

Seriously Personal: The Reasons that Motivate Entrepreneurs to Address Climate Change

Katharina Kaesehage¹  · Michael Leyshon² · George Ferns³ · Catherine Leyshon²

Received: 13 October 2016 / Accepted: 23 June 2017 / Published online: 13 July 2017
© The Author(s) 2017. This article is an open access publication

Abstract Scholars increasingly argue that entrepreneurs and their small- and medium-sized enterprises should play a central role in reducing the rate and magnitude of climate change. However, evidence suggests that while some entrepreneurs recognize their crucial role in addressing climate change, most do not. Why some entrepreneurs nevertheless concern themselves with climate change has largely been overlooked. Some initial work in this area tentatively suggests that these entrepreneurs may engage with climate change because of their personal values, which either focus on financial or socio-ecological reasons, or a combination of both. Yet, it is unclear if all for-profit entrepreneurs engage with climate change for the same reasons, or if indeed their motivations vary across business types. Over a period of four years, we examined entrepreneurs' motivations to engage with climate change through a variety of qualitative research methods. Our

findings illustrate how entrepreneurs who address climate change have motivations specific to their business activity/industry and level of maturity. In each instance, we link these motivations to distinct conceptualizations of time and place. We contend that, through a more differentiated understanding of entrepreneurial motivations, policy-makers can draft climate change-related policies tailored to entrepreneurial needs. Policies could both increase the number of entrepreneurs who already engage in climate change mitigation and leverage the impact of those entrepreneurs already mitigating climate change.

Keywords Climate change · Entrepreneurs · Motivations · Sense of time · Sense of place · Low carbon economy

List of Abbreviations

BL4LC	Business Leaders for Low Carbon
BREEAM	Building Research Establishment Environmental Assessment Methodology
CO ₂	Carbon dioxide
CSR	Corporate social responsibility
e.g.	exempli gratiā (<i>for example</i>)
et al.	et alii (<i>and others</i>)
EU	European Union
GHG	Greenhouse gas
Ibid.	ibidem (<i>the same place</i>)
IPCC	Intergovernmental panel for climate change
MBI	Market-based instrument
OECD	Organisation for Economic Co-operation and Development
SME	Small- and medium-sized enterprise
UK	United Kingdom
UKCIP	United Kingdom Climate Impacts Programme

✉ Katharina Kaesehage
kathi.kaesehage@ed.ac.uk

Michael Leyshon
m.leyshon@exeter.ac.uk

George Ferns
g.ferns@ed.ac.uk

Catherine Leyshon
c.brace@exeter.ac.uk

¹ Center for Business and Climate Change, Business School, University of Edinburgh, 29 Buccleuch Place, Edinburgh EH8 9JS, UK

² Centre for Geography, Environment and Society, College of Life and Environmental Sciences, University of Exeter, Penryn Campus, Penryn TR10 9FE, UK

³ University of Edinburgh, 29 Buccleuch Place, Edinburgh EH8 9JS, UK

Introduction

Scholars increasingly argue that entrepreneurs and their small- and medium-sized enterprises (SMEs)¹ should play a central role in reducing the rate and magnitude of climate change and its associated socio-economic risks (Pastakia 1998; Kaesehage et al. 2014; Ostrom 2010, 2012; York et al. 2016). The potential of the United Kingdom's (UK) SME sector to collectively save over 2.5 million tonnes of CO₂ per year is significant here (Eco Monitor 2011; see Fleet et al. 2015). SMEs—enterprises with fewer than 250 employees (EU Commission 2003)—are also considered to have the capacity to initiate society-wide behavioural change. They could do so by adapting their business activities to mitigate climate change, and by influencing change amongst their customers, suppliers, employees, and communities (Schumpeter 1934; Boons et al. 2013; Loorbach and Wijsman 2013; Munoz and Dimov 2015).

However, while some entrepreneurs recognize their crucial role in mitigating climate change, most do not; only a few SMEs measure their carbon emissions for instance (Carbon Trust 2007, 2009, 2014; Enkvist and Vanthournout 2008; Goodall 2008; Carbon Neutral 2013). Why some entrepreneurs concern themselves with climate change has been the subject of few recent studies. As Williams and Schaefer (2013), Kaesehage et al. (2014) and others have proposed, entrepreneurs who mitigate climate change do so largely because of their personal values. Others, notably York et al. (2016), similarly identify both commercial and ecological motivations as reasons for entrepreneurs to address with climate change. Yet, it is unclear if all for-profit entrepreneurs engage with climate change for the same reasons, or if their motivations vary across types of businesses and levels of maturity (see Williams and Schaefer 2013; Kaesehage et al. 2014; Hudson and Roloff 2010). Furthermore, why exactly some entrepreneurs actively confront tensions between ecological and commercial priorities remains largely underexamined (Hahn et al. 2014).

This paper addresses this currently overlooked area of research by exploring entrepreneurialism within the context of climate change in the UK. We examine three

interrelated research questions. First, what motivates entrepreneurs to engage with climate change? Second, do these motivations vary across business activity/industry and level of maturity? Third, where do these motivations originate?

Revealing a more differentiated understanding of entrepreneurial motivations in response to climate change is of crucial importance because entrepreneurs drive social and economic innovation (Wickert et al. 2016; Baumann-Pauly et al. 2013). They revolutionize patterns of production (Schumpeter 1934) through the acceptance of risk (Carland et al. 1984; Burns 2011) and their ability to foresee socio-economic opportunities (Drucker 1988; Kirzner 1999). However, most people struggle to understand climate change because of the void between an individual's decision-making today, in their immediate surroundings, and the seemingly distant (in time and geographical location) impacts of climate change in the future (Geoghegan and Brace 2011). The origins of, and reasons for some entrepreneurs to nevertheless address the 'conflict between social and commercial priorities' (Tracey and Phillips 2007, p. 267) remain largely unknown, nor is it known how they relate to perceived distant climate change impacts.

We begin with an examination of the interdisciplinary literature on entrepreneurs, climate change, and values, before detailing our bespoke methodology for exploring entrepreneurs' engagement with climate change issues. In the next section, we reveal a continuum that is constituted by two dimensions—*time* and *space*. Situated along this continuum, we locate three types of climate entrepreneurs. First, 'Climate Opportunists' are primarily driven by financial motivations linked to a *short-term* temporal understandings of climate change. Their sense of place in relation to climate change is expressly *global*. Second, 'Traditional Entrepreneurs' demonstrate motivations that stem from their *generational* view of time and their community focus, coupled with a *local* understanding of place. Third, 'Integrative Entrepreneurs' exhibit both financial and socio-environmental motivations, which are linked to their *fluid* understanding of time and place, and a blend of self-interest and an interest in society's well-being. Our final section concludes that based on such insights, policy-makers are able to draft bespoke policies tailored to entrepreneurial needs. This may increase the number of entrepreneurs who engage in climate change mitigation and, alternately, leverage the impact of those already mitigating against dangerous climate change. Arguably, through these sorts of interventions policy-makers and entrepreneurs could more effectively facilitate society-wide behavioural change, which may lead to a quicker transition towards a low carbon economy (see Burns 2011; Boons et al. 2013; Loorbach and Wijsman 2013).

¹ SMEs are defined as enterprises with fewer than 250 persons, an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million (EU Commission 2003, p. 39). 'An enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million' is defined as a microenterprise (ibid.). SMEs account for over 99% of all enterprises, and two thirds of employment across Organisation for Economic Co-operation and Development countries (OECD 2010).

Theoretical Background

Entrepreneurs, Motivations and Climate Change

It is widely acknowledged that people have different reasons for making use of entrepreneurial opportunities (see Hisrich 1985; Collins et al. 2000; Shane et al. 2003). However, while most research focuses on macro-level, external influences (Aldrich 2000), others identify specific but varied motivations, including the drive for independence (Hisrich 1985), self-efficacy (Bandura 1997), and personal achievement (Collins et al. 2000). With regard to the natural environment, the motivation to create financial benefits while solving environmental issues has been a key finding (Schaltegger 2002; Cohen 2006). Although these motivations might drive entrepreneurs to mitigate climate change, there is a lack of empirical research into where such motivations originate. Other studies emphasize the importance of personal values and experiences in the decision-making process of entrepreneurs (see Bonanni et al. 2011; Fagenson 1993; Hemingway 2005). Schwartz (1992, p. 21) defines values as ‘desirable trans-situational goals, varying in importance that serve as guiding principles in the life of a person or other social entity’. Busenitz and Barney (1997) explain that, because entrepreneurs tend to let their decisions be influenced by these apparently ‘irrational’ considerations, they are often perceived as intuitive and opportunistic risk takers (see Ürü et al. 2011; Murmann and Sardana 2012). Entrepreneurs’ values and their persistent interest in society’s needs (Oliverio 1989) act as drivers of socially responsible behaviour (Hemingway 2005).

Scholars are increasingly interested in how entrepreneurs are motivated to address climate change in a sustainable, meaningful, and profitable way (Kaesehage et al. 2014; Williams and Schaefer 2013). Contemporary studies have highlighted the important role of personal values of entrepreneurs specifically, and/or business managers/owners more generally, in mitigation strategies for climate change (Vives 2006; Kaesehage et al. 2014).

The literature specifically examining environmental entrepreneurs—entrepreneurs that pursue ecological goals—presents a more nuanced picture and reveals that environmental entrepreneurs are motivated by financial and/or ecological reasons (York et al. 2016; Battilana and Lee 2014; Besharov and Smith 2014). Notwithstanding these studies, when and why entrepreneurs aim for financial and/or ecological goals is currently poorly understood (see Williams and Schaefer 2013; Kaesehage et al. 2014). Unknown is how these research findings might be interlinked with personal values. Furthermore, none of these

studies show how motivations might be differentiated amongst heterogeneous entrepreneurs.

Climate Change and Individuals

The core problem that individuals face when considering climate change is that climate change science projections and associated impacts are too distant in time and geographical location for individuals to understand them as an issue of personal and/or immediate importance (Slocum 2004; Lorenzoni and Pidgeon 2006; Geoghegan and Brace 2011). Climate change is primarily expressed in a variety of physical processes predicted to leave an impact in the future beyond the 2050s (IPCC 2013). The most severe consequences are predicted for places that are far away from the daily reality of the individuals in this study, such as the Arctic. Most individuals can only consider their actions and the potential consequences within their own lifetimes and/or immediate locality (Geoghegan and Brace 2011). The greater the social distance from the object of concern—i.e. future climate variability—the greater the intellectual doubt, personal sense of helplessness (Norgaard 2003), and uncertainty about the likely success of individual action (Blake 1999; Kollmuss and Agyeman 2002).

Geoghegan and Brace (2011) argue that both space and time are significant to people’s understanding of themselves in relation to climate change, particularly the sense that likely impacts are both far away in time and likely to happen in distant geographical locations. Through memories of past weather, reflections on the present climate, and imagining future climates, people form an understanding of climate change. Perceptions of place and time allow climate change to be seen relative to people’s lives (Geoghegan and Brace 2011; see Slocum 2004; Lorenzoni et al. 2007). People’s interpretations and understandings are predicated upon personal and social entanglements with both climate and culture (Geoghegan and Brace 2011; Schuldt et al. 2011; Wolf and Moser 2011). Responding to, and minimizing, the socio-economic and environmental risks therefore lies beyond the scope or remediation of the natural sciences alone (Hulme 2009).

Place, and its social relations, also plays a significant role in the development and success or failure of a business (see Porter 2004; Porter and Kramer 2006; Massey 1991). As Thomas and Cross (2007) argue, business organizations that believe their own success to be interlinked to the ‘well-being of a place’ aim to contribute to that well-being. Indeed, Hudson and Roloff (2010) find that the local natural environment and place associations influence SMEs’ perspective on corporate social responsibility (CSR).

Identifying with place is therefore a central organizing concept in business decision-making and climate change. We argue that motivations are determined by a sense of time and place, which provide the context for action.

Method and Data

Our research focuses on entrepreneurs in the county of Cornwall, in the UK, who engage with climate change. Cornwall is the most southerly peninsula in the UK and is exposed to the Atlantic Ocean on three sides. It is an area which is especially susceptible to climate change impacts, such as increased frequency of intense storm events and coastal flooding (UKCIP 2009; Cornwall Council 2011). Entrepreneurs can easily observe the impacts of climate change in time and place, allowing for a transparent observation of entrepreneurs' responses to those impacts (Eisenhardt 1989). We used purposive snowball sampling, which allows entrepreneurs to be viewed in relation to each other while acknowledging that they operate in existing, complex social relations that influence their behaviour (Law and Hassard 2007; Dolwick 2009). Due to the social nature of the research, we deployed qualitative methods in our interactions with key contacts, attending business network meetings and climate change-related business events to identify entrepreneurs who already engage with climate change. This approach ensured that our research sample and the research findings were representative for other entrepreneurs who engage with climate change. We only stopped approaching additional entrepreneurs once our data were saturated and any additional observations were reflecting similar findings to earlier ones.

We selected entrepreneurs in two steps. First, we identified those who matched our research criteria, e.g. entrepreneurs who were determined to directly and/or indirectly address climate change. Second, we invited them to participate. We also included climate change innovation intermediaries; these help SMEs to engage with climate change by addressing information and managerial gaps (Kaufmann and Tödtling 2001; Howells 2006)

Participant Sampling

We used the following sources to identify participants.

Key Informants

Climate change-related intermediaries pointed us towards entrepreneurs with whom they had worked previously, and who had contacted their organization to access climate change-related knowledge.

Climate Change-Related Business Events

We made contact with entrepreneurs at climate change-related business events and business network meetings. We also met several intermediaries who were relevant for our study.

Climate Change-Related Business Networks

We joined 'Business Leaders for Low Carbon' (BL4LC). At the network meetings, we were introduced to entrepreneurs who showed a strong interest in climate change. We were able to identify more intermediaries who occasionally joined the network meetings.

Once we constructed a list of potential entrepreneurs, we recruited the participants, selecting SME entrepreneurs with these characteristics:

1. Profit-making entrepreneurs from for-profit SMEs. We did not target social enterprises because motivations for social entrepreneurs to engage with environmental issues are well understood, whereas the motivations of for-profit entrepreneurs who engage with commercial and ecological issues are more challenging (Tracey and Phillips 2007) and largely unexplored by the literature (Williams and Schaefer 2013; Kaesehage et al. 2014).
2. Entrepreneurs who are active members in their SME's management team, allowing us to understand why they embarked on the climate change route.
3. Entrepreneurs implementing mitigation and associated climate change-related actions and/or show evidence that they had a genuine desire to do so by attending climate change-related business events, communicating climate change messages, or implementing adaptation actions. This ensured that participants had a clear focus on climate change.

Table 1 summarizes the participants, who were from across industries and whose SMEs varied in size from micro-businesses to businesses with up to 250 employees (see Eisenhardt 1989). In total, 25 entrepreneurs took part in our study between 2011 and 2014.

Data Sources

We chose to focus on Eisenhardt's (1989, p. 547) concept of 'theory building' due to the limited number of research studies that explore the diversity of entrepreneurs who engage with climate change, and the reasons for their engagement. As York et al. (2016), Williams and Schaefer (2013), and others have speculated, where entrepreneurs mitigate climate change they do so because of their personal values. Although these studies investigate groups of

Table 1 Participating entrepreneurs, characteristics, and data sources

Name of entrepreneur	Industry	Service/product offered	Number of staff (incl. owner)	Year founded	Position of participant	In position since	Age of participant	Mitigation activities of business	Family run	Number of interviews	Additional data source	Completed online survey	Theory dimension
Amy	Hospitality, Tourism	Hotel, Restaurants	120	1940	Sustainability Manager (spoke in name of founding entrepreneurs)	2010	32	Carbon Accounting Carbon Reduction Waste Management Renewable Energies	Yes	1	Website, company reports, mentioned by other interviewees, observation during climate change-related business events	Yes	Traditional Entrepreneurs
Caroline	Cartography, Design	Cartography, Design	4	2011	Founding Director	2011	37	Carbon Accounting Waste Management	No	1	Observation during climate change-related business events, BL4LC	Yes	
Chris	Farming, Education, Tourism	Carbon Sequestration, Beef, Education, Accommodation	4	1960	Manager	1990	54	Carbon Accounting Carbon Reduction Waste Management Renewable Energies	Yes	1	Mentioned by other interviewees, observation during climate change-related business events	Yes	
Claire	Hospitality, Tourism	Hotel, Restaurants	200	1960	Sustainability Manager (spoke in name of founding entrepreneurs)	2011	30	Carbon Reduction Waste Management Renewable Energies	Yes	1	Website, company reports, mentioned by other interviewees, observation during climate change-related business events	Yes	
Ian	Wholesale Food Distribution	Food for catering	30	1947	Managing Director	1985	66	Carbon Reduction Waste Management	Yes	1	Mentioned by other interviewees, observation during climate change-related business events, BL4LC	Yes	
Katie	Hospitality, Tourism	Hotel, Restaurants	90	1920	Director	2011	44	Carbon Reduction Waste Management Renewable Energies	Yes	1	BL4LC	Yes	
Mark	Marketing	Branding, Strategy, Design, Public Relations, Marketing	6	1999	Creative Director	1999	39	Carbon Accounting Carbon Reduction Waste Management	Yes	2	Company website, mentioned by other interviewees, observation during BL4LC	Yes	
Matt	Creative Design, Marketing	Graphic, Web Design	6	2004	Director	2004	42	Carbon Accounting Carbon Reduction Waste Management Renewable Energies	No	1	Company website, mentioned by other interviewees, observation during climate change-related business events	Yes	
Mike	Landscape Architecture	Designing Open Spaces	1 (with 3-4 regular freelancers)	n/a	Director	n/a	50+	Carbon Reduction Waste Management Renewable Energies	No	1	Observation during climate change-related business events	Yes	
Phil	Food Production	Savoury Food	205	1988	Chairman	2010	68	Carbon Reduction Waste Management Renewable Energies	Yes	1	Mentioned by other interviewees, observation during BL4LC	Yes	
Rob	Communication	Promotional, Marketing Communications	70	1919	Sustainability Manager	2013	45	Carbon Accounting Carbon Reduction Waste Management Renewable Energies	No	1	Observation during climate change-related business events	Yes	
Robert	Creative Design, Marketing	Service Design	9	2003	Director	2003	39	Carbon Accounting Carbon Reduction Waste Management Renewable Energies	Yes	1	Observation during climate change-related business events	Yes	
Robin	Beverage Production	Beverage Production, Distribution	250	1851	Compliance Officer (spoke in name of founding entrepreneurs)	2008	44	Carbon Accounting Carbon Reduction Waste Management Renewable Energies	Yes	1	Observation during climate change-related business events, mentioned by other interviewees	Yes	
Simon	Hospitality, Tourism	Holiday Homes	40	1977	Chairman	2011	50	Waste Management	Yes	1	Observation during climate change-related business events	Yes	
Toby	Marine	Refit, Rebuild, Construction of Yachts	250	1988	Sales and Marketing Director	n/a	40+	Carbon Reduction Waste Management, Renewable Energies	No	1	Website	Yes	
Angelo	Business Services	Marketing, Management	1 (with 3-4 regular freelancers)	2006	Managing Director	2006	40	Waste Management Renewable Energies	No	1	Observation during climate change-related business events	Yes	Integrative Entrepreneurs
Kurt	Sustainable Clothing Production, Retail	Clothes	50	2004	Director	2004	43	Carbon Reduction Waste Management	Yes	1	Website	Yes	
Marc	Waste Management	Community Recycling	1	2008	Director	2008	52	Waste Management	No	1	Observation during climate change-related business events, mentioned by other interviewees	Yes	
Paul	Sustainable Construction	Monitoring, Training, Consultancy, Project Management	5	2002	Chief Executive Officer (CEO)	2003	63	Carbon Reduction Waste Management Renewable Energies	No	1	Observation during BL4LC	Yes	
Tom	Sustainable Clothing Production, Retail	Clothes	20	2003	Managing Director	2003	39	Carbon Accounting Carbon Reduction Waste Management	No	1	Website	Yes	
Andrew	Renewable Energies	Consultancy	3	1934	Director	1997	46	Renewable Energies	Yes	1	Observation during climate change-related business events, mentioned by other interviewees	Yes	Climate Opportunists
Klaudia	Renewable Energies, Clean Technologies,	Auditing, consulting, training, permaculture design	1	2009	Director	2009	49	Carbon Accounting Carbon Reduction Waste Management	No	1	Mentioned by other interviewees	Yes	
Miles	Clean Technology, Town Planning, Smart Cities	Recruitment, Business Development, Market Intelligence	2	2013	Director	2013	34	<i>under planning</i>	No	1	Observation during BL4LC	Yes	
Russell	Renewable Energies	Project Management	2	2013	Manager	2013	37	Carbon Accounting Carbon Reduction Waste Management Renewable Energies	No	1	Observation during climate change-related business events	Yes	
Tony	Renewable Energies	Renewable Energies	7	2011	Managing Director	2011	41	Carbon Reduction Waste Management Renewable Energies	No	2	Observation during BL4LC	Yes	

very diverse entrepreneurs, their diversity is left somewhat unexamined and they tend to be summarized as individuals operating for-profit SMEs and/or only investigate entrepreneurs that offer renewable energy products. However, it is unknown if (i) all for-profit entrepreneurs engage with climate change for the same reasons; (ii) if their motivations vary across business industry/activity and maturity; (iii) where different motivations, whether financial and/or socio-environmental, come from (see Williams and Schaefer 2013; Kaesehage et al. 2014; Hudson and Roloff 2010). We investigated entrepreneurs from a range of business sizes, maturity, and industry/activity. We were able to synthesize how behaviour is ‘intimately tied’ to the value-identity positions, and to establish findings for further investigation. We used a range of data collection methods:

- *Open interviews* with key informants from the wider business community and local government provided important insights into climate change and entrepreneurship.
- *Indicative interviews with the entrepreneurs* served to determine how entrepreneurs understand climate change, and why they engage with climate change. The semi-structured interviews covered a list of topics which were common to all entrepreneurs (see appendix) and utilized open questions to enable entrepreneurs to speak about issues not necessarily addressed by the interviewer (see Lapan et al. 2012).
- *Indicative interviews with the intermediaries* with whom entrepreneurs have regular contact gave us an additional view of entrepreneurs’ motivations.
- *Participant observations* took place when we joined climate change-related business events and business network meetings. These delivered important insights into the actions that the entrepreneurs undertook based on their perception of time and place. We undertook participant observations based on Whyte’s (1955) grounded approach to ethnographic research and gathered the data by being active participants and through detailed note-taking. These data points and field notes were then written up as essays.
- We ran *practitioners’ workshops* which brought together the research participants and ascertained how entrepreneurs overcome the gap that exists between business practice, motivations, and climate change.
- *An online questionnaire* gathered additional data about the individual entrepreneurs in the study. The questionnaire ensured triangulation of data and tested the key findings.

In total, we conducted 10 open interviews with key informants, semi-structured interviews with 25 entrepreneurs and 21 intermediaries, 30 participant observations, an

online questionnaire with all 25 entrepreneurs, and 2 practitioner’s workshops.

Data Coding and Analysis

We took an iterative approach to data analysis and drew from Gioia et al.’s (2013) analysis guide. We reviewed the data on why entrepreneurs engage with climate change, and the linkages that the entrepreneurs make with time and place. This drew out significant themes, which informed a coding frame. Using NVivo, we formed first-order concepts based on the wealth of data that we had collected. For this, we focused on our primary data source, the interviews with our participating entrepreneurs, because the entrepreneurs themselves could provide the best insights on their motivations and associated origins. We tried to understand the diverse ideas raised and carefully developed broad concepts within which the data could be sorted. We then approached the data from our other sources and added supporting or contradicting data points to the themes. This was an important step, as it allowed us to integrate data from our multiple research tools/sources, which enabled ‘methodological triangulation’ and ‘data triangulation’. We then identified similarities and differences between the concepts so that we could develop more specific themes, which we labelled second-order themes. Once the second-order themes were determined, we suggested theory dimensions which would describe and explain the phenomena visible in our data (see Fig. 1).

The coding involved an iterative process: going back to the data, looking for a category, opening coding again, and establishing sub-categories (see Table 2). We then used the data gathered through the survey to cross-examine the research findings and added additional data points. We were then able to pre-assess the data implications in the context of our research questions. We cross-analysed the themes and revisited the different data points to reassess our first interpretations, and to establish final interpretations. To ensure internal reliability, our codes were produced by two of the authors individually coding data before comparing results. We also shared our codes with a colleague in our department, who reviewed our smaller sample and agreed in general with our interpretation.

To ensure our codes were externally representative, internally valid, and minimized social desirability, we undertook five measures. First, we disclosed the positionality of the participants by formulating detailed profiles that included the entrepreneurs’ interests in the research, the different roles that they played, and the ways in which they tried to benefit from the specific situations that we observed. Second, we asked indirect interview questions, as opposed to direct ones, to produce answers that reflect the truth about an interviewee’s behaviour towards socially

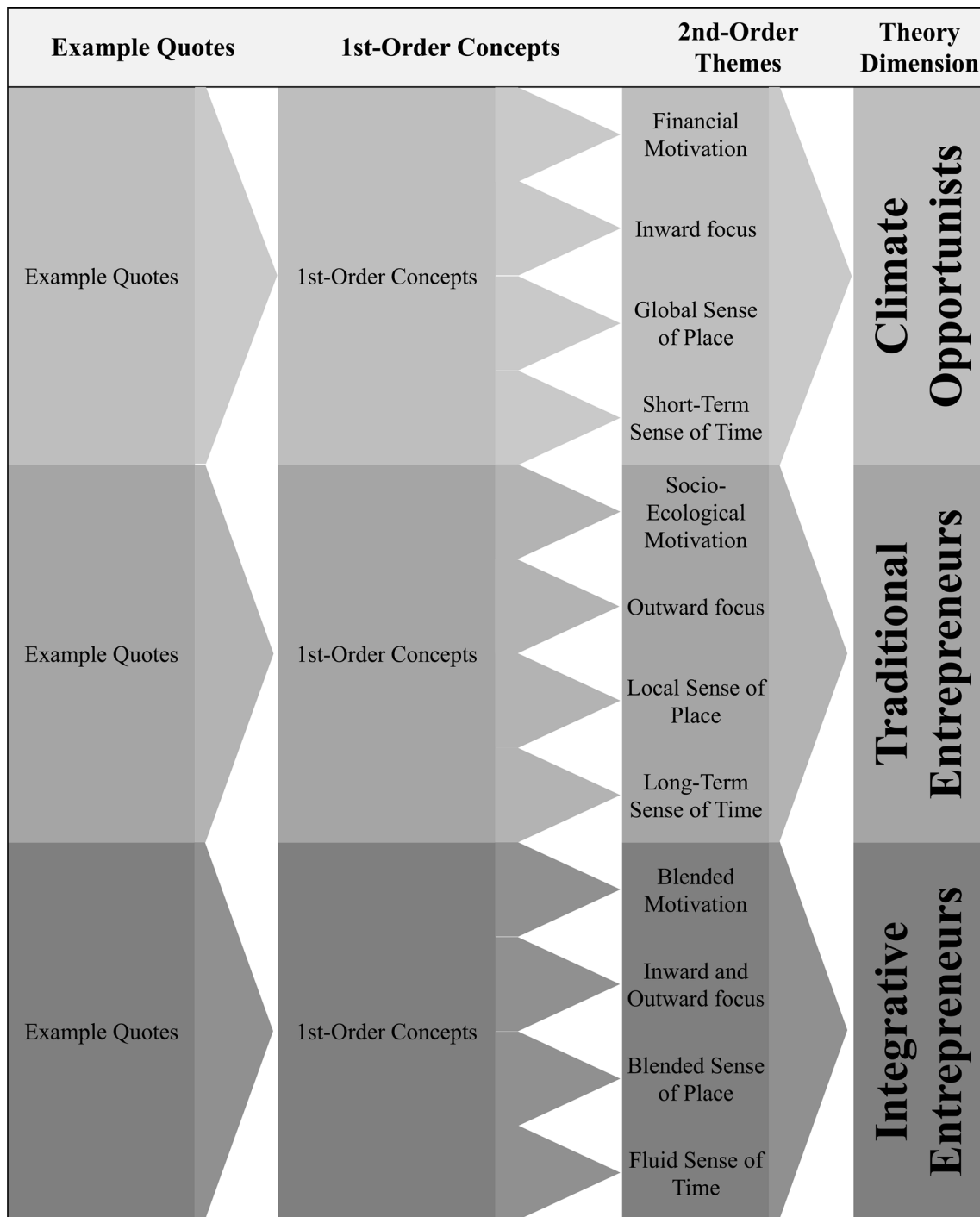


Fig. 1 Data coding structure

sensitive variables (see Fisher and Tellis 1998). Third, we conducted the research via open disclosure, revealing to the participants how we were situated in the research. Fourth, by referring to the research team as ‘we’ in the field notes taken throughout the research, ‘*the observational distance*’ between researchers and researched was minimized

(England 1994, p. 244). Finally, we applied multiple research tools which enabled triangulation of data. We did this by combining both ‘methodological triangulation’ (using different methods, including semi-structured interviews, workshops, document analysis, and a survey to examine the same participants) and ‘data triangulation’

Table 2 Data coding

Example Quotes	1st-Order Concepts	2nd-Order Theme	Theory Dimension
<p>'I think that climate change is due to environmental damage whether it is landfill, gases, etc. To reduce the amount of energy that we use to produce the good we need the will to reduce the gases in the atmosphere as well as the soil etc. so there is a secular cycle to everything. Our business is very much part of that.' (Marc)</p> <p>'My target is to make a million pounds turn over in the first 12 months. [...] So instead of doing a nice range of products, because we are selling to the installers and to the big estate agents, we've got some really cool products, very sexy, very nice textile PV products that people can feel and look at.' (Russell)</p> <p>'So far we are driven by the feed-in-tariff. [...] For us the feed-in-tariff change was brilliant because government suddenly gave a deadline. It pushed a lot of people into making their decision so we did four times that business during that time that we normally would have done.' (Tony)</p> <p>'It's something I'd like to see highlighted and I feel that I should support it. I feel that I am in a position where I can support it by giving it a bit more credibility to put forward what BLALC is doing.' (Tony)</p> <p>'The main thing would be certainly! If you look at some of the regulation at the moment things like the feed-in-tariff, the CRC, Green Deal, all of those things... the government changes its mind... makes alterations. One thing investors hate is uncertainty. When people see that we are achieving things they want to get on board. [...] The stick approach doesn't work to get anyone on board but it does celebrating what has been achieved and giving incentives.' (Tony)</p> <p>'It is two things – primarily business opportunity and second to create knowledge and collaborate with the view to benefit the low-carbon economy.' (Miles)</p> <p>'I think what lacks is that there is no celebration of achievements [...]. [...] When that starts being well known people will be on board. So far it's just negative. When people see that we are achieving things they want to get on board. [...] The stick approach doesn't work to get anyone on board but it does celebrating what has been achieved and giving incentives.' (Tony)</p>	<p>Participant highlights the opportunity for climate change engagement due to financial support. Participant sees himself as responsible to drive change due to his financial position. Participant emphasizes demand and profits. Focus is on sales and political certainty/support. Participant describes political stability and investment in close correlation, focuses on financial gains. Participant refers to his financial benefits and links this to the overall development of the economy. Participant discusses financial benefits and refers to numbers primarily to describe his motivations. Participant views climate change as a business opportunity.</p> <p>Participant focuses on his own benefit not mentioning society or the environment. Others in society are seen as contributor to self-success. Participant sees himself as different from other businesses/society. Participant wants recognition for his engagement and means financial ones. Sense of self is described by differentiating between self and others. Terms such as me, I, my are used frequently.</p> <p>Participant does not make local differentiation and views issue as a global phenomenon. Participant speaks about the many different aspects of climate change. The business is seen as part of the atmospheric process causing climate change.</p> <p>Time is seen in the present. Participant has a pragmatic understanding of climate change and business. Both are seen as logical cycles. Participant describes that the political environment needs to be stable. He believes that UK's policies are too fluid. Certainty is equated with time which needs to be present and future oriented. Overall link to financial benefits.</p>	<p>Financial Motivation</p> <p>Inward focus</p> <p>Global Sense of Place</p> <p>Short-Term Sense of Time</p>	<p>Climate Opportunists</p>
<p>'It has to be the future. In a few years time I'm sure we will look back and think 'how on earth did companies survive?' It is so wasteful for us to travel a hundred miles with some boxes and other companies that we know are doing exactly the same thing.' (Ian)</p> <p>Customer do not demand the green agenda in tourism. It doesn't really make a difference to customers. [...] We think we should and put resources into it. There is no demand now, but we think it is an investment in the future.' (Simon)</p> <p>'When I grew up, there were hardly any trees around here. [...] The predominant winds are no longer so much from the South West. [...] It is amazing for me to see what is growing around here where there wasn't very much at all.' (Ian)</p> <p>'With the big side of climate change you might not see the benefits but it's those small steps. The butterfly effects that you start with recycling paper but then three years down the line you get solar panels. [...] Our first project [mean] 18 months of solid work trying to up the level of recycle use in Cornwall and suddenly you are immersed in recycling, compost, nappies etc.' (Matt)</p> <p>'I think its one of those issues that to make it part of your core business you have to be very passionate about it. Unless people find that passion they won't see the relevance. It is really down to personal passion for such an issue.' (Claire)</p> <p>'It's something that we want to do because we felt like we should be doing it. It's given us business benefits at the same time but to begin with it was my own conviction.' (Mark)</p> <p>'Our business is very aware of climate change and the impact it can have on our local environment and on the things that so many of our customers come to visit; the beaches, the green grass for walking, enjoying the area around. [...] If we don't take care of our environments then people won't come back for it.' (Claire)</p> <p>'Cornwall has a sense of place! So if you want to grow Cornwall's economy then you have to do it in a way that suits the place. Our economic agenda has to work with the place and not spoil the place.' (Simon)</p> <p>'Another thing I do is to just ring other people that do similar jobs [...] in similar hotels. I would definitely call Claire's hotel. We have a very good working relationship actually. [...] There is no point in re-inventing the wheel. We are all in it for the same reasons.' (Amy)</p> <p>'Business sense and climate change are really the motivations for the whole business. Buildings account for about half of the climate change gases, everyone lives in a building. So it's really a quick way to make a difference. That's where you can make a big difference quickly.' (Simon)</p>	<p>Participant has socio-environmental reasons which are supported through financial benefits. Participant sees link between business and climate change. Feels responsible to change things. Participant sees his efforts as independent from financial benefits as market does not yield rewards. Participant explains that reasons for engagement are personal and that they come from local identification and understanding. Participant speaks about personal values and motivation. Participant feels that it is a responsibility for society and environment that motivates him. After this he has benefited as a business too. Participant sees climate change as problem of society. Socio-environmental concerns can only be met by deep engagement and business thinking. Participant sees business activities in relation to social environment. Participant views himself and business activities in relation to other people. The environment is seen as more important than business benefits. Participant identifies a link between business and society. Action is seen through the interrelation of society and the environment. Participant emphasises engagement with climate change should challenge the UK's neoliberal economics and culture of consumption more generally. Focus is outward. Participant is motivated through embeddedness in local environment and society. Business depends on both and feels an emotional responsibility to preserve it. Participant views motivation through embeddedness with place. Wants to protect and respect this. Participant understands climate change through local place. Understands that the business is directly dependent on the local community. Participant sees link between local community and business success. Believes that businesses need to respect local place. Participant emphasises local networks. Action is understood and specified through close local links. Participant describes a slow step-by-step approach to engagement with climate change. Only through this can environmental benefits emerge. Participant relates current business/society activities to current climate changes. Participant understands activities in relation to others but believes that there are few financial benefits. Activities should create benefits in the future. Participant makes sense of climate change through memory and imagination. Refers to himself as a person rather than business entity. Participant sees a link to generational business structure.</p>	<p>Socio-Ecological Motivation</p> <p>Outward focus</p> <p>Local Sense of Place</p> <p>Long-Term Sense of Time</p>	<p>Traditional Entrepreneurs</p>
<p>'Business sense and climate change are really the motivations for the whole business. Buildings account for about half of the climate change gases, everyone lives in a building. So it's really a quick way to make a difference. That's where you can make a big difference quickly.' (Simon)</p> <p>'It's our background and being capitalistic hippies. As much as we believe that business is good for society and for people to give them jobs, wellbeing. You can't escape business. But if you do it, you should run it in the best possible way. The best way is looking after the supply chain, staff, planet and still be profitable.' (Kurt)</p> <p>'[My company was] created as a direct result of the feed-in-tariff [...] The feed-in-tariff got us all interested, looked at the returns and the businesses got involved.' (Andrew)</p> <p>'We are obviously not perfect. We do cause impact but try to minimise it, communicate that to the consumer and try to make them minimize their impact. Our stuff lasts a long time and at the end of its life cycle it's easy to recycle. That's what we do.' (Tom)</p> <p>'I became aware of the deceit that goes on in industry. People will take primary resources and cover that up and talk about how they've been sustainably managed. [...] Profit is king generally and to hell with tomorrow [...] I became aware of it back in the 80s [...] I thought there must be a better way of doing this than exposing my workers and myself to nasty chemicals.' (Paul)</p> <p>'I did some climate change at University and I've been involved with the environment for most of my life so it's an awareness of starting a business that takes those kind of things to heart.' (Tom)</p> <p>'We are business. [...] We make clothes; we transport them around the world. The business started on the principles of good and sound environmental policies and beliefs. That's how we exist today.' (Tom)</p> <p>'Climate change is just part of the whole package. We want to show the world and Cornwall that running a business on environmental principles is good for business and the planet. By growing [our business] we hope to show this.' (Kurt)</p> <p>'I don't see much from local authorities on this. Nothing. I should not have to be searching for it. I'm aware of stuff that goes on with consumers and the public. Businesses just want to know how it might affect their business bottom line. That is the only way in.' (Kurt)</p>	<p>Participant explains the link between his profit-making industry and the well-being of society. Participant describes himself as 'anti-capitalism' but believes that engagement has to make financial sense. Participant knows that own business cannot be carbon-neutral but wants to yield socio-environmental benefits while doing business well. Participant differentiates between bad business and good business. Participant believes climate change and business practice are interconnected and should benefit both. Participant believes that business logic requires climate change engagement. Participant wants to benefit society by being successful in business. Participant explains that he is motivated to offer products and services that create a 'win-win' situation – for society, the economy and the environment and the business. Participant explains that climate change engagement is only possible if it creates a business benefit. Participant aims to benefit himself and others/society. Participant sees business and climate change as interrelated. Participant highlights self-interest and interest in society. Wants to do something good while doing business as well. Participant 'uses' the global space rather than conceptualizing climate change through local space allocations. Participant expresses his disconnection from local place/community. Neither local nor global place plays a role. Participant sees his businesses independent from political support. Local community plays no role either. Believes that there need to be financial benefits while aiming for environmental issues. Participant draws from past to imagine future. Participant understand climate change through past and future. Decision-making takes place in immediate present. Time is fluid. Time is referred to depending on context.</p>	<p>Blended Motivation</p> <p>Inward and Outward focus</p> <p>Blended Sense of Place</p> <p>Fluid Sense of Time</p>	<p>Integrative Entrepreneurs</p>

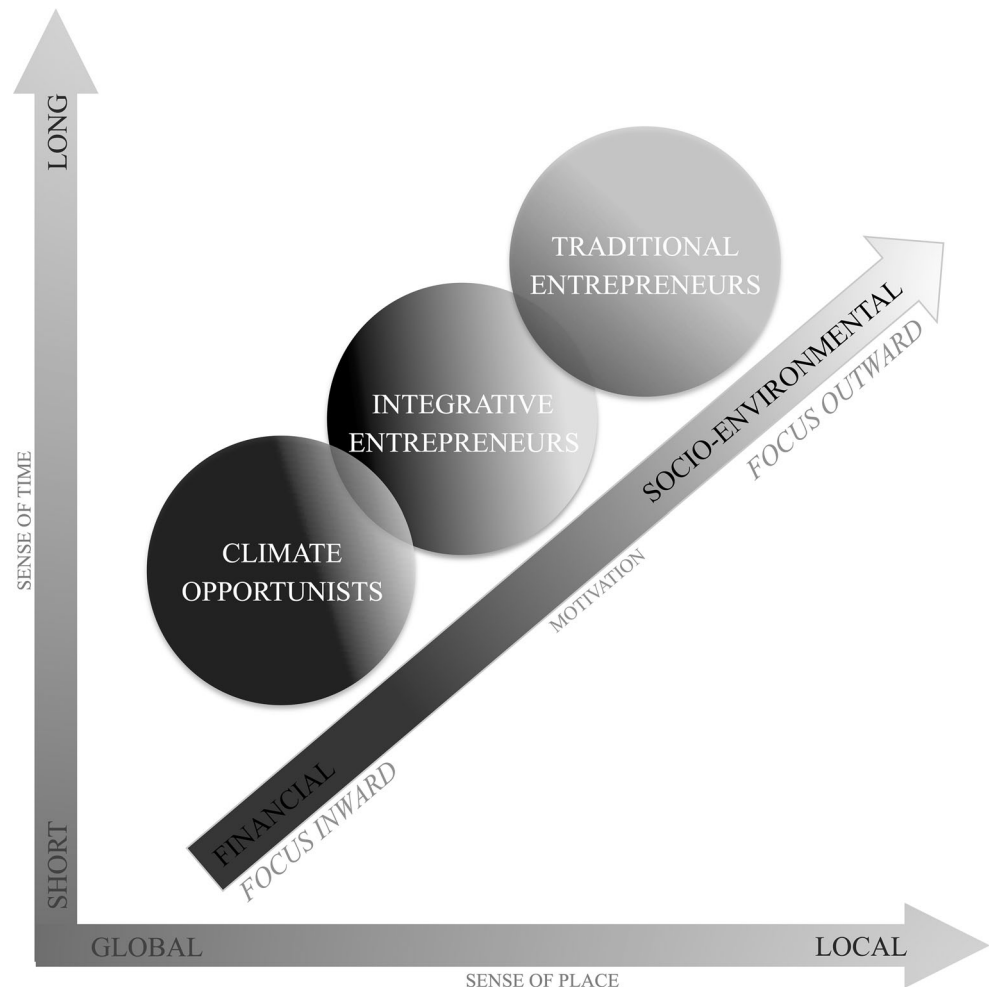
(using different data sources, e.g. entrepreneurs, intermediaries, climate change events and business networks, for the same investigation) (see Denzin 2009).

Findings

Our findings revealed a continuum on which we highlight three types of entrepreneurs: 'Climate Opportunists', 'Traditional Entrepreneurs', and 'Integrative

Entrepreneurs'. Our inductive analysis showed early in the research process that entrepreneurs were compelled by dominant value-defining factors of *motivation*, *focus*, *sense of time*, and *sense of place*, depending on their industry/activity and maturity of their business at the time of their climate change engagement. *Firstly*, we noticed that there are entrepreneurs who founded a business in a new market segment created by climate change, e.g. the renewable energy market. These entrepreneurs offered specific products/services in this emerging market, enabling the end-

Fig. 2 Continuum of type of entrepreneurs



customer to lower their own carbon footprint. We named these entrepreneurs ‘Climate Opportunists’. *Secondly*, we identified entrepreneurs who already managed successful businesses before encountering climate change and named them ‘Traditional Entrepreneurs’. These entrepreneurs tried to adjust their existing business operations to primarily lower the carbon emissions of their businesses. *Lastly*, we identified entrepreneurs who founded businesses in well-established industries with climate change in mind. We named these entrepreneurs ‘Integrative Entrepreneurs’. These entrepreneurs only offer products and services which have a low carbon footprint in their production. They saw their businesses as modern businesses that logically made use of the changing socio-economic market conditions. These three types of entrepreneurs gradually differed in terms of four value-defining factors along a continuum: (1) *motivation* whether the entrepreneur engaged in climate change due to financial or socio-ecological reasons, or both; (2) *focus* whether the venture aimed to create benefits primarily for the entrepreneur, the society/environment, or both; (3) *sense of*

time whether the entrepreneur conceptualized climate change over the short term, the long term, or both; and (4) *sense of place* whether the entrepreneur understood climate change through a local, global, or merged sense of place (see Fig. 2). We acknowledge that these four factors represent dominant forms of value-driven motivations for our three categories of entrepreneurs, although they are not mutually exclusive from one category to the next.

Climate Opportunists

These entrepreneurs founded their businesses based on climate change presenting a specific business opportunity. Typical examples include start-ups that offer renewable energy products. Entrepreneurs in this category are primarily motivated by financial reasons. They show an aptitude for identifying a business opportunity based on the political, economic, and social changes produced by climate change. Tony, the founder of his renewable energies company, highlights this well by explaining:

Climate change is what our business is about. So far we are driven by the feed-in-tariff and in the future it will be driven by the savings on people's bills.

In the quote above, Tony mentions how capitalizing on a government initiative—a Feed-in Tariff that allows homeowners to save substantially on their energy bills—defines his business concerns with climate change. Furthermore, Climate Opportunists like Tony are mostly driven to fulfil their own needs: they speak about how the outcomes of their business activities are personal achievements providing personal gains:

I think what lacks is that there is no celebration of achievements [...]. [...] So far it's just negative. When people see that we are achieving things they want to get on board. [...] The stick approach doesn't work to get anyone on board but it needs celebrating what has been achieved and giving incentives.

In this quote Tony seems to be frustrated by the lack of praise for himself and other Climate Opportunists, (by referring to 'we'). In a similar vein, Russell, who runs a business offering solar panels, overwhelmingly uses the pronoun 'I' or 'my', and rarely speaks about 'us', as he discusses his business aspirations:

My target is to make a million pounds turn over in the first 12 months. [...] [...] we've got some really cool products, very sexy, very nice textile PV products that people can feel and look at.

Russell gives a detailed account of introducing solar panels as a product range motivated by financial opportunities. As such, Climate Opportunists often use a means-to-an-end rationale where the ends are profits and the means are provided by climate change. Numbers, goals, and money dominate their discourse. It becomes apparent that these entrepreneurs do not mention environmental changes and/or the desire to preserve the natural environment in their rationale. Climate Opportunists have an economic understanding of the socio-environmental consequences of climate change, and the responsibility that comes with being in a climate change-related industry. The statements here demonstrate that Climate Opportunists are driven predominantly by financial reasons—they want to make money, and it just happens that climate change has presented itself as an opportunity. This behaviour can then create positive socio-economic benefits. Climate Opportunists involve themselves in the lobbying of government with the intention to create political and economic changes that further their opportunities. Tony explains that his status as a successful entrepreneur gives him the credibility to become a member of the carbon-related business

network BLALC to stimulate system-wide change. Due to their need for political support and market opportunity, Climate Opportunists' sense of time is largely based on short-term thinking. These entrepreneurs assert the need for immediate and short-term political stability. For example, Miles discusses the lack of clear and consistent legislation, which he regards as a problem:

The main thing would be certainty! If you look at some of the regulation at the moment things like the Feed-in Tariff [...] the government changes its mind, makes alterations. One thing investors hate is uncertainty.

In this example, Miles expresses a particular 'discomfort' for the unknown. He is dependent on stable legislation for his immediate decision-making to plan for the opportunities that might arise in the near future. This is typical of Climate Opportunists, who often assert that their financial motivation is predicated on a sense of certainty. This is because their actions take form quickly, both in terms of financial outcomes and implementing carbon mitigation. Tony, for instance, stresses his appreciation for certainty regarding time in reference to government pressure:

For us the Feed-in Tariff change was brilliant because government suddenly gave a deadline. It pushed a lot of people into making their decision so we did four times that business during that time that we normally would have done.

These entrepreneurs are less concerned with the physical impacts and development of climate change, and more concerned with the political and economic consequences that climate change might have on their business operations. In that sense, Climate Opportunists have a global sense of place. By this, we mean that although they use local networks and suppliers to leverage their business opportunities, they do not conceptualize climate change through local issues. This contrasts strongly against our second category, Traditional Entrepreneurs, who understand climate change by observing physical changes to their local natural environment (see below). Climate Opportunists speak in global terms about climate change. For example, climate change is both a local issue that can be segmented into small particulars *and* a global one that requires grand, all-encompassing solutions. Climate Opportunists, however, refer to the all-encompassing phenomenon of climate change. What is noticeable is that the entrepreneurs in this category rarely implement mitigation and adaptation within their own businesses, but rather see it as a responsibility to offer opportunities for action to their customers.

Overall, our analysis reveals that Climate Opportunists have a highly commercial approach to climate change, and

they clearly see climate change as an opportunity rather than a threat. Our research demonstrates that Climate Opportunists are mostly driven to fulfil their own needs. The needs of local communities and others are given second priority. Frequently, Climate Opportunists express this sense of self by speaking about how the outcomes of their business activities are personal achievements providing personal gains—the mitigation of climate change is of little concern, and positive externalities for society and economy are a welcome side effect. Our observations show that this is in sharp contrast to our next group: Traditional Entrepreneurs.

Traditional Entrepreneurs

Our second category, Traditional Entrepreneurs, place socio-environmental motivations ahead of financial concerns regarding their climate change-related activities. These entrepreneurs already managed successful, for-profit businesses before encountering climate change. As such, financial motivations are assumed as ‘given’—they were already at the core of their objectives, given their previous commercial success. However, when contemplating whether to mitigate climate change, it is not a financial discussion that takes place but one about socio-environmental benefits. Acting on climate change is crucial for these entrepreneurs in order to contribute to a prosperous society in times of change. Ian explains that he feels that the impacts of climate change are closely linked to the ways in which ‘doing business’ will evolve in the future:

In a few years’ time I’m sure we will look back and think ‘how on earth did companies survive?’ It is so wasteful for us to travel a hundred miles with some boxes and other companies that we know are doing exactly the same thing.

For these entrepreneurs, climate change is primarily a socio-environmental concern, closely linked to their personal commitment to the issue. Claire, speaking on behalf of the founding entrepreneurs of two luxury hotels in Cornwall, illustrates this by underscoring their passion about tackling climate change. She points out that it is only possible for entrepreneurs to incorporate climate change in their business operations through socio-environmental motivations.

I think its one of those issues that to make it part of your core business you have to be very passionate about it. Unless people find that passion they won’t see the relevance. It is really down to personal passion for such an issue.

Most of the entrepreneurs in this category also prioritize socio-environmental motivations by stressing that little

immediate business benefit exists for engaging with climate change issues. They argue that there is a lack of demand from customers and suppliers for climate change action. Simon, who owns a company that rents out luxurious holiday cottages, explains this:

Customers do not demand the green agenda in tourism. It doesn’t really make a difference to customers. [...]. We think we should and put resources into it. There is no demand now, but we think it is an investment in the future.

Not considering the potential business benefits as essential for engagement with climate change is contrary to our two other categories, where entrepreneurs directly observe business benefits through their engagement with climate change. Traditional Entrepreneurs show that they overcome the absence of market demand and policy support through their strong personal beliefs and values on climate change. For them, it requires ‘*a certain leap of faith*’ to be able to do so, as Chris, the owner of a farming business, explains. A long-term sense of time plays a significant role for Traditional Entrepreneurs to act on such socio-environmental values. They conceive time as generational and infinite, in order to conceptualize climate change. In particular, entrepreneurs such as Ian, who owns a family-run food distribution business which has existed for several generations, observe changes in their immediate natural environment which they attribute to climate change. Amy, who speaks on behalf of the owners of a luxury hotel in Cornwall, further explains the benefit, through time relation, that comes with this inter-generational business:

They have the ability unlike lots of other Cornish businesses to think long-term. They realized that there are opportunities that they could be missing by not looking at sustainability [...].

This shows how Traditional Entrepreneurs conceptualize climate change through past experiences of changes in the environment, which they in turn project into the future. They observe, memorize, and construct an idea about what climate change is and might be. These entrepreneurs have the ability to conceptualize climate change as a potential threat to society, others, and their immediate place, as a result of being able to overcome the disproportions of ‘scale between climate change and individual actions’ (Patenaude 2011, p. 267). Imagining climate change poses less of a problem as these entrepreneurs are able to overcome humans’ ‘inability to conceptualize time beyond the periodic frame of (their) own lifetimes, or even a generation’ (Geoghegan and Brace 2011, p. 292), by imagining the infinite lifetime of their business.

Our data show that our Traditional Entrepreneurs draw a connection to the reasons why they engage with climate

change and their direct embedding in the local place—as both business entities and individual beings. These entrepreneurs seem to be motivated by the fact that their businesses are directly dependent on the local environment, local suppliers, customers, and communities. Claire details that she has worked to understand climate change due to the dependence of her business on the natural environment in which it is situated:

Our business is very aware of climate change and the impact it can have on our local environment and on the things that so many of our customers come to visit; the beaches, the green grass for walking, enjoying the area around. [...] If we don't take care of our environments then people won't come back for it.

Simon suggests that entrepreneurs need to act in accordance with Cornwall's local needs and resources in order to run a business successfully:

Cornwall has a sense of place! So if you want to grow Cornwall's economy then you have to do it in a way that suits the place. Our economic agenda has to work with the place and not spoil the place.

In this way, we can see that these entrepreneurs are motivated to engage with climate change due to their strong ties with their local place. This sense of belonging motivates them to take care of their local surroundings. A desire to change social systems was also identified in the participant observations. During business network meetings, entrepreneurs would use any opportunity to communicate the importance of climate change to policy-makers and other business leaders. Traditional Entrepreneurs display a strong sense for the other: most suggest that their sustainable engagement with climate change should challenge the UK's neoliberal economics and culture of consumption more generally. Their intentions are often outwardly focused and directed at the social, as opposed to individual, change. Robert, the owner of a service design company, expresses this as follows:

It's culture. [...]. We want more and buy more and actually the way our society functions is fuelled by credit. [...]. That is not sustainable. It's not the key to happiness. [...]. Climate change is exactly the same.

Additionally, Traditional Entrepreneurs' emphasis on local relational networks highlights a sense of community, as they share information on climate change and aim to help each other in a 'continuous effort to understand connections [...] in order to anticipate their trajectories and act effectively' (Klein et al. 2006, p. 71). Surprisingly, our last category, Integrative Entrepreneurs, see themselves as quite disconnected from such networks and localities.

Integrative Entrepreneurs

Our final category is comprised of entrepreneurs who exhibit both financial and socio-environmental motivations, without necessarily prioritizing one over the other. Integrative Entrepreneurs express that they are motivated to offer products and services that are climate conscious and produce a 'win-win' situation—for society, the economy, and the environment, as well as for entrepreneurs. Kurt, an entrepreneur in the clothing industry, highlights this blend of motivations, explaining that by being financially successful and offering climate-conscious products, he can create benefits for both himself and society. He thereby synthesizes a complexity of world views.

It's our background and being capitalistic hippies. As much as we believe that business is good for society and for people to give them jobs [...] you can't escape business. But if you do it, you should run it in the best possible way. The best way is looking after the supply chain, staff, planet and still be profitable.

The above statement reflects that these Integrative Entrepreneurs pursue situations that materialize in both financial and socio-environmental goals. It is interesting that these entrepreneurs account for this approach as a logical way of doing businesses in modern society; something that should be pursued by every entrepreneur. Although perhaps rather individualistic, these entrepreneurs' business models emphasize dissatisfaction with the current economic models within which they operate. However, we observed that they do not participate in any local business initiatives that challenge those economic models, and neither are they involved in local lobbying initiatives. Accordingly, they do not seem to have a one-dimensional (e.g. long or short) perception of climate change over time. They deploy different understandings of time in relation to changing contextual circumstances that impact their business operations. For example, these entrepreneurs see climate change through past experiences, and equally through a detailed consideration of how 'doing business' will evolve in the future. Most Integrative Entrepreneurs, for example, draw from their past experiences in business in order to address climate change. However, these past experiences are linked not to the physical changes in the natural environment, but to socio-economic development. Paul, the founder of a sustainable construction company, explains that while running his previous businesses he wanted to make his profit more sustainable for society:

People will take primary resources and cover that up [...]. [...]. Profit is king generally and to hell with tomorrow [...]. [...]. I thought there must be a better

way of doing this than exposing my workers and myself to nasty chemicals.

These entrepreneurs also pay attention to a personal imagined future. Tom, who founded a nationally known clothing company, explains that his past education about climate change has motivated him to create a business that is climate change conscious and which will create, he imagines, positive impacts on future society:

I did some climate change at University and I've been involved with the environment for most of my life so it's an awareness of starting a business that takes those kind of things to heart.

Integrative Entrepreneurs are therefore very operationally focused on the present. Kurt, for example, refers to the twelve-month planning scenario of his production line pinned to the wall behind him during his interview about climate change. Integrative Entrepreneurs accept climate change as a given challenge that is to be considered in immediate timeframes to produce a better future. These entrepreneurs experience climate change as *'part of the whole package'* (participant Kurt), which encompasses mostly global issues. Conversely, they do not, for example, verbalize specific local physical changes to the environment when conceptualizing climate change. They highlight that they do not need support from local governments to understand climate change-related issues, for instance. Kurt expressed that there is little help from local authorities, and that his mitigation activities are successful only if they are profitable:

I don't see much from local authorities on this. Nothing. I should not have to be searching for it. I'm aware of stuff that goes on with consumers and the public.

Similarly, global levels of climate change have no particular relevance. Tom explains that he 'uses' the global place rather than 'conceptualizes' climate change through global place allocations. Integrative Entrepreneurs are motivated strongly by the dual idea of enlightened self-interest while also serving society. These entrepreneurs want to satisfy their desire to do something good, while doing well in business.

Discussion

Our study shows that entrepreneurs' engagement with climate change is derived from socio-environmental and/or financial motivations that are, in each account, linked to their dominant perception of themselves and/or their business to climate change impacts in a specific time and

place. The degree to which each motivation plays a role, however, differs according to the type of entrepreneurial activity/industry one is engaged with and their maturity: traditional, opportunistic, or integrative. This sets an unprecedented example for how entrepreneurs, larger companies, and other economic actors could find ways and reasons to engage with climate change, and contrasts with the concept of homo-economicus that underlines most climate change-related policies (Carter 2007; Hoffman and Jennings 2012). Divergent motivations for entrepreneurs' engagement with climate change can largely be explained by examining their understanding of climate change in time and place, and less by their understanding of science and/or financial reasons alone. Climate Opportunists are driven by financial motivations due to their short-term, and somewhat disjointed, global and local understanding of climate change. With Traditional Entrepreneurs, socio-environmental motivations dominate, stemming from their generational view of time coupled with a local understanding of climate change. Lastly, we illustrate how Integrative Entrepreneurs exhibit both financial and socio-environmental motivations. This is due to their fluid understanding of time and place and a blended interest in their own and society's well-being.

This paper makes a significant contribution to the sparse, albeit growing, literature on business and climate change by providing unique insights into why entrepreneurs engage with climate change. We reveal that entrepreneurs' motivations to engage with climate change are more diverse than previously theorized. They are intrinsically linked to individuals' perceptions of self to place and time and differ according to business type. This is critical because too few entrepreneurs engage with climate change. Previous literatures have argued that most entrepreneurs that do manage to engage do so because of the desire to contribute to the well-being of the natural environment and society and/or the wish to achieve financial goals. Nevertheless, the reasons for such motivations are unknown, and neither is it known where those motivations come from, or how they relate to the distant impacts of climate change.

Revealing the diversity of motivations for different entrepreneurs, their reasons, and their relation to time and place, allows the drafting of climate change-related policies that can differentiate entrepreneurs by business activity/industry and maturity, and ensures that the underlying motivations to act are targeted. This should increase the number of entrepreneurs who want to mitigate, as well as leverage the impact of those who already mitigate, climate change. This could be achieved through a dialogue in which society's perceptions of climate change to specific ideas of time and place can be exchanged. Importantly, our research findings support previous speculations that climate change is an issue that is more complex than simplified

cost-profit-arguments, and that entrepreneur's immediate surroundings such as places and perceptions of time are also, and occasionally more, important (Carter 2007; Hoffman and Jennings 2012; Bassi and Duffy 2016). Furthermore, we argue that if climate change is only positioned through a 'one size fits all' message, businesses will not be motivated to respond to the longer-term challenges it presents to future societies.

This paper makes three main contributions to the business literature. First, policy-makers need to comprehend the diverse audience of climate change entrepreneurs. Our study shows that recent speculations about the roles of personal experience, lay knowledge, and personal values in decision-making related to climate change are highly relevant (Hulme and Blackman 2009; Moser 2010; Nerlich et al. 2010; Geoghegan and Brace 2011) and fill the gap in the literature regarding their significance for entrepreneurs and climate change engagement. Business engagement with climate change is not as rational as policy-makers would like to think. The study highlights that the reason why entrepreneurs engage with climate change is more complex than traditional market-based instruments (MBIs) and Command and Control policies can address. In the light of climate change, policy-makers need to enable people to consider what should be protected, and target entrepreneurs' very personal conceptions of climate change in time and place. Currently, most successful climate change-related policies relevant to SMEs focus primarily on renewable energies such as the Feed-in Tariff and energy-saving buildings such as Building Research Establishment Environmental Assessment Methodology (BREEAM). One way of addressing more complex motivations and entrepreneurs from other industries would be by implementing voluntary agreements that would allow entrepreneurs to integrate place and time considerations, making mitigation action more meaningful. One could imagine an agreement between entrepreneurs and local councils on the annual reporting of greenhouse gas (GHG) emissions, which could include a review of the emissions by a committee delivering recommendations for adjustments. Failure to comply with such an agreement would not end in direct financial penalties, but send reputational signals to local customers and community members.

Second, our paper demonstrates that these motivations do not appear to be formulated through interpreting specific scientific knowledge and/or business reasoning. Entrepreneurs conceptualize climate change through both imaginative and experiential lenses, positioning their businesses in relation to past and future existence(s) (Geoghegan and Brace 2011). Our second group of entrepreneurs' motivations, particularly, are shaped in a way that policy-makers do not expect (see Carter 2007; Hoffman and Jennings 2012; Bassi and Duffy 2016): they use intuitive and

subjective considerations of time and place to understand the relevance of climate change on their generational view of time, community focus, and local understanding of place. This means that our Traditional Entrepreneurs do not wait to evaluate all alternatives for possible action before deciding on climate change engagement. The ability of the entrepreneurs to see climate change as a potential risk to their business operations in the future, even though it is not yet impacting their businesses, extends current thinking on what has been described as a risk society: a society in which individuals are concerned with risks that are distant in time and place (Giddens 1999; Beck 2006). In this modern society, people aim to make individual and rational decisions in which less scientific considerations, such as traditions, collective identity, and experiences, are overlooked (Beck 1992). Society today instead yields to the 'mathematicized morality of expert thinking' (Beck 2006, p. 333). Scientific evidence legitimizes and guarantees the ways in which governments can and should minimize risks for society (Hollway and Jefferson 1997; Beck 2006). In this approach, it is important that our observations reflect the fact that these entrepreneurs connect their activities closely with local stakeholders, such as customers/suppliers and communities. This contrasts with the ways in which climate change is currently communicated to businesses, which are based on the principle of homo-economicus, ignoring the relevance of lay knowledge, place, and time (see Kaesehage et al. 2014). Our three groups of entrepreneurs are able to construct a link between past experiences, possible future impacts of climate change, and their immediate business activities. Those entrepreneurs who believe that they have the ability to make a difference in countering the impacts of climate change have a positive and often opportunistic outlook on adapting to potential change.

It is important for the climate change-related business literature that entrepreneurs view themselves with their business as an entity that is located and shaped over time and experiences. It is only then that these entrepreneurs can 'place themselves in [...] context, to cope with the contingencies of existence', such as climate change (Leyshon 2008, p. 5). This understanding of how climate change science is understood by entrepreneurs is fundamentally at odds with the 'deficit model' of knowledge exchange. Without addressing and changing individuals' ideas of what climate change means in their individual time and local place, we should not expect climate knowledge to be acted upon. Reasons for the engagement of businesses are derived from place and time conceptualizations, and engagement has little to do with any deficit in the basic scientific knowledge available. One idea for a policy that targets long-term concerns of entrepreneurs could be the introduction of community time banks for mitigation

actions. Entrepreneurs and their SMEs could, for example, be rewarded with time bank credits for their carbon reduction efforts such as using local suppliers or reducing their carbon footprints. The entrepreneurs could use their time-bank credits to acquire training for their employees, or they could pass credits on to groups and organizations in their local community. Establishing and supporting such time banks would allow entrepreneurs to see how a mitigation activity in the present—whose benefits they would likely not experience in their lifetime and locality—can benefit their local communities and the value of their business over longer-time periods.

Third, our paper provides insight into the unique potential of entrepreneurs to lead us towards a low carbon society. In climate change-related debates, entrepreneurs and their businesses are largely treated as organizations that are impacted by climate change, rather than as potential frontrunners and leaders for attaining a low carbon society. Our study shows that entrepreneurs pursue strategies to safeguard economic, ethical, and philanthropic expectations of themselves and their organizations, something hitherto largely unrecognized and consequently ignored, despite reflecting the true cultural characteristics of this business audience. The entrepreneurs' questions over values, beliefs, and worldviews emphasize the need for mainstream systems that enable meaningful mitigation of, and adaptation to, climate change away from the more traditional 'organizing binaries' of modern society (Gregory et al. 2009, p. 7). Our findings provide evidence that engagement with climate change is less scientific, and much more dependent on entrepreneurs' individual perceptions of time and place which shape specific personal values. Entrepreneurs' personal values towards the issue of climate change are much more differentiable than previously thought (Hoffman 2004; Goodall 2008). Policy-makers should advance and follow entrepreneurs' ways of addressing climate change by questioning people's understanding of themselves in time and place—and their accompanying lay knowledge, personal values, and practices.

Conclusion

This research offers a first glimpse into a complex phenomenon. Future studies should refine the continuum and/or specify the categories of entrepreneurs further with larger-scale quantitative research studies and should investigate how, and if, entrepreneurs' decision-making about climate change varies in different cultures and locations. A replication of this research would enable the research findings to be generalized further, and contrasts could be developed about some of the cultural drivers for

climate change engagement. A focus on a specific industry would also be interesting, so that a cross-sectional analysis of these research findings could be carried out. Our study indicates that current external governance structures, which determine how actors interact in society, do not support most entrepreneurs' climate change efforts. Thus, entrepreneurs require significant financial and socio-environmental motivations to act. Future research should explore how entrepreneurs are influenced by, and can influence, the governance structures associated with climate change, to allow greater support for climate change mitigation. This could be accomplished by investigating the perceptions of governance structures in several locations which vary considerably with respect to the immediacy of climate change risk mitigation.

Our explorative research carries potential weaknesses. First, one might notice that the entrepreneurs who participated in this study only represent a small number of UK entrepreneurs, and the relevance of these research findings to the wider business community might be limited. However, in this study we wanted to focus on 'theory building'—the forming of possible hypotheses to be tested in future studies (Eisenhardt 1989)—due to the lack of empirical studies in this area. Using a small research sample enabled us to find cases that capture the area of interest and allow the research to be 'intimately tied' to the data which provide findings for further investigation in the future.

Second, one could argue that we only investigated entrepreneurs that are already 'onboard' the climate change discussion. To some, it might seem more compelling to learn about entrepreneurs who do not yet mitigate climate change, and why that is the case. A lack of a successful diffusion of innovation is, however, often a result of looking too much at organizations that are wedded to current socio-economic systems, as many scholars have repeatedly argued (Hildreth and Kimble 2004; Christensen et al. 2006; Seyfang and Longhurst 2013). We purposefully aimed to learn from entrepreneurs that have the motivation and understanding to innovate.

Third, one needs to consider that data for this study were collected using mainly qualitative research methods, focusing on the entrepreneurs' personal perceptions of climate change. Social desirability bias could have influenced the research findings due to the fact that entrepreneurs might believe it to be socially desirable to wilfully conform to the social, political, and environmental pressures produced by the research (witnessed by the researchers and other entrepreneurs). Entrepreneurs may, for example, respond to interview questions about themselves or their behaviour as a 'positional good' by emphasizing behaviour that is regarded as socially desirable, and thereby underreport behaviour that is perceived as

socially inappropriate (see Callegaro 2008; Densten and Sarros 2012). As we set out to understand the motivations of entrepreneurs and the origins of those motivations, we were bound to ask the entrepreneurs themselves. This would present a considerable weakness if we solely relied on interview data. Purposefully, we applied multiple research tools which enabled ‘methodological triangulation’ and ‘data triangulation’.

Fourth, we acknowledge that our observed relevance of time and place might not be solely relevant for entrepreneurs who engage with climate change. None-climate-change entrepreneurs might have similar ideas of the relevance of time and place for their actions. However, the purpose of our study was to find the specific perceptions of entrepreneurs towards climate change to see how one might awaken such motivation in entrepreneurs not yet actively engaging with climate change. Our sample of entrepreneurs provides compelling insights into how other entrepreneurs might move towards mitigating climate change.

Finally, our data set is very heterogeneous, a quality that indicates the complexity of the issue. An entrepreneur’s perception of time and place might be largely influenced by their experience and industry maturity, rather than specific ideas of time and place. One’s motivation, for example, to focus on financial gains instead of socio-environmental issues might purely be driven by a need to earn a living. Equally, one could argue that a Traditional Entrepreneur has the liberty to focus on other issues than financial ones due to the stability of an established business. However, one could also argue that Traditional Entrepreneurs have existed for many years without consideration of climate change and thus, to mitigate climate change, a significant effort and motivation is needed to make those changes. It is these variances and influences that we detected in our research, and we highlighted the dominant ones. The highly textured account that our methods produced shows that the attempt to motivate entrepreneurs to address climate change through ‘one size fits all’ approaches overlooks important differences in experience, activity, and industry that determine climate change engagement.

Our research strongly reinforces the view that climate change communication should be more aware of individual audiences (see O’Neill and Hulme 2009) and acknowledge that climate change is as much a discussion about people’s understandings of themselves as it is about modelling climate variability. Too often, climate change is seen purely as a scientific debate, and climate science is misappropriated as an economic and political instrument (Cook et al. 2013). Instead, a progressive space for discussion and dialogue on climate change, in which society’s perceptions

of climate change to specific ideas of time and place can be exchanged, needs to be opened up because, ultimately, political regulation does not depend on governments alone, but on consensual agreement (see Hulme 2009). Climate change policies need to move beyond simply appealing to the potential financial benefits of adaptive behaviours and the catastrophe narratives of science, and focus instead on challenging and integrating entrepreneurs’ very individual understandings of place and time. This paper therefore contributes to debates on how entrepreneurs can be motivated to engage with climate change in meaningful, profitable, and sustainable ways.

The policy implication resulting from this paper is that climate change-related policies must move away from the traditional assumption that businesses are rationally minded entities. To create climate change-related policies that are more socially embedded, policy-makers should acknowledge that ‘the debate over climate change, like almost all environmental issues, is a debate over culture, worldviews, and ideology’ (Hoffman 2012, p. 32). After all, the entrepreneurs show us that by acting on their understanding of themselves in relation to climate change, and by reflecting on the world they want to live in, society can to be more reflexive about the things it values, take actions to protect those.

Acknowledgements This study was funded by the European Social Fund (09099NCO5). We acknowledge with thanks the participation of the entrepreneurs and the support of Business Leaders for Low Carbon, Cornwall Council, and Cornwall Sustainable Tourism Project. The authors wish to thank Professor John Amis, Professor Kenneth Amaeshi and the anonymous reviewers who provided useful feedback on earlier versions of the article.

Compliance with Ethical Standards

Conflict of interest All authors declare that there are no conflicts of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Open Access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

Appendix

Indicative Interview Topics for Entrepreneurs

- Role of climate change in entrepreneur's business
- Motivations for engagement with climate change
- Role of place for the business and of both for climate change
- Role of time for the business and of both for climate change
- Self, personal values and climate change

References

- Aldrich, H. (2000). *Organizations evolving*. Beverly Hills: Sage.
- Bandura, A. (1997). *Self-efficacy: The exercise of self control*. New York: Freeman.
- Bassi, S., & Duffy, C. (2016). *UK climate change policy: How does it affect competitiveness?* Policy brief May 2016. Leeds: Centre for Climate Change Economics and Policy and Grantham Research Institute on Climate Change and the Environment.
- Battilana, J., & Lee, M. (2014). Advancing research on hybrid organizing. Insights from the study of social enterprises. *Academy of Management Annals*, 8, 397–441.
- Baumann-Pauly, D., Wickert, C., Spence, L., & Scherer, A. (2013). Organizing corporate social responsibility in small and large firms: Size matters. *Journal of Business Ethics*, 115, 693–705.
- Beck, U. (1992). *Risk society: Towards a new modernity*. London: Sage Publications.
- Beck, U. (2006). Living in the world risk society. *Economy and Society*, 35(3), 329–345. doi:10.1080/03085140600844902.
- Besharov, M., & Smith, W. (2014). Multiple logics in organizations: Explaining their varied nature and implications. *Academy of Management Review*, 39, 364–381.
- Blake, J. (1999). Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience. *Local Environment*, 4(3), 257–278. doi:10.1080/13549839908725599.
- Bonanni, C., Lépineux, F., & Roloff, J. (2011). *Social responsibility, entrepreneurship and the common good: International and interdisciplinary perspectives*. London: Springer.
- Boons, F., Montalvo, C., Quist, J., & Wagner, M. (2013). Sustainable innovation, business models and economic performance: An overview. *Journal of Cleaner Production*, 45, 1–8. doi:10.1016/j.jclepro.2012.08.013.
- Burns, P. (2011). *Entrepreneurship and small business. Start-up, growth and maturity*. Hampshire: Palgrave Macmillan.
- Busenitz, L. W., & Barney, J. B. (1997). Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, 12(1), 9–30. doi:10.1016/s0883-9026(96)00003-1.
- Callegaro, M. (2008). Encyclopedia of Survey Research Methods. SAGE Research Methods. Social Desirability. <https://srmo.sagepub.com/view/encyclopedia-of-survey-research-methods/n537.xml>. Retrieved November 14, 2015.
- Carbon Neutral (2013). SMEs can quickly achieve business benefits from carbon management. <http://www.carbonneutral.com/knowledge-centre/company-blog/smes-can-quickly-achieve-business-benefits-from-carbon-management/>. Retrieved April 13, 2016.
- Carbon Trust. (2007). *Advanced metering for SMEs. Carbon and cost savings*. London: The Carbon Trust.
- Carbon Trust. (2009). *The Carbon Trust support for SMEs. Your partner in the low-carbon world*. London: The Carbon Trust.
- Carbon Trust. (2014). *A 'must' win. Capitalising on new global low carbon markets to boost UK export growth*. London: The Carbon Trust and Shell International Limited.
- Carland, J. W., Hoy, F., Boulton, W. R., & Carland, J. A. C. (1984). Differentiating entrepreneurs from small business owners: A conceptualization. *The Academy of Management Review*, 9(2), 354–359.
- Carter, N. (2007). *The politics of the environment: Ideas, activism, policy*. Cambridge: Cambridge University Press.
- Christensen, C. M., Baumann, H., Ruggles, R., & Sadtler, T. M. (2006). Disruptive innovation for social change. *Harvard Business Review*, 84(12), 94–101.
- Cohen, B. (2006). Sustainable valley entrepreneurial ecosystems. *Business Strategy and the Environment*, 15(1), 1–14.
- Collins, C., Locke, E., & Hanges, P. (2000). *The relationship of need for achievement to entrepreneurial behavior: A meta-analysis*. Working paper. Maryland: University of Maryland.
- Cook, J., Nuccitelli, D., Green, S. A., Richardson, M., Winkler, B., Painting, R., et al. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters*, 8(2), 1–7. doi:10.1088/1748-9326/8/2/024024.
- Cornwall Council. (2011). *Connecting Cornwall: 2030. Moving towards a green peninsula. Evidence Base*. Truro: Cornwall Council.
- Densten, I. L., & Sarros, J. C. (2012). The impact of organizational culture and social desirability on Australian CEO leadership. *Leadership & Organization Development Journal*, 33(4), 342–368. doi:10.1108/01437731211229296.
- Denzin, N. K. (2009). *The research act: A theoretical introduction to sociological methods*. New Jersey: Rutgers.
- Dolwick, J. S. (2009). The social and beyond, introducing actor-network theory. *Journal of Maritime Archaeology*, 4(1), 21–49. doi:10.1007/s11457-009-9044-3.
- Drucker, P. F. (1988). The discipline of innovation. *Harvard Business Review*, 80(8), 95–103.
- Eco Monitor (2011). UK SMEs can save £400 million a year through carbon footprint reduction and certification. <http://www.ecomonitor.com/uk-smes-can-save-400-million-a-year-through-carbon-footprint-reduction-and-certification/>. Retrieved April, 15, 2016.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550.
- England, K. V. L. (1994). Getting personal: Reflexivity, positionality, and feminist research. *The Professional Geographer*, 46(1), 80–90. doi:10.1111/j.0033-0124.1994.00080.x.
- Enkvist, P. A., & Vanthourmout, H. (2008). How companies think about climate change. *McKinsey Quarterly*, 2, 46–51.
- EU Commission (2003). Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, Small and Medium-Sized Enterprises. Official Journal L 124 of 20.05.2003.
- Fagenson, E. A. (1993). Personal value systems of men and women entrepreneurs versus managers. *Journal of Business Venturing*, 8(5), 409–430.
- Fisher, R. J., & Tellis, G. J. (1998). Removing social desirability bias with indirect questioning: Is the cure worse than the disease? In J. W. Alba & J. W. Hutchinson (Eds.), *NA—Advances in Consumer Research* (Vol. 25, pp. 563–567). San Diego: Association for Consumer Research.
- Fleet, D., Palladino, M., & Da Costa, S. (2015). *Assessing the potential cost savings and resource savings of investments in 4 SME sectors*. Brussels: Directorate-General for Environment, European Commission.
- Geoghegan, H., & Brace, C. (2011). On climate change and cultural geography: Farming on the Lizard Peninsula, Cornwall, UK.

- Climatic Change*, 113(1), 55–66. doi:[10.1007/s10584-012-0417-5](https://doi.org/10.1007/s10584-012-0417-5).
- Giddens, A. (1999). Risk and responsibility. *The Modern Law Review*, 62(1), 1–10. doi:[10.1111/1468-2230.00188](https://doi.org/10.1111/1468-2230.00188).
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research. *Organizational Research Methods*, 16(1), 15–31.
- Goodall, A. H. (2008). Why have the leading journals in management and other social sciences failed to respond to climate change? *Journal of Management Inquiry*, 17(4), 408–420. doi:[10.1177/1056492607311930](https://doi.org/10.1177/1056492607311930).
- Gregory, D., Johnston, R., Pratt, G., Watts, M., & Whatmore, S. (2009). *The dictionary of human geography*. UK: Blackwell.
- Hahn, T., Pinkse, J., & Preuss, L. (2014). Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics*, 2, 297–316.
- Hemingway, C. A. (2005). Personal values as a catalyst for corporate social entrepreneurship. *Journal of Business Ethics*, 60, 233–249.
- Hildreth, P. M., & Kimble, C. (2004). *Knowledge networks: Innovation through communities of practice*. London: Idea Group.
- Hisrich, R. D. (1985). The woman entrepreneur in the United States and Puerto Rico: A comparative study. *Leadership and Organizational Development Journal*, 5, 3–8.
- Hoffman, A. (2004). *Climate change strategy, the business logic behind voluntary greenhouse gas reductions*. Working Paper No. 905. Michigan: University of Michigan.
- Hoffman, A. (2012). Climate science as culture war. *Stanford Social Innovation Review*, 10(4), 30–37.
- Hoffman, A., & Jennings, P. (2012). The social and psychological foundations of climate change. *Solutions*, 4(3), 58–65.
- Hollway, W., & Jefferson, T. (1997). The risk society in an age of anxiety: Situating fear of crime. *The British Journal of Sociology*, 48(2), 255–266. doi:[10.2307/591751](https://doi.org/10.2307/591751).
- Howells, J. (2006). Intermediation and the role of intermediaries in innovation. *Research Policy*, 35(5), 715–728. doi:[10.1016/j.respol.2006.03.005](https://doi.org/10.1016/j.respol.2006.03.005).
- Hudson, S., & Roloff, J. (2010). In search of sustainability? SMEs in Brittany, France. In L. J. Spence & M. Painter-Morland (Eds.), *Ethics in small and medium sized enterprises. A global commentary* (pp. 193–214). London: Springer.
- Hulme, M. (2009). *Why we disagree about climate change. Understanding controversy, inaction and opportunity*. Cambridge: Cambridge University Press.
- Hulme, M., & Blackman, S. (2009). Top British boffin: Time to ditch the climate consensus. In M. Hulme (Ed.), *Exploring Climate Change through Science and in Society. An anthology of Mike Hulme's essays, interviews and speeches* (pp. 219–226). New York: Routledge.
- IPCC (2013). *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
- Kaesehage, K., Leyshon, M., & Caseldine, C. (2014). Communicating climate change—Learning from business: Challenging values, changing economic thinking, innovating the low carbon economy. *Fennia*, 192(2), 79–97.
- Kaufmann, A., & Tödtling, F. (2001). Science-industry interaction in the process of innovation: The importance of boundary-crossing between systems. *Research Policy*, 30(5), 791–804. doi:[10.1016/S0048-73330000118-9](https://doi.org/10.1016/S0048-73330000118-9).
- Kirzner, I. M. (1999). Creativity and/or alertness: A reconsideration of the Schumpeterian Entrepreneur. *Review of Austrian Economics*, 11, 5–27.
- Klein, G., Moon, B., & Hoffman, R. R. (2006). Making sense of Sensemaking 2: A macrocognitive model. *IEEE Intelligent Systems*, 21(5), 88–92.
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239–260. doi:[10.1080/13504620220145401](https://doi.org/10.1080/13504620220145401).
- Lapan, S. D., Quartaroli, M. L. T., & Riemer, F. J. (2012). *Qualitative research: An introduction to methods and designs*. San Francisco: Wiley.
- Law, J., & Hassard, J. (2007). *Actor network theory and after*. Oxford: Blackwell.
- Leyshon, M. (2008). The betweenness of being a rural youth: Inclusive and exclusive lifestyles. *Social and Cultural Geography*, 9(1), 1–26. doi:[10.1080/14649360701789535](https://doi.org/10.1080/14649360701789535).
- Loorbach, D., & Wijsman, K. (2013). Business transition management: Exploring a new role for business in sustainability transitions. *Journal of Cleaner Production*, 45, 20–28.
- Lorenzoni, I., Nicholson-Cole, S., & Whitmarsh, L. (2007). Barriers perceived to engaging with climate change among the UK public and their policy implications. *Global Environmental Change*, 17(3–4), 445–459. doi:[10.1016/j.gloenvcha.2007.01.004](https://doi.org/10.1016/j.gloenvcha.2007.01.004).
- Lorenzoni, I., & Pidgeon, N. F. (2006). Public views on climate change: European and USA perspectives. *Climatic Change*, 77(1–2), 73–95. doi:[10.1007/s10584-006-9072-z](https://doi.org/10.1007/s10584-006-9072-z).
- Massey, D. (1991). A global sense of place. *Marxism Today*, June 1991.
- Moser, S. C. (2010). Communicating climate change: History, challenges, process and future directions. *Wiley Interdisciplinary Reviews: Climate Change*, 1(1), 31–53. doi:[10.1002/wcc.11](https://doi.org/10.1002/wcc.11).
- Munoz, P., & Dimov, D. (2015). The call of the whole in understanding the development of sustainable ventures. *Journal of Business Venturing*, 30, 632–654.
- Murmann, J. P., & Sardana, D. (2012). Successful entrepreneurs minimize risk. *Australian Journal of Management*, 38(10), 191–215. doi:[10.1177/0312896212444114](https://doi.org/10.1177/0312896212444114).
- Nerlich, B., Koteyko, N., & Brown, B. (2010). Theory and language of climate change communication. *WIREs Climate Change*, 1(1), 97–110. doi:[10.1002/wcc.2](https://doi.org/10.1002/wcc.2).
- Norgaard, K. M. (2003). *Denial, privilege and global environmental justice, the case of climate change*. Oslo: Centre for Development and the Environment.
- O'Neill, S. J., & Hulme, M. (2009). An iconic approach for representing climate change. *Global Environmental Change*, 19(4), 402–410. doi:[10.1016/j.gloenvcha.2009.07.004](https://doi.org/10.1016/j.gloenvcha.2009.07.004).
- Oliverio, M. E. (1989). The implementation of a code of ethics: The early efforts of one entrepreneur. *Journal of Business Ethics*, 8, 367–374.
- Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change*, 20, 550–557.
- Ostrom, E. (2012). Nested externalities and polycentric institutions: Must we wait for global solutions to climate change before taking actions at other scales? *Economic Theory*, 49, 353–369.
- Pastakia, A. (1998). Grassroots ecopreneurs: Change agents for a sustainable society. *Journal of Organizational Change Management*, 11(2), 157–173.
- Patenaude, G. (2011). Climate change diffusion: While the world tips, business schools lag. *Global Environmental Change*, 21(1), 259–271. doi:[10.1016/j.gloenvcha.2010.07.010](https://doi.org/10.1016/j.gloenvcha.2010.07.010).
- Porter, M. E. (2004). *Competitive advantage, creating and sustaining superior performance*. New York: The Free Press.
- Porter, M. E., & Kramer, M. R. (2006). Strategy and society. The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84(12), 78–92.

- Schaltegger, S. (2002). A framework for ecopreneurship. Leading pioneers and environmental managers to ecopreneurship. *Greener Management International*, 38, 45–58.
- Schuldt, J. P., Konrath, S., & Schwarz, N. (2011). Global warming or climate change? Whether the planet is warming depends on question wording. *Public Opinion Quarterly*, 75(1), 115–124. doi:10.1093/poq/nfq073.
- Schumpeter, J. (1934). *The theory of economic development*. Cambridge, MA: Harvard University Press.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 1–65). Orlando: Academic Press.
- Seyfang, G., & Longhurst, N. (2013). Desperately seeking niches: Grassroots innovations and niche development in the community currency field. *Global Environmental Change*, 23(5), 881–891. doi:10.1016/j.gloenvcha.2013.02.007.
- Shane, S., Locke, E. A., & Collins, C. J. (2003). Entrepreneurial motivation. *Human Resource Management Review*, 13, 257–279.
- Slocum, R. (2004). Polar bears and energy-efficient light bulbs: Strategies to bring climate change home. *Environment and Planning D Society and Space*, 22, 413–438.
- Thomas, D. F., & Cross, J. E. (2007). Organizations as place builders. *Journal of Behavioral and Applied Management*, 9(1), 33–61.
- Tracey, P., & Phillips, N. (2007). The distinctive challenge of educating social entrepreneurs: A post- script and rejoinder to the special issue on entrepreneurship education. *Academy of Management Learning and Education*, 6, 264–271.
- UKCIP (2009). UK Climate Projections. <http://ukclimateprojections-uk.metoffice.gov.uk/ui/admin/login.php>. Retrieved August, 24.2016.
- Ürü, F. O., Çalışkan, S. C., Atana, O., & Aksua, M. (2011). Much entrepreneurial characteristics matter in strategic decision-making? *Social and Behavioral Sciences*, 24, 538–562. doi:10.1016/j.sbspro.2011.09.112.
- Vives, A. (2006). Social and environmental responsibility in small and medium enterprises in Latin America. *The Journal of Corporate Citizenship*, 2006(21), 39–50. doi:10.9774/gleaf.4700.2006.sp.00006.
- Whyte, W. F. (1955). *Street corner society: The social structure of an Italian slum*. Chicago: University of Chicago Press.
- Wickert, C., Scherer, A. G., & Spence, L. J. (2016). Walking and talking corporate social responsibility: Implications of firm size and organizational cost. *Journal of Management Studies*, 53(7), 1169–1196.
- Williams, S., & Schaefer, A. (2013). Small and medium sized enterprises and sustainability: Managers' values and engagement with environmental and climate change issues. *Business Strategy and the Environment*, 22(3), 173–186. doi:10.1002/bse.1740.
- Wolf, J., & Moser, S. C. (2011). Individual understandings, perceptions, and engagement with climate change: insights from in-depth studies across the world. *Wiley Interdisciplinary Reviews Climate Change*, 2(4), 547–569. doi:10.1002/wcc.120.
- York, J. G., O'Neil, I., & Sarasvathy, S. D. (2016). Exploring environmental entrepreneurship: Identity coupling, venture goals, and stakeholder incentives. *Journal of Management Studies*, 53(5), 695–737.