Sustainability Entrepreneurs, Ecopreneurs and the Development of a Sustainable Economy*

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This paper focuses on investigating the role that sustainability entrepreneurship may have in engendering a shift in the practices and operations of contemporary capitalism. Sustainability entrepreneurs are increasingly seen as being in the vanguard of a shift to a new form of capitalist development that can help to address fears over global warming, climate change and their associated negative environmental impacts. Such developments can be set within a wider popular and academic discourse of ecological modernisation, at the heart of which is a relatively optimistic view of the potential for technological change to lead to solutions for environmental problems. This paper focuses on a subset of sustainable entrepreneurs termed 'ecopreneurs' who seek to combine business practice with sustainable development and so transform their business sectors. The paper suggests that work on sustainable entrepreneurship could be substantially improved by an engagement with the literature on transition management in science and technology studies and makes some suggestions as to how such a research agenda could be advanced.

- Sustainable entrepreneurship
- Ecopreneurs
- Ecological modernisation
- Transition management
- Strategic niches

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T HE FOCUS OF THIS PAPER IS ON INVESTIGATING THE ROLE THAT sustainability entrepreneurship, and in particular individual sustainable entrepreneurs, has in engendering a shift in the practices and operations of contemporary capitalism. Sustainability entrepreneurs are those who attempt to combine the environmental, economic and social components of sustainability in a holistic manner and are said to have a different organising logic to more conventional entrepreneurs (Tilley and Parrish 2006). In particular, sustainable entrepreneurs seek to use the enterprise as a tool for perpetuating resources involving 'whole enterprise design' focused on sustainable development (Parrish 2006). Increasingly, both the popular media and a small, but growing, set of academic literature have focused upon the role of these individuals as being in the vanguard of a shift to a new form of capitalist development that can help to directly address fears over global warming, climate change and their associated negative environmental impacts (Beveridge and Guy 2005). Moreover, many of these sustainable entrepreneurs are said to operate their businesses in ways that run counter to popular perceptions of entrepreneurial behaviour (Hart 2006). As opposed to being the ruthless profit-seeking capitalists of popular imagination (as portrayed in a number of recent UK reality television programmes such as *The Apprentice* and *Dragon's Den*), sustainable entrepreneurs supposedly display a different mentality as evidenced through donations to environmental causes, employee-friendly working conditions, an interest in wider social issues than bottom-line profits and a concern for the longer-term implications of their business activities (Harvey 2007). Indeed, many sustainability entrepreneurs are happy to advertise their 'alternative' credentials through their own publicity, promotional material and websites and may cultivate an image of themselves as being outside the mainstream of business.[1] We can see such developments within a wider popular and academic discourse of ecological modernisation, at the heart of which is a relatively optimistic view of the potential for technological change to lead to solutions for environmental problems (Roberts and Colwell 2001).

It could be argued that ecological modernisation, with its promised combination of new technologies and changing institutions, is increasingly becoming a mainstream source of policy responses and initiatives in the developed world (Barry and Paterson 2003; Barry and Doran 2006). Hybrid cars, windmills and solar power, for example, will supposedly allow us to continue with a similar, if slightly different, lifestyle that will still deliver a high quality of life (see the collection of examples in EEDA 2007). Indeed, it could be argued that we are all environmentalists now, conditioned perhaps by growing awareness of climate change and oil price rises, if not peak oil. Recent debates over the need to go carbon-neutral by UK retailers such as Marks & Spencer and Tesco, emission labels on supermarket produce, Wal-Mart's announcement of a shift to organic products and recycled energy, the growth of local food schemes, the shift away from SUVs due to high oil prices, debates over air travel and so forth all seem to indicate that environmental issues have finally moved into the mainstream of both popular and political concerns. Perhaps, at last, concern over climate change and resource scarcity will have a major impact on economic policies and behaviour? This may open up opportunities for sustainable entrepreneurial activity to move into the mainstream of economic development. As with entrepreneurs more generally, 'agency depends in most circum-

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1 See, for example, the websites of two high-profile companies, Ecotricity, www.ecotricity.co.uk, founded by Dale Vince, which contains press articles that frequently emphasise his hippy background; and Innocent Drinks, www.innocentdrinks.co.uk, which contains details of the unconventional route into business by its founders, as well as a section on 'things to do when bored'. On a smaller scale, Revolve, www.revolve-uk.com, contains pictures of the founders as X-men and a host of personal detail, while Rob Grand, owner of Grassroots, a Canadian green retailer, has a blog, the-ecopreneur.blogspot.com, which mixes personal history, political views and movie recommendations.

stances on legitimacy. Until they are confirmed socially, entrepreneurs may appear to be cranks or misfits, once confirmed they appear visionary' (Downing 2005: 199). Perhaps the time has come therefore for the types of alternative firms based on social and environmental concerns that seemed so marginal 10–15 years ago to move into the mainstream? Indeed, some researchers have suggested that 'we may be on the edge of a new wave of creative destruction with the potential to change fundamentally the competitive dynamics in many markets and industries' (Larson 2000: 315). Thus 'increasing evidence of substantive environmental degradation and recent market developments in renewable energy, fuel cells, green building, natural foods, carbon emissions, and other sectors suggest an increasing importance for environmental entrepreneurship' (Dean and McMullen 2007: 51). In classic Schumpterian terms, an environmental gale of creative destruction is said to be creating the basis for a new form of capitalism based on new innovative activities.

A growing body of research has begun to explore this intersection between the entrepreneurship and ecological modernisation/sustainable development agendas and the creation of 'sustainability entrepreneurship' (Tilley 2007). Sustainable entrepreneurship draws on the long-standing concept of creative destruction in entrepreneurship research so that it becomes the driving force for the establishment of a holistic and sustainable economic–environmental–social system (O'Neill *et al.*, this volume). For example, Willis *et al.* (2007), drawing on the work of Christensen, call such entrepreneurs 'disruptive innovators' whereby established business models and user expectations are superseded and transformed. Qualitative changes in enterprise structures and operations are said to equate to similar changes in broader socioeconomic institutions giving entrepreneurs a key role in reshaping the latter and engendering the kinds of cultural shifts associated with ecological modernisation (Parrish 2007). In total, 'a venture qualifies as sustainability-driven if it combines opportunities and intentions to simultaneously create value from an economic, social and ecological perspective' (Schlange, this volume: 18). One problem here, though, is that the concept of a sustainable entrepreneur may remain as much of a 'black box' as sustainable development itself. Simply stating that economic, social and environmental aims are combined within the firm's organisational logic and practices does not get at how (and if) this is achieved, nor how this connects to any subsequent wider social changes.

The main focus of this paper is on investigating the role of a key subset of sustainability entrepreneurs, *ecopreneurs*, defined here as those entrepreneurs who combine environmental awareness with their business activities in a drive to shift the basis of economic development towards a more environmentally friendly basis (see Dean and McMullen 2007). In reality, it may be difficult to separate out these categories neatly. As Schlange (this volume: 17) suggests, 'ecologically driven entrepreneurship has *sustainability* as a key element to *motivate* its basic approach'. Certainly 'ecopreneurship is . . . distinguished from other forms of corporate environmental development by the company's vivid commitment to environmental progress and its strong desire for business growth' (Schaltegger 2002: 48), but again there may be much less difference between ecopreneurs and sustainable entrepreneurs. In this paper I examine the role of ecopreneurs within such developments to try to tease out the substance from the hyperbole. In particular I am interested in exploring how the development and activities of individual entrepreneurs can be linked to wider economic and social contexts, rather than seeing them as lone actors or the 'entrepreneur as hero' approach common to both academic and popular accounts. In doing so, I draw on work in science and technology studies which has focused on the potential for transition management and the development of strategic niches. The structure of the paper is as follows. In the next two sections I outline the main features of both ecological modernisation and transition management. The paper then turns specifically to look at the literature on ecopreneur-

ship in terms of definitions, main issues and typologies used. Following this, I develop a critique of the existing literature and suggest some research questions for future work.

Ecological modernisation

Ecological modernisation envisages a process of the progressive modernisation of the institutions of modern society, the basic argument is that the central institutions of modern society can be transformed in order to avoid ecological crisis. In this view 'the current capitalist system is seen as having the capacity to develop sustainable solutions to environmental problems, that capitalism's drive for innovation can be harnessed to realise environmental improvements' (Beveridge and Guy 2005: 666). An ecological modernisation approach would involve both structural change at the macro-economic level, through broad sectoral shifts in the economy, and at the micro-economic level: for example, through the use of new and clean technologies by individual firms. For its proponents ecological modernisation indicates the possibility of overcoming environmental crises without leaving the path of modernisation. Rather, the assumption is made that it is possible to restructure processes of production and consumption on ecological terms through the institutionalisation and internalisation of ecological aims. In Spaargaren, Mol and Buttel's terms (2000: 6) this means more than just taking environmental factors into account, 'but also ensuring that they are structurally "anchored" in the reproduction of these institutional clusters of production and consumption'.

The concept of ecological modernisation has been developed as both a theory and as a guide to more pragmatic policy action. As a theoretical concept it has been used to analyse those changes to the central institutions in modern society deemed necessary to solve the ecological crisis. In this use of the concept, ecological modernisation represents a major transformation, or Joseph Huber's 'ecological switchover', of the process of industrialisation onto a different basis which takes account of the need to maintain the sustenance base (Huber 1985). Here we might cite ideas such as industrial ecology and its contention that we can shift from a 'throughput' to a 'circular' manufacturing economy (Gibbs and Deutz 2007). Such ideas have gained practical footholds, not just in developed countries, but the development of a circular economy is also now enshrined in Chinese economic development practice (Yuan *et al.* 2006).

Ecological modernisation has also gained purchase as a pragmatic political programme to combine environmental policy-making with economic development (Huber 1985). Proponents of ecological modernisation argue that we have already seen this process at work in countries such as Japan, the Netherlands, Germany, Sweden and Denmark (Mol 2002). In these countries, material flows have become delinked from economic flows, with a consequent decline in the use of natural resources and emissions. As a pragmatic political programme, ecological modernisation approaches suggest that this will engender support from private-sector businesses, given that it can have beneficial outcomes (Hajer 1995; Harvey 1996). It is claimed business can gain advantages in a number of ways (see Drysek 1997):

▶ Through greater business efficiency due to reduced pollution and waste production

▶ Avoiding future financial liabilities, such as the potential cost of contaminated land clean-up

▶ Through improved recruitment and retention of the workforce due to the creation of a better work environment

▶ From the potential for increased sales of more 'environmentally friendly' products and services

► Through the sale of pollution prevention and abatement technologies

As a political programme a shift towards ecological modernisation would involve a number of interrelated measures (Gouldson and Murphy 1997):

► Restructuring of production and consumption towards ecological goals, including the development and diffusion of clean production technologies

► Decoupling economic development from the relevant resource inputs, resource use and emissions

► Exploring alternative and innovative approaches to environmental policy, such as 'economising ecology' by placing an economic value on nature and introducing structural tax reform

► Integrating environmental policy goals into other policy areas; and the invention, adoption and diffusion of new technologies and production processes

It could be argued that ecological modernisation has a well-developed perspective on how to conceptualise economy–environment relationships and a set of policy prescriptions that, if taken as a whole, would engender the development of a new economic trajectory.[2] The political measures outlined above therefore involve a number of progressively more sophisticated steps that shift from a narrow focus on processes and individual firms through to broader cultural shifts in the socioeconomic structure. Ecological modernisation is essentially a realist perspective on the 'green economy', with proponents arguing that there is little to be gained from 'a complete rejection of consumption and materialism' even though there is a need for the reassessment of materialistic lifestyles, the delinking of quality of life from material goods and the introduction of new economic signals (Barry and Doran 2006: 252). Barry and Doran (2006) argue that ecological modernisation should be seen as a 'jumping off' point for more radical shifts towards a green economy and politics, rather than as an end in itself. Concepts derived from work on ecological modernisation have become incorporated into the policy agenda, even if their actual implementation is limited and they have so far largely been drawn from 'weak' conceptions of ecological modernisation (Barry and Paterson 2003; see also the UK's Sustainable Technologies Initiative[3]).

In total, then, ecological modernisation envisages a process of the progressive modernisation of the institutions of modern society in order to mitigate ecological crisis. Moreover, this can supposedly be achieved without leaving the path of modernisation (Mol and Spaargaren 1993). The assumption is that processes of production and consumption can be restructured on ecological terms through the institutionalisation of ecological aims. From this perspective the capitalist system, supported by regulation, has the capacity to develop sustainable solutions and the greening of the economy through the market. As Roberts and Colwell (2001: 424) observe:

> ecological modernisation suggests that it is possible to integrate the goals of economic development, social welfare and environmental protection, and that through this reconciliation synergies will be generated which can be harnessed and put to good use.

Of key importance for the argument developed in this paper, however, is that these moves towards ecological modernisation have 'created a space and an increased need for a form of business which looks to work across two logics that have often been seen as incompatible: the commercial and the environmental/green' (Beveridge and Guy 2005: 667). The growing adoption of ecological modernisation (albeit often implicit) as

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2 Though see Blühdorn and Welsh 2007 for a critique of ecological modernisation.
3 www.sustainabletechnologies.ac.uk

the basis of environmental policy in many developed nations can be seen as both driven by innovative economic actors, such as sustainable entrepreneurs, and as also providing them with a niche or space in which to operate whereby new markets are created for 'green' goods and services (Sverrisson 2000; Barry and Paterson 2004). The extent to which ecological modernisation could act as a 'jumping off' point for more substantive changes to the economy as a whole can be usefully explored by drawing on research work on transition management and strategic niche development.

Transition management and strategic niches

Indeed, exactly how the transition to ecological modernisation may come about is less clear in the literature. Here it is useful to draw on a body of work within social studies of technology which has been concerned with the transformation of technological regimes and, within this, has emphasised the role of innovative technological strategic niches in transition management (Rip and Kemp 1998; Smith 2003; Geels 2005). These technological regimes consist of 'interconnected systems of artefacts, institutions, rules and norms' (Berkhout *et al.* 2003: 3). The relevance to ecopreneurial activity is that one strand of such work focuses on 'innovative experiments in alternative, sustainable technological niches and draws lessons from the challenges they face in the context of a dominant, unsustainable technological regime' (Smith 2003: 128). These niches are seen as 'nurturing sociotechnical configurations, which grow and displace incumbent regime activities' (Berkhout *et al.* 2003: 9). Ecopreneurs could therefore be seen as one set of actors occupying environmentally sustainable niches that offer lessons for policy-makers in any transition to ecological modernisation. Indeed, it has been argued that new companies are required for transition management (Vollenbroek 2002). Such niches transform technological regimes through their focus on tensions within these regimes. These tensions are a product of changing circumstances in the wider 'sociotechnical landscape', where new trends, such as current increased environmental awareness, climate change policy and shifts towards a low-carbon economy, challenge existing technological regimes. In some accounts, niche activities may break through to the mainstream if they successfully solve bottlenecks in the extant regime (Geels 2005). These tensions may therefore create the space within which ecopreneurs can operate successfully. Conversely, those niches completely at odds with the existing landscape may find it difficult to break through into the mainstream, but some aspects may be more compatible and more easily incorporated (Smith 2003). In the latter case, actors in the extant regime may borrow convenient aspects of niche activity, but in the process lose the more radical and transformative aspects. In some cases, as Smith (2006) shows for the organic food industry, the mainstream technological regime may transform the niche rather than the reverse.[4] Ecopreneurs may be among

> the 'idealists'(producers and supportive users) who initiate a sustainable niche [and] are later joined by entrepreneurial 'system builders'(who open the niche out to a wider set of users) and, eventually, by serious amounts of capital seeking to profit from the proto-regime (Smith 2003: 130).

If, as Smith (2003: 131) suggests, 'recommendations for radical shifts to sustainable technological regimes entail concomitantly radical changes to the sociotechnical landscape of politics, institutions, the economy and social values', they are unlikely to pro-

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4 In this example Smith (2006) argues that the mainstream industry has co-opted some aspects of niche practices, such as organic standards, but sells imported organic food from around the world, packaged, processed and sold in the mainstream food sociotechnical regime.

ceed (if at all) without parallel political actions. This may then show the limits to an eco-logical modernisation approach and the need for further research work on transition management. Moreover, ecological modernisation represents a normative and modernist approach to sustainability and lacks the ability to deal with the ambivalence that surrounds sustainability (Walker and Shove 2007). While the reflexive approach of transition management may help to address this latter shortcoming, it still lacks any real sense of the politics and power relations involved between the different actors and institutions that may facilitate or hinder the transition. This is an area that requires further study, particularly in relation to the kinds of policy actions that the transition management literature proposes for innovative technological change. Transition is therefore not inevitable, but the outcome (or not) of struggle, agency and power relations, something that may be hidden by strategic niche management approaches that extrapolate from historical studies (Smith 2004; Shove and Walker 2007).[5] Certainly, niches are important sources of innovation that may offer solutions for tensions in existing sociotechnical regimes, but the 'adaptation process is confined by structures within the existing, mainstream regime' (Smith 2006: 453). Indeed, it may be that existing sociotechnical contexts close down spaces for alternative approaches (Shove 1998), except at times of tension when new trajectories are actively being sought, as with the current concerns over climate change and the need to reduce carbon emissions. At these moments certain actors come to the fore, or have their actions legitimated, as in the case of ecopreneurs. The potential value of transition management and strategic niche approaches for a study of ecopreneurship is that they stress not just individual actions, but also 'the networks and support structures that have built up to help these alternative forms of sustainable practice' (Smith 2003: 128), helping us to move away from the notion of the lone entrepreneurial hero (see below). Indeed, work within science and technology studies has long helped to debunk the idea of individual heroes in the development of science and new technologies (see Bijker 1997, for example). This helps us connect the activities of individual ecopreneurs to wider economic and social structures and indicates the kinds of broader changes that may be necessary. As Keijzers (2002: 356) suggests,

> it will be necessary to configure new alliances of established and new companies that go beyond the traditional networks of enterprises and supersede traditional competitive relations. Transitions towards new systems of technology require new alliances.

Ecopreneurs: ecological modernisation in action?

A small, but growing, literature has argued that individuals seeking to combine environmental awareness with entrepreneurial action represent the paradigm of ecological modernisation in action (see, for example, the collection of papers in Schaper 2005). Thus we are seeing the development of new business forms where a new generation of sustainable entrepreneurs or 'ecopreneurs' are seeking to combine environmental awareness with business success and conventional entrepreneurial activity (Anderson 1998). 'Ecopreneurs are social activists, who aspire to restructure the corporate culture and social relations of their business sectors through proactive, ecologically oriented business strategies' (Isaak 1998: 88). Ecopreneurship has developed as a new field of research, mainly within management and business studies, and places emphasis on the

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5 Smith (2004) makes this same point through a comparison with the Alternative Technology movement in the UK. This movement had a keen awareness of the need to consider political and economic power structures.

key role of individuals and organisations in engendering a shift towards more sustainable practices. The argument is that, far from being antithetical to environmentalism, entrepreneurial activity may be increasingly central to market success. In many ways this goes back to the roots of work on entrepreneurialism and Schumpeter's (1934) vision of entrepreneurial activity as 'a process of creative destruction' whereby entrepreneurs create new products, processes and working methods that challenge and overturn conventional methods. Entrepreneurs are seen as agents of change, with entrepreneurship being about the process of change (Audretsch 2002). Innovation is the essence of entrepreneurship; hence Schaltegger (2002: 46) proposes that 'ecopreneurs destroy existing conventional production methods, products, market structures and consumption patterns and replace them with superior environmental products and services. They create the market dynamics of environmental progress'. Thus ecopreneurship is claimed to have the potential to be 'a major force in the overall transition towards a more sustainable business paradigm' (Schaper 2002: 27), acting as 'exemplary solutions for a social transformation' (Isaak 1998: 88). These are what Isaak (1998: 87) terms 'green–green businesses'—businesses that are founded from the outset on an environmentally friendly basis, and which seek to achieve the social and ethical transformation of their particular business sectors.

> The study of ecopreneurship is therefore an attempt to understand the impact innovative individuals and organisations can have on the environments within which they act: how they attempt to force their vision upon other actors. It aims to enhance our understanding of the character of such actors and how they interface with and transform their surroundings (Beveridge and Guy 2005: 668).

The drivers for change that encourage ecopreneurship can take several forms. Post and Altman (1994) identify three main drivers that are:

▶ Compliance-based, with environmental improvement emerging as an outcome of government regulation and legislation

▶ Market-driven, with environmentally beneficial behaviour coming through positive incentives

▶ Value-driven, with environmental change coming in response to consumer demands as they act on their environmental values

Such drivers are not mutually exclusive and ecopreneurs may respond to all three drivers (Walley and Taylor 2002). Ecopreneurs may face additional challenges that conventional entrepreneurs do not. While the challenge of market creation or the limited extent of the market for products and processes is true for all entrepreneurs, it has been argued that

> . . . market creation is even more difficult for environmental business ideas than it is for non-environmental business ideas, because the financial community may not yet be mature enough to finance environmental innovations, and the role of ethical reasoning creates confusion within the mainstream business community (Linnanen 2002: 79-80).

This may impose additional financial barriers, not just through an absolute lack of finance such as 'green' venture capital funds, but also a shortage of investors with knowledge about the ecopreneurial market, as well as a lack of awareness about financial matters by ecopreneurs themselves (Randjelovic *et al.* 2003; O'Rourke 2005). It has been argued that advisers and financiers perceive environmental businesses to be subject to additional financial burdens and thus less likely to grow and provide an adequate financial return on their investment (Cohen 2006). Ecopreneurial developments may also require longer periods to achieve market breakthrough than conventional entrepreneurial activity, deterring investors who require a faster return on their investments (Randjelovic *et al.* 2003).

There are also important issues that arise from the ethical *raison d'être* of the business. On the one hand, this may have positive impacts: it is suggested that ecopreneurs are not driven solely by the desire to make money, but by a commitment to improving the world (Isaak 2002). This may mean that ecopreneurial activities need to be measured through 'multi-dimensional success criteria' which may be non-financial, such as social inclusion rather than profit maximisation or secondary materials use rather than sales penetration. On the other hand, there may also be negative consequences of the firm's ethical stance as this may complicate some management decisions: for example over redundancy (Lahdesmaki 2005). In some accounts, it is assumed that ecopreneurs are different from more conventional entrepreneurs as they are not driven by mere commercial gain, but by their own individual values, not least a concern for the environment (Linnanen 2002). A major research focus has been on the role of the individual who plays a key role in shaping the character and strategy of the company. However, as with more mainstream entrepreneurs (see Austin *et al*. 2006),

> green . . . entrepreneurs may well have mixed motivations; their motives may not be solely green but be a combination of green, ethical and social motives, and it is often difficult to separate these (as, indeed, the concept of sustainability reflects) (Walley and Taylor 2002: 37).

Here ecopreneurial and sustainable entrepreneurial motivations appear to mix. Both ecopreneurs and sustainable entrepreneurs may reject being thought of as entrepreneurial if this is seen to possess connotations of profit maximisation, materialism and aggressive behaviour (Friedman and Phillips 2003; see also Nicholson and Anderson 2005 for an analysis of these entrepreneurial stereotypes in the media). Conversely, Schaltegger (2002) argues that ecopreneurs see these tensions between their personal ideals and the broader economic and social context as a source of creative tension.

However, ecopreneurs do not operate in isolation and 'will be influenced by the evolving economic and social structures around them and, in turn, are influencing those structures' (Walley and Taylor 2002: 33). A common theme in the ecopreneurial literature is an emphasis on this interplay between individual motivations for ecopreneurial activity and the broader economic and social context within which individuals operate (Schick *et al*. 2002; Walley and Taylor 2002; Beveridge and Guy 2005). The latter may include the various powers of investors, consumers, civil-society and regulatory agencies, as well as the policy context (Pastakia 2002).

> It is by examining these interactions—between the psychological dimension and the socio-economic dimension—that we can identify, conceptualise and promote the forms of innovative business activity which can lead to more sustainable industry practices (Beveridge and Guy 2005: 667).

Pastakia (2002) suggests that there must be congruence between personal ideals and context for ecopreneurs to emerge. Without a supportive socioeconomic environment within which to operate and make a profit, internal drivers to implement sustainability may lie dormant (Cohen and Musson 2000). Conversely, economic advantages cannot be exploited unless individuals and organisations possess the necessary internal motivation (Beveridge and Guy 2005).

Typologies of ecopreneurs

Exploring this interplay between personal motivation and external factors as a driver of ecopreneurial activity has been utilised to construct typologies of ecopreneurs. Thus Walley and Taylor (2002) construct their typology on the basis of Giddens's ideas of structure and action, whereby ecopreneurial activities emerge 'from the mutually pro-

ducing relationship between action and organisation or social structure. In other words, structure shapes the action of the entrepreneur and entrepreneurial action in turn shapes structure' (Walley and Taylor 2002: 33). From this they derive a typology based on two axes: structural influences and personal orientation/motivation. Each of these has a spectrum from 'hard' (regulation, economic incentives, etc.) to 'soft' (past experiences, family and friends, etc.) structural influences and from an economic to a sustainability orientation. This produces four ideal types of ecopreneur:

► **Innovative opportunists.** Those who identify a green niche for economic exploitation and who are mainly influenced by hard structural factors, such as regulation

► **Visionary champions.** Champions of sustainability who seek to transform the world and whose business is founded on the basis of sustainability

► **Ethical mavericks.** Influenced by soft structural drivers (such as past experience, networks or friends) and a sustainability orientation. These may be alternative-style businesses

► **Ad hoc enviropreneurs.** These are financially driven, but influenced by soft structural drivers. They may be 'accidental green entrepreneurs'

Schaltegger (2002) similarly uses two dimensions for his typology. One reflects the priority given to environmental issues as a business goal from low to high, while the other focuses on the market effect of the business, with a spectrum through 'alternative scene' to 'eco-niche' and mass market. His main focus is on those companies where environmental goals are core to the business as opposed to those where the focus is simply on environmental management or administration. Within the former, three main types of ecopreneurs are identified:

► **Alternative actors.** Market goals are not important and the business may exist to support a lifestyle. These may be counter-cultural in type and engage in non-market transactions. While the wider impact on environmental improvement is (deliberately) limited, this group may provide a seedbed for the next two types

► **Bioneers.** Occupy medium-sized niche markets with customer-focused eco-products. These are often inventors with a strong R&D focus and can be found in high-technology sectors, such as alternative energy sources. The markets served are big enough for economic success, but small enough to be neglected by larger suppliers, such that their direct impact is limited

► **Ecopreneurs.** Actors aim to possess a large market share and to engage with mass markets. These are rarely inventors, but aim 'to search for business ideas with products and services that solve environmental problems, to identify the market potential of inventions and to realise market success with them' (Schaltegger 2002: 51)

Finally, Linnanen (2002) also uses two criteria in his typology based on internal motivations: the desire to change the world (high, low) and the desire to make money and grow the business (high, low). From this he derives four types of ecopreneur:

► **Non-profit business.** High desire to change the world, low financial drive

► **Self-employer.** Low desire to change the world, low financial drive

► **Opportunist.** Low desire to change the world, high financial drive

► **Successful idealist.** High desire to change the world and high financial drive

In all these typologies there are strong overlaps. Thus Linnanen's self-employer is similar to Walley and Taylor's ethical maverick, the opportunist to the ad hoc enviropreneur and the successful idealist to the visionary champion.

Ecopreneurial research: a critique and some research questions

A number of questions arise from this existing work on ecopreneurship. One major critique of the ecopreneurial literature is that it is heavy on speculation and extremely light on empirical evidence. Few researchers provide any evidence beyond a limited number of case studies: for example, Pastakia (1998) has six examples, Schaltegger (2002) uses seven case studies, Walley and Taylor (2002) provide four examples for each of their typologies, and much of this is based on anecdotal evidence. This brings into question how relevant and useful are these ecopreneurial typologies, given that they are based on little empirical evidence? Moreover, most typologies are static and fail to account for changes over time as businesses (and individuals) develop (de Bruin and Lewis 2005). Do firms and individuals shift between different typologies over time? Schaltegger (2002) suggests that his alternative actors category may provide a seedbed for bioneers and ecopreneurs. Have ecopreneurs emerged from counter-cultural backgrounds? While Isaak (1998) argues that such ideal types will not be found in their 'pure' forms, but serve as a reference point by which to steer the broader shifts in the business paradigm, as Beveridge and Guy (2005) point out, we have little understanding of how the interaction between the internal and external dimensions leads to ecopreneurial activity; how ecopreneurs impose their view of the world on others; or how external factors influence particular individuals. We have little idea of how ecopreneurs engage in making sense of their business for themselves and for others and how (or if) they develop a coherent identity as they seek to reconcile being enterprising and environmentally aware (Cohen and Musson 2000; Lahdesmaki 2005).

Other published work focuses on high-profile ecopreneurs such as Anita Roddick of The Body Shop, Ben Cohen and Jerry Greenfield of Ben & Jerry's and Yvon Chouinard of Patagonia (Isaak 1998, 2002), often drawing on their biographies for empirical 'evidence' (Roddick 2001; Chouinard 2005). This focus on individuals as change agents is especially prevalent in popular accounts of the potential of ecological modernisation strategies. For example, Hart (2006: 42) argues, 'socially minded entrepreneurs running small-scale businesses are the natural leaders of the new capitalism' (see also Pink 2006 on the US and numerous accounts in the publication Green Futures for the UK). As Beveridge and Guy (2005) argue, this focus on the role of charismatic and pioneering individuals is a simplistic solution to current environmental challenges, whereby, if we only had more of these individuals, the problems would be solved. Further,

> we do not get much feel for the interplay of competing discourses of business and the environment, the flow of national and local technology politics, the trade-offs, compromises, deals and conflicting visions that constantly frame and reshape innovation processes (Beveridge and Guy 2005: 672).

Much of this mirrors work on more conventional entrepreneurship where, despite critiques, the notion of the individual 'entrepreneurial hero' remains pervasive (Nijkamp 2003). This focus on individuals that pervades much of the entrepreneurship literature has led to a neglect of the multiple factors at work and the role of supporting infrastructures at the national and local scales (Cohen 2006). As with work on conventional entrepreneurship, 'researchers focusing on individual entrepreneurs have ignored the historical evolution and actions of multiple actors that create the infrastructure for entrepreneurship' (Neck *et al.* 2004: 192). Indeed, within the conventional entrepreneurial

literature the reasons why individuals become entrepreneurs is often presented as being solely in individual and psychological terms, leading to a research focus on individual histories and backgrounds (Down and Reveley 2004). We need to know why, when and where such individuals are able to exploit opportunities while others do not (Larson 2000). What role do differing external socioeconomic contexts play in encouraging or deterring ecopreneurship? Are there different local and national contexts that influence ecopreneurial identities and opportunities (Downing 2005)? Certainly, work on conventional entrepreneurship suggests 'that the opportunity for individuals and firms to engage in entrepreneurial activity is not at all fixed, but varies considerably across regions and countries' (Audretsch 2002: 30).

Conclusions

Its proponents argue that ecopreneurship will form the basis of new forms of environmental progress within the economy if companies' 'core business deals with environmental solutions and environmentally superior products and if their innovations substantially influence the mass market' (Schaltegger 2002: 48). Schaltegger argues that such companies must 'exert significant market influence by gaining a large market share or by influencing competitors and other market actors (such as suppliers) to adopt superior environmental solutions'. As with more conventional activities, 'entrepreneurs are seen as agents of change and renewal in the economy' (Atherton 2004: 124) and 'entrepreneurship is the vehicle by which (the most radical) ideas are sometimes implemented' (Audretsch 2002: 10). A key question, then, is the extent to which ecopreneurial activity does represent an exemplar of the shift towards a new business paradigm of ecological modernisation or merely the exploitation of niche markets that will remain small-scale? Do ecopreneurs manage their firms in a different way to conventional firms in similar sectors (Hendrickson and Tuttle 1997)? An investigation of ecopreneurial activity, therefore, offers scope to explore the forms of alternative modes of environmental transformation (Harvey 1996) that may constitute a shift towards ecological modernisation and also to investigate its coherence and relevance both empirically and theoretically (Gibbs 2006). As part of a research agenda for sustainable entrepreneurship we need empirical studies of firms that take a wider view than just examining individual histories and motivations. There is scope for detailed study within firms that assesses the extent to which practices are different from more mainstream firms and how (and if) employees buy into the ecopreneurial vision of the founder or founders.

I would suggest that any future research agenda for sustainable entrepreneurship could usefully draw on the transition management literature in order to help situate the actions of individual ecopreneurs within their wider political and social context. Here there are opportunities for detailed sectoral studies that examine not just the activities of such firms as potentially sustainable technological niches, but also place these within a detailed study of the extant sociotechnical landscape within which they operate. These may also vary over space, so that certain sociotechnical landscapes, whether these are nation states or regions, could be more supportive of ecopreneurial activity than others.[6] As Parrish (2007: 850) states, 'to understand the contribution an enterprise can

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6 For example, policies to develop a renewable energy sector have involved much greater financial support in countries such as Denmark and Germany than in the UK (Barry and Paterson 2004). Schlosberg and Rinfret (2008) outline the limited purchase ecological modernisation has on Federal policy in the USA, though some states, such as California, are more engaged. See also Cohen 2006 on differing potential at the regional scale.

make to sustainable development, attention must be directed to the interaction between the enterprise and other components of the social–ecological system'. The transition management literature offers a rich source from which to theorise sustainable entrepreneurship in more detail than has so far been undertaken. In particular, we need research work which takes cognisance of the power relations at work in particular sectors and how these help to promote or inhibit ecopreneurial activities. Thus, ecological modernisation requires not just changes at the level of the firm (as is the major focus in the ecopreneurial literature), but also broader sectoral and institutional shifts (Gibbs 2000). In this manner, we might see the rise of ecopreneurial activity as involving a struggle for 'discursive hegemony' (Hajer 1995) over the future form of economic development. While it overstates the case to suggest that this can offer a way out of the kind of legitimisation crisis for capital imposed by environmental constraints (Angel 2000), it may provide the basis of a temporary 'sustainability fix' that involves 'relative (but significant) changes to more environmentally sound directions' (Mol 2002: 97).

Finally, as the transition management literature suggests, 'there can be niche elements which can be appropriated by the mainstream relatively easily and which may form a first step towards mildly more sustainable reforms' (Smith 2006: 455). The extent to which this occurs involves not just action by ecopreneurial individuals, but also actions by the state to ensure supportive institutional structures and forms are in place (Gibbs 2002). Many of those working in the transition management field are agreed that intervention in the pursuit of sustainability 'is possible and potentially effective' (Walker and Shove 2007: 219). Indeed, 'the degree of change that entrepreneurs bring about depends on the levels of legitimation afforded to entrepreneurship in that particular society' (Hannafey 2003). Similarly, a key aspect of the state in the ecological modernisation literature is its enabling and supporting role encouraging innovation and the development of new sectors (Barry and Doran 2006). What is less clear is exactly what form such intervention should take, beyond a recognition that it will involve multiple tools, methods, actors and knowledge. There may be a role for policy in influencing ecopreneurial start-up businesses with the aim of developing sustainable corporate cultures from the outset. It has been suggested that 'it should be easier to "infect" founders of new businesses with the idea of sustainability than to rebuild the established corporate cultures of existing companies', including not just ecopreneurs, but also those just planning to create a more conventional enterprise (Schick *et al.* 2002: 60). In this view 'a widespread sustainability orientation in start-ups could speed up the overall process of sustainable restructuring of industry and commerce' (Schick *et al.* 2002: 60). This would be compatible with existing policies to encourage entrepreneurial activity at both UK and EU levels. These have developed not only because of the potential gains in employment and output from new enterprises, but also because they are seen to have 'a vital role as dynamic "agents of change" within the economy' (HM Treasury, 2002: 17). Increasingly, it is recognised that this may extend beyond purely economic impacts to both social and environmental concerns (European Commission 2003). Here, then, there is scope for research that examines the kinds of support available to ecopreneurial ventures and the experiences of those involved in such activities with a view to drawing on their expertise in the construction of better policy forms (see Willis *et al.* 2007 for some examples of this). In total, while much has been achieved to date by those researching into sustainable entrepreneurship and ecopreneurial activity, there is now a need for a combination of detailed empirical work (especially to move beyond anecdotal and small-scale case study evidence) and careful theorising if the field is to have both practical and academic purchase in the future.

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