

Geographies of food: agro-food geographies – making reconnections

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I Introduction

There was a time, and not so very long ago, when research in the geography of agriculture had little to say about food other than as a raw commodity. By the same token, geographers of food were largely taken up with retail geography as a sub-specialism within economic geography. In other words, both were about economic activity, but in separate compartments. Both focused on issues of production as against consumption. The emergence of an agro-food geography that seeks to examine issues along the food chain or within systems of food provision derives, in part, from the strengthening of political economy approaches in the 1980s. By directing attention away from the narrow confines of the farm business, hitherto examined largely through the lenses of either neoclassical economics or behaviourism, towards relations with 'capital' an important reorientation and reconnection was started. However, the process has been taken much further in recent years with the (re-)discovery of consumption, linked so strongly to the postmodern or poststructuralist trends in social science. Conceptualizing consumption is, in turn, linked to the discovery of 'culture' in economic geography, and this has had some positive impacts on agro-food studies (Goodman and DuPuis, 2002). However, Martin and Sunley (2001) have recently raised concern that 'what these cultural economic geographers criticise as the myopic economism of "old" economic geography could simply be replaced by an exclusionary cultural essentialism in the "new" ' (p. 152). To date, cultural essentialism has not taken hold in agro-food studies where the legacy of political economy is strong (e.g., Marsden *et al.*, 1993). Consequently, economic realities and power remain important in many discussions of food consumption, as in Marsden *et al.* (2000). Nonetheless, a negative impact of the new cultural geography of consumption is perhaps apparent in how very few recent studies highlight the basic socio-economic and political issues of income inequalities which underpin and result from differential access to the process and

places of consumption (but see Atkins and Bowler, 2001). A similar point may be made with regard to actor-network theory (ANT) which, as Marsden (2000) has pointed out, is methodologically strong but substantively weak in that global asymmetries of power and value may be ignored within ANT.

However, the turns to both the food chain and to consumption are not only consequences of conceptual shifts and fashion. They also reflect political and policy realities arising out of the shift from a homogeneous agricultural commodity market to a more segmented market. Crucial to this shift of attention towards both food system and consumption issues is the need for reconnection or, indeed, new connections. The main purpose of this paper, the first of three trend reports on the agro-food sector, is to sketch out the bare bones of four sets of reconnections: farming and food, food and politics, food and nature, and farmers and agency.

II Reconnecting farming and food

The conceptual reconnection of farming and food owes much to empirical reality and, in particular, to the harsh political and market circumstances confronted by farmers in recent years. Farmers, once the suppliers of a relatively homogeneous commodity market, underpinned by complex systems of state support for markets, now face uncertain and more segmented markets. Following a period of nearly 60 years, during which agricultural producers were enjoined to produce raw commodities at volume with relatively little attention to the finer detail of market requirements, farmers are now urged to reconnect with the market. The UK Government's *Strategy for sustainable farming and food*, published in December 2002, urges farmers to develop an understanding of the changing market and to 'take action to make the best use of the market opportunities identified'.

There are two main drivers of this reconnection: trade policy and the alternative food economy. Trade policy provides a strong, some would argue irreversible, drive towards globalized markets and the demise of trade-distorting agricultural protection measures. Driven by both reform of the European Common Agricultural Policy and the inclusion of agriculture high on the agenda of the World Trade Organization since its formation in 1995, farmers in Europe face a continuing reduction in the level of direct support payments and other hidden support measures. However, much of the research conducted hitherto on CAP and WTO reform processes and impacts has not focused directly on the issue of reconnecting farmers to their markets. Rather in Europe there has been a particular focus on the impacts of agricultural policy reform on countryside and environmental management (Donald *et al.*, 2002; Brouwer and Lowe, 2000; Potter and Goodwin, 1998; Winter, 2000; Winter *et al.*, 1998). At the level of the WTO itself, most commentators have been content to seek to unravel its complexities (Swinbank, 1999) or situate discussion of the WTO within a much broader globalization discourse (Hertz, 2001), although there has been some attempt to consider some of the specific policy issues WTO poses for European agricultural and rural policy and its implementation (Potter and Burney, 2001).

The direct impacts of CAP/WTO liberalization measures on mainstream commodity markets have not attracted a great deal of attention from geographers, beyond a straightforward charting of commodity market trends (but see Walford, 2002). In some

ways this is surprising, for earlier geographical inquiry did much to demonstrate the spatial implications of policy intervention within mainstream agriculture (Bowler, 1979a; 1979b; 1985) and it is clear that liberalization will impact on spatial patterns of production reflected in farmers' position in the food chain. Banks and Marsden (1997) provide a helpful exception to this neglect in their analysis of the regulation of the UK milk sector. It is probably fair to say that most rural geographers have tended to see farmers as hapless victims of globalization and, consequently, see reconnection as synonymous with the stark realization of market weakness. However, there have been some responses by farmers and other stakeholders through strategies of cooperation, joint venturing or vertical integration as a means of coping with lower prices, but these have been neglected in the literature hitherto (but see Davies, 1999; Hornibrook and Fearn, 2002).

By contrast, the second driver of reconnection has received considerable attention in the literature to the attempts by both farmers and consumers to challenge the global agro-food complex through establishing alternative systems of food provision. Two issues have provoked particular interest by researchers in this area: the notion of quality and the conception of embeddedness. The 'turn to quality' in the food market has been constructed around consumer concerns over human health and food safety, the environmental consequences of globalized and industrialized agriculture, farm animal welfare and fair trade. Such concerns are seen as the prime motivating factors in a move away from the homogenized products of the global agro-food industry in the western world, with quality seen as inherent in more 'local' and more 'natural' foods (Murdoch *et al.*, 2000). A significant body of work is being built up around notions of quality in the food systems with much emphasis on regional and/or local branding (Gilg and Battershill, 1998; Ilbery and Kneafsey, 1998; 1999; 2000; Holloway and Kneafsey, 2000; Murdoch and Miele, 1999; Parrot *et al.*, 2002), the organic sector (Ilbery *et al.*, 1999; Morgan and Murdoch, 2000; Rigby *et al.*, 2001) and quality assurance (Morris, 2000; Morris and Young, 2000). Conceptualization of these food-sector changes has shifted from a framework of postproductivism, which emerged from agrarian political economy and continues to excite some debate (Evans *et al.*, 2002; Wilson, 2001) to that of embeddedness (Murdoch *et al.*, 2000; Hinrichs, 2000; Winter, 2003a). However, the concept of embeddedness has been subject to a rigorous critique by Krippner (2001) in economic sociology. Within economic geography, embeddedness is cited as an example of vague theory ill defined or theorized yet 'firmly established as part of economic geography's conceptual vocabulary, despite the criticism and debates surrounding the notion within economic sociology itself' (Martin and Sunley, 2001: 153).

The foot-and-mouth epidemic in Great Britain brought into even sharper focus the issue of reconnecting farming and food and, more broadly, the connection between farming and the wider rural economy. This is reflected in a number of studies published in the subsequent period. Lowe *et al.* (2001), Phillipson *et al.* (2002) and Bennett *et al.* (2002) have examined in some detail the consequences of foot and mouth for the rural economy in the northeast, with a particular emphasis on the vertical and horizontal linkages across different sectors of the economy. Ilbery (2002) examines the geographical aspects of the spread of the disease. Some of the policy and political consequences have been examined by Donaldson *et al.* (2002), Poortinga *et al.* (2003) and Winter (2003b). The epidemic also helped to direct academic attention to particular parts of the food chain, perhaps not routinely inspected in any great detail by geographers. For

example, Broadway (2002) analyses the British slaughtering industry, emphasizing the decline in the number of slaughterhouses and the emergence of a small number of highly specialized companies to dominate the sector. Wright *et al.* (2002) consider the issue of the viability of livestock markets.

III Reconnecting food and politics

Following an address to an audience of farmers in 2002, in which I set out some of the policy issues facing the agricultural industry, a Dartmoor hill farmer summarized my talk succinctly as an account of the shift from 'the politics of scarcity to the politics of prosperity'. It was a political shift he had lived through during a 40-year farming career and it was one he did not expect his business to survive. The period between these two points is also of significance for, between the rationing and food shortages of the 1950s and the surpluses of the 1980s and 1990s, there was an era in which food was not a public issue, at least in the affluent west. To label the 1960s and 1970s a time of food depoliticization is somewhat misleading, for hidden away behind the complexities of agricultural support policies were the politics of corporatism. In addition, food-safety regulation was inexorably creating a new micropolitics of bureaucratic administration. Nonetheless, as Buttel (1998) argues, the invisibility of late twentieth-century commodity chains, together with the advantages they brought to the consumer, served to legitimate (make 'natural' or commonplace) the systems in the eyes of most consumers. For the modern food consumer, the processes of supply were 'out of sight, out of mind'.

The repoliticization of food, in terms of an open and conflictual politics, went hand in hand with the gathering critique of the Common Agricultural Policy and the impact of farming on the countryside in the 1980s. Thus, alongside the many criticisms of the CAP from either an economic or an environmental perspective was a smaller number of critiques built around a food agenda (e.g., Clutterbuck and Lang, 1982). It was not a massive step to move from attacking agricultural policy to an assault on systems of food retailing (Raven *et al.*, 1995). The emergence of countervailing processes, of resistance to the agro-food distantiation highlighted by Buttel (1998), has been manifested in the rise of 'ethical consumption', the desire to 'make visible' and achieve a more complete knowledge of production realities enabling consumers to 'eat with a clear conscience'. Ethical consumers may seek to buy fairly traded food products directly and through boycotting food from particular multinational companies. They may seek to consume only locally produced or organic food or animal welfare-friendly meat. They may become involved in 'community supported agriculture'. The politics of ethical consumerism does not go unchallenged. Within the retail marketplace, there are attempts to resist, subvert and/or subsume these new concerns as seen, for example, in the activities of national governments and major retailers in the organic sector (Allen and Kovach, 2000; Goodman and Haynes, 2000).

How these trends and countertrends translate into the mechanisms and structures of food governance has been illuminated by Marsden *et al.* (2000) who show 'through the haze of food scares, the emergence of alternative food networks, and the public anxieties surrounding GMOs, that there is a significant shift in those agencies and actors who wish to have a say and stake in the new food politics and governance

systems' (Marsden, 2000: 27). Notwithstanding the rise of ethical consumerism, consumer groups remain marginalized within an increasingly privately regulated system dominated by retailers (Marsden *et al.*, 2000; see also Poole *et al.*, 2002). For agro-food researchers, one of the implications of this is that the terrain in which they research is changing, with a shift from the traditional territory of farms and agriculture departments to a broader set of actors, including a wide range of government departments (health, trade, economic development, etc.) and agencies including those involved in regional regeneration.

IV Reconnecting food and nature

Arguably, one of the liveliest debates in agro-food research in recent years has revolved around the need for a more adequate conceptualization of 'nature', which emerged as a major project in the social sciences as scholars began to engage with the implications of environmentalism. For some the historic neglect of nature in Marxism (Benton, 1996; Fitzsimmons, 1989; Smith, 1990; Redclift and Benton, 1994) provided the main point of departure, while others sought to develop a more eclectic sociology of nature-society relations (Macnaughten and Urry, 1998). Recently proponents of ANT have sought to provide a methodology which rejects the fetishized categories of 'nature' and 'society' and analyses, instead, the seamless fabric of interwoven worlds (Goodman, 2001). Goodman (1999) attacks 'modernist' agro-food studies for ignoring 'nature' as an active agent in developing social explanations. Marsden (2000) suggests that Goodman's critique is too far-reaching and ignores important attempts within agricultural political economy to incorporate natural processes (citing *inter alia* Buttel, 1998; Marsden, 1997; Murdoch and Marsden, 1995; Ward *et al.*, 1998).

In particular, Marsden (2000) questions the acceptability of some symmetry and hybridity arguments about nature-society relations, not because agro-food researchers are 'necessarily socially reductionist in a modernist/ontological sense, but because they recognize that the intricate balances between the *actor-status of natural and social objects are highly variable*, and that the power to socially define the natural lies with humans, and particularly their organizational and social practices rather than nature itself'. (Marsden, 2000: 23, original emphasis). Marsden appeals for detailed empirical work at the micro level that will assist in the abandonment of aggregated conceptions of 'nature' and 'society', emphasizing instead the construction of variable hybrid categories. The recent text by Whatmore (2002) offers a number of conceptual and empirical lines of inquiry that should be picked up by agro-food scholars anxious to grapple with the debate opened up by Marsden and Goodman.

V Reconnecting farmers and agency

It would be an exaggeration to say that the agency of farmers was totally ignored during the political economy of the 1980s and early 1990s. However, in recent years it is clear that a combination of circumstances has re-invigorated the tradition of studying farmers, not only as recipients of policy and market signals but as actors within policy and market networks, as members too of rural communities, and as occupants of roles

within households. One stimulus to this revival has been the emergence of policies, particularly in the agri-environment sector, which differentiate between farmers. The specific circumstances and responses of farmers become crucial to the uptake of policy, and this has undoubtedly stimulated the greatest volume of work focusing on farmers as social actors as academics have sought to understand patterns of response to agri-environment schemes (Morris and Potter, 1995; Wilson, 1997a; 1997b; Wilson and Hart, 2000; 2001).

Another stimulus, at present somewhat underdeveloped, has come through sustainability discourses. The emphasis these place on social outcomes of human-nature interactions, as well as economic and environmental outcomes, are beginning to prompt some researchers to revisit the social characteristics of agriculture in terms of the knowledge requirements of sustainable agriculture (Morris and Winter, 1999; Roling and Wagemakers, 1998; Tsouvalis *et al.*, 2000). Rather fewer attempts have been made to define social objectives of policies to promote sustainability in farming, although some basic thinking is provided by Bowler (2002), who suggests that the *social* dimension of sustainable development in agriculture should include 'the retention of an optimum level of farm population, the maintenance of an acceptable quality of farm life, the equitable distribution of material benefits from economic growth, and the building of "capacity" in the farm community to participate in the development process, including the use of knowledge to create new choices and options over time' (p. 205).

Beyond these two broad, arguably policy-led, themes has been an important strand of work that can be loosely characterized as 'cultural'. Work by Gray (1996; 1998; 2000) has provided an important corrective to those inclined to conceptualize farmers' behaviour and actions from large-scale empirical surveys (still the preferred method in much of agricultural geography). By contrast, Gray investigated 15 farm households in Teviothead for more than a decade and his findings provide a rich ethnography with insights sometimes at odds with the orthodoxies of other approaches. Ethnographic work on three farmers' identities and moralities has been undertaken by Holloway (2002). The cultural reconnection of farmers and agency need not necessarily rest on work with farmers themselves. Morris and Evans (2001) consider the representation of gender identities in farming through an examination of the pages of the *Farmers Weekly*, a leading agricultural news magazine. Their case studies reveal how hegemonic masculinity and emphasized femininity are perpetuated through the farming media but in increasingly subtle and fragmented ways.

VI Conclusions

This brief review has covered a wide ground in very general terms. It has demonstrated that a great deal of research effort is now taking place within the geography of agro-food systems in each of the four sets of reconnections covered (farming and food, food and politics, food and nature, and farmers and agency). The first two of these will be examined in more detail in a year's time and the final two a year later. The geographical focus of this paper has been largely European, and more particularly British. Examples from elsewhere will be given in the subsequent papers.

References

- Allen, P.** and **Kovach, M.** 2000: The capitalist composition of organic: the potential of markets in fulfilling the promise of organic agriculture. *Agriculture and Human Values* 17, 221–32.
- Atkins, P.** and **Bowler, I.** 2001: *Food in society*. London: Arnold.
- Banks, J.** and **Marsden, T.** 1997: Reregulating the UK dairy industry: the changing nature of competitive space. *Sociologia Ruralis* 37, 382–404.
- Bennett, K., Carroll, T., Lowe, P.** and **Phillipson, J.**, editors 2002: *Coping with crisis in Cumbria: the consequences of foot and mouth disease*. Newcastle upon Tyne: University of Newcastle Centre for Rural Economy Research Report.
- Benton, T.**, editor 1996: *The greening of Marxism*. New York: Guilford Press.
- Bowler, I.R.** 1979a: *Government and agriculture*. London: Longman.
- 1979b: *Topics in applied geography. Government and agriculture: a spatial perspective*. London: Longman.
- 1985: *Agriculture under the Common Agricultural Policy: a geography*. Manchester: Manchester University Press.
- 2002: Developing sustainable agriculture. *Geography* 87, 205–12.
- Broadway, M.J.** 2002: The British slaughtering industry: a dying business? *Geography* 87, 268–80.
- Brouwer, F.** and **Lowe, P.**, editors 2000: *CAP regimes and the European countryside*. Wallingford: CAB International.
- Buttel, F.H.** 1998: Nature's place in the technological transformation of agriculture: some reflections on the recombinant BST controversy in the USA. *Environment and Planning A* 30, 1151–63.
- Clutterbuck, C.** and **Lang, T.** 1982: *More than we can chew: the crazy world of food and farming*. London: Pluto Press.
- Davies, B.** 1999: *Vertical integration in agriculture*. Exeter: University of Exeter Agricultural Economics Unit Research Report.
- Donald, P.F., Pisano, G., Rayment, M.D.** and **Pain, D.J.** 2002: The Common Agricultural Policy, EU enlargement and the conservation of Europe's farmland birds. *Agriculture, Ecosystems and Environment* 89, 167–82.
- Donaldson, A., Lowe, P.** and **Ward, N.** 2002: Virus-crisis-institutional change: the foot and mouth actor network and the governance of rural affairs in the UK. *Sociologia Ruralis* 42, 201–14.
- Evans, N., Morris, C.** and **Winter, M.** 2002: Conceptualizing agriculture: a critique of post-productivism as the new orthodoxy. *Progress in Human Geography* 26, 313–32.
- Fitzsimmons, M.** 1989: The matter of nature. *Antipode* 21, 106–20.
- Gilg, A.** and **Battershill, M.** 1998: Quality farm food in Europe: a possible alternative to the industrialized food market and to current agri-environment policies. *Food Policy* 23, 25–40.
- Goodman, D.** 1999: Agro-food studies in the 'age of ecology': nature, corporeality, bio-politics. *Sociologia Ruralis* 39, 17–38.
- 2001: Ontology matters: the relational materiality of nature and agro-food studies. *Sociologia Ruralis* 41, 182–200.
- Goodman, D.** and **DuPuis, E.M.** 2002: Knowing food and growing food: beyond the production-consumption debate in the sociology of agriculture. *Sociologia Ruralis* 42, 5–22.
- Goodman, D.** and **Haynes, P.** 2000: The changing bio-politics of the organic: production, regulation, consumption. *Agriculture and Human Values* 17, 211–13.
- Gray, J.** 1996: Cultivating farm life on the borders: Scottish hill sheep farms and the European Community. *Sociologia Ruralis* 36 (1), 27–50.
- 1998: Family farms in the Scottish Borders: a practical definition by hill sheep farmers. *Journal of Rural Studies* 14(3), 341–56.
- 2000: The common agricultural policy and the re-invention of the rural in the European community. *Sociologia Ruralis* 40, 30–52.
- Hertz, N.** 2001: *The silent takeover: global capitalism and the death of democracy*. Oxford: Heinemann.
- Hinrichs, C.C.** 2000: Embeddedness and local food systems: notes on two types of direct agricultural market. *Journal of Rural Studies* 16, 295–303.
- Holloway, L.** 2002: Smallholding, hobby-farming, and commercial farming: ethical identities and the production of farming spaces. *Environment and Planning A* 34, 2055–70.
- Holloway, L.** and **Kneafsey, M.** 2000: Reading the space of the farmers' market: a case study from

- the United Kingdom. *Sociologia Ruralis* 40, 285–99.
- Hornibrook, S.A. and Fearn, A.** 2002: Vertical co-ordination as a risk management strategy: a case study of a retail supply chain in the UK beef industry. *Farm Management* 11, 353–63.
- Ilbery, B.** 2002: Geographical aspects of the 2001 outbreak of foot and mouth disease in the UK. *Geography* 87, 142–47.
- Ilbery, B. and Kneassey, M.** 1998: Product and place: promoting quality products and services in the lagging rural regions of the European Union. *European Urban and Regional Studies* 5, 329–41.
- 1999: Niche markets and regional speciality food products in Europe: towards a research agenda. *Environment and Planning A* 31, 2307–22.
- 2000: Producer constructions of quality in regional speciality food production: a case study from south west England. *Journal of Rural Studies* 16, 217–30.
- Ilbery, B. Holloway, L. and Arber, R.** 1999: The geography of organic farming in England and Wales in the 1990s. *Tijdschrift voor Economische en Sociale Geografie* 90(3), 285–95.
- Krippner, G.** 2001: The elusive market: embeddedness and the paradigm of economic sociology. *Theory and Society* 30, 775–810.
- Lowe, P., Edwards, S. and Ward, N.** 2001: The realities revealed by foot and mouth. *Town and Country Planning* June, 173–76.
- Macnaughten, P. and Urry, J.** 1998: *Contested natures*. London: Sage.
- Marsden, T.** 1997: Reshaping environments: agriculture and water interactions and the creation of vulnerability. *Transactions of the Institute of British Geographers* NS 22, 321–38.
- 2000: Food matters and the matter of food. *Sociologia Ruralis* 40, 20–29.
- Marsden, T., Flynn, A. and Harrison, M.** 2000: *Consuming interests: the social provision of foods*. London: UCL Press.
- Marsden, T., Murdoch, J., Lowe, P., Munton, R. and Flynn, A.** 1993: *Constructing the countryside*. London: UCL Press.
- Martin, R. and Sunley, P.** 2001: Rethinking the ‘economic’ in economic geography: broadening our vision or losing our focus? *Antipode* 25, 148–61.
- Morgan, K. and Murdoch, J.** 2000: Organic vs. conventional agriculture: knowledge, power and innovation in the food chain. *Geoforum* 31, 159–73.
- Morris, C.** 2000: Quality assurance schemes: a new way of delivering environmental benefits in food production? *Journal of Environmental Planning and Management* 43, 433–48.
- Morris, C. and Evans, N.** 2001: ‘Cheese makers are always women’: gendered representations of farm life in the agricultural press. *Gender, Place and Culture* 8, 375–90.
- Morris, C. and Potter, C.** 1995: Recruiting the new conservationists: farmers’ adoption of agri-environmental schemes in the UK. *Journal of Rural Studies* 11(1), 51–63.
- Morris, C. and Winter, M.** 1999: Integrated farming systems: the third way for European agriculture? *Land Use Policy* 16, 193–205.
- Morris, C. and Young, C.** 2000: Seed to shelf, teat to table, barley to beer and womb to tomb: discourses of food quality and quality assurance schemes in the UK. *Journal of Rural Studies* 16, 103–15.
- Murdoch, J. and Marsden, T.** 1995: The spatialisation of politics: local and national actor spaces in environmental conflict. *Transactions of the Institute of British Geographers* NS 20, 368–80.
- Murdoch, J. and Miele, M.** 1999: ‘Back to nature’: changing ‘worlds of production’ in the food sector. *Sociologia Ruralis* 39, 465–83.
- Murdoch, J., Marsden, T. and Banks, J.** 2000: Quality, nature, and embeddedness: some theoretical considerations in the context of the food sector. *Economic Geography* 76, 107–25.
- Parrott, N., Wilson, N. and Murdoch, J.** 2002: Spatializing quality: regional protection and the alternative geography of food. *European Urban and Regional Studies* 9, 241–61.
- Phillipson, J., Lowe, P. and Carroll, T.**, editors 2002: *Confronting the rural shutdown: foot and mouth disease and the north east rural economy*. Newcastle upon Tyne, University of Newcastle Centre for Rural Economy Research Report.
- Poole, R., Clarke, G.P. and Clarke, D.B.** 2002: Growth, concentration and regulation in European food retailing. *European Urban and Regional Studies* 9, 167–86.
- Poortinga, W., Bickerstaff, K., Langford, I., Niewohner, J. and Pidgeon, N.** 2003: The British foot and mouth crisis: a comparative study of public risk perceptions, trust and beliefs about government policy in two communities. *Journal of Risk Research* 6, in press.
- Potter, C. and Burney, J.** 2001: Agricultural multifunctionality in the WTO – legitimate non-trade concern or disguised protectionism?

- Journal of Rural Studies* 18, 35–47.
- Potter, C. and Goodwin, P.** 1998: Agricultural liberalization in the European Union: an analysis of the implications for nature conservation. *Journal of Rural Studies* 14, 287–98.
- Raven, H. Lang, T. and Dumonteil, C.** 1995: *Off our trolleys? Food retailing and the hypermarket economy*. London: IPPR.
- Redclift, M. and Benton, T.** 1994: *Social theory and the global environment*. London: Routledge.
- Rigby, D. Young, T. and Burton, M.** 2001: The development of and prospects for organic farming in the UK. *Food Policy* 26, 599–613.
- Roling, N.G. and Wagemakers, M.A.E.** 1998: *Facilitating sustainable agriculture: participatory learning and adaptive management in times of environmental uncertainty*. Cambridge: Cambridge University Press.
- Smith, N.** 1990: *Uneven development*. Oxford: Basil Blackwell.
- Swinbank, A.** 1999: CAP reform and the WTO: compatibility and developments. *European Review of Agricultural Economics* 26, 1–19.
- Tsouvalis, J., Seymour, S. and Watkins, C.** 2000: Exploring knowledge-cultures: precision farming, yield mapping, and the expert-farmer interface. *Environment and Planning A* 32, 909–24.
- Walford, N.** 2002: Agricultural adjustment: adoption of and adaptation to policy reform measures by large scale commercial farmers. *Land Use Policy* 19, 243–57.
- Ward, N., Clark, J., Lowe, P. and Seymour, S.** 1998: Keeping matter in its place: pollution regulation and the reconfiguring of farmers and farming. *Environment and Planning A* 30, 1165–78.
- Whatmore, S.** 2002: *Hybrid geographies*. London: Sage.
- Wilson, G.A.** 1997a: Factors influencing farmer participation in the Environmentally Sensitive Areas scheme. *Journal of Environmental Management* 50, 67–93.
- 1997b: Assessing the environmental impact of the Environmentally Sensitive Areas scheme: a case for using farmers' environmental knowledge? *Landscape Research* 22, 303–26.
- 2001: From productivism to postproductivism ... and back again? Exploring the (un)changed natural and mental landscapes of European agriculture. *Transactions of the Institute of British Geographers NS* 26, 77–102.
- Wilson, G. and Hart, K.** 2000: Financial imperative or conservation concern? EU farmers' motivations for participation in voluntary agri-environmental schemes. *Environment and Planning A* 32, 2161–85.
- 2001: Farmer participation in agri-environmental schemes: towards conservation-oriented thinking. *Sociologia Ruralis* 41, 254–74.
- Winter, M.** 2000: Strong policy or weak policy? The environmental impact of the 1992 reforms to the CAP arable regime in Great Britain. *Journal of Rural Studies* 16, 47–59.
- 2003a: Embeddedness, the new food economy and defensive localism, *Journal of Rural Studies* 19, 23–32.
- 2003b: Responding to the crisis: the policy impact of the foot and mouth epidemic. *Political Quarterly* 74(1), 47–56.
- Winter, M., Gaskell, P. and Short, C.** 1998: Upland landscapes in Britain and the 1992 CAP reforms. *Landscape Research* 23, 273–88.
- Wright, J., Stephens, T., Wilson, R. and Smith, J.** 2002: The effect of local livestock population changes on auction market viability – a spatial analysis. *Journal of Rural Studies* 18, 477–83.

