, for

example, with chefs in local restaurants. This gives them opportunities to develop social relations with others in their locality which are not so available to the conventional farmer. It also illustrates how the organic activists largely took for granted that market exchanges are social exchanges and are to be valued for both aspects.

Among the organic growers and farmers interviewed (and as noted above, they may over-represent the best-known people in the movement), involvement in broader developmental activities and organisations - both directly connected with the organic movement, and not connected at all or only peripherally - stood out as a pronounced characteristic. This was particularly striking given the heavy labour demands which organic production makes on producers and which all of them complained about in one way or another. They were Chairmen, ex-Chairmen, or Board members of one or other of the three national organic organisations in Ireland; active members of their local community councils; office-holders in local co-operatives; key figures in the LETS (Local Exchange and Trading Systems) movement for developing local trading currencies; extensively involved in organising courses on organic production in conjunction with LEADER groups in Ireland or with Teagasc, the national food and agricultural authority. Beyond this, there were a number of interviewees who had a specific interest in innovating techniques of social organisation around organic farming, in much the same way, if less strongly, as they were interested in innovating production techniques.

One activist, for example, said that he became involved in organic growing because he wanted to develop 'sustainable lifestyles' (Interview 3). He has innovated organisationally in a number of ways to deal with labour shortages in a very labour-intensive horticultural enterprise. He belongs to the local LETS system and has 'two or three people on average coming up, they'd work a day in exchange for local currency in vegetables'; he exchanges hospitality and a holiday in the countryside to visitors in return for help with the work; and given the constraints on individuals working in organic production (hard work and small returns) he is trying to develop a new organisational form which he calls 'community gardening'. A lot of people want organic vegetables but cannot take on the responsibility of running a garden themselves, so...

I'm interested in the idea of setting up gardens where people can come and work more or less when it suits them. So you'd need an overall manager there and then you can have children there, you can have adults there, you can have unemployed, coming and working as they choose and getting from it what they need...It's very idealistic but I see it working as better than a co-operative system where you have maybe 12 guys on a FAS course in the room and if they don't get on, so what happens? (Interview Three)

He's currently trying to get funding from the Local Partnership body to develop this idea, and is playing around with a range of imaginative ideas about how, once established, it could best be managed, including various types of share-cropping arrangement.

Another organic grower who is also organisationally creative is a nun in a well-known religious order in Ireland. One of her current projects is setting up a community recycling organisation in her locality to compost organic waste. She has other projects in mind too:

We have plans for an 11-acre plot that we have ownership of and we're hoping to develop that. This is a dream that we have: of having a mini eco-community where there would be maybe four or five families occupying that land, both the dwellings and the methods of growing would be organic. That's in the pipeline. There are a couple of centres around the country, we have friends in X have built a house out of straw bales actually. So we have a network of people. We have friends in Y who have also developed a project down there, they have done a school thing down there where the children would be very much in tune with the organic garden that surrounds them... (Interview 19).

She also mentioned friends on a new housing estate in the South West, who got the estate landscaped with fruit and berry plants instead of 'fancy landscaping'.

Underpinning the organisational praxis of organic movement members is an emphasis on collectivism, on networking and mobilising groups to respond collectively to dilemmas and problems that they encounter. Most of the people interviewed appeared to be strong individuals who were well able to take on individual leadership roles; but their 'cosmological' response to any issue was not to act on their own but to look for others who could engage with them in addressing it. This appears to be connected to a belief in the superiority of technological solutions which are reached through sharing knowledge and experience, which in turn is linked to the activists' own experience of setting up as organic farmers at a time when few formal supports were available to them. As one put it,

It has been a very small community, the organic one, in this country, and so there's been a huge interchange of knowledge and that sort of thing and you find that it is very common for people to have open days and farm walks and visiting each other and you learn an awful lot that way (Interview 1).

But along with this goes an assumption that co-operation as a principle of social relationships is both ethically desirable and the only rational way of proceeding:

It is very important to make sure that they (new entrants into organic growing) don't all produce the same half a dozen things and hit the market all at the one time. That's where the co-operation comes in. And that is another mindset we have to change. Because in conventional farming all the people producing the same thing hit each

other head on, face-to-face. What should happen is co-operation so they don't all suddenly arrive in the market with a vanload of lettuce... (Interview 6).

The point I want to emphasise, however, is that the interests which these organic farmers display in technical and organisational innovation are not regarded by them as straightforwardly coherent or mutually reinforcing. What was particularly interesting was that a number saw innovation in the techniques of food production as something which has dangerous possibilities and which could pose future dilemmas for the movement. They have, in effect, a dualistic orientation towards it. They recognise that intensive labour can easily become drudgery and do not see this as a desirable lifestyle, and so they look to technological innovation to remove as much of the hard work as possible from organic production. They are also passionately interested in issues of technique, almost for their own sake. But at the same time they recognise that industrialising food production, even in ecologically friendly ways, tends to lead to concentration of production and the expropriation of the smaller producer. The nun quoted earlier put the contradictions particularly clearly:

I lived on a farm where the whole co-op movement was in full swing. And the Green Isle [vegetable processing] factory in Ballinrobe was up and running then. We had six acres of Brussels sprouts and twelve acres of sugar beet and four acres of French beans and we harvested all that in the bitter cold of winter: four girls. Being the oldest I had no option but to work the land. So I wouldn't be advocating that people return to that with labour. But I would feel that there's a way of doing it with modern technology and still be organic. But I wouldn't like it to go the road of Germany where instead of enabling people to work the land they have so industrialised it that fewer people are working the organic than previously on traditional, conventional farms. So it's a dilemma. I don't know where it will go... (Interview 19)

DISCUSSION

The paper argues that our understanding of sustainable development, and the part played in this by alternative agriculture movements, could be expanded by incorporating social movements theory - and particularly the cognitive perspective of Eyerman and Jamison (1991) - into our approach. Among other things, this might help us to get a better grasp on the creation and effects of 'social capital' in depressed rural areas. I noted earlier that one problem facing the organic movement as an alternative agricultural movement in Ireland and elsewhere is the tendency of outside observers and agents, particularly the state and commercial interests, to treat it as a movement purely for technical change, with no wider ideological commitments or social implications. This makes its technical innovations available to be absorbed into and developed as commercial practices within the mainstream food industry, while suppressing the extent to which the organic movement is critical of the practices of conventional food production. A belief that environmental problems can be solved through technical change is a feature of Ecological Modernisation policy orientations (Hajer 1996), probably the hegemonic worldview of contemporary state environmentalism. It would be understandable if movements like the Irish organic movement were attracted by that position. What is interesting then is that it is not, apparently, the hegemonic view among my network of organic activists. As a 'cultural' as well as a 'political' movement, pursuing a set of alternative cognitive projects, these activists seem able to resist pressures to integrate themselves into and collude with the instrumental, capital-rationalist orientations of eco-modernist regimes. The interview material suggests, if it can do no more than that, that although technological innovation often seems to dominate their practices, social or organisational innovation remains of great concern to them as well, because for them this is the way in which civil society can check the proliferation of instrumental rationality associated with technology; in Habermasian terms, it is what enables 'the lifeworld' to resist the continuous expansion and incursion into it of 'the system'. Movements which wish to act on civil society try to prevent interaction with others which is based on communicatively achieved agreement, through unforced participation, from turning into occasions for instrumental action, where other human subjects are treated as merely part of the environment in which the actor must strategise to achieve his or her own interests. The cosmological commitments of Irish organic producers are what prevent their passion for technique from undermining their concern with interpersonal interaction, community, and the development of new forms of rural social organisation.

The 'cultural' perspectives on social movements developed by both Cohen (1996), and Eyerman and Jamison (1991), recognise the dual, or in the latter case, triple orientation of such movements. However, neither asks how multiple orientations are experienced by movement actors, making an implicit inference that this is not problematic, or that the different dimensions are well integrated and coherent with each other. My approach questions that, and suggests that movement actors can experience considerable difficulties in balancing what can often appear to them as conflicting imperatives - to develop technical efficacy, and to maintain communicative or communal relations with others. How they resolve the difficulties may depend very considerably on the strength of the movement cosmology. Movement activists in Ireland and elsewhere may have reason to be concerned about the recent influx of organic practitioners who have been attracted into the field, not through becoming members of the movement but as a result of state- or corporate-sponsored programmes of technical re-education (Lyons and Lawrence 2002).

More broadly, the ambivalence and contradictions which so many commentators have detected at the heart of movements for sustainable development are not, or not only, a product of political attempts to capture and de-radicalise the concept. They may actually be an expression of the difficulties in choosing how to act - communicatively or strategically - which constantly confront movement activists themselves.

A related question posed by this paper concerns the nature of the rural development praxis exercised by organic movement activists. What, if anything, is distinctive or valuable about it? Following van der Ploeg et al (2000), I suggested that in researching rural development it may be useful sometimes to focus on 'unofficial' agents and activities, instead of starting from officially identified community development agencies and groups. My interviews open up the possibility that across rural Ireland, we could locate a layer of community development activity, possibly of considerable significance for rural regeneration, which is undertaken not as a goal in its own right so much as a by-product of attempts at economic innovation. This type of 'practical philanthropy' has been largely ignored in research on rural community or civil society development. People active within the organic movement also appear to be often quite extensively involved in voluntary or informal types of rural community development, ranging from volunteering to provide educational courses in organic horticulture through their local Community Development Council, to providing extensive support, friendship and advice on an individual basis to novice organic producers, and from mobilising farming neighbours into sellers' collectives to negotiate with food processors, to establishing and supporting alternative economic systems such as LETS in their local area. They contribute to maintaining a philosophy of voluntary initiative and help to re-construct the notion of 'community' within a rapidly changing, de-agrarianising or suburbanising Irish countryside.

A number of the organic growers interviewed are not native to the locality in which they are farming, but have moved in from elsewhere. The 'stranger', as Simmel reminds us, can develop close relationships with members of a local group which others in that group are not able to do, simply because they are seen as disengaged or transient and as therefore not interested in exploiting locals for their own advantage. The research reported here adds to this the suggestion that organic food producers are people who have been seized by a cosmological belief that existing social arrangements could be organised differently, and that individual initiative can make a long-term difference. While their particular concern is to alter the way in which social relations with nature are organised, specifically within contemporary agriculture, that concern is intertwined with a wider interest in devising alternative models for social and economic life and a generalised optimism that such efforts can be effective. Finally, the nature of the organic food producers' working life tends to give them quite extensive contacts with different types of groups and individuals across their local area. The growth of the organic movement has brought into rural Ireland activists who think both developmentally and collectively, who expect to take part in any initiatives occurring in their locality, and who bear witness in their own lives to a belief in the efficacy of local action in bringing about social change.

These characteristics – a degree of disengagement from local competition, combined with a belief in the value of thinking about alternative models of socio-economic organisation, and access to a wide-ranging and varied network of local social contacts - are significant elements of 'social capital', even if their precise effects in achieving local development remain to be shown. Yet, they are generated out of 'career' and occupational concerns rather than concerns for community development. Involvement in community development appears to these actors to be indistinguishable from their practical problems of making a livelihood out of an alternative or innovative relationship to food, within what are often demographically, economically and/or culturally impoverished rural neighbourhoods, and in the context of belonging to a social movement characterised by some distinctive cognitive praxes. If it can do no more, the very limited data reported here suggests that in trying to understand 'sustainable' development in rural Ireland, it would be useful not to overlook the part played by actors whose primary concern is their own livelihood problems but whose worldview leads them to assume that these can best be addressed, not as isolated individuals, but through collective and co-operative construction of new social as well as technical knowledges.

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Food Systems, Consumption Models And Risk Perception In Late Modernity*

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INTRODUCTION

The food system is undergoing profound changes, at the level of production and consumption models. Economic theory on the one hand, and sociological and anthropological theories on the other, give different interpretations of the changes, but these often do not confront each other. Moreover, within sociology, with regard to food, '(a) curious, if implicit, division of labour seems to have established itself... On one side are rural sociologists who study the organisation of agriculture and its variable local forms, and on the other, sociologists of food who locate themselves firmly within the sociology of consumption' (Tovey 1997:21).

This paper is an attempt to bridge the gaps between and within disciplines concerned with food production and consumption, which is made possible as a result both of the utilisation of consolidated traditions of studies and new theoretical perspectives. In fact, while for some time the French school of Malassis (Malassis 1979; Malassis and Padilla 1986; Malassis and Ghersi 1996) has been analysing the agro-food system from a perspective that takes into account the results of economic, sociological and nutritional disciplines, the more recent economics of conventional forms (Allaire and Boyer 1995; Boltanski and Thévenot 1991; *Revue économique* 1989; Thévenot 1995; Wilkinson 1997) offer new opportunities for understanding the complex phenomena linked to food production and consumption.

The objective of this article is then, to link different readings of food consumption and food production problems. Special attention will be given to problems of risk and risk perceptions that are central concerns of both reflexive modernisation theory (Beck 1999; Beck, Giddens and Lash 1994; Giddens 1991) and food consumers in late modernity.

In the first section, I will present the relevant definitions and propose a short synthesis of the evolution of food systems in industrial society. Then the main features of the agro-industrial food system are presented, with particular reference to the work of Malassis and his school. The following section will deal with the most recent 'satiety' model of food consumption. The economic analysis of convergence and differentiation will be compared with the sociological analysis of risk perception and the de-traditionalisation, fragmentation and individualisation of food consumption (Beck 1999; Giddens 1991). Risk perception and de-traditionalisation leads to the culinary disorder that Fischler (1990) effectively names *gastro-anomia*. In the third section I will utilize the economic conventions theory in order to discuss the consumers' new strategies of trust reconstruction in their relationship with food. Finally, some concluding remarks will be made on the necessity and the opportunity to formulate an integrated theoretical approach to the analysis of the late modern food system.

THE AGRO-FOOD SYSTEM: DEFINITIONS AND EVOLUTION

The concept of a 'food consumption model', first elaborated by the French school headed by Malassis (Padilla and Thiombiano 1996), is one of the most successful attempts at unifying economic, social and cultural perspectives in the analysis of food consumption. It refers to consumption as a process with different stages, comprising: how and where food is acquired, what is acquired, how food is prepared, how and where it is eaten, and how wastes are disposed of. Provisioning of food is strictly linked to foodstuff availability and exchange capacity which, in turn, are linked to the food production system. The consumption model is the demand side, while agro-industry is the supply side of the food system.

In the tradition of the Malassis school, the agro-food system is defined as the set of interdependent elements that work together towards the end of satisfying food needs of a given population in a given space and time. The elements and activities are shown in Table 1:

Table 1. Economic processes, social actors and objects in the food system

Economic processes	Social actors	Objects
Land cultivation/ animal breeding	Family/Farms	Agricultural good
Agricultural product transformation	Family / Agro-food company	Industrially transformed product
Conservation / distribution	Family/ Distribution firms	Agricultural products and industrial food
Food preparation	Family/ Agro-food firms / catering / restaurants	Service food (convenience food)
Consumption	Family/ Restaurants	Served food

Waste management	Family/ Public and/or private system firms	Organic and inorganic residuals
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The complexity of the system derives from the large number of elements that are part of it, as well as from the varieties of domains and social subjects involved: family, state, market, and all the productive sectors - agriculture, industry and the tertiary sector. Elements and system structure change in time and space. The evolution of society and the economy leads to a succession of models of food consumption (Malassis and Allaya 1996; Padilla and Thiombiano 1996): from the traditional (the poverty model), to the agro-industrial (which implies the substitution of richer proteins of animal origin for poor proteins of vegetable origins), and to the satiety model (Table 2). Each system is defined in relation to a dominant production system and a consumption model that is consistent with it, although the shift from one system to the other does not imply the complete disappearance of the preceding one. The persistence of different models makes more complex, and thus difficult to interpret, food system in late modern societies.

Table 2. Main food consumption models

Activity	Traditional model	Agro-industrial model (modern society)	Satiety model (late modernity)
Production	-simple reproduction family farms - agricultural employees are a very high proportion of the total population	-the inputs and the agricultural product transformation are industrialised -the farm is integrated in the agro-food industry - agriculture employees are a small part of the total employees	-heterogeneity of techniques and flexible specialisation -the agricultural production process itself may be industrialised (biotechnologies) -re-evaluation of traditional techniques
Distribution	-local markets - exchange of food inside the community and parental groups	-international, global markets - <i>access to food</i> regulated by markets and entitlements (income, land ownership...)	-modern distribution has the most active role in the supply chain - segmentation of global markets
Preparation	- in the family, at home	- also outside home, at the workplace, in restaurants, etc.	- industrialisation and market provisioning of ready-to-consume food (catering, convenience food)
Consumption	-local choice, according to availability and status -nutritional inequality inside the society - abundance and scarcity alternate, depending on seasons and crops	-mass consumption of standard, durable food - nutritional inequality between, more than inside, societies	- individualisation, de- traditionalisation and fragmentation of consumption styles - de-structuring of meals -eating out
Ideological status, identity of food	-man at the top of food chain -agriculture as the material and symbolic base of life - symbolic value of food, as distinctive of 'us' and 'the others'	-science and technical change give legitimization to the exploitation of nature - food as edible industrial product, coming from a filière, with no identity	-science and technology are considered doubled- edged and lose their legitimation power - risk, food safety concerns question the industrial techniques - food looks for identity

Source : elaborated from Beardsworth and Keal (1997) and Malassis and Gherzi (1996).

THE EMERGENCE OF THE AGRO-INDUSTRIAL FOOD MODEL IN MODERN SOCIETY

The traditional food consumption model is linked to a society of generalised poverty. Both the system functions and social actors are limited in number. It is a very simple system, based on self-consumption, where one actor predominates: the producer-consumer. Farm and family are strictly intertwined, so much so that it is possible to deal with them as a unit: the family farm. The market is limited to local exchanges. Diets are differentiated by income levels, between rich and poor. Diets of poor people are characterised by foodstuff with low energy values, mainly vegetables (cereals and tubers). Preparation and consumption take place inside the family, their forms and organization revealing of gender and power relations.

Personal proximity between producer and consumer constitutes the basis of trust in the production process and the quality of food. Furthermore, traditional agriculture, constrained by the territory and linked to the natural cycles of seasons, carries a sense of participation and identification with nature. Traditional techniques strictly link man to nature.

The emergence of the agro-industrial model of food production and consumption (through a transition period that lasted many centuries, from the late middle ages to the twentieth century), leads to the disappearance of self-consumption and to the provisioning of industrial food through the market.

The market, a new collective, enters the scene. The food system becomes more complex, and the network of relevant subjects becomes longer. Through processes of industrial appropriation and substitution, the domain of agriculture is limited; agricultural product transformation activities are appropriated by industry, while products and producers are subjected to processes of substitution; vegetable fats for animal fats; sugar beet for sugar cane; European with American producers; industrial products for agricultural products, etc. (Friedmann 1993; Goodman, Sorj and Wilkinson 1987; Kautsky [1899] 1958).

At the general economic level, we are living at the time of industrialisation and sector differentiation of the economy. Agriculture no longer produces final products and it loses its links with final consumers. It becomes instead an economic sector producing intermediate goods for the agro-food industry. Upstream, it loses its link with nature, as techniques are increasingly determined by industrial inputs rather than by seasonal and territorial constraints or by the biological characteristics of the production process and the cultivated species. Inasmuch as the market becomes the relevant place of food provisioning, trade and distribution acquire a prominent role.

Mass consumption prevails, based on standardised products. Friedmann and McMichael (1990) talk of a 'Fordist diet', whose central element is the 'global steak' produced by a transnational *filière*. For the majority of the population in rich countries, consumption of calories increases, while calories of animal origin substitute for calories of vegetable origin. The former reach about 40 percent of total final calories, making the model very costly from an energy point of view¹.

At the level of spatial organisation of society, this model implies urbanisation, pushed to an unprecedented scale by industrial development. The greater part of population, no longer self-sufficient for food, breaks its links with agriculture and establishes the *demand* in the market for food.

While industrial transformation of agricultural products becomes generalised and food markets international, consumption becomes more remote from seasonal and locality constraints. Products come from different parts of the world, from territories with different agricultural vocations and with 'out of season' times of production. The family is still the privileged locus of consumption, but consumption outside the home acquires relevance, as meals consumed at the workplace or at the restaurants.

Industrial food is the new-born object: industrial logic prevails and leads to standardisation, de-seasonalisation and de-territorialisation of food. Food becomes, in Fischler's vocabulary (1990), *a not-identified edible object*. Distance and durability (Friedmann 1993), that is the ability to last in time and to travel in space, become the essential characteristics of the new goods, determining a new meaning for quality, consistent with the industrial convention.

FOOD SYSTEMS AND CONSUMPTION MODELS IN LATE MODERNITY²

The early seventies are generally considered as a watershed: these years bring the crisis of the Fordist regime according to regulationists, a new technological paradigm according to economic evolutionists, and the beginning of post- or late modernity, according to general sociologists.

In the analysis of food systems, we may date the crisis of the agro-industrial model from this period. The economic and political roots of the crisis lie in the emergence of transnational capital, with the consequent crisis of the nation state, and in the spatial and structural modification of the economy. At a structural level, the crisis appears as the de-structuring of meals and the predominance of service (retailing, catering, restaurant, etc.) over the industrial sector.

Malassis's French school refers to the emergence of a new model, specific to societies at the stage of satiety. Whereas the agro-industrial model is a growth model, the satiety stage is characterised by the saturation of energy intake and the stabilisation of food expenditure over total expenditure. On the supply side, the emergence of a flexible production system, the rationalisation of distribution (which becomes the 'big organised distribution system'), and overall, a commodification of relations in the sphere of food preparation and consumption, take place. Following the generalised participation of women in the labour market, foodstuff progressively incorporates services (that is, different stages of preparation work) and become convenience food for the microwave oven or served meals in restaurants. Structured family meals lose importance, while snacks and meals consumed outside the home increase. Market relations extend to the kitchen and the table and, in the terminology of Goody (1982), retailing, rather than industry, acquires a bigger role in the food chain.

¹ ...fast food is not an efficient way, from an energetic point of view, to feed people. The success story behind the recent "superchicken" is entirely based on a feed containing not only maize, soybeans, sorghum and other high- protein content feed plant, but also animal products, predominantly fish flour. ... From the point of view of nutritive value, all these feed plants, together with the fish flour, mean that the average American chicken eats better than three quarters of world population (Harris 1990: 126)

² Arguments in this paragraph draw from an earlier article (Fonte 1998).

The three models (traditional, agro-industrial, satiety) are presented in the literature as a sequence of stages, that eventually leads to convergence in the most advanced model. Convergence may be justified on the basis of the biological characteristics of food consumption, which poses a limit to the ingestion of food by the individual, a limit that nutritionists indicate at about 2500-3000 final calories. As Engels showed in the second half of the nineteenth century, as income rises food expenditure tends to account for a smaller percentage of total income, and to stabilise at about 15-20 percent of the total expenditure (Blandford 1984; Connor, 1994). Nonetheless, convergence is also a social phenomenon and indicates the trend towards homogenisation of consumption styles, i.e. not solely *what* we eat, but also *how* we eat (Fanfani and Salluce 1997; Gatti and Migani 1997).

Blandford (1984) provides interesting documentation of convergence in the structure of diet in OECD countries, with relation to consumption of calories and the share of animal calories in the total. A decade later, Connor (1994) illustrates dietary convergence, taking into account large combinations of products, which oppose fresh to transformed food. Here convergence refers to the general diffusion of industrial and service products in the diet of rich countries, fostered by the globalisation of the food processing and distribution system. Convergence is not only a matter of what is eaten, but of where products are bought (at the supermarket) and where the food is eaten (outside the home).

In Connor's article, as well as in other works (Appadurai 1988; Goody 1982; Padilla and Thiombiano 1996), it seems that what is in question is the persistence of national diets on one side, and the emergence of horizontal differentiation between transnational social groups, on the other. National dietary models converge, but a new differentiation of consumption styles emerges between social strata characterised by different socio-economic and cultural positions (Miele 2001). The socio-economic differentiation relates more to lifestyles than to income. It concerns an urban or rural life style, the position of women in the labour market, the size and characteristics of the family which add to the search for time-saving food, the deconstructing of family meals and the parallel increase of meals consumed outside the home. Cultural variables, relating to dimensions of pleasure and ethics, are also particularly important. Food consumption becomes for the *active consumer* the means both to fight environmental degradation and to pursue the protection of material and immaterial resources (local techniques, products, knowledge) on the one hand, and the search for subjective welfare, in its material and immaterial aspects (health and diversity of tastes) on the other (Belletti and Maresscotti 1995).

Convergence towards increasingly similar consumption models is not seen to be in contradiction with an increasing variety of food, made possible by both the intensification of exchange and the dominance of transnational corporations in the food distribution industry (Belletti and Maresscotti 1995; Gatti, Finotello and Moretti 1996).

INDIVIDUALISATION AND DE-TRADITIONALISATION OF FOOD CONSUMPTION

A paradox seems to emerge from this debate: it appears to conclude that diets become more different at the same time that they become more similar. One way of reading this paradox is the shift from 'model' to 'style'. While 'consumption model' is a concept that refers to a social group (a community, a nation), style refers to the individual behaviour. The individual, in his/her food consumption behaviour, loses any reference to any objective belonging, to a family, a social group, a class, a community. He/she is driven only by his/her subjective choice, of an ideological, hedonistic nature. Style choices are *negotiated* among a diversity of options, in a plurality of contexts and authorities (Giddens 1991: 5)

If the industrial society is based on classes and social groups, defined by their relation to the productive process (the working class, bourgeoisie, petty bourgeoisie, etc.), in the post-industrial society, social classes are fragmented in groups or strata according to subjective criteria (age, gender), ideological criteria (religion, beliefs), or consumption styles (Miele 2001). Food consumption is subject to the individualisation process of reflexive modernisation (Beck *et al.* 1994), a process which adds up to the complex nature of food consumption.

In food systems, in fact, change is not irreversible (Wilkinson 1993). This is particularly evident when product innovation is introduced. The new product does not eliminate the old one, as in most industries. On the contrary, traditional, 'natural' products remain the quality standard for the industrial food product, traditional farm products remain side-by-side with the new industrial products (Fanfani, Green and Rodriguez Zuñiga 1993; Wilkinson 1993).

The heterogeneity of the productive structure in the agro-food system makes it possible to speak, as Byé (1998) suggests, of a *nature-oriented technical system* (small agricultural farms, transformation and distribution firms) which operate side-by-side with an *industry-based technical system*, identified with agribusiness and the transnational distribution corporations.

Finally, at production, exchange and consumption levels, many differing conventions persist: a domestic convention, where economic actions are co-ordinated by a network of personal relations (the product linked to a place); an industrial convention, based on standardisation; a commercial convention, driven by price competition; an opinion convention, functioning on the basis of a company brand, and a civic convention based on the sharing of common principles.

On the consumption side, food must at the same time work as a marker for identity and belonging (to a family, a community, a place), and as class, ideology or life-style identifier. In the industrial process though, food is deprived of any identity, and is standardised and de-territorialised. A tension derives from the perception of the link between food, the biological world, nature and a specific culture on one side, and food as industrial standardised product and exchange value, on the other.

What the economists see as convergence toward the satiety model and the sociologists see as a fragmentation of consumption styles, is for the anthropologists, the expression of a profound crisis in food consumption models. Food consumption is represented by the latter as characterised by many tensions: between neo-philia and neo-phobia (Fischler 1990), between health and illness, life and death (Beardsworth and Keil 1997). The traditional food system elaborates these tensions through stability. Changes in food habits in traditional societies are rare and gradual; culinary rules are consolidated in a local tradition, empirical knowledge and ethno-medical practices evolve slowly, and beliefs and customs work at legitimating what is edible and what is not.

In contrast, late modern society pushes towards change in a frantic way; the crisis of traditional forms of family, participation of women in the labour market, new forms of work organisation lead to de-structuring of meals; technical change, changing nutritional or scientific indications determine, maintain and foster a sense of anxiety in relation to food.

The industrialisation of production and transformation of food, and the globalisation of markets, bring closer diets that used to be very distant, augmenting the possibilities of individual choice. Technical change eliminates from the food system any locality and seasonal constraint, separating agriculture from nature and the consumer from its familiarity to places of production and productive techniques. Food production and transformation is now carried out far away from the eyes of the average consumer, who buys and consumes food with unknown ingredients and attributes, produced by unknown and little-understood techniques. Modern transformation techniques, such as the use of synthetic substances, irradiation, de-composition and re-composition techniques, may hide the original texture and taste of food. The consumer is no longer able to interpret the sensorial messages of food as a trustworthy sign of its nature (Fischler 1990).

Always less integrated in a familiar or community network, the individual consumer must make his food choices alone. The absence of collective norms generates more anxiety and *gastro-anomie* (Fischler 1990).

RISK PERCEPTION AND SAFETY IN THE FOOD SYSTEM

Risk is an organic part of late modern society. It first derives from the disappearance of deterministic beliefs. With the disappearance of fate, all human action can in theory be calculated in terms of risk. For the ordinary man and woman, as well as the experts in different fields, it has become normal to think in terms of risk and risk calculation (Giddens 1991: 107-143). The penetration of abstract systems of knowledge and the dynamic nature of knowledge imply that risk awareness influences the actions of virtually everybody. Furthermore, in the condition of late modernity, risks are of a particular kind: they are *manufactured*, they derive from the manipulation of nature by man, rather than from external forces. As a consequence, they push men and women to question themselves about the consequences of their actions, in a condition of *reflexivity* (Beck *et al.* 1994).

As regards food, the most common risks in industrialised countries mainly concern contamination and adulteration of food with man-made substances, rather than deriving from natural calamities. Food may contain additives and agricultural products, such as chemical residuals, whose consequences may be unknown and devastating. Risks are amplified by the specialized, concentrated and transnational character of the food system. At a time of many food scandals and the diffusion of transgenic plants, knowing that a small (by industrial standards), but modern chicken firm sends to the market more than twenty million broilers per year, that soybeans³, as a component in the form of lecithin, enter into more than 60 percent of transformed food and that corn syrup is an ingredient of about three thousand food items, gives an idea of the difficulties that must be faced when seeking to keep under control a risk situation. A very efficacious description of the complexity of food system was recently given by a well-known Italian journalist, at the time of the dioxin chicken scandal:

Transformation and distribution have such elusive dynamics that the same producers cannot probably control their content. The food chain is so fragmented and sophisticated (in both meanings) that the only possibility is to trust blindly the preceding link: the consumer hopes that the packaging man does not clean his nose during working time; the packaging man trusts that the chicken carcasses arrive resting on clean containers rather than hanging on red-hot mortar mixing machines; the deliveryman hopes that what he is delivering are legs well-shaped by exerciserather than doped by the farmer; the farmer hopes that the feedstuff producer does not oil the grain with the oil from his tractor; the feedstuff producer hopes that the grain is grown naturally, rather than heavily sprayed with pesticides and other chemicals. There are rules, it is obvious: regional, national and European Union rules, each superimposed on the other as sheets of pasta in the lasagna. But, since it is inconceivable that controls are so watertight as to exclude fraud, it is obvious that for each of us buying food is governed mainly by trust (Serra 1999).

Besides the contingent situation of risks that create cyclical panic waves in late modern society - we may recall twenty deaths in Piemonte (Italy) in 1986, because of benzene in the wine, the mad cow crisis since 1996, the dioxin found in chickens and eggs and the toxic Coca Cola in 1999 in Belgium - there is, according to theorists of risk society, an institutionalised and structured environment of risks characterised by regular shifts of knowledge. That raises the necessity for the continuous, detailed monitoring of risk, as far as health is concerned. Risk profiles, delineated by the expert, are conveyed through the media to ordinary people. In response to the experts' opinion, people try to change life styles, but these are not easy to change, linked as they are to many aspects of overall behaviour. Furthermore, the experts may disagree between themselves or else their advice may change, following an advance or a revision of scientific theories. We have then, on one side, a continuous and structured reflection on the risk situations, and on the other, a continuous exchange between experts and ordinary people that

³ As is known, soy is the most diffused transgenic crop, representing the 53 percent of sown area in 1999 (CEC 2000).

generates anxiety and behavioural uncertainty.

Institutionalised situations concern individual and collective risks alike: the life chances of the individual are directly linked to global capitalist economy. This is particularly evident from the debate that is accompanying the diffusion of biotechnologies in agriculture. The experts speak for different sides. While it is difficult to know the long-term consequences of the diffusion of transgenic plants on the environment and of transgenic food on people, many experts are quick to declare that they are safe. Other experts envisage problems such as the risk of toxicity, allergies and modification in people's immune system, and the risks of biodiversity erosion and modification of ecological equilibrium for the environment. (Bonny 1999; BMA 1999; Cheallaigh 2001).

It seems clear that with current biotechnological change, the food industry is opting for technological choices that are not favoured by consumers, leading to an alliance which is emerging between consumers, retailers and restaurants. In Italy and in Europe, the number of supermarkets that refuse to sell, under their own brands, products containing transgenic ingredients, is growing. In March 1999, Sainsbury's announced the formation of a consortium with six European supermarket chains⁴ to organise the 'GMO-free' supply chain (CEC 2000).

On one side, biotechnologies appear as the end point of genetic manipulation of nature, on the other, they make evident the common basis of life, that makes man part of nature, linked to its destiny. Nature is socialised, while at the same time man cannot forget that his life is linked to other living beings. With the introduction of biotechnology and transgenic plants, the production of food emphasises that the dichotomy, man - nature (society - nature), is not sustainable, and that food as well as the environment in which we live are interconnected (Latour 1991).

DISCUSSION: THE RECONSTRUCTION OF TRUST IN RELATION TO FOOD

Food is recognised as a symbolic value of identification and differentiation between 'us' and 'the others'. According to the incorporation principle (Fischler 1990), man is what he eats, and through food man is incorporated into a culture. One of the effects of food industrialisation is the disappearance of the symbolic power of food. Standardised, industrialised, de- and re-composed food loses its history and its identity, and is transformed into the 'not-identified edible object', that has to tell the story of its origin, preparation and identity through *certification processes and labels*.

From a neo-classical economic perspective, the different ways of labelling and certifying food are considered a problem of quality management, and the reduction of uncertainty and information asymmetry as a way to maintain conditions of consumer sovereignty and choice (Caswell and Mojuszka 1996). From the anthropological perspective, they are an attempt at reconstructing the identity of food and, through it, the identity of the individual. The economics of conventions may interpret risk perception, that is the loss of trust in relation to food, inside the conflict between domestic and industrial conventional forms.

In the European Union, the variety of certification systems testify to the complexity of the agro-food system: we find the HACCP system guaranteeing the hygienic conditions of the production system; the ISO 9000 norms that certify the conformity to industrial standards; the certification system of organic production; the different certification systems for typical and specific products; and the protected designation of origin (PDO), the protected geographical indication (PGI), and the traditional specialty guaranteed (TSG), which again try to link a product to a territory, a culture, a community. Far from simplifying the situation, these systems are revealing of the different quality conventions (Sylvander 1995; Thévenot 1995) that co-ordinate the food economy, while representing a compromise between them. A specific product can, thanks to a PDO, travel to distant markets without losing its link with the territory and the tradition. The PDO may then be viewed as a compromise between domestic, industrial and commercial conventions.

In some crucial situations, though, the compromise does not work and the conflict between different forms of agreement breaks down, as in the case of the European Union hygiene directive, which threatened the survival of so many traditional products in Italy and in the Mediterranean regions: the 'formaggio di fossa', the 'culatello di Parma', the 'lardo di Colonnata'. On the whole, Italian institutions had to ask for an exemption from the European directive on hygiene for about 3000 traditional products; 250 types of salamis, 400 cheeses, 200 types of bread, 200 preserved vegetables and fruits, etc. At the same time:

The most alarming element in the story of the dioxin chicken is the fragility of the hyper-hygienist construction, which is presented as a fundamental advance in the food protection. Behind the apparent triumph of sanitary progress, a schizophrenic Europe is hidden. On one side, the EU promulgates directives that reject from a sanitary point of view the *pecorino di fossa* and other products that are eaten with pleasure and no harm for centuries. On the other side, it loses its war with the United States, which wants to impose levels of hormones in the meat, that we, on this side of the Atlantic, consider unacceptable. So at the same time that we risk losing ancient tastes and safety, we are asked to renounce our gastronomic culture, made of artisan techniques, of regional recipes, of great diversification of raw material, in order to leave the field free for the unfettered industrialisation of the food system. When the English meat producers lobbied for protection under the umbrella of the Thatcher government in order to reduce safety norms in

⁴ They were: Carrefour (France); Delhaize (Belgium); Esselunga (Italy); Marks and Spencer (UK); Migros (Switzerland); Superquinn (Ireland).

feedstuff production, they acted so as to realise extra profits; the fact that herbivorous animals were compelled to eat other animals did not appear to place an excessive strain on natural cycles...(Cianciullo 1999).

In order to find ways out of the food disorder, consumers seem to be pursuing two different trust strategies (Sellerberg 1991); that of organic food and that of the local product. The two strategies are not equivalent, in terms of the coordinating frameworks.

In particular the first strategy refers to a civic convention, that is to say to the adherence to a set of principles that in an ecological perspective, privilege the link between food and nature. In today's context, the ecological imperative is not necessarily linked with the domestic convention (defence of a patrimony, of traditional species and varieties, etc.). Rather, in some circumstances, it seems to incline towards a compromise with the industrial convention, insofar as big multinational companies develop techniques for organic production which is becoming increasingly specialised and industrialised. A regulation, centred on permitted inputs, rather than on agro-ecological processes, techniques and socio-economic dimensions of a sustainable agriculture, may become the basis for the appropriation of organic agriculture by the multinational capital. Examples in this trend are reported from California, where production of organic vegetables is organised around specialised, intensive techniques (Buck, Getz and Guthman 1997). Goodman (1999) reports that in 1997 the United States Department of Agriculture (USDA) released a proposal for the regulation of 'organic' certified products, according to which genetically modified organisms and irradiation was permitted. Only the protests of the public and the movement of organic agriculture producers compelled the USDA to withdraw the proposal. Norms incorporated in the certification system and, in the last instance, the shape that the institutional compromise will take, will determine which logic or convention will predominate.

The second trust strategy is based on a domestic convention, the product linked to a place and a time, the defence of a culinary patrimony, of a local gastronomy, related to the identity of a group, a community, a tradition. Traditional food and culinary tradition became an economic resource (Bessi re 1998). The necessity to find new markets though, pushes toward de-localisation of consumption (Fonte forthcoming; Sylvander 1995) and compromises with a commercial convention. Specificity of the product, as a local attribute of the good, does not immediately find a general form of valuation and valorisation through prices in global markets. Certification systems that imply the formalisation of local, tacit forms of knowledge in the production protocols and product specifications, function as an intermediary between local and global systems, assigning to the specificity of the product and technique a general form, meaningful for people outside the local systems. New tensions may inevitably be brought in by the compromises between the local level of production, which remain inserted in a domestic convention (and a restricted territory), and the global level of consumption, that implies an articulation with the commercial convention pushing toward the expansion of production.

CONCLUSION

Two decades ago, the agro-food system was described as a monolithic 'complex' heavily dominated by the industrial capital. If the supply side was fully integrated in the market economy, preparation and consumption of food was still important in the family context, favoring a disciplinary division of analysis: preparation and consumption of food were the field of interest of anthropological and psycho-sociological literature, while aspects of production were the terrain of agricultural economists and rural sociologists (Fonte 1991).

The transition from modern to late modern food systems brings an intensification of market relations in the kitchen and to the table (Goody 1982), a re-location of power in the supply chain, an invasion of controversial food biotechnologies and the outbreak of problems related to risk and food safety, all of which imply a loss of trust in relation to food.

In this new context, many new social and economic actors (the biotechnology industry, consumers, experts, retailing capital, regulation agencies), with their specific interests and values (Wilkinson 2000), are playing an active role in shaping the future of the food system in the twenty-first century. Only an integrated approach to the study of the food system will enable us to understand the emerging conflicts and strategic alliances, the motivations behind an actors' behaviour, and the conditions in which such developments take place.

In this paper I have tried to show how reference to the economic, sociological and anthropological literature can give a more articulated picture of the evolution of the food system from modernity to late modernity. In particular, the theory of reflexive modernisation is illuminating in the analysis of risk, while the new economics of conventions is useful in that it makes it possible to interpret the complexity of food consumption as a function of the plurality of conventional forms (domestic, commercial, industrial, opinion and civic) co-ordinating the economic activities in the agro-food system.

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PAMPAS FAMILY FARMS AND TECHNOLOGICAL CHANGE: STRATEGIES AND PERSPECTIVES TOWARDS GENETICALLY MODIFIED CROPS AND NO-TILLAGE SYSTEMS*

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INTRODUCTION

Agriculture in the Argentine Pampas region has been changing its technological pattern in the last decade, in an international context in which biotechnological innovations have great influence. A great many of these changes have not yet expressed their environmental and social consequences, but it is possible to ask some questions about these processes, especially in relation to social actors who are in the most vulnerable situation in structural terms.

In this regard, the aim of this article is to analyse the strategies and perspectives of the Pampas family farmers towards the new technological paradigm composed of no-tillage systems and transgenic varieties, and to state some possible social consequences related to its expansion.

This kind of issue, together with the concern for on-going processes, supports a qualitative approach, based in case analysis. The point of departure for this paper is a research project which focussed on pluriactive family farmers of Junín, an area situated in the north-west of the province of Buenos Aires.¹ For this latest paper, I selected from the typology of family farmers constructed within that earlier study, a sample of those who could be considered representatives of each stratum, to follow their evolution - contrasting their situation in September 1998 with September 1999 - and to explore their strategies and perspectives towards technological issues.

In spite of the fact that this methodological approach presents some limitations concerned with the generalisation of the findings, I think its potential lies in the possibility of generating new hypotheses and a research agenda involving work in an under-researched subject. In fact, the recent literature shows a prevailing interest in important issues like the mergers of biotechnological or agrochemical firms or the degree of acceptance of consumers of genetically modified food (subjects which have recently been much discussed on the Internet). But the concern with producers is rather minimal, in spite of the fact that they are the actors who adopt these technologies and who, with their decisions, affect the type of agricultural system that is being developed.

In the Pampas region, which is the focus of this study, the technological issue is a very important one. Among other variables, the dependence on external inputs for production from institutions that provide credit for investment and development purposes, and the commercialisation of practically all the production (an important part of which is at the international level), is evidence of the high degree of market integration of the average Pampas producer, or from another perspective, his/her vulnerability and indirect subsumption to capitalism (Whatmore et al 1987). On the other hand, the importance of the technological issue has been highlighted in Argentina in a macroeconomic context defined by the absence of farm subsidies and the implementation of the set of measures popularly called the 'Plan de Convertibilidad', that is, the equivalence between the peso and the dollar, de-regulation and a reduced role for the state in economic activities. As noted elsewhere:

Taking into account the price of commodities, the economic performance of the Pampas farms depends exclusively on factor productivity, because the possibility of lobbying to fix different exchange rates, as well as the opportunities generated by high inflation, have faded away. *So the only variable in the hands of producers turns out to be production costs, and the incorporation of technology is the only open way to reduce them* (Chudnovsky et al.1999: 2).

Even from different perspectives at the international level, there is a coincidence in the fact that these new technologies will bring about great changes in the agrarian sector, which include the expansion of the agrarian frontier in areas up to now considered as marginal. A no-tillage system (which implies sowing without ploughing the soil) facilitates a better use of rainwater, allowing the cultivation of soybeans in areas affected by drought. Alternatively, biotechnology, with the development of plants that resist salty, cold or dry soils, acts in the same direction.

One of the changes associated with these developments is a greater articulation of producers with agribusiness - the provider of these new technologies - and an increase in vertical integration. In this light, the development of techniques which allow the differentiation of products - a new stage in the evolution of biotechnology, which aims not to improve

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¹ 'Family farms' are considered as those with family involvement in physical jobs which are relevant on a day-to-day basis for the functioning of the farm. Pluriactivity is defined in broad terms, involving the fulfilment of on-farm and off-farm activities by the family, in the agricultural or non-agricultural sector. This definition includes 'machine contractors' among pluriactive farmers.

agronomic traits of crops but to modify the quality and nature of them - would bring about different types of upstream articulation:

Maintaining the value of a commodity with improved attributes will require identity preservation, including segregation of the value-enhanced commodity by farmers and processors. Increased vertical integration, including production contracts, is likely to occur in grain production to ensure this result (Pasour 1998:16).

This scenario has also been identified in the case of Argentina, although the development of quality traits related to differentiated crops is still in an experimental stage:

The role of the agrarian producer will change. He will lose in a great measure the sense of individualism and independence, which has been a characteristic up to now. The producer who aims to survive will have to associate to compete, or commercially integrate with big firms with practically unlimited resources...Deals between producers and firms to develop crops with precise quality traits are likely to develop (Pizarro 1998: 47).

With regard to the possible consequences of these technologies on agrarian structure, the (large) scale requirements of no-tillage systems have been noted, while in relation to transgenic crops, it has been emphasised that they are developed by a handful of international firms, and protected by property rights. This can lead to the impoverishment of small farmers by raising their production costs.

However, it is difficult to be unequivocal about the patterns of structural change likely to arise in farming due to biotechnologies, because these methods may trigger mutually off-setting trends. As Goodman (1991) has pointed out, a technological determinist explanation of social change is necessarily partial and incomplete, as it does not take into account the actors' strategies and socio-political processes.

From this point of view, my research concerns were diverse but related: what is the degree of adoption of these new technologies among different types of family farmers? What kind of restrictions do they find and what strategies do they develop to face them? What is the degree of viability of these strategies? How do farmers judge these new technologies and the industries that provide them?

THE STAGES IN THE EVOLUTION OF PAMPAS AGRICULTURE AND THE NEW TECHNOLOGICAL PARADIGM

The evolution of Pampas agriculture from the mid-twentieth century up to the mid-1980s, has been traditionally divided into four stages, each of which is centred in the diffusion of four groups of innovations; agronomic techniques, mechanisation, improved seeds (hybrids in the case of corn, sunflower and sorghum), and agrochemicals. Over this period there occurred what has been termed the 'agriculturisation' of the Pampas region, that is to say, the expansion of the area devoted to agriculture, as well as the concentration of production in five main crops (wheat, soybeans, corn, sunflower and sorghum) (Obschatko 1988).

Agriculturisation took place in a context of changes in production scales and social processes, which included modernisation of part of the big traditional estates (*estancias*), the transformation of part of the family farmers into small renters, and the constitution of new actors, known as 'machine contractors', who offer their services to all types of farms. These machine contractors include farmers who basically employ family labour, and firms which own machinery but not land.

The last decade, well-known as a period of intense change in the macroeconomic context, shows an intensification of agricultural production, most importantly involving the incorporation of technological packages in some cases or isolated practices in others, aimed at improving the potential capability of the available crops. In this period, the incorporation of technology, as well as management qualities and productive efficiency, turned out to be essential in order to develop (Pizarro 1998).

The most important features of this new stage are the diffusion of reduced tillage and no-tillage systems, a greater use of agrochemicals - particularly herbicides, because of the increase of weeds derived from not ploughing the soil - an increasing use of fertilisers and the introduction of irrigation. In addition, this stage involved the diffusion of transgenic varieties such as 'Round-up Ready' (RR) soybeans resistant to glyphosate, and BT corns resistant to some lepidoptera (Pizarro 1998).

With reference to no-tillage systems, although the first tests took place in the 1970s, the technique only gained momentum in the 1990s, with the appearance of more specific herbicides together with adequate sowing machines. The introduction of RR soybeans in 1996, changed the possibilities of adoption of no-tillage systems dramatically, as the technology delivered an easier and much cheaper solution to the main problem of this technique, i.e. weed control².

² No-tillage costs were very much simplified with transgenic varieties, because with reference to operation costs, what was saved in labour was in turn spent in expensive herbicides. Older varieties with more resistance needed bigger quantities of herbicides, whereas it turns out that with transgenic varieties, one dose of glyphosate is all that is needed (Farmer Interview 1999) .

Thereafter there appeared a package in which no-tillage systems implied the use of transgenic varieties and glyphosate. However, it must be noted that the use of transgenic varieties with reduced or conventional tillage is possible and actually is most prevalent. Some figures may show the importance of the technological change which is taking place:

1) By 1997, the sale of no-tillage sowing machines reached 12,870 units. In terms of cultivated area with this system, there was an increase from 300,000 hectares in 1990-91, to 5.5 million in 1997-98, a figure that represented nearly 25% of the average cultivated area in 1995-98 (Chudnovsky et al. 1999). In the view of these researchers, the expansion of no-tillage systems in Argentina has been occurring at a very high rate, surpassing the United States in proportion of cultivated area, and doubling by the year 2003. In relation to this data, it should be noted that for the 1996-97 season, 57 percent of the area with no-tillage corresponded to soybeans in 'second planting'³ and 16 percent to 'common' soybeans.

2) The agrochemical market trebled in the 1992-97 period, growing from \$336 million to \$924 million.

3) The seeds market grew from \$524 million in 1992 to \$872 million in 1996 (ASA 1999). The expansion of transgenic seeds was even more remarkable; at the international level, Argentina holds second place in terms of the area cultivated with these seeds.⁴ Genetically modified soybeans represented 20 percent of the soybean-cultivated area in 1997/98, and 72 percent in the following season (Gutman 1999). It was estimated that in 1999, it would reach nearly 90 percent of the cultivated area. In contrast, the adoption of genetically modified corn and cotton is lower, at 30,000 and 8,000 hectares respectively (Hopp 1999a; Sosa Belaústegui 1999).

These data - at least those that refer to genetically modified soybeans - are impressive. It is worth noting that in the United States, the country with the greatest area under genetically modified crops, the level of adoption of soybean is not so pronounced, comprising as it does 50 percent of the soybean area. This situation has important consequences in commercial terms, considering the leading position of Argentina in soybean oil and flour exports.

Together with the diffusion of these technologies, other changes that took place in the Pampas agrarian structure during this decade included a decrease in the number of farms and an increase in the average area of the remaining farms⁵, an increasing externalisation of productive tasks carried out by machine contractors, and the constitution of new forms of productive arrangements known as *pools de siembra* (sowing pools).⁶

FAMILY FARM STRATEGIES TOWARDS THE NEW TECHNOLOGICAL PARADIGM

As pointed out earlier, the aim of this paper is to analyse the technological issues facing the typical family farmer of the region. Taking into account the pluriactivity study previously carried out (Craviotti 1999), three strata of family farmers can be identified:

a) A 'low resources' family farmer: employs family labour complemented with the use of machine contractors for certain tasks, and owns up to 150 HP traction force. He also fulfils off-farm activities in the non-agrarian sector.

b) A capitalised family farmer: employs family labour complemented with the use of machine contractors for certain tasks, and owns more than 150 HP traction force. He also works as a machine contractor.

c) An entrepreneurial family farmer: owns more than 150 HP traction force and a great variety of modern machinery, and employs at least one permanent worker. He also performs tasks as machine contractor and other non-agrarian off-farm activities.

It was hypothesised that the incorporation of new technologies would be markedly different in the three strata, and that the nature of off-farm earnings would be related to adoption. In considering no-tillage systems, the scale requirements and the social implications of this technique are clear:

In spite of the fact that no-tillage systems can be applied to any size of enterprise, it involves a drastic decrease in workforce and an increase of planted area on the part of the producer. Certainly it will contribute to a decrease in the number of farmers and an increase in the training and skills of those who remain.... The socio-economic

³ This refers to soybeans sown in an area which was previously devoted to another crop (normally wheat) in the same season.

⁴ By 1999, 39.9 million hectares were planted to transgenics, a 44 percent increase in the single year, 1998-99. By agricultural industry standards, this high rate of new technology adoption is virtually unprecedented. Yet the pattern of adoption is highly skewed; 99 percent of commercial adoptions - by planted area - has so far taken place in just three countries: the United States (72 percent of the global area in 1999), Argentina (17 percent of global area) and Canada (10 percent of global area). Only nine other countries were growing any transgenic crops at all in 1999 (China, Australia, South Africa, Mexico, France, Portugal, Rumania and Ukraine) and their combined acreage added up to just 1 percent of the global total (Clive James, 'Global Review of Commercialized Transgenic Crops: 1999', ISAAA report No. 12-1999, Ithaca, NY: ISAAA, cited by Paarlberg, 1999).

⁵ Contrasting data from the 1988 Agrarian Census with those of the 1999 Experimental Census in Pergamino, a county representative of the region studied.

⁶ Pools are formal or de facto associations that manage contributions (in the form of capital, land or services) of different 'actors', with the purpose of carrying out production over large areas (generally over 1000 hectares). Benefits are distributed in proportion to the contribution of each actor in inputs, operational or management tasks, capital and land. The expansion or contraction of these arrangements is related to grain price cycles.

implications should be considered by the political sector, because of the possible impact on the development of rural communities (Lattanzi 1998: 33).

One of the main restrictions in the adoption of this technique by small and medium-size farmers, derives from the lack of modern sowing machines, the key element of this technology. Farmers find it difficult to recover the cost of machinery (which stand at nearly \$40,000), which is double the cost of the full range of sowing equipment required in conventional tillage. In this respect, a study carried out in Pergamino, a province of Buenos Aires, found that in no-tillage systems, there is a threshold of 200 hectares at which point the purchase of these machines is profitable. So adoption is justified for large or medium-sized farmers who also work as machine contractors. Small-size farmers only employ this technology in the sowing of 'second planting' soybeans, but they usually contract the service (Blanco 1999).

Another limitation on adoption arises from the importance of one-year renting in the Pampas region, which restricts knowledge about the type of soil and prevents crop rotations, both of which are relevant in a no-tillage system. On the other hand, the savings in labour and time that this technique brings about, are not so important for small and medium-size farmers (Berdini et al. 1998).

The findings from the case study are consistent with this evaluation, but also reveal further elements about the strategies developed by these types of farmers. They show that in what I term 'low resource' and 'capitalised' family farmers, the incorporation of no-tillage systems takes place later, only in 'second planting' soybeans and only in *part* of the area devoted to this commodity. In 'entrepreneurial family farmers', the incorporation of this technique is much more consolidated; it covers 100 percent of the soybean planted area and it is also found in corn, although not to the same extent. It is important to emphasise that the difference did not occur, as it was predicted *a priori*, in capitalised family farms, but in entrepreneurial ones, where the employment of at least one permanent worker probably denotes a higher production scale.

The main reasons for the more extended adoption of no-tillage in 'second planting' soybeans are that it simplifies work and saves time at a crucial period (the sowing of soybeans must be done in a very short period of time, immediately after the wheat harvest), and also brings about higher yields because it preserves the humidity of the soil. It is clear that the technique has been adopted mainly for the economic benefits although those who have practised this technique over a long period of time also mention the improvement of soil qualities. Non-agricultural off-farm work also affects positively the adoption of no-tillage in soybeans, because it helps at the time at which job requirements overlap, that is, with sowing.⁷

The adoption strategies that prevail are the use of machine contractors or the adaptation of sowing machines; exchanges of labour take place to a lesser extent. The adaptation of machines occurs in those cases involving at least 200 hectares and upwards; the purchase of a sowing machine only was found in one case, i.e. a farmer who was expanding the cultivated area through land rental (in part associated with a seed firm), and was 'influenced' by this association.

These strategies clearly face limitations. Contracting the service means that small farmers are '*last in the queue*', compared to larger farmers. On the other hand, and perhaps more important, is the fact that farmers are externalising an operation previously done by themselves, changing their role as producers and increasing their needs for operating capital.

The adaptation of sowing machines implies an investment of at least \$8,000 and requiring several tests as well as technical advice. Likewise, these machines are not so convenient for those farmers who work also as machine contractors, since they are much slower than no-tillage sowing machines, which places them on unfavourable terms in the competition with other machine contractors. Last but not least, adapted machines hinder the sowing of other crops such as corn which, unlike soybeans, require the application of two different fertilisers together with sowing.

Another possibility is the purchase of sowing machines through farmers' associations. However, the most suitable machines for this kind of arrangement are those that represent a technological improvement, are expensive and are neither a continuous nor a fundamental implement for carrying out production (Tort and Lombardo 1992). No-tillage sowing machines meet all of these features, except for one; they are critical for production. Sowing must be done in a timely manner – over a specific period - with the difficulty about agreeing to take turns being a main issue for the success of these enterprises.

As regards the adoption of RR soybeans, it must be noted that they are inputs which need not to be tested over the full extent of the cultivated area, which thereby minimises the risks associated with the innovation. This probably explains why the differences in adoption rates are not so marked among the categories of family farmers considered, although it has taken place later in 'low resource' farmers. On the other hand, there is an evident coincidence in the nearly total adoption of this soybean in 1999/2000 season. The main reasons are that it simplifies the management of soybeans (it requires the use of only one type of herbicide, which may be applied at almost any time); at the same time, costs are lower and the result, *in terms of weed control*, are guaranteed. Preference occurs in spite of the fact that transgenic varieties are supposed to bring about lower yields than conventional varieties.

Strategies developed in order to diminish the cost of seed (which is high in relation to total costs and which was particularly elevated in the 1996-97 season) are;

- a) The purchase of second multiplication seeds;

⁷ In the Pampas region, another work demanding timely activity is the harvest, which is mostly contracted.

- b) saving seed for own use; and,
- c) the exchange of seeds between farmers.⁸

It is clear that the viability of these strategies and their maintenance in time depends on the need of the farmer to buy new or more effective varieties.

FAMILY FARMERS' PERSPECTIVES TOWARDS NEW TECHNOLOGIES

In this section, I attempt to keep track of the technology issue, focusing on the actors' perspectives: How do they place themselves with respect to these new developments? Do they visualise these techniques as 'attainable' or as new forms of exclusion?

Concerning no-tillage technology, family farmers interviewed clearly visualise the limitations they face as small and medium-size producers:

To apply no-tillage nowadays we ought to have a big sale, but nobody will buy the tools we have; or rather we should make a big pit, bury all of the equipment and buy a new sowing machine, a fumigator. We still can use our tractors. Otherwise, we either die in the attempt or kill everyone, because with a sowing machine, we will have to work ten times as much as what we worked before, so if we translate this to the type of farm we have in this area, the farmer who worked 100 hectares will have to work 1000, so as to be profitable. If there are ten farmers working 100 hectares each, nine will have to disappear. I don't know if it is going to be me or if it will be the other nine. (...) Apart from that, there is another issue: in this area, in order to do no-till, you need not only the sowing machine and the fumigator but also everything else has to be adapted; farms must be big, you have to eliminate fences, because you have to work in an organised way. You can't harvest and at the same time trample the field, because afterwards it affects the result (Farmer Interview 1999).

Sometimes I think: we have all the tools in the shed and we still pay for other peoples' tools (Farmer Interview 1999).

Reduced tillage, rather than no-tillage, seems a more viable option to these types of farmers, as it requires a change in farming practices using the machinery they already have (Cloquell and De Nicola 1999). That is why it can be found not only in 'second planting' soybeans, but also in other crops, such as corn. From the farmers' point of view, the restriction on the use of no-tillage in corn has to do in part with scale requirements. Adapted sowing machines are not suitable in these cases, and a complete change of the machinery is needed (Refer to Appendix One):

Why don't you find no-tillage in corn? Because you face a rainy autumn or a bad winter, then the soil is soft, you make big tracks, how do you manage to sow then? You have to do a reduced tillage at least...You need special carts, with special tires, caterpillars, so you don't trample the soil; this doesn't happen with second planting soybeans because the wheat harvest generally is a dry one (Farmer Interview 1999).

I am interested in no-tillage in second planting soybeans, maybe I would be interested in common soybeans once I've mastered it; with corn I'm not convinced yet. Besides, it is a matter of management, of implement costs, we have the machinery adapted from conventional to reduced tillage and in order to pass to no-tillage you have to change everything (Farmer Interview 1999).

Another reason arises from the fact that corn sowing must be done in a much more careful way, requiring greater technical knowledge and external advice:

Actually, soybeans are weeds you sow; it is very hardy stuff, it grows anyway, whether it is sown very close together, whether it gets enough light or only a little; these are details, but you can harvest all the same. It is not the same as corn where the sowing must be done in a much more careful way...If you sow five seeds in a metre and you miss two, then the corn is a mess, if you sow too much and it germinates everything, then it is overloaded, it doesn't work (Farmer Interview 1999).

Concerning genetically modified seeds, it is worth noting that the farmers interviewed associated '*transgenic*' with glyphosate resistance, so from their point of view, BT corn, also a genetically modified seed, is *not* transgenic at all.⁹

With regard to the question of the possible consequences of these seeds in environmental terms, only one of the farmers interviewed stated his doubts with respect to this:

⁸ This practice of saving seed is not new, although it was probably strengthened because of the high price of transgenic soybeans during the first years of market introduction. In the eighties, when these varieties did not exist, it was stated that nearly 60 percent of the cultivated area was sown with farmer-owned seed. (Obschatko 1988).

⁹ The relationship between the farmers' characterization and the marketing strategies of the agricultural business firms should be further investigated. The president of Nidera, one of the leading firms in Argentina stated that 'in corn, the most important achievements are corn resistance to Round-up, to Liberty-Link and to Lightning - but transgenic corns have not been approved in our country yet' (La Nación, 7/8/99). Up to that date, Argentine authorities had authorized the commercialization of at least three transgenic corns (Res. SAGPyA 372/98, 429/98 and 535/98).

Soil is going to be used as a sponge, where we are going to apply the amount of fertilisers needed, and of chemicals to destroy the weeds, and later we will harvest. First we destroyed it by plowing it, now we will burn it with what we add to it (Farmer Interview 1999).

Although the few objections that farmers have towards the environmental questions related to the use of transgenic seeds may be impressive, it should be noted that local environmental and consumers' movements against genetically modified organisms (GMOs) were not much developed at the time of this study. Besides, the farmers' assessment of GMOs is not being made in absolute terms but in *relative* terms. That is to say, their comparison is with the cultivation of 'conventional' soybeans, which need up to three different herbicides, some of them with strong residual character. It is in relation to these that farmers judge RR soybeans as 'better':

I think that glyphosate is good on soil erosion and maybe on soil contamination too. I will explain to you why. Round-up has less toxicity than an aspirin, in the same amount of milligrams. What I don't know is the effect that Round-up Ready soybeans can produce on human consumption; nobody knows. It is like the mad cow disease. [In relation with the soil] I feel safer with it than with the herbicide cocktails we used before (Farmer Interview 1999).

In fact, considering the high level of market integration of these farmers, it can be stated that a change in their perspectives is strongly linked to the evolution of demand, in brief, with the payment of a premium price for non-transgenic grains.

Similar to the situation found in the case of no-tillage systems, in the case of transgenic seeds, family farmers indicate that the reason they restrict their adoption to crops other than soybeans is because:

The culture that we have is to sow corn not in weedy fields, but in clean ones, maybe we don't need a transgenic corn (Farmer Interview 1999).

Another important restriction arises from the fact that the new seeds are hybrids, which must be bought in each season, instead of varieties that may be multiplied and saved by the farmers for their use. As I previously indicated, this is one of the factors behind the family farmers' strategy.

It can be stated that family farmers find genetically modified seeds 'attainable', provided they can develop the strategies noted previously; but these imply some sort of response on the part of the seed firms. An issue explored in the context of this research was related to how farmers visualised their capacity to deal with powerful actors such as the agribusiness firms:

...For the last four years they have been playing with *publicity*. The big enterprises merged: Monsanto, Dekalb, Agrevo and I don't know which others; their aim was to compel the farmer to purchase everything, the seed, the chemicals... That's why there was a great struggle, the guys were going to make good money... A bag weighing fifty kilos cost fifty pesos, I need seventy-five, eighty kilos. The price fell because the demand dropped. Everyone produced his own seed, so they also made a mistake (Farmer Interview 1999).

... What I do know is that they are going to introduce a gene and that the seed is not going to germinate; well, I've got the seed, for ten years I manage with it. And we come back to the same, if they are going to charge eighty bucks for the hectare of seed, I'll go back to the common one (Farmer Interview 1999).

Generally the farmers assess the strategies they develop as successful, although they take place within the boundaries of a productive pattern that does not leave too many options available to them:

I don't know what is going to happen in the next twenty or thirty years, working in this kind of activity, with this rhythm, each time we take more out of the soil, some years ago one talked about corn that yielded fifty thousand kilos, today one talks of ten thousand; one must talk of ten thousand because the farmer that obtains only seven is left behind (Farmer Interview 1999).

SOME FINAL REMARKS

This research work leads me to the conclusion that although a change in the technological pattern in the Argentine Pampas region is taking place, this change is restricted to the cultivation of soybeans, where the use of both technologies - no-tillage and transgenic varieties - is more extended. In other crops there is a more heterogeneous situation.

Besides, quantitative and qualitative data support the suggestion that there are different stages of use of no-tillage in the different categories of family farmers. There is a more marked and earlier adoption in entrepreneurial family farmers, and this is probably related to their larger scale of production.

With respect to RR soybeans, its generalised adoption probably has to do with its 'neutral' character in relation to the size of the farm, and its impact in lowering costs, in a difficult macroeconomic context in which the evolution of commodity prices and economic policies did little to defend vulnerable family farmers.

Another issue that arises from the analysis of in-depth interviews is that family farmers should not be considered as *passive* subjects in the face of these technologies, but *actors* who, once they have decided on the adoption of a technological pattern, take advantage of all the means within their reach to keep up with these technologies, and to counterbalance the asymmetry of their relationship with agricultural firms.

It is not that they are setting an alternative pattern of production. Theirs are strategies that aim at integration within the leading productive pattern, that pursues profitability and is highly dependent on input prices and the evolution of international markets. Maybe in this aspect lies their greater vulnerability, since capital, either fixed or operating, turns out to be a central variable, as does the possibility of accessing it through financial institutions.

As I have demonstrated, the strategies which farmers developed present some limitations in relation to no-tillage systems. This may lead to the polarisation of the group of family farmers who also work as machine contractors. It is not easy to have access to this equipment and considering their work capacity, probably there will not be a demand for the services of all of them. They are successful in respect of transgenic seeds, although it must be taken into account that the development of technologies patented by agrochemical firms, which eliminate the germinative power of seeds or condition them to the application of certain products, might establish major limitations on these types of farmer, and lead to some being excluded.

State action in respect of these new technologies, and the participation of the different categories of agrarian producers in the committees that advise on these matters, appear then as fundamental for the viability of actors such as those studied, who find themselves in a clearly asymmetric situation.

From this perspective, I consider the institutional issue as particularly relevant and deserving further research, as well as the possible developments of contract farming (related to the production of differentiated grains), which would mean a qualitative transformation of the ways in which the commercialisation of production is traditionally practiced in the Pampas region.

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LOCAL SUSTAINABLE DEVELOPMENT, GLOBALIZATION AND AGRICULTURAL RESTRUCTURING IN UNDERDEVELOPED COUNTRIES*

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INTRODUCTION

There is no novelty in the affirmation that poverty is the most serious impediment to sustainable development in late-developing countries. Yet it would be a mistake to imagine that this is the only or even the greatest problem. As I will argue in this paper, the lack of social organization – especially with regard to civil society – has proved to be just as great or perhaps an even greater barrier than the misery of rural populations. This is especially true at the moment that globalization has highlighted local spaces as arenas of social, economic and political participation for organized groups.

In the era of globalization, the idea of *local sustainable development* has been presented as the new ‘panacea for economic development’ in the Third World countries, particularly for the Latin America and the Caribbean Region¹. This idea suggests that all issues are resolved when we take power away from the State in the federal arena, and give it to the organized society at a local level.

This optimism is such that it is often forgotten to ask for whom this local development is intended, which interests are represented and how, in reality, these interests are organized. Unfortunately, if we did this, in most cases the answers would be hardly stimulating: in the non-developed countries the old, oligarchic interests are well represented at the local level. The new social actors who are emerging in the rural areas of these countries are still incipient and have no organized institutional form. The so-called NGOs (non-governmental organizations) are, in fact, hardly alternative forms of organizing interests. Many of them are little more than *ad hoc* arrangements aimed at winning governmental and foreign financial support and employing half a dozen ‘dedicated professionals’ who could find no other form of survival. Most of the local governments have so many problems related to the lack of infrastructure (transport, energy and water supply, sanitation, educational and health facilities, etc.), besides the high poverty levels in the urban areas of the small and median cities, that rural development is not one of their main priorities.

Perhaps that is one of the most important reasons why there is some doubt that decentralization will necessarily lead to policies which are more sensitive to poverty. De Janvry and Sadoulet (2000) identified four paths out of rural poverty in Latin American countries (migration exit, agricultural, pluriactive, and assistance). But they point out that only two of these paths (agricultural and pluriactive) require ‘a wholesale new approach based on regional development, decentralization and participation’ for a ‘successful rural development path’. Even the World Bank believes that ‘local elites are keener than national ones on preserving inequitable social structures, tend to dominate local decision-making, and serve their own interests at the expense of the poor’ (The World Bank 1996).

The rural areas of Brazil have undergone substantial transformations in the last two decades. In essence, they are subject to influences of urban activities which have transformed them in spaces that are not restricted to agricultural production. The Brazilian National Domicile Survey (PNAD) of 1997 shows that there are nearly 14 million people aged 10 and over in economic activity in rural areas.. Of this total, about 4 million people are involved with non-agricultural activities. The most important sectors of non-agricultural activities are: consumer services, industry, commerce, social services, and the building industry. Those non-agricultural rural workers have been rapidly growing in number since the 1980s and have become majority residents in some states like Sao Paulo, Rio de Janeiro and Rio Grande do Norte (Graziano da Silva 2001). As a consequence of this increasing incidence of typically urban activities in the rural milieu, current official criteria designed to separate urban from rural areas have been put in check, leading to a change in the traditional agriculture sectoral focus of rural policies. Thus territorial policies are acquiring importance and giving rise to new proposals for regional development.

However, it is not the first time that local development has been marketed as the ‘natural panacea’ for development in the Third World countries. In the wake of the Green Revolution of the 1960s, it was widely believed that agricultural development would induce rural development on its own (Cox, 2001). In the case of Brazil, the result of this was a ‘conservative modernization’ of agriculture, which maintained extremely high levels of land concentration and of the income generated there – and consequently, of the political power which derived from this. In the Brazilian rural areas, this meant the exclusion of the small producers from the ‘development’ process, especially in those areas that were already poor. Less than half a century after the introduction of new varieties cultivated on a mechanized basis and the widespread use of chemicals, Brazil achieved the enviable position of being one of the largest producers of grains and meat in the world, the greatest exporter of concentrated orange juice and more. Despite this, a quarter of its urban population continues to go hungry or suffer from a serious lack of nutrition. In addition, 20 percent of rural population are engaged only in self-

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¹ See for example: The World Bank (2001) and also Inter-American Institute for Cooperation on Agriculture- IICA (2000).

sufficient consumption activities and another third are low paid seasonal workers with no support from the labor laws and/or national health system (Chase 1999; Houtzager 2001).

This paper aims to contribute to the debate on rural and agricultural restructuring in the context of globalization, by addressing the danger of 'a reification of the local', mainly in the less developed countries. Issues of social participation and local organization have rarely been addressed in relationship to processes of globalization and within the framework of a comparative approach of the developed and the developing countries. We first discuss some implications of globalization for the Third World countries. Then we try to emphasize four fundamental differences in the impacts of globalization on the underdeveloped countries vis-à-vis the developed ones; the emergence of new forms of governance; the issues related to social organization; quality of life issues; and, the place that those countries (and their agricultural sectors) occupy in the new international division of labor. At the end, we address some considerations regarding the merit of the local sustainable approach of moving beyond the archaic urban/rural and the agricultural/ non-agricultural dichotomies.

While there are some references to what is going on in Brazil, the United States and the United Kingdom, we do not want to undertake a general discussion of processes of rural and agricultural change linked to globalization, based on a systematic comparison/ opposition of 'developed' and 'underdeveloped' countries. Instead, the United States and the United Kingdom are used as an ideal type of developed countries and Brazil as the ideal type of underdeveloped countries. This oppositional and ideal typical approach ends up being very reductionist, whereas our intention is to account for the complex and multi-dimensional character of processes of rural and agricultural changes linked to globalization in different countries.

THE IMPLICATIONS OF GLOBALIZATION

Globalization is not a process that takes place with equal intensity in every country, since it depends on the advantages they can offer to global networks. And this is contingent upon factors such as the country's economic and political strength, the size and potentialities of its internal market, the nature and importance of raw materials that transnational corporations are seeking, the legislation and regulation regarding to foreign trade and flows of transnational finance capital, and other not so evident criteria that may include for example, the levels of corruption of local governments (Belo Moreira 1994).

Thus, globalization does not distribute its costs and benefits equally amongst countries, nor does it eliminate the need for the interventionist state. The logic of its movement incorporates predatory competition and patrimonial speculation, which can only be contained and regulated by new forms of governance and by reinforcing the mechanisms of intervention delineated in public policies (Marsden, Flynn and Harrison 2000).

At the same time that contemporary societies are brought into global processes, they also contain local dynamics directed toward solving problems generated inside and outside their boundaries. As it has been observed, global forces require and stimulate solutions within local and regional spheres. Therefore, we need to look for new ways of balancing the global and the local connections. In this sense, we should not focus strictly on the local, but also on the relations and interactions that take place between localities and regions (Campanhola e Graziano da Silva 2000). It can be seen that the phrase that has been used to speak about national strategies for a global market – *think globally, act locally* - is relevant here.

The spatial re-organization of production involves the acceleration of capital mobility, creating commodity chains in order to obtain the greatest advantages for capital accumulation in different countries, and de-centralizing and specializing production processes. Even in developed countries, globalization accelerates the processes of social exclusion of small producers and the poorest consumers. Particular regions and locales are incorporated into these chains, while others are excluded. Thus, rather than representing a worldwide phenomenon of homogenization, globalization contributes to an increase in the differences between nations and also within their own regions (Bonanno *et al* 1994).

Marsden (1998) has explained that food networks have horizontal and vertical connections with the spaces in which they are located. The social sum of these two types of connections has begun to remodel rural space from within, and in interaction with other spaces. Thus, both dependent and dominant spaces are created.

In the case of the garment industry, commodities are not produced in the global entrepreneurs' own factories, but are contracted to local, regional and national manufacturers, who produce these commodities – clothing, shoes – according to the specifications of the large commercial firms (Friedland 1994). The situation is similar in the case of fresh fruit and vegetable production, which comes from a wide range of locales, some close and some very far away, but in which distribution is controlled by transnational distribution corporations.

In the case of the food system, governments have attempted not to get involved through direct economic regulation, shifting that responsibility to private sector retailers. The State has delegated the status of the representation of consumer interests to retailers, with powers functioning both within national governments and beyond their borders. In this way, the supposed action of consumers through retail networks has contributed to re-defining markets, promoting the emergence of new cultural patterns for the quality of nutrition and for the environment. Thus, regarding global food networks, the processes of food and agricultural accumulation have become increasingly different rather than more similar - as might be supposed - and food prices are increasingly determined in the post-agricultural production phases of food

networks. It is evident that the global cannot exist without the local, and that the local is characterized by social relations that are structured by global social relations (Marsden 1997).

It is important to emphasize that not all local and regional productive activities are integrated into transnational networks or chains. There are demands for local and regional products that are also important, and which constitute important business opportunities for small and medium-sized producers or entrepreneurs (Goodmann and Watts 1997). The competitiveness of each area or region is contingent upon its ability to integrate local, historically accumulated knowledge and capabilities with information and exchange linked to non-local markets. For this reason, the globalization of markets is more likely to increase territorial differentiation than to lead to homogenization (Saraceno 1998). The so-called market 'niches', which refer to the demand for products with specific characteristics and high value (such as organic foods that are free of chemical residues or have not caused environmental damage during the production process), are generally linked to more affluent social classes, since for the low-income population, the demand for cheap and scarcely differentiated food resulting from mass-production processes, continues to operate.

Together with these tendencies there has been a change in the sense of a shift of power and policies from a strong national/weak local to a weak national/strong local framework. Furthermore, globalization is stimulating local re-organization, regarding the particularities of the usage of space and the social actors involved. The differentiation and participation in particular and specifically located markets and niches have created new opportunities for small producers and family farmers. This happens even in non-developed countries where the least privileged groups have been facing the successive processes of macro-economic adjustment (Campanhola and Graziano da Silva 2000).

IMPACTS OF GLOBALIZATION

Thus far we have seen that globalization accentuates the unequal character of the capitalist development of the Fordist era in such a way that its impacts vary from one country to another and even within different regions of a given country. We want now to emphasize four fundamental *differences in the impacts of globalization* on what has been called First-World, developed or northern countries (which we will refer to from here on simply as C1), and analyse these in relation to all other countries, which have been referred to as Third World, southern, late-developing, underdeveloped or developing countries (and which we will refer to from here on simply as C2). In fact, nowadays it is even more difficult to say who we in the less-developed countries are, since after what Schumpeter would denominate as the 'non-creative destruction' of the socialist world, we have lost our identity as the Third World and no longer know how to classify ourselves - as backward, developing, emerging or undeveloped countries, or whatever.

The first of these differences concerns *the emergence of new forms of governance*. With regard to C1 we should not speak about a 'withdrawal of the State in general', but of a re-ordering of its functions (Bonanno *et al* 1994). Political regulation has been vigorously demanded to address new issues, such as the interaction between the environment and productive activities, (to cite one example that is of particular interest to us). These new forms of regulation are not necessarily public, but often represent the State's delegation of functions to particular segments or groups to exercise control in the name of society, thereby creating new forms of private governing (Schmitter 1990). In the case of the C2, globalization has occurred within the context not only of the reduction of the nation states' capacity to regulate economic activities, but has manifested itself in the crises of these states, both in fiscal terms and in terms of the loss of social legitimacy. The fiscal crisis of the nation states in C2 has led to a collapse of part of the public apparatus for economic and also for social regulations. The financial and operational inability of national and local government to attend to even the minimal demands of its citizens, has led to a growing exclusion of social groups that have been denied access to education, health, transport, leisure, security, etc. It is not just that the State has withdrawn from these activities in order to better perform other activities that are being currently demanded. Actually, some state institutions and public bureaucracies are being intentionally dismantled in order to eliminate social forms of regulation that oppose transnational business goals.

In general, the withdrawal of the State from both the C1 and the C2 does not leave 'empty spaces' where the invisible hand of the market is then renewed, as neo-liberals would like us to think. But within the C2 at the economic level, the bankruptcy of public power has led to the take-over of the coordination of these highly oligopolistic markets by transnational firms, as studies of fresh fruit in Argentina and Chile and concentrated orange juice in Brazil have shown (Bonanno, Marsden and Graziano da Silva, 1999). At the social level, exclusion has intensified, contaminating the entire social structure with violence and stimulating radical forms of contestation. At the political level this has led to increasingly authoritarian forms of private regulation by dominant groups.

Another great difference has to do with *levels of societal organization* in the C1 and C2. As we have seen, within some of the new forms of social regulation created by globalization, local spaces have become increasingly relevant. These forms generally originated in the new relationships that were established between private and public sectors, frequently delegating the exercise of governing functions that once belonged to organized interest groups. The difference is that in the C1, a large portion of civil society is organized around its own interests, which at least guarantees the participation of these sectors in the new forms of private government that are being introduced. Thus, the possibility of re-constructing a democratic society, in terms of representation and of the relative strength of these organizations and their relationship to the new configuration of nation states, at least does exist. In the C2 however, where civil society is only weakly organized, the strengthening of decision-making at the infra-national (local and regional) level tends to revitalize the conservative

power of the large rural landowners that are linked to the local dominant classes. In particular, the fact that an earlier period of Fordist accumulation was never as extensive and as significant in the C2 as it was in the C1, where it triggered strong labor union organization, has contributed to making the workers of the former the prime victims of globalization (Reis 1990). So it is justifiable to say that the much lauded 'labor flexibility' is really no more than a dissimulated form of removing from organized labor the rights that had just previously been won in their countries (Chase 1997).

The third type of differential impacts that we want to point out has to do with *issues of quality of life*, generally associated with environment and foods, but which should also be extended to labor conditions. Murdoch, Marsden and Banks (2000) have emphasized that consumers in the advanced nations are demanding 'quality' food and are endorsing systems that provide for those outcomes.

This has at least two important consequences for small farmers in the C2. The first is the ever-increasing concentration of the production of those commodities that have found a place in these transnational productive chains. Furthermore, the transnational companies themselves are now responsible for the coordination of these chains – in light of the operational bankruptcy of public power in the C2 to which we have referred to above – accelerating the process of 'verticalization' of agro-industrial production. In this way the transnational companies start dominating also the sphere of agriculture production *strictu sensu* as well, whether directly or through varied contractual mechanisms (Belik 1997).

A second consequence is linked to the restrictions imposed on producers located in areas of ecological interest, which most often undermines the traditional agricultural systems that had been in use in those areas. Perhaps the most extreme case we can point to is that of peasant producers in the Amazon, who employ cutting and burning techniques to clear land for their subsistence agriculture. The new restrictions as dictated by organized groups in the C1 – especially those devoted to environmental preservation – often end up destroying local production in those areas of the C2 that have been targeted for control or for ecological interests from the C1 point of view groups (Ritson and Harvey 1997).

Furthermore, beyond the difficulty that small farmers have in finding a place in the system, globalization accentuates the exclusion of both small landowners and rural wage workers, through its acceleration of processes of technological innovation. The irrigated areas near the São Francisco river in the state of Pernambuco, Northeast region, illustrate this point very well. About ten years ago, rural settlers planted onion and tomato in the irrigated areas, creating 6 or 7 jobs per hectare per year. Fruit-growing was just beginning - particularly grape-growing - which at that time demanded intensive use of labor and generated significant income. This created the possibility that irrigation – by sprinkling or flooding - could give new opportunities for the Northeastern *caatinga* population.² Today, neither onions nor tomatoes are lucrative and grape-growing generates only 2 jobs per hectare per year. A new irrigation technique (micro-aspersion) that had been developed in Israel, was introduced in the region and made obsolete thousands of kilometers of concrete channels for irrigation, built hardly a decade earlier through heavy government subsidized investments for which the Brazilian people are still paying. Thus, what has resulted is not just the exclusion of small farmers, but of all those who came to the region attracted by work opportunities linked to the conventional irrigation, which at that time represented the state of the art in terms of technological modernization of the northeastern agriculture.

Beyond these impacts of globalization, which can be identified at the level of production, we should also consider the strong discrimination against local consumers, left as they are with the products that do not meet up with the quality standards for exportation to other countries or to other Brazilian regions with higher levels of purchasing power. This is an aspect that should not be neglected: globalization is also a way of accelerating the dynamics of social exclusion in the C2, especially with regard to small farmers but also to workers and consumers with lesser purchasing power. The C1, besides having solved the problems of internal supply, maintain policies of direct subsidies for lower income consumers (King 2000; Rossi 1998). This can, almost partially, compensate the reduced competitiveness of its producers, thus stopping the additional restrictions linked to quality control and environmental protection from leading to greater social exclusion (OECD 1998). Since the C2 lack the resources necessary for a wider policy of subsidies (Gundersen *et al* 2000) they are unable to break the vicious cycle of poverty and the destruction of natural resources to which small farmers of unfavorable regions are subjected. Furthermore, since the C2 have not solved their problems of food safety, it is next to impossible to obtain social legitimacy for policies of non-production (such as the U.S. 'set-aside'). In these regions, hunger is associated not only with low income levels but also to insufficient supply of basic food products, despite the greater capacity of production C2 agricultural have.

Finally, a major difference that we want to emphasize has to do with the place that the C1 and the C2 occupy in *the new international division of labor*, and in particular, with regard to the agricultural products market. It is important to point out that in the C1, agriculture is a less economic important sector, from the perspective of production, employment and income-generation. Furthermore, the C1's participation in the agricultural international markets took place through surplus products and as importers of specific foods regulated through bilateral agreements that usually establish the prices and quantities negotiated. In short, at the point at which globalization moved from the financial to the productive sphere, the C1's dependence on international agricultural markets was declining. It should also be emphasized that the C1's have, since the 1980s, introduced a series of rural development policies based on strong financial incentives that were outside the

² Region covered with brushwood (Translator's note).

new restrictions that GATT placed on agricultural subsidies. Policies to stimulate reforestation, extend agricultural production and create non-agricultural activities in the rural areas (such as tourism, leisure, environmental and landscape conservation, etc.) should be seen as an attempt to complement the income of rural producers, compensating their losses associated with the decline of agricultural incomes (Etxezarreta 1995; OECD 1999).

This is not only a change in the direction of the agricultural policies, but 'the greening of rural policy' or, more widely, 'the greening of the public and the *environmentalization* of the State' (Harper 1993). One of the facts which best illustrates this tendency is the 'right to roam' legislation promised in the Queen's Speech in UK House of Commons, delivered in November 1999. This will provide a legal right of access to much of the non cultivated land, mostly in the wilder or more upland regions of England and Wales. The new countryside access provisions are the main feature of a forthcoming environmental Bill that also promises greater protection for wildlife sites and modernization of the law concerning footpaths and crime against wildlife (such as prison for collectors of wild bird eggs). The aim, supposedly, is to promote 'fairness' and 'enterprise' (*The Independent* November 18, 1999).

In the case of the C2, the economic weight of agriculture is still very important, both in terms of creating jobs and producing foods; it provides a significant part of the income and the revenues that countries need to pay for what they import, which has greatly increased as a result of globalization. For this reason, access to international agricultural markets are becoming increasingly important, both for countries that export a significant amount of their products (such as the countries that established the Cairns group) and for countries that have always depended on the importation of agricultural commodities for domestic supply and/or domestic price control, like Brazil and Argentina. Furthermore, given the pressures deriving from the GATT agreement, the C2 have been forced in the 1990s to open their markets to imported agricultural commodities in order to avoid retaliation from the C1 (which did not want their agricultural and non-agricultural exports affected).

The case of the Brazilian northeast is a good example of what we are describing. Imports to some parts of the region doubled during a two-year period in the 1990s. Imports are made up of agricultural commodities, mainly grains such as wheat and corn, resulting in the almost complete interruption of the circuit of local production and distribution. The corn consumed in the region comes now from Argentina, which on the one hand stimulated the development of a modern poultry industry in the Northeast region, but at the same time worsened the conditions of the producer from the dry lands of the interior, who used to take surplus corn and flour to sell at local markets. It is not only inputs that are imported but capital goods as well. As already mentioned the use of Israeli-developed micro-aspersion, as well as other types of equipment and machinery imported from abroad, are labor-saving and accelerate unemployment due to technological innovation in the region.

The final result of the Northeastern process of agriculture globalization shows that competition, once restricted to the local and regional levels, has now spread to supra-national and international levels, accelerating technological innovation particularly in the fruit-growing sector. It is in this irrational race that new forms of governing linking public and private interest have emerged. Once again, the least privileged are the ones who have lost the most – small and medium farmers, workers and less affluent consumers.

FINAL CONSIDERATIONS

The new approach to local sustainable development has the undeniable merit of moving beyond the archaic urban/rural and the agricultural/non-agricultural dichotomies. As we know today, agricultural activities are profoundly transformed by non-agricultural activities. Rural space is not just a space defined by its particular relationship to the land – and, in broader terms, to nature and the environment – but is profoundly linked to contiguous urban space.

None-the-less, the local development approach presupposes a minimum of social organization permitting different social actors to function as the true protagonists of the processes through which the spaces they inhabit are transformed. For this reason we can say that local sustainable development should also be understood as a political development, in that it permits greater and better representation of diverse social actors.

An important point to be made is that when we speak about these actors, we are not simply referring to agricultural producers, as widely-varied as the latter group may be. We must also include those who inhabit the rural milieu or those from urban areas who simply maintain an idyllic point of reference for a new relationship with nature.

Growing demands and concerns regarding the management and conservation of natural resources are other important components in the strengthening of rural space. Here, as well, the organization of social actors can provide the impulse for participation and implementation of local development plans oriented toward their interests. Although many restrictions on forms of participation and representation continue to exist, this is due to both low levels of mobilization and to difficulties in maintaining an adequate representation of all the social sectors involved. These add up to the presence of operational and organizational biases resulted from local institutional structures and the decision-making power of the most affluent groups.

In the Brazilian case, for example, while it can be said that actions oriented exclusively toward agricultural development were able to engender a high level of modernization in some parts of the country, this was not accompanied by thdesired rural development. One of the main reasons for this is the fact that only the technological and economic

dimensions of the rural development process were privileged, relegating social and political changes, such as the labor organization of rural landless workers and small farmers, to a secondary concern.

Furthermore, with globalization, the disparities that exist in the less developed countries tend to be exacerbated, both in regional terms and, especially in the agricultural sector, in terms of the relationship between the family farm sector and agribusiness. It is apparent that globalization is accelerating this process of social exclusion of the already less favored, accentuating the unbalanced character of agricultural modernization. Also, if it is true that this treatment of local development allows one to overcome the old dichotomies (such as urban/rural and agricultural/non-agricultural) it is also true that we cannot assume that there is always a minimum of social organization which allows the new social actors to participate.

It is necessary to build new institutions at the local level if we wish to ensure that local people can express themselves and claim for their own needs. Also, these new institutions, which are just emerging in the rural areas of the underdeveloped countries, are endorsing better social representation of previously excluded groups, such as workers who own little or no land, for example. The new institutions must also search towards a better representation of the agricultural landowners and salaried rural workers as well, despite the fact that both of groups are still prisoners of a unitary union structure and rural ideology. In the Brazilian case, the impossibility of allowing representation of pluralistic interests is one of the main facts responsible for maintaining the political power of the country's rural oligarchs, even in those regions which they retain no corresponding economic and social power. We must also search for ways to represent the interests of all rural residents, be they non-farm workers, pensioners or urban residents who own country residences and leisure smallholdings, or those who have non-productive rural interests, such as the preservation of the countryside and of natural resources. In this new institutionalization, the agricultural workers and farmers must not monopolize the representation of the new rural situation, since the interests to be articulated would neither be merely economic, nor sectional, but of a space delimited geographically by many organizations represented. Thus, in many cases the locality would have to be larger than the municipality; that is it amplifies the spatial dimension of a region, such as a hydrographical basin, a river valley, a mountain range or even an area which produces a certain product which centralizes the interests of these distinct localities, such as the cocoa region of Bahia or the sugar cane in the Northeast.

One fundamental question is how this new institutionalization is to be constructed; should it start from the existing structures and organizations or from new entities? In principle it seems there is no clear rule as to whether one or other of these possibilities should be excluded. Thus it seems obvious that the institutions of teaching, research and technical assistance would have to be reformulated to include these non-agricultural dimensions of the local rural development. Also, this reformulation cannot be effected by simply aggregating new departments, secretariats or even ministries to the already existing institutions created in the wake of the Green Revolution of the sixties. Above all, one must modify the content, methods and objectives of these institutions and of their programs and methods of action. In the same way, the policies of administrative and financial decentralization alone are not enough to strengthen the power of the newly emerging social actors. It is necessary to create new mechanisms for the participation of the local populations, which go much further than simply nominating 'development councils' with the task of making suggestions about the application of the funds received by the local governments. As far as we know, the process by which such mechanisms are created seems to be an open question, since it cannot be solved *ex ante*, as the economists have it. Rather, solutions will be constructed one by one, in the swell of the actual fight for the transformation of the structure of power in each locality.

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THE DYNAMICS OF THE GLOBAL CAPITAL AND ITS CONSEQUENCES ON AGRICULTURE AND IN RURAL SPACES*

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INTRODUCTION

In this paper globalization is conceptualised as a process that marks a new phase of capitalism (Moreira 1994). The aim of this paper is to propose a systematic approach to the economic and social consequences of the globalization process, with particular attention to agriculture and agri-food as well as the use of rural areas. Therefore, understanding the role of the main agents of globalization is a necessary condition to assess the impact of this process. My working hypothesis is that the different actors in the globalization process do not demonstrate the same behaviour, justifying a closer look at the logic and dynamics of its main agents, and the reactions that these changes provoke.

Whether from a theoretical or empirical point of view of globalization, it is necessary to take into account the actions of the state. The issues of the 'state' is beyond the purposes of this paper, however I stress that the state can be found acting mostly as a facilitator of capital requirements or mostly as a regulator (McMichael and Myhre 1991: 99). Usually, the 'withdrawal of state intervention in some spheres (particularly the social sphere) has been accompanied by strengthening of intervention in other spheres' (Bonnano et al. 1994: 22).

Globalization, while developing new degrees of freedom for capital, is weakening nation-state power, with considerable variation among states (Friedland 1994). In fact, global capital not only succeeds in escaping the regulatory power of the nation-state but is increasingly assuming powers that historically were prerogatives of nation-states (McMichael 1996). All these features suggest that there was a reversion in the equilibrium between capital rents, wages and social security rights achieved, after a long period of struggle, by modern states in the twentieth century (Santos 1998).

In order to further elaborate these arguments, I initially engage in the various debates concerning the logic and dynamics of global finance capital using ideal types as a device to focus on the differences and contradictions between the different fractions of the agents of the global capital. As such, particular attention is paid to the effects brought about by each type of global capital. I then discuss the dialectical nature of the globalization process and the consequent forms of resistance to global capital. Finally, it is possible to reach several conclusions and to establish some points of a research agenda that can lead towards a better assessment of the different dimensions of globalization.

GLOBAL FINANCE CAPITAL

Karl Marx characterized capital as a social relation. To be properly understood, social relations and capital accumulation must be considered not only at the local level but also on a world scale. That is, local capitals cannot be considered in isolation from global capital.

My argument is that the main agents of global capital do not act in the same way, and they do not share the same possibilities of dealing with the countervailing powers that can be present at the local level. This has led me to use the following ideal types¹: **producer-driven** capital; **commercial-driven** capital and **speculative-driven** capital.

The ongoing globalization process brought about a change in the relative importance of the different ideal types. Since the industrial revolution until the middle of the twentieth century, it was producer-driven capital that prevailed. The interest given to the business schools and the increasing marketing concerns are symptomatic of the shift of importance to commercial-driven capital, changes that greatly intensified in the last decades of the twentieth century. Most recently, we must look to the overwhelming power of speculative-driven capital which is associated with the emergence of the virtual or symbolic economy (Drucker 1993).

PRODUCER-DRIVEN CAPITAL

This type of global capital is represented by the transnational corporations (TNCs), whose core business is the production of commodities and which are looking for economies of scale and scope. The competitiveness of the TNCs is largely based on technological knowledge (R&D) and the search for market power through the formation of oligopolies that raise barriers to the new competitors.

COMMERCIAL-DRIVEN CAPITAL

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¹ Inspired on the producer-driven and buyer-driven commodity chains (Gereff 1994).

Commercial-driven capital focuses essentially upon intermediation, without needing to be directly involved in any productive activity. It looks for diversified systems of contract, as well as anything that can provide more flexibility to search for suppliers anywhere on earth. Thus, this ideal type *is not* particularly concerned with the organisation and control of productive labour, the choice of technologies, the financial requisites to manage productive assets, or the production hazards and risks connected with commodity production. These are to be guaranteed by other types of capital (global or local) and by non-capitalist forms of production.

SPECULATIVE-DRIVEN CAPITAL

Speculative-driven capital has taken advantage of the liberalisation and de-regulation of the financial markets. This ideal type of capital is free of concerns about production, social meaning of production, employment, market power, multi-spatial co-ordination of production and distribution and other items, which are the concern of producer-driven or commercial-driven capital.

THE DYNAMICS OF GLOBAL CAPITAL

It is obvious that, in contemporary society, the borders of the different types of capital become blurred and every concrete example of a transnational corporation will show a mix of characteristics from the three ideal types.

One of the main characteristics of capitalism is the conquest of market power through processes of concentration that point to the formation of global oligopolies. But capitalism also means competition: it needs to achieve high levels of mobility and flexibility to change production and commercial patterns in response to changing marketing targets. This being so, even producer-driven capital which is less mobile and flexible, tends to adapt to these concerns.

Although many of the differences between producer-driven and commercial-driven capital tend to blur, it seems wise to consider that the core business of some corporations is still concerned with production purposes. This is particularly the case in the kind of production regimes that require high capital investments in machinery and in 'research and development' (R&D).

Similarly, commercial-driven capital is increasingly concerned with productive matters, making an effort to control production technologies and the traceability of the commodities produced under contract. This is particularly important in the agro-food sector where large retailers develop efforts to control technologies in order to provide reliable information to the consumers, assuming forms of regulation previously typical of the state². The dynamics of speculative-driven capital depend largely upon the will and capacity of the nations such as the United States, Germany, the United Kingdom and Japan.

Finally, it is important to note the contradiction between speculative financial capital and the other two types mentioned previously. While both producer-driven and commercial-driven capital look for a reliable and stable financial system, the inner logic of speculative capital is based on financial volatility and short-term financial profits that give an extra incentive to the speculative game (Chesnais 2000; Shiller 2000).

ASSESSMENT OF THE EFFECTS OF THE DIFFERENT TYPES OF GLOBAL CAPITAL

I now attempt to schematise the most important type of impacts resulting from the dynamics of global capital, paying particular attention to agro-food and agricultural restructuring, as well as to the impacts in the socio-economy of rural areas. I focus on the following dimensions: scale effects, investment durability, market power and environmental problems (other than the obvious pollution increase associated to long distance trade).

PRODUCER-DRIVEN CAPITAL

This ideal type is represented by capital-intensive industries such as aeronautics, engineering, chemicals and pharmaceuticals, oil, automobiles and high-tech electronics, as well as agro-food giants.

Producer-driven global capital provides jobs and introduces a new economic dynamism where it is introduced. Thus, it is not surprising that most governments or local authorities are eager to attract this type of capital. I now assess the four above-mentioned dimensions, each of which present positive and negative effects.

Scale effects: producer-driven capital looks for economies of scale and scope (Chandler 1994), which inevitably lead to a concentration of production. This means that concentration of production in some zones and diminishing or abandoning of production in other zones, leading to a new territorialization.

Investment durability: new establishments can provide economic dynamism and positive social effects as well as technological transfers.³ These can also be examples of durable businesses. Other types of investments can easily de-localise when most favourable conditions appear elsewhere. This means that the incentives granted to attract global capital can have the perverse effect of reducing the costs of de-localisation. It is significant that the IMF (largely opposed to subsidies) and, more recently, the WTO, do not seem interested in regulating these incentives.

² See Marsden (1999).

³ This includes familiarization with new management concepts, and the possibility of the emergence of new subcontractors.

Market power: an important part of foreign investment is directed to the purchase of local operations in order to increase the market power of the TNCs. Portuguese examples in agro-food acquisitions point to higher levels of management efficiency and better marketing facilities, with mixed results concerning production capacity and the employment (Vaz 1996).

Environmental problems: negative environmental effects of producer-driven global capital are potentially the most well-known and feared features of the globalization process. In fact, some TNCs search new locations so that their operations might avoid the environmental regulations enforced in most industrialised countries. This is viewed by mainstream economic theorists as a trade-off between pollution and money (Korten 1997). It must not be forgotten, however, that negative environmental impacts are not the sole result of new or restructured operations under the direct control of global capital.

A crucial outcome of the operation of producer-driven capital is the release of restructuring forces, causing a new territorialization that is negative for the regions abandoned due to the marginalizing effects of the installation of concentrated units, or after restructuring or de-localisation processes. The only regions that can benefit are the ones that can secure the benefits of investment spillovers. The importance of these matters is enough to allow the formation of large coalitions favouring or opposing some technologies aimed at by this type of capital⁴.

So, the final balance of this type of operation results mainly from the number and impact of the spillover effects in bringing an independent economic life after the TNCs withdrawal.

Finally, an effort must be made to assess the environmental effects of the TNCs' operations, which means that it is necessary to try to guarantee, on a permanent basis, the accountability of all its externalities. This is very difficult, even from a theoretical point of view, since many of these externalities cannot yet be properly defined. To this extent, I now unpack the various concepts.

COMMERCIAL-DRIVEN CAPITAL

This type of capital is characterised by the use of global sourcing, connecting different forms of production, under a variety of contracts. Thus, when looking at the effects of global commercial-driven commodity chains one must pay attention to the kind of contracts and the estimated effects of the various locations. This is not an easy task. In fact, the production basis of these chains can be located in the rich or in the less favoured zones, both at urban centres and in rural areas.

Scale effects: production under contract probably does not have the same scale effects as TNC direct-owned operations. Instead of big isolated operations with loose articulation with surrounding community life (except the use of wage labour), production under contract contributes to the spread of information concerning the use of new technologies, new products, new forms of organisation, management, and marketing, as well as new forms of doing businesses. These features have a positive side, but we must be aware that it can start a movement toward the concentration and specialisation of production that break the traditional socio-economic organisation of the rural areas, with identical effects to those observed with the 'green revolution'. From the point of view of service enterprises, it must not be forgotten that most of the advice granted by these TNCs point to the re-enforcement of concentrated capital. That is, these service enterprises are a powerful means to spread the mainstream development model, thus contributing to the aggravation of the scale effects caused by producer-driven capital.

Investment durability: it is well known that producing units depending only on the demand of global chains can be abandoned very easily when the global decision centre finds firms from any other place, more favourable to its global sourcing needs. So, even if the producer bases of these global chains are nationally or locally owned this does not necessarily have an influence on the durability of the investment. That is, the risk of deactivation of those production units is higher than the typical producer-driven capital type. This is not only because the costs of the investment are assured by national or local capital, but also because without the marketing connections provided by the global chain those units risk losing their demand.

Market power: globalization brought new forms of marketing and distribution based on centralized forms of acquisition (*centrales d'achat*). This led to an enormous increase in the market power of this type of capital vis-à-vis producer-driven capital and contributed to the restructuring of the productive sectors. I will address later its effects on the agriculture and agri-food restructuring.

Environmental problems: the environmental risks are real but are not the particular concern of this type of capital: the producer bases of these global chains are assured by producer-driven global capital or by locally owned forms of production. Even if global commercial-driven capital shows some concerns regarding existing or perceived environmental risks, environmental responsibility is unlikely to be seen as its problem.

⁴ Bonnano and Constance (1998) refer to a very unusual coalition on the safe tuna case.

The increasing shift of power from production-driven to commercial-driven global capital is associated with an increasing focus on cost reduction that is assured not by global capital directly, but by using subcontractors. Cost reduction mainly assured by lowering labour costs (sweatshops, child and prisoners' labour) and the lack of care about environmental considerations (Morvaridi 1995), constitute the most negative effects. On the positive side, one can expect higher levels of employment and some economic dynamism contributing to the welfare of the populations that benefit from them.

SPECULATIVE-DRIVEN CAPITAL

Speculative financial capital moves on a sphere of speculative purposes typical of the virtual economy. In this case scale effects, investment durability, market power and environmental effects are the less important outcomes of this type of capital.

The impact of this type of capital is in line with the growth of the symbolic economy. Besides the power to diminish nation-states' degrees of freedom, one can also point out other effects such as the psychological over-evaluation of greed and individualism, relegating co-operation and human values to lower scales of preferences. It also creates an economic situation where the merits of the entrepreneurial behaviour of assuming risk on productive assets is strongly de-valourised.

IMPLICATIONS FOR AGRI-FOOD RESTRUCTURING, AGRICULTURE AND LESS FAVOURED AREAS

Probably the most important implication of the analysis so far is in relation to the empowerment of commercial-driven vis-à-vis producer-driven capital. The core business of agri-food global giants such as Nestlé, Unilever, Philip Morris and BSN-Danone, is related to their productive activity. However, a shift is being observed and the commercial-driven capital is acquiring a stronger capacity to deal as an equal to these giants. In fact, with the exception of the leader market brands, all other products (even the products of these huge TNCs), face increasing difficulties in being displayed on retailers' shelves. Furthermore, an increasing number of retailers rely upon non-branded ('generic') products or products with their own brands (e.g. supermarket 'private' labels). So, despite the power of these retailers, even the large TNCs must accept non-branded commodities or those labeled with the retailers' own brand.

Other TNCs, such as ConAgra and Cargill (Heffernan and Constance 1994) besides their own producing capacity, are employing various ways to do business, using not only vertical integration but also subcontracting. This means that they are using the same instruments as commercial-driven capital, leaving the greater part of their products to be processed by less powerful agents, such as local capitalists or even non-capitalist forms of production.

Another aspect particularly important to agricultural restructuring and to the less favoured areas has to do with the concentration of producer-driven and commercial-driven capital, along with the growing importance of long distance trade. Access to big retailers requires that the producers have a critical economic mass. This sometimes means that it is easier for the retailers to buy needed products abroad than to have to rely on local producers. The latter are incapable of fulfilling standardised patterns or assuring the flow of the required quantities according to the desired schedules. This aspect is a very powerful device to restructure agriculture, marginalising the small farmers and the territories that cannot comply with the retailers' exigencies.

Similarly, long distance trade is the cause of important changes, mainly in animal husbandry. These changes rely on the use of soybeans, corn and cassava (or its derivatives) for intensive animal production, substituting traditional feed systems and presenting an economic logic that, at a certain moment, ensures that herbivores are forced to eat animal sub-products as a source of protein – something that seems to be at the heart of the BSE (mad cow disease) scare. Globalisation has brought about an acceleration of the intensification of production patterns, meaning that a number of productive systems have become independent of the surrounding territories and traditional farming systems.

The new territorialization is not only important in the zones that cannot comply with the global retailers' requirements, but also has important outcomes in other zones and in other countries and, sometimes, in other continents. In fact, the well-known phenomenon of export-oriented production of soybeans, cassava, feed grains and fresh produce, portends important agricultural restructuring in a number of countries, particularly developing countries. Such effects are believed to include shortages of traditional food supply, marginalization of smaller farmers, and increased importance of the areas with larger, exported-oriented farmers (Conroy et al. 1996).

In the overwhelming majority of cases, producer-driven capital will avoid location in less favoured zones, unless these geographical areas have any characteristics that could be considered as improving their competitive advantage. Commercial-driven global capital is causing enormous impacts in terms of accelerating concentration trends, and contributing to important changes to the geographical patterns of agro-food production. The main effects of speculative-driven global capital is the purchase huge areas of land awaiting future valorisation⁵. The 'freezing' of such land is far from being environmentally and socio-economically neutral.

SOURCES OF RESISTANCE TO THE GLOBALIZATION PROCESS

Globalization is a dialectical process. There are oppositional forces that, one way or another, try at different levels and with diverse degrees of efficacy to oppose its current direction and pace. Forces such as workers' unions, farmers' unions,

⁵ Which is only possible in countries where unused land pays no significant taxes.

environmentally-based NGOs, as well as more or less spontaneous movements, such as consumers and other grass root movements, are included here.

The aim of this section is to assess the importance of some of these forces and to relate them to the types of capital discussed above. However, we must keep in mind that resistance to global capital is intrinsically linked with the effective influence of the hegemonic politico-ideological forces over the state apparatus and public opinion.

Workers' resistance to globalization: in this phase of capitalist development, when the state-nation is no longer the only relevant unit of analysis, workers' unions are being progressively weakened in their struggle against global capital, particularly when trying to resist global agents with higher mobility, such as commercial-driven and speculative-driven capital. In fact, even those workers' unions more ideologically concerned with the internationalist rhetoric usually only have influence inside the borders of the nation-state. Thus, the few examples of successful workers' resistance to global capital seem to be cases related to typical forms of producer-driven capital (less flexible and mobile), and which were essentially cases that did not raise the hostility of public opinion, therefore preventing state moves against workers. But, even these examples usually stop at the countries' borders. There are only rare cases of cross-border solidarity. When that happens it is usually in the form of demonstrations or, very rarely, symbolic strikes. It could therefore be concluded that globalization is strongly eroding trade unionism. Furthermore, as we have seen, the weakening of the nation-state means that, even with more pro-workers' governments, it is not easy to be assured that the state will be able to support organised labour in their disputes with the capital. This would send the 'wrong' message to the financial markets – something that would quickly be highlighted by economic journalists and potentially lead to recommendations for impositions from the IMF or World Bank.

However, if workers' unions and capital are frequently on opposite sides, what will happen with farmers' organisations that, by their nature, are not anti-capitalism?

Farmers' resistance to globalization: Marsden (1999) has highlighted four key dimensions concerning the territorialization of rural space: mass food markets; quality food markets; agriculturally-related development; and rural restructuring (non-agricultural development). The perceived impacts of globalization on agricultural and food markets and the ways farmers accept it or try to resist it are intrinsically connected with their logic and dynamics.

Farmers involved in mass food markets must be prepared to compete in a globalised world. However, in the EU (but not exclusively in Europe) farmers have been largely spared from global competition, taking advantage of the Common Agricultural Policy (CAP). Since globalization means the loss of privileges and increasing competition, many farmers take a risk in moving into the global market. Thus, it is understandable that they perceive globalization as a threat, and many of them are in the front line of demonstrations against globalization, particularly fearing the introduction of new technologies such as the genetically-modified organisms (GMOs).

Farmers involved in quality food markets range from the ones localized in favourable rural areas having the necessary structures and skills to be very competitive, to the small producers for niche markets, from the less favoured areas. The increasing importance of organic food and the link between traditional farm products and the cultural sphere are good examples of these markets. Small producers involved in niche markets are not especially concerned with the impact of globalization, probably expecting that it will increase the demand for their products. The others, producing quality food in a globally-competitive way, will probably be more divided. On the one hand, globalization represents a larger market and new opportunities to enlarge the business or to get better prices. But on the other hand, globalization means increasing competition, leading producers to think that it is better to remain within a largely protected market with a specific European dimension. It is therefore not at all absurd to consider that many of these producers will participate in anti-globalization protests.

The loser in this game is the large group of differentiated farmers that, due to scale, infrastructure endowment, skills, and so on, cannot compete in mass food markets and cannot change production patterns to compete in quality food markets. Many of these also are willing to increase the ranks of the anti-globalization movements.

Relating globalization to emerging rural restructuring is a disputed issue - market-driven non-agricultural restructuring showing no particular concern for farmers and agricultural production. Farmers are seen as hampering such restructuring. The French position - which views farmers as a major component of rural restructuring and therefore justifies their involvement in a variety of non-agricultural tasks - is one that both supports and endorses the tradition of pluriactivity among French (as well as many European) farmers.

Grass-root resistance to globalization: consumers' protests can affect the sales of products of some TNCs as happened in the Nestle's baby milk powder campaign. Similarly, Levi-Strauss and the Timberland Company were forced to withdraw from China because of widespread human rights violations.

Empirical evidence shows that coalitions between labour organizations, environmentalists, consumers and other grass root movements in developed countries have obtained some positive results. So-called 'mad-cow' disease also contributed to better awareness about food safety. Such knowledge led to radical changes in the way that regulations are made in the food chain, both at the local and at the global level.

Food safety is increasingly becoming a major area of controversy among consumers, retailers and agro-food industry, giving rise to quite different local responses to the perceived threats. These local responses have economic and social effects that can prevent the marginalizing effects of trade globalization.

These examples of resistance are directed against producer-driven or commercial-driven global capital. Resistance to speculative-driven capital has been more difficult. This type of global capital does not, apparently, fear any form of resistance from organised workers, farmers, grass roots or consumers movements. The extreme mobility of this type of faceless capital prevents a proper identification both of its real role, and of the agents causing the marginalizing effects. Furthermore, it is worthless organising demonstrations or trying to bring to court such a diffuse entity as 'global speculative capital'.

If the above is correct, then only nation-states or supranational entities can regulate global speculative capital. However, hegemonic ideology favouring deregulation still prevails, leading to a practice that means governments are almost helpless to impose any form of effective regulation on global capital, and especially on the speculative-driven type.

It seems that the attempt to institutionalise the Multilateral Agreement on Investment (MAI) provoked the beginning of a real global movement against globalization. In France, the ATTAC (an association promoting the taxation of financial transactions to support citizens) was instrumental in attracting media attention to the Tobin Tax. Protests against the move towards a globalized world are also examples of globalization gathering a great number of grass-root organisations, as demonstrated in Seattle, Washington, and Davos. But this global movement reached a new level during the World Social Forum in Porto Alegre (Brazil) aimed at discussing alternatives to current globalization. Such activity has been instrumental in cracking the hegemonic wall of neoliberal ideology.

At an economic level we are witnessing the appearance of global movements (such as the Fair Trade Movement) that want to promote real alternatives to the TNCs' globalization processes. Even if the economic importance of the Fair Trade Movement is growing one must be aware that, in fact, this is nothing more than a niche market, representing about 0.001 per cent of all global commerce. Its main importance is more ideological, showing some potential for changing the way mainstream importers do business.

Putting aside nation-state or supra-nation state possible interventions to regulate speculative capital, what is worth noting is the surge of experiences of alternative forms of doing business that escape the speculative logic of global capital. I am referring specially to the LETS (Local Exchange Trade Systems), and to alternative banking systems, ranging from the most informal, like the ROSCAs (Rotating Saving and Credit Associations) and the Grameen Bank of Bangladesh, as well as to others which are more formal, such as the Ethical Banks that are emerging in some developed countries.

CONCLUDING REMARKS

The first concluding remark that can be made is that globalization is essentially a process of empowerment of global finance capital and its agents - the global corporations (and particularly the representatives of speculative-driven capital). Here and there, however, some connections with other spheres have been identified, showing the necessity of making an effort to develop a multi-disciplinary approach to these issues. This is particularly important if it is accepted that the globalization discourse (Koc 1994) is used to legitimize an ideological purpose that presents globalization as a pre-fixed process, leading to the acceptance of the most negative features as nothing more than a necessary and inevitable outcome. Indeed, this idea is what most of the concentrated corporate mass media, and the leading opinion-makers, transmit to the public on a daily basis, but with special energy during electoral debates.

From a conceptual perspective, globalization is a very complex and multi-dimensional process, influenced by the variety of structural conditions which differ from country to country and from region to region, and by a huge differentiation of human agency, impregnated with social, political, ideological and religious purposes. This is very far away from the 'homogenized' thinking favoured by the corporation.

As a result of this dialectical process, there is evidence that, at times, countervailing powers are emerging that are challenging – and providing alternatives to - global capital. The alternatives comprise mixed concerns, gathering people from a variety of political and ideological positions who share a common concern about the shortcomings resulting from the unrestricted action of global capital. There is also evidence that large TNCs show great concern for their image and are developing an approach, designated as good corporate citizenship, involving them in a variety of community projects.

The effort to better understand the logic and dynamics of global capital points to various obscure aspects that can contribute to a research agenda to assess the impact of such capital. One of the main problems that research concerning the net effect of the TNCs on agricultural and rural areas faces, is the difficulty in translating most of these effects into an acceptable unit of account. Even if there are a number of instruments to evaluate economic, social and environmental effects, there is still a great number of effects, namely those that are related to environmental and social costs and benefits, that are usually not considered on current evaluations, due to difficulties of measurement as well as evaluation costs.

This raises two different issues. On the one hand, there is a question of methodology and operational difficulties in assessing social and environmental impacts. On the other hand, there is the question related to the ideology that tends to

give to the market the ultimate power to decide what is acceptable and efficient, regardless of ethical problems and human values, and which only can be properly assessed from a political point of view.

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