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Sustainability-Driven Entrepreneurship:
A Literature Review

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Abstract

This paper explores the emergence, progress, and possibilities of sustainability-driven entrepreneurship as a new field of knowledge. Sustainability entrepreneurship research has emerged from the larger body of business and environment and corporate responsibility research in response to questions of affecting change in business social and environmental practices. Sustainability entrepreneurship research links micro-level entrepreneurship research with macro-level sustainable development research, but to do so the meso-level field of organisation research also needs to be included. Therefore, this review first traces the origins and development of these three foundational fields. For each field, essential themes and characteristics of the objects of study are identified, recent critiques are discussed, and opportunities for expanding the concepts are explored. Following this, recent progress on studying the overlap of these fields is reviewed. In addition to sustainability entrepreneurship we see research taking place at the overlap between organisation studies and sustainable development, giving us sustainability enterprise as another interdisciplinary field of study. The overlap between entrepreneurship and organisations yields research on organisation design. Finally, the paper concludes by looking at the point where all of these fields overlap, and suggesting the idea of 'sustainability enterprise design' as a unifying concept that could both draw on, and contribute to, knowledge in the other fields.

Key words: sustainability entrepreneurship, sustainability enterprise, sustainable business, sustainable development, organization design.

About the Author

Bradley Parrish's expertise in entrepreneurship and sustainable development focuses on the organisation of human activities at multiple scales as individuals pursue their aspirations within dynamic socio-cultural, politico-economic, and ecological structures and processes. He pays particular attention to innovative approaches to organising that challenge widely accepted assumptions about the way things should be done. His research has involved fieldwork on four continents, including North America, Europe, East Africa, and Asia-Pacific regions. He has worked on the policy and implementation of environment and development programmes in Washington, DC, New York State, and North and East Africa. Over the past four years has co-designed and delivered training on sustainability entrepreneurship, organisational change management for sustainability, and principles of sustainable development, and has been invited to deliver workshops to educators, practitioners, and policy makers on entrepreneurial approaches to sustainable development. Recently, he helped to co-found the Onesa Institute International, which works to translate these advances in research and theory into practical applications.

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1 Introduction: Fields of Knowledge

This paper explores the emergence, progress, and possibilities of sustainability-driven entrepreneurship as a new field of knowledge. Sustainability entrepreneurship research has emerged from the larger body of business and environment and corporate responsibility research in response to questions of affecting change in business social and environmental practices. There is growing recognition that change in practice is co-dependent on change in the theoretical constructs used to understand such practice. Gladwin and colleagues posit to fellow management researchers that "by disassociating human organisation from the biosphere and the full human community, it is possible that our theories have tacitly encouraged organizations to behave in ways that ultimately destroy their natural and social life-support systems" (1995: 896). They see the "primary transformational challenge for management theorists" as reintegration by reconceiving "their domain as one of organisations-in-full community, both social and ecological" (1995: 896).
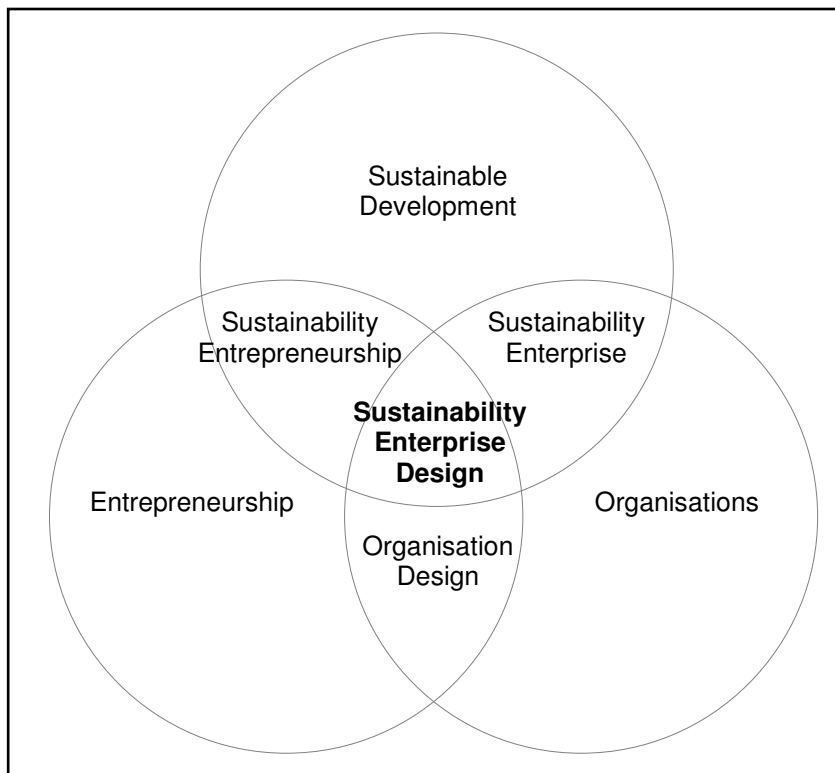
Figure 1:   Fields of Knowledge

Sustainability entrepreneurship endeavours to these ends by linking our knowledge about entrepreneurship to our knowledge about sustainable development. The emerging field is therefore interdisciplinary by nature, and draws on a number of established fields that also tend to be interdisciplinary (see Figure 1). The focus of entrepreneurship research is on the activities of individual entrepreneurs or small entrepreneurial teams, and the impacts they have on the wider socioeconomic system. The focus of sustainable development research is on the development and

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sustainability of whole societies and ecosystems. Thus, sustainability entrepreneurship research links micro-level entrepreneurship research with macro-level sustainable development research, but to do so the meso-level field of organisation research also needs to be included. Organisations operate between entrepreneurship and sustainable development because on one hand they function as the essential tool of the entrepreneur, and on the other hand they constitute an important part of the institutional landscape of society. Therefore, this review first surveys these three foundational fields to see how they might help us to better understand sustainability entrepreneurship.

Following this, recent progress on studying the overlap of these fields is reviewed. In addition to sustainability entrepreneurship we see research taking place at the overlap between organisation studies and sustainable development, giving us sustainability enterprise as another interdisciplinary field of study. The overlap between entrepreneurship and organisations yields research on organisation design. Finally, the paper concludes by looking at the point where all of these fields overlap, and suggesting the idea of 'sustainability enterprise design' as a unifying concept that could both draw on, and contribute to, knowledge in the other fields.

2 Emergence: Foundational Fields

2.1 Entrepreneurship

Interest in entrepreneurship as a phenomenon rests in the perceived contributions entrepreneurs make to public policy goals such as economic growth, increased productivity, job creation, technological innovation, deregulation and privatisation, and structural adjustments or realignments (Gibb 1996; Shane 1996). Although the effects of entrepreneurship are rarely contested, a common observation about the field of entrepreneurship research is that it lacks consensus about its object of study (Cornelius et al. 2006; Schildt et al. 2006). Bull and Willard lamented that "the term has been used for more than two centuries, but we continue to extend, reinterpret, and revise the definition" (1993: 185). It is worth exploring the conceptual legacy of entrepreneurship as an object of study, both to identify the essence of the construct and to provide perspective for contemporary understandings and possible future extensions.

Conceptualising and Defining Entrepreneurship

For 250 years, attempts to define and explain entrepreneurship as a phenomenon have been widely based on functional arguments. Differing interpretations of entrepreneurship can be distinguished based on how two related questions are answered: (1) what unique function does the entrepreneur play in the economy, and (2) what unique characteristics of individuals enable them to perform this function?

A medieval French term originally referring simply to 'people who get things done,' the meaning of the term 'entrepreneur' evolved by the early 18th century to refer to business contractors. Richard Cantillon, a practicing businessman of dubious means turned reflective penman of economic treatises, is credited with first imbuing the term with a new and more significant meaning. In 1755 Cantillon used the term to identify those individuals in the economic system who accept risk to make a financial profit

rather than depend on a regular salary for income. These 'entrepreneurs' were thereafter demarcated as distinct from the masses, being postulated as the driving force behind the seemingly perpetual motion of the economy's circular flow of money and goods (Pressman 1999). Thus was the first formal conception of the 'risk-taking entrepreneur' as the catalyst of economic production.

Since Cantillon, attributing the catalytic power of entrepreneurship to the entrepreneur's willingness to take on risk has been a persistent theme among entrepreneurship scholars (see Hébert and Link 1988). Although, as the concept of risk-taking was debated and refined by successive scholars, over time differences of opinion emerged (cf. Brockhaus 1980; Koh 1996; Miner 1997). In the early 20th century, Knight made the distinction between uncertainty that is measurable, which he termed 'risk,' and uncertainty that is *not* measurable, which he termed 'true uncertainty' (1921: 20). Risk, he contended, could simply be insured. It is therefore in the area of meeting the challenge of uncertainty that a space for the entrepreneur is made in the economic system. To Knight, the entrepreneur is a specialist in uncertainty bearing – someone uniquely capable and willing to take responsibility for controlling productive resources in an uncertain environment (1921: 244-55).

Subsequent interpretations of the concept can be viewed with reference to a general equilibrium model of the economy (Chiles et al. 2007). On one side are the ideas of Schumpeter, considered by many to be the grandfather of contemporary entrepreneurship theory, who positioned entrepreneurs as the causal agents responsible for creating disequilibrium in the economy (Schumpeter 1934; 1943). Schumpeter vehemently opposed the idea of the entrepreneur as a risk taker. Instead, he conceptualised entrepreneurship as the act of carrying out new combinations of productive resources. Schumpeter insisted that "'everyone is an entrepreneur only when he actually 'carries out new combinations'" (1934: 78). Thus, he viewed the *act* of innovation as the defining characteristic of an entrepreneur, although he takes pains to make clear that an entrepreneur is not the same as a technological inventor. Schumpeter saw his definition as a permutation consistent with the classic definition of Jean-Baptiste Say, that "the entrepreneur's function is to combine the productive factors, to bring them together" (Schumpeter 1934: 76). Schumpeter's ideas spawned one of the most influential and lasting concepts in the study of entrepreneurship – that of the 'innovative entrepreneur' (e.g. Baumol 1993; Drucker 1985).

In direct contrast, Kirzner positioned entrepreneurs as the causal agents that move an economy back toward equilibrium. He argued that the defining act is that of 'opportunity discovery', and the unique characteristic of entrepreneurs is their attentiveness to opportunity. In this way, valuable opportunities arising from economic disequilibrium are recognised, and through the pursuit of these opportunities for profit, economic equilibrium is gradually restored (Kirzner 1973; 1997a; 1997b). Based on Kirzner's ideas, the concept of entrepreneurship as essentially the "processes of discovery, evaluation, and exploitation of opportunities" (Shane and Venkataraman 2000: 218) sits among risk-bearing and innovation as one of the most widely accepted definitions of the field.

While these theorists postulated both the unique function and unique characteristics of entrepreneurs, researchers have since tended to focus on one or the other of

these. Those who focused on the distinguishing characteristics of entrepreneurs often took what came to be known as the 'traits' approach, while those who focused on the distinguishing entrepreneurial function took what came to be known as the 'behavioural' approach. The traits approach drew largely on the field of psychology to try to identify a range of attitudes and personality traits that could distinguish entrepreneurs from non-entrepreneurs, or successful entrepreneurs from unsuccessful entrepreneurs (e.g. Hornaday 1982; Hull et al. 1980; Timmons et al. 1985). This was closely tied to studies drawing on the strategic management field that attempted to use entrepreneurial traits as a predictor of new venture success (e.g. Sandberg and Hofer 1987; Vesper 1980). Although the traits approach proved unsuccessful and was largely discontinued after the 1980s (Gartner 1989), the strategic management quest to link entrepreneurship to new venture performance has continued to the present. This often involves looking for correlations between entrepreneurial variables, such as resources controlled or industry structure during market entry, with new venture performance variables, such as firm survival or growth (e.g. Bamford et al. 1999; Gundry and Welsch 2001; Kunkel 1991; Littunen and Tohomo 2003).

In addition to risk-bearing, innovation, and opportunity discovery, those who took the behavioural approach argued for a number of defining acts to distinguish the phenomenon of entrepreneurship. Foremost among these was the act of new organisation creation (Aldrich 2005; Gartner 1985; 1993; Katz and Gartner 1988; Low and MacMillan 1988). To reconcile these disparate views, Bruyat and Julien (2000) proposed defining and bounding entrepreneurship with the concept of 'new value creation'. They argued that in so doing the most salient features of the entrepreneurship phenomenon are included, while lines of inquiry that are better suited to other fields, such as strategic management, are usefully excluded. With this formulation, new organisation creation, opportunity identification, and innovation are simply viewed as different ways of creating new value. But, as Schumpeter pointed out, entrepreneurs contribute both "will and action" to the process (1934: 134). In this respect, Bird's (1988; 1989; 1992) work on entrepreneurial intention, which focused on the way entrepreneurs' values and motivations guide their entrepreneurial actions, adds an otherwise-neglected dimension (Dimov 2007b; Krueger Jr et al. 2000). Taken together, entrepreneurship could be regarded as intentional acts of new value creation.

From a process perspective this definition specifies the starting conditions and functional endpoints of entrepreneurship, but does not speak to the "black box" of processes that connect the two (see Van de Ven and Huber 1990). Process approaches are increasingly viewed as necessary to explain entrepreneurship because they are more capable of accommodating the dynamic realities of entrepreneurial action (Low and MacMillan 1988; Steyaert 1998; Ucbasaran et al. 2001; Van de Ven and Engleman 2004). Mitchell and colleagues (2002: 96), following Stevenson and Jarillo (1990), suggest this process "is about individuals who create opportunities where others do not, and who attempt to exploit those opportunities through various modes of organizing."[1] A synthesis of these ideas

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[1] They also suggest these activities are done "without regard to resources currently controlled" (Mitchell et al. 2002: 96). Following Stevenson and colleagues (1985) reference to this feature is common in the literature. However, work by Sarasvathy (2001) and others suggests the resources to which an entrepreneur has access may be a vital determinant of

suggests a process view of entrepreneurship can be defined as *intentional acts of new value creation in which opportunities are created and realised through various modes of organising* (see Figure 2).
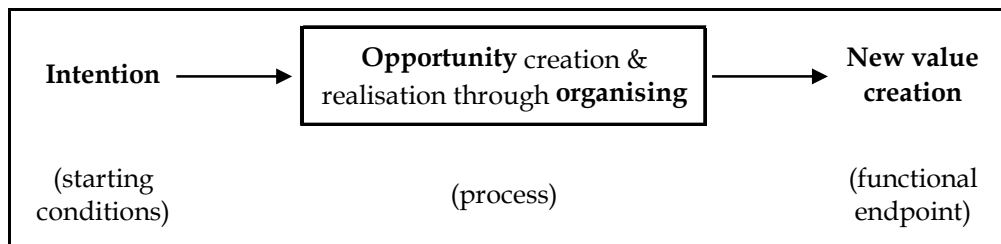
Figure 2   A Process Interpretation of Entrepreneurship

Toward a Contemporary Interpretation of Entrepreneurship

More recent perspectives on entrepreneurship have reinterpreted some of the long-running themes of the field, such as opportunity identification, unique entrepreneurial characteristics, risk or uncertainty-bearing, and the link between entrepreneurs and enterprise success. Historically, the entrepreneur was positioned as a lone individual who scanned the external environment to discover new opportunities (Dimov 2007a; Van de Ven 1993). In this interpretation the opportunity is thought to exist apart from the entrepreneur. However, a parallel interpretation that has been gaining currency holds that opportunities are a joint product of the changing socioeconomic environment and idiosyncrasies of the entrepreneur (Dutta and Crossan 2005; McMullen and Shepherd 2006). In this view, entrepreneurs do not *discover* opportunities but *create* them through an interactive process of action and interaction (Bruyat and Julien 2000; Dimov 2007b; Gartner et al. 2003; Sarason et al. 2006). This perspective suggests that not only is the process of organising to realise opportunities a social process (Choi and Shepherd 2004; Jack and Anderson 2002; Kodithuwakku and Roas 2002), but so too is the process of creating the opportunities. Thus, Van de Ven argues "the process of entrepreneurship is a collective achievement" (1993: 226).

As a corollary to this view, attention is directed to the particular way entrepreneurs think and act to enable the creation and realisation of new opportunities. This "thinking-doing connection" (Mitchell et al. 2007) has led to the study of successful entrepreneurship as a form of expertise (Mitchell 1995) or 'maturity' (Thorpe et al. 2006). Successful entrepreneurship as a form of expertise brings psychology back into entrepreneurship research by investigating the cognitive processes, or knowledge structures, that entrepreneurs use while interacting with other people and the wider environment (Mitchell et al. 1997; Mitchell et al. 2002). In a separate but related interpretation, successful entrepreneurship as a form of 'maturity' avoids the information processing view of individuals, "preferring to analyse cognition as the largely intuitive and habitual recognition of patterns and pattern fit" (Thorpe et al. 2006). In both interpretations what becomes important is how socially embedded

the types of opportunities created. For this reason I have left the role of resources controlled by the entrepreneur out of the above synthesis.

entrepreneurs approach their interactions with other people and the wider environment to make ambiguous and uncertain situations meaningful for the creation and realisation of new value creating opportunities.

As the longest running theme in the field, the seemingly exceptional ability of entrepreneurs to confront risk or uncertainty underpins most interpretation of entrepreneurship. This ability is usually explained by attributing to the entrepreneur either a greater propensity to bear uncertainty, or unique access to knowledge that renders the situation less uncertain for the entrepreneur relative to others (McMullen and Shepherd 2006). In either case uncertainty is framed as something problematic, something to be avoided or at least reduced as far as possible. However, using the concept of entrepreneurship as a form of expertise, Sarasvathy (2001) argued that entrepreneurs thrive in uncertain environments because uncertainty itself is used to create opportunities. She suggested the entrepreneurial approach to realising and controlling the creation of opportunities involves three distinguishing principles: (1) "affordable loss rather than expected return," (2) "partners rather than competitive analyses," and (3) "leveraging contingencies rather than avoiding them... This principle makes uncertainty a friend and an asset, eliminating the need to overcome it" (Sarasvathy 2003: 210).

Not only has the necessary ingredients for successful entrepreneurship undergone significant reinterpretations, but the notion of what constitutes *success* in entrepreneurship has also been reconsidered. The traditional focus on financial return, venture growth, and even venture survival have all become suspect indicators of entrepreneurial success as the presence of several different types of entrepreneurs, including serial (Wright et al. 1997), portfolio (Carter and Ram 2003), and lifestyle entrepreneurs (Marcketti et al. 2006) have challenged conventional assumptions about the goals a new venture are intended to serve. Even when firms do prematurely cease trading or under perform according to an entrepreneur's aspirations, Sarasvathy argues that success versus failure is not a simple dichotomy. In a process resonant with Weick's (1984) notion of "small wins", Sarasvathy suggests "entrepreneurial experience is composed of a temporal stream of varying degrees of successes and failures. Entrepreneurship therefore becomes the art of learning to outlive failures and accumulate successes over time" (Sarasvathy 2002).

Recent Critiques and Opportunities for Expansion

The close relationship between entrepreneurship studies and the fields of economics and strategic management are credited with imbuing entrepreneurship studies with assumptions that no longer appear appropriate, or that are appropriate for only a small subsection of cases (McMullen and Shepherd 2006). Mitchell and colleagues explain that "the highly economic orientation of strategy research led many studies to equate entrepreneurial motive with the desire for profit", and suggest more needs to be known about how "individuals with personal motivations other than profit maximization perceive opportunity, apply decision logics, etc." (2007: 15). With the recognition that entrepreneurship is a fully social process, from the formation of entrepreneurial intentions to the creation of opportunities, their realisation through various modes of organising, and the new value that is created, there is growing appreciation of just how much entrepreneurship is a product of its times, as

entrepreneurs continue to both "reproduce and challenge the existing social order" (Aldrich 2005: 451).

From this vantage, it should be no surprise to Bull and Willard that "the term has been used for more than two centuries, but we continue to extend, reinterpret, and revise the definition" (1993: 185). It is in this process of periodic reinterpretation that opportunity lies for entrepreneurship to contribute to society in new and significant ways. Entrepreneurship may have gained prominence based on its promise to fulfil public policy goals such as economic growth and increased productivity, but with rising social and ecological challenges to sustained human wellbeing, the stage is set for entrepreneurship to contribute to new and more pressing concerns. With each interpretation of entrepreneurship, from the time of Cantillon to the present, two common themes have endured: the notion of the entrepreneur as someone who 'gets things done,' and the notion of entrepreneurship as a process with disproportionate power to drive and alter socioeconomic institutions. As Sarasvathy (2004b) argues, entrepreneurship provides a means "to create the society we want to live in from the society we have to live in".

2.2 Organisations

The widespread interest in organisations as a phenomenon across the social sciences is founded on the prominent role organisations play in shaping social processes. The role of formal organisations has been particularly prominent in modern, western societies, though with globalisation this is increasingly becoming a global phenomenon. Aldrich and Ruef (2006) suggested organisations are the basic building blocks of modern society, and Reed (1992) argued that modern social systems depend on formal organisations for their very existence. Simon noted that organisations rather than markets are the dominant social artefacts of modern society's economic system (Simon 1991), to the extent that "organization-&-market economy" would be a more appropriate term (1996: 32). Looking beyond the economy, Hall (1996) described the pervasiveness of organisations in almost all aspects of society, while Perrow suggested organisations have "absorbed society" in that "activities that once were performed by relatively autonomous and usually small informal groups…and small autonomous organizations…are now performed by large bureaucracies" (Perrow 1991: 726). Despite their ubiquity, or perhaps because of it, consensus about organisations as an object of study has not withstood the test of time. As with our look at entrepreneurship, an exploration of the concept of formal organisation as an object of study will allow us to identify the essential elements of the construct, to account for shifts in contemporary understandings, and to locate opportunities for possible future extensions.

Conceptualising and Defining Organisations

The study of organisations has a long history (Starbuck 2003a), though the mid-19th century works of Barnard (1938) and Selznick (1948) represented a turning point by focusing on the organisation itself as the unit of analysis (Scott 2004). Hall (1996) notes that important definitional statements were made in the 1960s as organisation research began to distinguish itself from the general study of sociology. The essential features of two seminal definitions by Etzioni (1964) and Scott (1964) are consistent with one another. Scott offers the following: "organizations are defined as

collectives…that have been established for the pursuit of relatively specific objectives on a more or less continuous basis" (1964: 488). This description includes a number of features reflected in the broader literature.

Foremost, organisations are composed of humans and human relationships. This means that organisations are social: they "consist of the patterned activities of a number of individuals" (Katz and Kahn 1978: 20). But more than activity patterns, the nexus of human relationships that take the form of a formal organisation were held to constitute social systems in which the complex whole is qualitatively different than the aggregate of its constituent elements (Barnard 1938; Etzioni 1960; Katz and Kahn 1978; Thompson 1967; Weick 1979). The emergence of organisation research as a distinct field coincided with the emergence of complex systems theory in the social sciences. As a result, this feature came to dominate the attention of organisation theorists for a time, and though a formal systems perspective is now seldom used, the view of organisations as distinct social systems embedded within larger social systems is an implicit assumption of most organisation studies (Clegg 1990). With the view of organisations as social systems distinct from the wider social environment came a focus on boundary maintenance (Scott 1964). The attention to boundaries gradually expanded to the study of the many ways organisational processes and environmental processes cross those boundaries to interact (Aldrich 1979; Davis 2005; Scott 2004).

In addition, Etzioni and Scott's seminal definitions suggested organisations are persistent, meaning they are produced and reproduced over time (Gross and Etzioni 1985). The dynamics of this production, reproduction, and transformation have been a long-running theme in organisation studies, particularly in behavioural theories of the firm (Argote and Greve 2007; Cyert and March 1963), and evolutionary approaches (Aldrich 1979; Aldrich and Ruef 2006; Nelson and Winter 1982). Describing organisations as "collectives" with "patterned activities" suggests human activity within organisations is not random, it is structured. That is, human activity is coordinated (Barnard 1938; Ouchi 1980) toward one or several desired goals (Perrow 1970; Thompson and McEwen 1958). Similarly, Etzioni (1964) described organisations as deliberate entities, meaning their activities are intentional. This feature has been questioned, most notably by Simon (1964), who observed that organisational members can have many diverse and often conflicting goals. Resolution of the apparent contradiction between the coordinated activities of an organisation and the multiple goals of its members was provided by the political perspective of organisations in which conflicting goals were seen to be subordinated by the goals of a 'dominant coalition' (March 1962; Pettigrew 1973; Pfeffer 1981). Being deliberate, goal-directed systems, organisations are widely held to be instrumental entities. This is in sharp contrast to most other social artefacts, such as institutions, and implies that organisations are inherently rational systems, meaning they have means-ends instrumentality (Scott 1992; Weber 1947).

As described, each of these distinguishing organisational features has spawned distinct themes, or lines of inquiry, within the field. Together, they serve to distinguish the object of study from other types of social phenomenon. Thus, the field of organisation research can be described as the study of *goal-directed social systems that are coordinated, boundary-maintaining, and relatively persistent.*

Toward a Contemporary Interpretation of Organisations

With this broad concept of formal organisations, research in the field has been challenged by the great diversity found in organisational forms and features. The primary means by which organisation scholars have attempted to make sense of this diversity has been to construct typologies that break the expansive class 'organisation' down into more homogenous subclasses. Typologies can be constructed based on any set of organisational characteristics, and in fact, thinking about organisations in this way has become a taken-for-granted approach to the subject matter. For example, we are used to thinking of organisations according to classifications such as profit (for-profit or not-for-profit), ownership (public or private), output (products or services), sector (primary, secondary, or tertiary), and so on. Blau and Scott (1963) described a number of such typologies before suggesting their own based on who the primary beneficiary of the organisation is intended to be. In this "*cui bono*" typology four archetypical organisational forms are identified, each with a dominant organising principle (see Figure 3).

This classification is useful because organisations are instrumental constructions – their basic nature depends on the purpose for which they are formed. In each case, their intended purposes result in distinct organising principle, or means of operating, that serves that purpose. The typology is meaningful because difficulties would arise by applying an organising principle to an organisational form that does not match. These categories are archetypical and do not exhaustively represent all organisational forms. But they are basic enough that other organisational forms could be seen as variations of a theme, or as hybrids of these archetypes. For example, a cooperative could be seen as a blend of the mutual-benefit association and the business concern, which explains why maintaining both operational efficiency and internal democracy is of concern. Or, a university could be seen as a blend between a service organisation (teaching) and a commonweal organisation (research) which explains why both procedural fairness and external democracy, or accountability, are expected to be maintained.

Archetypical form	**Mutual-benefit association**	**Business concern**	**Service organisation**	**Commonweal organisation**
Intended beneficiary	Membership	Owners	Client group	Public-at-large
Organising principle	Internal democracy	Operational efficiency	Procedural fairness	External democracy

Figure 3   Typology of Organisations (adapted from Blau and Scott 1963)

This typology could be further aggregated by noting that the left two types, mutual benefit associations and business concerns, are fundamentally concerned with self interest, while the right two types, service organisations and commonweal

organisations, are fundamentally concerned with the interests of others. This dichotomy helps to explain the historical concerns of organisation research. As Walsh and colleagues (2006) pointed out, the early empirical research of the 1960s focused largely on public organisations, such as Blau's (1974) studies of government agencies, academic institutions, and teaching hospitals, or Aiken's studies of social welfare and health agencies (Hage and Aiken 1969), which operated in relatively stable, undynamic, uncompetitive environments. Thus, organisations were viewed as closed systems (Clegg 1990), and the resulting theories focused on internal concerns, such as control, rational administration, and performance as goal achievement (Walsh et al. 2006). By the 1970s and '80s the empirical focus shifted toward business firms while the business environment itself was rapidly changing. This ushered in a period of open systems theorising in which the dependence of organisations on their environment was recognised. The resulting theories from this period, including contingency theory (Galbraith 1973), resource dependence theory (Pfeffer and Salancik 1978), population ecology (Hannan and Freeman 1977), network theory (Burt 1983), and new institutional theory (Meyer and Rowan 1977) all addressed the ways in which organisations are impacted by their external environments. Research interest shifted to concerns of competitiveness and adaptation, and assessments of performance shifted from goal achievement to survival (Walsh et al. 2006).

A consistent theme throughout these shifting trends in organisation research has been the idea that organisations exist as a means of coping with an uncertain world (see Davis 2005). In early interpretations organisation structure and action were seen as a way of sealing off the outside world of high uncertainty so that inside rational planning could enable a technical core to flourish (Thompson 1967). However, other interpretations suggested the situation was less straightforward. Organisational actors were seen as less rational, in the sense of calculated, pre-planned behaviour, although they still had rationales, in the sense of having reasons for their actions (Brunsson 1982). Weick (1979) suggested organisations represent collective efforts to deal with uncertainty by reducing equivocality in interpretations of events. In fact, he suggested organisations should not be thought of as fixed entities with rigid boundaries, but as a continual *process* of organising consisting of "a set of recipes for connecting episodes of social interaction in an orderly manner" (Weick 1979: 45; see also Weick 2001).

With both interpretations organisations are viewed instrumentally as a means of creating order in an uncertain world. Presently, with an appreciation for the permeability of an organisation's boundaries (Pfeffer 1997), researchers are increasingly concerned with the way the internal and external worlds of organisations condition one another. For example, institutional theory is concerned both with how external, taken-for-granted regulative, normative, and cultural-cognitive features penetrate the organisation to condition organisational activities (DiMaggio and Powell 1983; Meyer and Rowan 1977), and also how organisational deviations from these can influence the regulative, normative, and cultural-cognitive features of wider society (Lounsbury and Crumley 2007; Scott 2001). From a complex systems perspective, attention has turned toward how organisations and their environments 'coevolve' through intentional and contingent interactions (Lewin et al. 1999; Lewin and Volberda 1999). And from a more general sociological perspective, researchers are beginning to consider the role of organisations in reproducing prevailing social

conditions, such as social inequality, both inside and outside the organisation (Davis 2005; Perrow 1991; Scott 2004; Walsh et al. 2006). In fact, Morgan argues that "Organizations do not exist in any way that is separate from their environment", and that "the fundamental challenge is to think in terms of gestalt patterns, not just in terms of immediate organization-environment relations" (1997: 298).

Recent Critiques and Opportunities for Expansion

Walsh and colleagues (2006) contend that the field is preoccupied with large, publicly-traded corporations, and that this distorts our understanding of organisations. The shift in affiliation of organisation researchers from social science departments to business schools in the 1980s is believed to have resulted in a legacy of organisation research being 'captured' by prevailing business interests (Dunbar and Starbuck 2006; Walsh et al. 2006). Walsh and colleagues (2003) found that since 1980 there has been a significant increase in the percentage of organisation studies that rely on reasoning drawn from economics (see also Scott 2004). As a result, 'humanitarian' concerns have been subordinated to the economic concerns of financial performance and wealth generation. As evidence, Walsh and colleagues point to the importance placed on finding a link between corporate social performance (CSP) and corporate financial performance (CFP). They suggest that "Unless it is linked to wealth creation, CSP has little standing within organizational theory" (2006: 665). Thus we see studies investigating the links between CSP and reputation (Schneitz and Epstein 2005), competitive advantage (Porter and Kramer 2002), and opportunities for profit (Hart 2005; Prahalad 2006). Recently there have been calls in the field for organisation research to investigate the implications of "market incursions into sacred domains" (Davis and Marquis 2005: 341) and to contribute more to the interests of human welfare and less to the interests of corporate owners and managers (Dunbar and Starbuck 2006; Starbuck 2003b).

These present limitations in the scope of the field of organisation research and the interpretation of organisations as processes of organising that reproduce and transform social realities within and without provide opportunities for expanding and realigning our understanding of organisations and their role in society. Since the early days of organisation research when Stinchcombe (1965) stressed that organisations are an inescapable product of the social environments in which they are formed, this lesson has been learned repeatedly (Davis and Marquis 2005; Walsh et al. 2006). Throughout its history, organisation theory has gone through periodic phases of renewal and reinterpretation as social realities brought new concerns to organisation researchers (Scott 2004). The immediacy and scale of current ecological and social challenges to human wellbeing present an important opportunity for organisation researchers to address the way modes of human organisation instigate, exacerbate, or ameliorate these challenges.

2.3 Sustainable Development

Sustainable development is a contested concept. It is contested because it is complex and it is high stakes. The concept is complex because it addresses some of the most basic concerns of the human condition – our wellbeing and our place in the natural world. It is high stakes because answers to these basic questions will affect who stands to gain and who stands to lose from movements in social values and

priorities (see Pezzoli 1997). While interpretations abound of these two words – *sustainable development* – it is worth exploring some of the intellectual history and contemporary interpretations of the ideas that are bound up in this concept. Following a review of these interpretations I offer a critique of the reduced form currently in widespread use and discuss the need for expanding the concept to embrace the full range of means and ends as originally embodied by the idea of sustainable development.

Conceptualising and Defining Sustainable Development

Threads of the sustainable development concept can be traced back for centuries (Lumley and Armstrong 2004), although the real synthesis occurred in the last quarter of the twentieth century. As the post World War quest for economic regeneration evolved into a more general pursuit for sustained economic growth based on Keynesian *General Theory* (1935) in Western Europe and North America and Rostowian-style growth theories (1960) aimed at newly independent, post-colonial countries, a general optimism of modernity prevailed in the West. At the same time early glimpses of modern environmentalism began to emerge, personified most clearly in Aldo Leopold's shift from the rational Progressivism of his *Game Management* (1933) to the environmental ethics of his *Sand County Almanac* (1949).

By the 1960s and '70s, as the economists focused on a 'circular flow' of money and goods, ecologists began to focus on the biophysical inputs and outputs of a linear economic process that begins and ends in ecosystems (Hall et al. 2001; Odum 1997). Implications of limits to the economic system at both ends of the process entered the public discourse as works such as Meadows and colleague's *Limits to Growth* (1972) drew attention to the earth's natural resource limits, and works such as Carson's *Silent Spring* (1962) drew attention to the earth's limited capacity to absorb industrial throughputs. By the early 1970s the public consciousness was faced with a conflict between a modernist panacea provided by the 'Growth' ideology and threats to that panacea provided by ecological critiques (see Pepper 1996). The concept of sustainable development emerged as an attempt to reconcile this conflict in some of Western society's most deep-seated values and beliefs. These ideas first received a global platform at the 1972 United Nations Conference on the Human Environment in Stockholm, Sweden. The declaration that resulted from this conference read in part:

> Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations… The capacity of the earth to produce vital renewable resources must be maintained and wherever practicable restored or improved… Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat which are now gravely imperilled… The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure the benefits from such employment are shared by all mankind…The discharge of toxic substances or of other substances and the release of heat, in such quantities of concentrations as to exceed the capacity of the

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environment to render them harmless, must be halted… (United Nations Conference on the Human Environment 1972).

Thus the central themes of improved and sustained human wellbeing, critical limits and improved environmental quality, and a long term time horizon were laid out. At this time, whether treated by groups with a primarily social mission, such as the World Council of Churches (Abrecht 1979), or a primarily environmental mission, such as the International Union for the Conservation of Nature and Natural Resources (IUCN 1980), there was remarkable consensus on the essence of the sustainable development concept. For example, in 1976 the Working Group on Church and Society stated:

> The twin issues around which the world's future revolves are justice and ecology. 'Justice' points to the necessity of correcting maldistribution of the products of the earth and of bridging the gap between rich and poor countries. 'Ecology' points to humanity's dependence upon the earth. Society must be so organized as to sustain the earth so that a sufficient quality of material and cultural life for humanity may itself be sustained indefinitely. A sustainable society which is unjust can hardly be worth sustaining. A just society that is unsustainable is self-defeating. (quoted by Abrecht 1979: 5)

This concern for the *interdependence* of ecosystem health on sustained human wellbeing and conversely for human organisation on sustained ecosystem health is remarkably similar to the IUCN's *World Conservations Strategy* published in 1980:

> Development is defined here as: the modification of the biosphere and the application of human, financial, living and non-living resources to satisfy human needs and improve quality of human life. For development to be sustainable it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base; and of the long term as well as the short term advantages and disadvantages of alternative actions. (IUCN 1980: 2)

All three documents reflected a concern with how human activities could be organised so as to ensure long term improvements in human wellbeing in the context of the biophysical realities of the earth's ecosystems. In 1987 this concept was politically popularised by the World Commission on Environment and Development (WCED 1987), and has been greatly elaborated upon ever since. In the process, much of the consensus evident in the 1970s has subsequently been lost. Perhaps Kottak (1999) explained the phenomenon of the *concept* of sustainable development best when he suggested it is an ethnoecological model[2] that represents the integration and global exportation of longstanding Western European and North American concerns with environmentalism and developmentalism. As this model is imported by localities the world over, it is necessarily appropriated and reconciled with local ethnoecologies. When viewed in this way, the vast array of interpretations that have followed the WCED publication are an understandable outcome of people's attempts to reconcile the concept with their own worldviews.

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[2] An 'ethnoecological' model is a "cultural model of the environment and its relation to people and society" (Kottak 1999: 26).

Contemporary Interpretations: Three Pillars?

By far the most prolific interpretation is to view sustainable development in terms of three distinct but interrelated spheres: economy, society, and environment. This trichotomy of sustainability has been used extensively and is widely accepted by businesses, governments, NGOs, and academia. For example, Harris and Goodwin (2001) present the three dimensions as a 'tripartite goal' for the social system; Erekson and colleagues (1999) as components of social system resilience; and Elkington (1997) as indicators of business performance in the form of the 'triple bottom line.' Of its manifold uses, Thin observed:

> The 'three-pillars' motif has been one of the sustainable development movement's most influential and oft-repeated catch-phrases. It appears not only in most theoretical and policy texts on sustainable development, but in local community strategies, national indicator frameworks, and (slightly transformed) in literature and plans for corporate social responsibility as the 'triple bottom line' in the world of business. (Thin 2002: 1)

Various rationales are given for distinguishing these three dimensions. Harris and Goodwin justified analysis based on these dimensions on the grounds that "there has been a growing recognition" of these three aspects, and that they "have resonance at a common-sense level" (2001: xxix). Goodland made the case on operational grounds. He opined that "defining each component of sustainability distinctly may help organize the action required to approach global sustainability in real life" (1995: 2). Dyllick and Hockerts offered a more substantial justification grounded in social values, both historical and emergent. They reasoned that the "quest for economic growth and social equity has been a major concern for most of the past 150 years. By adding concern for the carrying capacity of natural systems sustainability thus ties together the current main challenges facing humanity" (2002: 130).
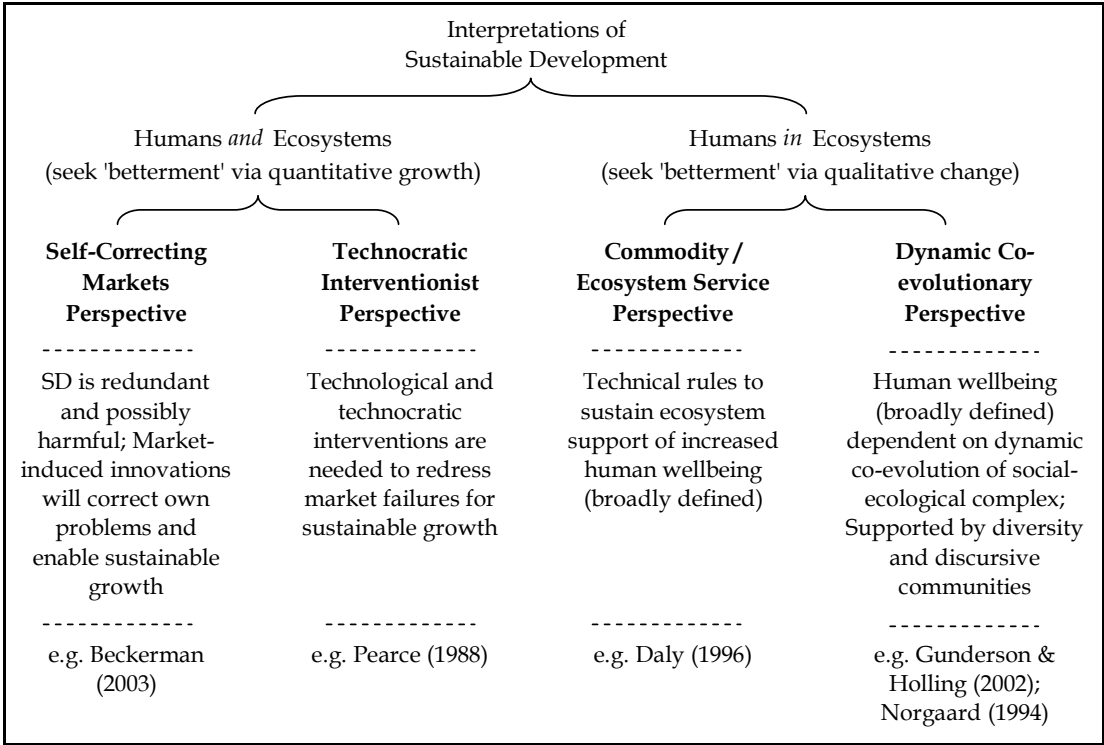
Despite its popularity, the three-pillars model does not stand up well to serious scrutiny. Giddings and colleagues (2002) identified important drawbacks to conceptualising sustainability in terms of three distinct spheres, leading them to also conclude that the economy and society distinction is artificial and unhelpful. They argued that the assumed autonomy of the economy, society, and environment embedded in the three pillars idea "can be used to justify a concentration on a part, rather than the whole" and "risks approaching and tackling issues of sustainable development in a compartmentalized manner…leading to assumptions that trade-offs can be made between the three sectors" (2002: 190, 188). In addition, they viewed the three sector separation as diverting "attention from asking questions that are important to getting to the core of sustainable development such as those about the nature of our society, what the policy priorities are, how decisions are made and in whose interest" (2002: 189-90). They concluded by suggesting the economy and society domains be merged into one domain of 'human activity and wellbeing,' and that this domain be embedded with a 'fuzzy' boundary into the environment domain.

Similarly, Thin argued that the economy does not constitute a distinct domain of sustainability, as "money, for example, is an expression of relationships between people and a tool for mediating relationships between people" (2002: 25). He

colourfully dismissed the three pillar model "as two pins (the environmental and social critiques) bursting a balloon (naïve economism)", where the environmental critique refers to biophysical constraints on economic growth and the importance of a future orientation, and the social critique refers to the necessity of social change and the distinction between instrumental value of economic growth compared to the ends of quality of life and social justice (2002: 24). Consistent with Giddings and colleagues, he proposed an alternative approach with stronger theoretical grounding is to classify development in just two realms: biophysical and social.

Contemporary Interpretations: A Social-Ecological System?

More recently there has been a move amongst researchers toward a model of sustainable development in which human development and its sustainability is viewed as a joint product of the interactions between an ecosystem, consisting of a web of complex relationships between biotic and abiotic elements, and a social system, consisting of humans and the artefacts of human interaction such as technology, organisations, and institutions (Westley et al. 2002). The range of perspectives in the literature on sustainable development can usefully be charted based on how authors view the relationship between these two systems (summarised in Figure 4).

Interpretations of Sustainable Development			
Humans *and* Ecosystems (seek 'betterment' via quantitative growth)		Humans *in* Ecosystems (seek 'betterment' via qualitative change)	
Self-Correcting Markets Perspective	**Technocratic Interventionist Perspective**	**Commodity / Ecosystem Service Perspective**	**Dynamic Co-evolutionary Perspective**
- - - - - - - - - - - - -	- - - - - - - - - - - - -	- - - - - - - - - - - - -	- - - - - - - - - - - - -
SD is redundant and possibly harmful; Market-induced innovations will correct own problems and enable sustainable growth	Technological and technocratic interventions are needed to redress market failures for sustainable growth	Technical rules to sustain ecosystem support of increased human wellbeing (broadly defined)	Human wellbeing (broadly defined) dependent on dynamic co-evolution of social-ecological complex; Supported by diversity and discursive communities
- - - - - - - - - - - - -	- - - - - - - - - - - - -	- - - - - - - - - - - - -	- - - - - - - - - - - - -
e.g. Beckerman (2003)	e.g. Pearce (1988)	e.g. Daly (1996)	e.g. Gunderson & Holling (2002); Norgaard (1994)

Figure 4   Interpretations of Sustainable Development

A first division can be identified between a 'humans-*and*-ecosystems' perspective and a 'humans-*in*-ecosystems perspective' (Davidson-Hunt and Berkes 2003). The former describes those who see a Cartesian divide between the social system and

the ecosystem, while the latter describes those who see the social system as being contained within the ecosystem. Those in the humans-*and*-ecosystems group tend to define sustainable development in terms of sustainable economic growth. Alkire explained the logical progression of equating development with economic growth:

> In the neoclassical approach, income was the metric that conveyed utility, or value; therefore, a respectable economic strategy was to maximize national income per capita, with some correction for externalities and distribution. (Alkire 2002:182-83)[3]

Proponents of this perspective tend to be technocentric in that they see ecological limits as a constraint to be overcome with technological advances. In sociology this perspective has come to be known as 'ecological modernisation' theory (Hajer 1995). Adherents to this perspective can further be split into two groups. One group sees the concept of sustainable development as redundant and possibly even counterproductive, because they expect liberal economic markets to self-correct for any ecological limits encountered by producing profit incentives for the creation of technological substitutes that will allow the economy to continue growing indefinitely (e.g. Beckerman 1994; 2003). The other group still sees sustainable development as consistent with economic growth, but they recognise a need for technological and technocratic interventions to correct for market failures (e.g. Pearce 1988; Pearce et al. 1989).

Those in the humans-*in*-ecosystems group tend to define development in terms of qualitative 'betterment'. For example, Daly argues for recognising the difference between growth and development. He makes the following distinction:

> Growth is a quantitative increase in the physical scale of throughput. Qualitative improvement of the use made of a given scale of throughput, resulting either from improved technical knowledge or from a deeper understanding of purpose, is called 'development'. (Daly 1996: 31)[4]

Lutz argued that "authentic development" means "meeting the basic material human needs of all" (1992: 166). But development has come to be understood as encompassing a much wider spectrum than just economic activity. Cowen and Shenton asserted that understanding development as a 'sub-discipline' of economics is wholly misplaced. They argued "the modern idea of development was created in the crucible of the first half-century of Western European transition to industrial capitalism" as a means of constructing order out of "the social disorders of rapid urban migration, poverty and unemployment" (1996: 12, 5). The focus on material needs is too narrow for some authors, who seek to encompass more holistic human needs. For example, Rahman (1992: 174) argued that "the basic *human* need [is] to fulfil our creative potential in ever newer ways." Alkire (2002) surveyed various lists of basic human needs and concluded that human development must be understood as

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[3] Although she also notes that "most discussions now acknowledge that income per capita is a necessary but insufficient proxy of well-being" (Alkire 2002: 183).

[4] Schumpeter came to a similar conclusion. As part of his treatment of economic development he states: "Nor will the mere growth of the economy, as shown by the growth of populations and wealth, be designated here as a process of development. For it calls forth no qualitatively new phenomena" (1934: 63).

a multidimensional concept. Common to all of these concepts of development, from the most narrow economic to the list with the largest number of human needs included, is the idea of improving the experience of human life on earth.

Adherents to this perspective can also be further divided into two groups (see Holling et al. 1998). One group takes a 'commodity' or ecosystem service perspective (e.g. Daly 1990; 1996). Within this perspective society is viewed as being embedded in, but still distinguishable from, the greater ecosystem. As a result the biophysical environment is seen in terms of stocks and flows that provide critical resources and services to humans and human society (Costanza 2000; De Groot 1987; De Groot et al. 2002). This perspective also tends to take more of a technocratic approach. They propose three technical principles for human development to be ecologically sustainable: the use of ecosystem resources must not exceed their rate of regeneration, waste emissions must not exceed the ecosystem's assimilative capacity, and use of non-renewable resources must not exceed the rate of investment in renewable substitutes (Goodland and Daly 1996).

The other portion of the humans-*in*-ecosystems group tends to take a dynamic co-evolutionary perspective. Rather than viewing social systems as embedded in but distinguishable from ecosystems, this perspective is based on a view of the social-ecological system as a single complex in which causes and effects as neither 'ecological' nor 'social' because they are necessarily a co-product of both (Ingold 1997). For example, Holling and colleagues (2002) suggested sustainable development represents the capacity of dynamic processes and structures within the social-ecological system to maintain both adaptive capacity and potential for novel self-organisation. Norgaard (1994) argued sustainable development is about the co-evolution of human values, organisation, knowledge, and technology with the environment. In this view humanity's 'development' is no longer a linear progression, but instead can take many forms and simply reflects whether human values and capabilities are compatible with ecosystem states. Rather than proposing technical rules for sustainable development, adherents to this perspective emphasise the need for more collaborative, discursive strategies that encourage quicker learning, flexibility, and diversity (Gunderson and Holling 2002; Norgaard 1994).

A Critique and the Need for Expansion

The discussion so far has surveyed a range of interpretations of sustainable development. However, in practice, the mainstream interpretation lies someplace in the middle of this spectrum. As Lélé described, sustainable development is usually understood as "a form of societal change that, in addition to traditional development objectives, has the objective or constraint of ecological sustainability" (1991: 610). Viewed as a constraint, the biophysical dimension takes prominence as the chief obstacle to sustained human progress (cf. Hueting and Reijnders 1998). Pearson (2003) suggested the post-WCED focus on sustainability has favoured the biophysical realm for two reasons: (1) an appreciation that society is constrained within 'critical limits' resulting from states of the environment and technology has resurfaced, and (2) the attempt by governments to rapidly operationalise sustainable development led to the search for quantifiable measurements, which was more easily applied to biophysical characteristics.

With this almost exclusive focus on the biophysical constraints to human development, much work on advancing sustainable development has therefore focused on the role of technology, particularly environmental technologies (e.g. Dincer 2000; Kuehr 2007; Wambugu 1999). Where the need for systematic social change is recognised it is usually invoked to support the diffusion of new technological innovations (e.g. Falk and Ryan 2007; Kemp 1994). However, it is not human technology so much as patterns of human activity that are challenging the sustainability of human development (Maiteny 2000; Norgaard 1994; Stern 1993). The overwhelming attention scientists and practitioners afford to technological means of redressing degradation of biophysical systems represents a reduction of the concept of sustainable development to an 'Enviro-Tech' paradigm (see Figure 5). Remedy for this reduction lies in recognising that, at their core, both sustainability and development are necessarily human-centred concepts. As Clark explains:

> When we talk about the sustainable future of the planet, surely we mean to say a sustainable future for the planet with human beings…Sustainability, then, refers to the sustainability of human life, and that ultimately depends on how we humans behave. (Clark 1994: 180)

Sustainable development describes more than a future in which humans simply self-perpetuate. As Elgin observes, "If we do no more than work for a sustainable future, then we are in danger of creating a world in which living is little more than 'only not dying'" (1994: 235). More than mere survival, sustainable development is, as Malaska (2001) suggests, a post-modern vision of progress. By this he means that sustainable development provides a vision that eclipses modernity's concept of progress by redefining the intellectual and ethical challenges involved. Visions of the future informed by sustainable development couple the long-term survival of humanity with a qualitative improvement in the human experience of life on earth. This makes sustainable development both a goal and a process, as it represents both a vision of the future worthy of human aspiration and an unending process of adapting human activities to correspond with that aspired future.

The ever-changing social-ecological system in which humans must navigate in pursuit of this vision includes humans and the artefacts of human interaction. It is this body of artefacts that provides the means for systematic change of the larger social-ecological system (Westley et al. 2002). 'Artefacts' refer to human-made objects and phenomena, distinguishable from 'natural' objects and phenomena that are products of the ecological system and occur regardless of human involvement (Simon 1996). The physical artefacts produced by human society are what we commonly know as technology. Social artefacts are institutionalised activity systems. They represent the patterns that result as we humans organise our activities through repeated interactions with one another.
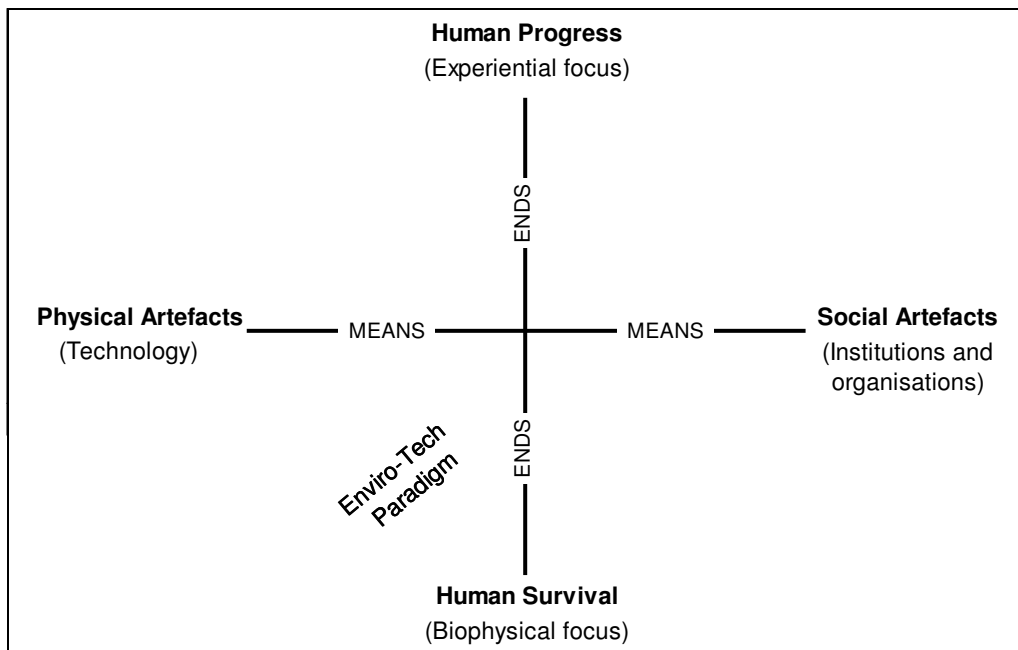
Figure 5   Means-Ends Paradigm for Sustainable Development

To reclaim the full meaning of sustainable development as represented in the early definitions of the 1970s, both the ends and the means of sustainable development must expand from the 'Enviro-Tech' paradigm, represented by the lower-left quadrant of Figure 5, to include a more comprehensive perspective and approach, represented by the entire spectrum spanning all four quadrants. Though technology is no doubt a crucial factor, it must be employed in the service of human activities that enhance sustainable human development, understood as an ecologically compatible qualitative improvement in the experience of life on earth. With this fuller understanding of sustainable development the importance of organisations and entrepreneurship becomes much more evident. While inventors of new technologies belong to the left side of the spectrum, entrepreneurs – innovators of human organisation – belong to the right side.

3 Progress: Interdisciplinary Forays

3.1 Sustainability Entrepreneurship

The concept of sustainability entrepreneurship, or more precisely, sustainability-driven entrepreneurship, as a unique phenomenon worthy of academic inquiry is still in its infancy. In fact, both academics and practitioners are just beginning to grapple with what sustainability entrepreneurship means, what it might look like, and how relevant it is likely to become. Just as conventional entrepreneurship research is conducted in support of the normative goal of economic growth (Gibb 1996; Shane 1996), so too sustainability entrepreneurship research is conducted in support of the normative goal of sustainable development (cf. Jacobs 1995). The impetus to experiment with cross-fertilising the traditions of entrepreneurship and sustainable development comes from both subject areas. At a time when the sustainable development agenda is growing in both legitimacy and urgency, the powerful and deeply entrenched notion of entrepreneurs as people who both 'get things done' and

have a disproportionate ability to drive and alter socioeconomic systems provides hope for a bottom-up solution to the need for large-scale, fundamental change to the current trajectory of the socioeconomic system. The possibility that individuals can affect dramatic change by engaging with the society's existing institutions rather than standing outside or in opposition to them provides an alternative course of action for those who seek to promote sustainable development. Sustainability entrepreneurship has potential to be a more immediate and inclusive approach than the seemingly protracted and exclusive realm of multi-state conventions and global institutions. At the same time, entrepreneurship researchers are seeking to escape the narrow confines of conventional business and economic applications of the concept to explore how the general concept of entrepreneurship may be usefully applied in wider contexts (e.g. Venkataraman 1997).

When this research project was begun there was little precedent for the concept of sustainability entrepreneurship other than the works of Tilley and Young (Tilley and Young 2004; Young and Tilley 2003), and works on the related but not identical subjects of social and environmental entrepreneurship. However, in the last year a handful of conceptual works have emerged along with two empirical studies. Therefore, this review first briefly addresses the social and environmental entrepreneurship literatures in the context of being both important precursors and allied fields. Following this, a review of the recently emerging literature on sustainability entrepreneurship is used to put the present study in the context of developments in this emerging field. Finally, this review is used to chart a conceptual map of the field.

Social Entrepreneurship

While the practice of social entrepreneurship is not considered to be a new phenomenon, social entrepreneurship as a field of research only crystallised in the late 1990s (Dees 1998; Leadbetter 1997) and has, in a short period of time, bourgeoned in both academia and the popular press (e.g. Bornstein 2003; Nicholls 2006). In this time social entrepreneurship has become a catch-all for any entrepreneurial activity not driven (strictly) by a profit motive. Perrini and Vurro suggested the concept "is a composite phenomenon and can initially be explained by the strengthening requests from various stakeholders to the nonprofit sector to enhance its economic efficiency and effectiveness, as well as to the for-profit sector to encourage the adoption of socially responsible behavior" (2006: 58). Mair and Marti (2006) identified three general clusters to the literature. The first and by far the most dominant interpretation is the introduction of business principles to non-profit organisations (e.g. Dees et al. 2002). A second use of the term applies to socially responsible commercial businesses with cross sector partnerships (e.g. Sagawa and Segal 2000; Waddock 1988). A third use of the term applies more generally to innovative pursuits that catalyse social transformations and provide solutions to social problems (e.g. Perrini and Vurro 2006; Robinson 2006), including environmental problems (e.g. Clifford and Dixon 2006; Seelos et al. 2006).

The emphasis on *social* purpose as the distinguishing characteristic of social entrepreneurship led to the field focusing predominantly on entrepreneurial non-profit management (e.g. Thompson 2002) and community ventures (e.g. Haugh 2007; Haugh and Pardy 1999). Much of this literature is concerned with exploring the

differences between conventional and social entrepreneurship. For example Mair and Martí (2006) explored how applicable the concepts and definitions of entrepreneurship are to initiatives with a social mission as their core purpose. Austin and colleagues (2006) conducted a more systematic examination of the similarities and differences between 'commercial' and 'social' entrepreneurship using Sahlman's (1996) framework for analysing entrepreneurial management. They concluded that instead of the 'deal' that is at the heart of a commercial venture, a "core social value proposition (SVP)" is at the heart of a social venture due to "the centrality of the social purpose" (2006: 16).

Weerawardena and Mort (2006) conducted a grounded theory study of nine social entrepreneurial nonprofits to identify the unique characteristic of social entrepreneurs and the contexts in which they operate. They develop a model of social entrepreneurship as a problem of 'constrained optimisation' in which efforts to sustain the organisation and environmental dynamics both act to constrain the entrepreneur's ability to create social value. Both Weerawardena and Mort (2006) and Austin and colleagues (2006) emphasised the dangers of goal displacement from organisational maintenance taking priority over the social mission. This concern perhaps reflects the positioning of social entrepreneurship within the paradigm of non-profit management. However, there is also a growing interest within the field in 'social purpose business ventures' as for-profit businesses that exist for a primarily social purpose (e.g. Choi and Kiesner 2007; Wallace 1999). For example, Hockerts (2006) examined three areas of opportunity for such ventures – activism, self-help, and philanthropy – and for each area identified where economic value propositions and social value propositions might converge to create 'blended value' opportunities.

Paredo and McLean (2006) attempted a reconciliation of these disparate views of social entrepreneurship by developing a pair-wise spectrum of social goals and commercial goals to show how the two combine to produce a range of organisation types. At one extreme are non-profit organisations and at the other extreme are commercial businesses that engage in 'cause-branding'. Another stream of the literature focuses more explicitly on the role of social entrepreneurship in solving social problems and catalysing social transformations. With this perspective the precise legal form (i.e. for profit or nonprofit) becomes less important as the function of social entrepreneurs as society's change agents is brought to the fore. For example Seelos and colleagues (2006) sought to find a link between social entrepreneurship and progress toward the UN General Assembly's Millennium Development Goals. Perrini and Vurro examined the process by which social entrepreneurs 'manage social change', including the identification of social problems, how these problems are paired with economic opportunities, and how the entrepreneurs organise in efforts to bring about transformative change.

Two of the field's crosscutting themes – innovative solutions to social problems and catalysing social transformation – have also been the targets of critique. For example, Thompson and colleagues (2000), among others, questioned whether social entrepreneurship represents a shift to the private sector of social services that should rightfully be provided by governments as public goods. Cho focused on social entrepreneurship's "juxtaposition of 'social' objectives and the instruments of private enterprise" (2006: 36). He questioned whether social entrepreneurship is "a substitute for, rather than a complement to, concerted public action" (2006: 51), and

suggested that by focusing on the symptoms of social pathologies it may actually prevent more profound social transformations from addressing the root causes of those problems. As a field of research, Hockerts criticised the broad scope of the field by suggesting contributions to knowledge may get lost in a "quagmire of definitions". By contrast other authors seem to relish the field's diverse scope of subject matter (e.g. Mair and Martí 2006).

Environmental Entrepreneurship

Schaper (2002) identified three general types of entrepreneurship in existence today: classic entrepreneurship as individuals who start their own businesses, intrapreneurship as entrepreneurs operating within large organisations, and social entrepreneurship as entrepreneurs working within non-profit organisations. To these he suggested a fourth type was emerging: environmental entrepreneurship. Use of the terms 'environmental entrepreneurship', 'eco-entrepreneurship', and 'ecopreneurship' emerged in the early 1990s as the idea that growing demand for environmental quality might represent new business opportunities and also might help to redress some of the environmental damage caused by industry (Bennefft 1991; Berle 1991; Blue 1990). This early literature largely dealt with opportunities for existing small businesses, but when the term re-emerged in the late '90s in a book by Isaak (1999), issues of the journals *Organizational Change Management* and *Greener Management International*, and a subsequent edited volume by Schaper (2005), it was grounded more explicitly in a view of entrepreneurship as innovation. Although some authors dealt with issues of corporate venturing, or intrapreneurship (Azzone and Noci 1998; Krueger Jr 1998; Post and Altman 1994), the vast majority of authors focused on innovative new ventures. The three themes that dominated this literature were: development of typologies to distinguish varieties of environmental entrepreneurship, identifying the push and pull factors that constrain and promote environmental entrepreneurship, and exploring how environmental entrepreneurs might catalyse larger transformations in the economy.

For example, Isaak (2002) made the distinction between what he called 'green businesses' and 'green-green businesses'. The former is a conventional business that has subsequently "discovered the cost and innovation and marketing advantages, if not the ethical arguments, for 'greening' their existing operations" (Isaak 2002: 82). This idea corresponds to what is termed in this study as environmentally responsible business. According to Isaak, a 'green-green business' "is one that is designed to be green in its processes and products from scratch, as a start-up, and, furthermore, is intended to transform socially the industrial sector in which it is located towards a model of sustainable development" (Isaak 2002: 82). This idea corresponds to what is considered in this study to be environmentally-driven entrepreneurship.

As with Isaak's typology, the values and motives of entrepreneurs is a key dimension of all of the suggested typologies. For example, Linnanen distinguished between a desire to change the world and a desire to make money, and suggested a "virtuous cycle of ecopreneurship" can result when entrepreneurs are driven by both motives (2002: 79). Similarly, Pastakia distinguished between 'commercial ecopreneurs' and 'social ecopreneurs' depending on whether an individual is driven primarily to maximise personal gains or to promote an "eco-friendly idea/product/technology"

(1998: 159). In a study of environmental influences at business incubators, Schick and colleagues (2002) distinguished between 'eco-dedicated', 'eco-open', and 'eco-reluctant' start-ups.

Other authors also added an external dimension to their typologies. For example, Schaltegger (2002) identified five types of environmental entrepreneurs based on priority of the environment as a business goal and the market effects of the business. He suggested "companies contribute most to the overall environmental progress of an economy and society if their business deals with environmental solutions and environmentally superior products and if their innovations substantially influence the mass market" (2002: 48). Walley and Taylor (2002) based their typology on Giddens' framework linking structure and action. They developed a framework with two dimensions. One described an entrepreneur's motives on a spectrum from 'economically oriented' to 'sustainability oriented', and the other described the social structural influences on a spectrum from 'soft (e.g. personal networks) structures' to 'hard (e.g. economic) structures'. They argued that entrepreneurs from any of the resulting categories can contribute to a sustainable society, even if they are 'opportunistically green' or 'accidentally green'. Pastakia (2002) constructed a framework to explore the internal drivers, such as personal values and competitive advantage of eco-friendly products, and external drivers, such as the power of stakeholders and the power of legislative and regulative policies, of environmental entrepreneurship.

In an interesting inversion from the rest of the field's interest on the impacts of environmental entrepreneurs on society, Bryant and Bryant (1998) use four historical case studies to explore how changes in social values influence changes in entrepreneurial behaviour. Anderson (1998) provides theoretical support for both approaches by using the concept of 'value' to link the traditions of environmentalism and entrepreneurship. He argues that even though environmentalism emerged as a "reaction to the excesses of industrial modernity", both environmentalism and entrepreneurship are "embedded in the "subjective 'rationality'" of society, and this "is why entrepreneurship is most likely to sustain environmentalism than any other form of imposed change" (1998: 136, 135, 139).

Most of the empirical work in the field consists of illustrative case studies used as examples of typological categories. However, Volery (2002) conducted a single case study of 'commercialised conservation' from which he found support for the importance of the founder in shaping company values, and concluded that even though it may not be the main driver, the financial 'bottom line' is still the most urgent bottom line. Beveridge and Guy (2005) suggested the literature on environmental entrepreneurship has usefully demonstrated that an entrepreneur's motivations and values, and the contextual conditions that influence their ability to instigate change in society, are critical explanatory factors. However they caution that "the literature is in danger of narrowing our focus to make innovation appear like a linear process in which motivated individuals with 'positive' environmental attitudes flourish or flounder as a result of external structural forces." They suggested more attention needs to be devoted to "processes and practices of emergence, negotiation and innovation" (2005: 672).

Sustainability Entrepreneurship

There are currently only a handful of works that directly address sustainability entrepreneurship.[5] Among these, some authors explore the contribution more conventional forms of entrepreneurship can make to sustainable development, such as providing employment opportunities, facilitating a shift to cleaner industries, and as a source of technology and innovation for new products and services (e.g. Ahmed and McQuaid 2005). Others self-identify their object of study as sustainability entrepreneurship but limit their focus exclusively to environmental issues, which is here considered to be the domain of environmental entrepreneurship (e.g. Dean and McMullen 2007). Others still are really addressing sustainable management practices of conventional enterprises (e.g. Crals and Vereeck 2004). While all of these approaches may make contributions to sustainable development in their own ways, they are not consistent with what is considered here to be 'sustainability entrepreneurship'. To remain faithful to the understanding of sustainable development as discussed in section 2.3 above, sustainability entrepreneurship is here understood as entrepreneurship that explicitly instils both environmental- and social-purpose dimensions in a single enterprise. The purpose and level of commitment for these enterprises exceeds what is usually discussed as corporate social responsibility and eco-efficiency (see section 3.2 below). Figure 6 clarifies the distinction between social, environmental, and sustainability entrepreneurship by showing where each engages with the means and ends of sustainable development.
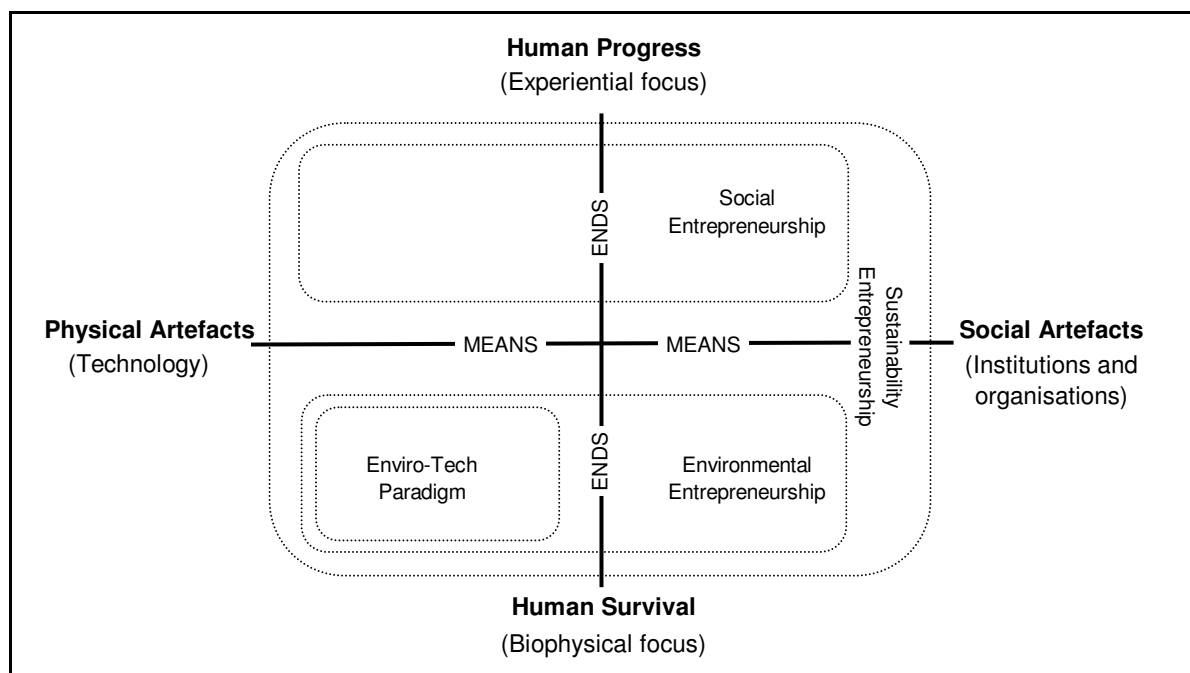
Figure 6   Social-, Environmental-, and Sustainability-Driven Entrepreneurship

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[5] At the First World Symposium on Sustainable Entrepreneurship held 15-17 July 2007 at the University of Leeds, the delegates discussed 'sustainability entrepreneurship' as being a more precise description of the topic domain. For that reason and for consistency I refer to the work of all authors in this field using that term, even though most authors discussed here have used the term 'sustainable entrepreneurship' in their works.

In an effort to demonstrate the limits of relying on concepts such as eco-efficiency for achieving sustainable development, Young and Tilley (2003, later published as Young and Tilley 2006) developed a model of sustainability entrepreneurship based in part on Dyllick and Hockerts' (2002) model of corporate sustainability and McDonough and Braungart's (2002) model for sustainable design processes. Young and Tilley used this model to make four arguments. First, they suggested there is a current trend for entrepreneurs to cluster around one of three philosophies, as either economic (conventional), social, or environmental entrepreneurs. Second, they showed how the sustainability agenda is interpreted from each of these vantages. For example, when viewed through the lens of the efficiency concerns of economic enterprises, environmental and social issues get interpreted as eco-efficiency and socio-efficiency. Third, they argued that even if an entrepreneur were to adopt all six criteria, representing the sum of all three perspectives, this is still insufficient to achieve sustainability entrepreneurship. This is because each criterion represents the primacy of one purpose over the other two, and therefore fails to provide an integrative, holistic perspective. Finally, they argue that the additional elements of a long-term time horizon and appreciation for critical limits of the social-ecological system are necessary components for the realisation of sustainability entrepreneurship. In subsequent articles, Tilley and Parrish (2006) elaborated on the pressures for compartmentalisation to one of the three poles, and the challenges to holistic integration for entrepreneurs; and Tilley and Young (2004) explored the potential for sustainability entrepreneurs to contribute more fully to society as the concepts of 'entrepreneurship' and 'wealth' are reinterpreted in light of the needs and values of contemporary society.

The articles of Dean and McMullen (2007) and Cohen and Winn (2007) represent a different approach to the subject. These authors used economic theories of entrepreneurship to demonstrate some of the sources of opportunities for entrepreneurs to profit by contributing to sustainable development. Both sets of authors use the neoclassical economic theory of market failures to show how market inefficiencies, externalities, imperfect information, flawed pricing mechanisms, government interventions, and monopoly power result in environmental degradation and therefore produce market conditions in which entrepreneurs can earn entrepreneurial rents by reducing environmental harm. Both sets of authors acknowledge that the concept of sustainable development is broader than the issues addressed by this framework. However, Dean and McMullen do define sustainability entrepreneurship strictly in terms of correcting "market failures that detract from sustainability" (2007: 58). Cohen and Winn allow for a broader interpretation by suggesting sustainability entrepreneurship is about the economic, psychological, social, and environmental consequences of future goods and services (2007: 35).

Both sets of authors present a similar picture, in which sustainability entrepreneurs are attracted by the prospects of earning entrepreneurial rents from market failures to redress some of the environmental harm that results from those failures. However, the authors each reach different conclusions from this analysis. Dean and McMullen argue that their theoretical discussion of sustainability entrepreneurship demonstrates "that market systems and the institutions that define them evolve over time in a manner that can resolve social ills" (2007: 72), thereby positioning sustainability entrepreneurship within ecological modernisation theory (see Hajer 1995). Cohen and Winn, on the other hand, envisage a broader role of sustainability

entrepreneurs as agents of Schumpeterian "creative destruction of unsustainable practices and their replacement with sustainable technologies, business models and resulting lifestyles" (2007: 46). Because of this they also suggest the 'dependent variables' or performance indicators for studying sustainability entrepreneurship need to be multifaceted to account for these entrepreneurs' 'triple bottom line' impacts.

Cohen, Smith, and Mitchell (*Forthcoming*) follow up on this last suggestion by exploring a range of possible 'dependent variables' for the value created by sustainability entrepreneurship. They suggest a list of indicators for the value created from economic, environmental, and social processes, activities, and impacts, as well as overlaps between each sphere such as eco-efficiency for the overlap between economic and environmental spheres, socio-efficiency for the overlap between economic and social spheres, stewardship for the overlap between environmental and social spheres, and sustainability for the overlap of all three. They seem to depart from Cohen and Winn (2007) by developing the argument that entrepreneurs can be motivated by concerns other than capturing entrepreneurial rents. In fact, they argue that the "primary value creation strategies and focal positioning" of enterprises will be different depending on which value sphere the entrepreneurial motives place them, with sustainability entrepreneurs being motivated by all three value spheres (Cohen et al. *Forthcoming*). They provide results from a review of empirical articles that suggest the most active overlapping domains are between economic and social spheres, with the environmental and sustainability spheres almost completely neglected.

Finally, three empirical studies by three sets of researchers were conducted during roughly the same period. An in-depth, qualitative study by Parrish (2008a; 2008b) of leading sustainability entrepreneurs from Europe, North America, East Africa, and Asia-Pacific regions provides an insider's look at the critical drivers of success. This research identified five unique principles of problem solving used to guide the process of enterprise design that have allowed sustainability entrepreneurs to successfully capitalise on market opportunities in the service of ecosystems and communities. This innovative approach to enterprise design suggests the emergence of a new organising logic that eschews the dichotomy between 'opportunistic' business and 'altruistic' charity in favour of a new logic based on the co-production of multiple benefit streams through the perpetuation of human and natural resource quality. Thus, far from being a middling compromise between business and charity, the organisational forms being pioneered by sustainability entrepreneurs represent innovative organisational solutions that resolve the shortcomings inherent in conventional organising logics.

Schlange has also contributed both conceptual and empirical work on the topic. In a conceptual paper he developed a model of stakeholder identification that addresses the unique motives of sustainability entrepreneurs (Schlange 2007). This model was based on a concept of sustainability entrepreneurship similar to Young and Tilley's model, in which the importance of long-term time horizons is recognised and sustainability entrepreneurship is viewed holistically as operating above and beyond the sum of economic, social, and environmental goals. In a related empirical study, semi-structured interviews were conducted with the founders of ten enterprises in eastern Switzerland that scored high against a set of environmental, social-ethical, and economic sustainability criteria (Schlange 2006). Schlange found that

sustainability entrepreneurs are motivated by a desire to catalyse regional development and, in so doing, instil their values into the regional economy and broader social system. In practice these entrepreneurs were notable for their ability to simultaneously meet competing objectives in the environmental, social-ethical, and economic realms. This suggests that not only are the values and motivations of sustainability entrepreneurs distinct from other types of entrepreneurs, but also that they exhibit distinct capabilities.

Clifford and Dixon (Clifford and Dixon 2006; Dixon and Clifford 2007), conducted a qualitative study of the launch and early stage development of a single UK-based enterprise that operates on earned income and seeks to reduce solid waste and the use of virgin materials in the furniture industry while providing opportunities for disadvantaged members of society. While these authors do not use the term 'sustainability entrepreneurship', this case study is congruent with the meaning of the concept as defined in this chapter. A key finding of their study was that this enterprise was able to succeed because it developed a symbiotic business model within an embedded network of other organizations which included larger, conventional companies and 'social franchises'. This suggests the social contexts within which entrepreneurs and enterprises operate are likely as important as the activities of the entrepreneur.
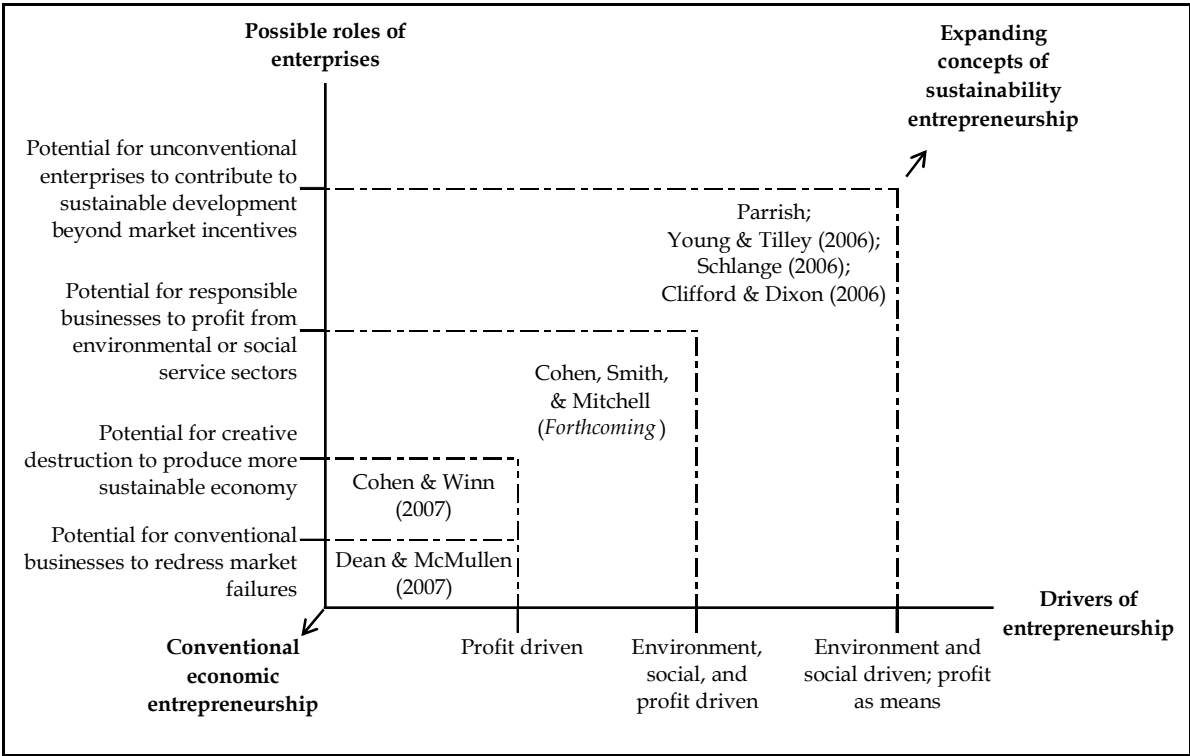
Figure 7   Possibility-Space for Concepts of Sustainability Entrepreneurship

Each of the authors discussed in this section have contributed to expanding the concept of entrepreneurship to explore how entrepreneurship might contribute to sustainable development. However, some of the conceptions of sustainability entrepreneurship are more restricted by conventional economic assumptions of

entrepreneurial motives than others. As the primacy of the profit motive is relaxed, the potential contribution of entrepreneurial ventures to sustainable development increases and the possibility-space of sustainability entrepreneurship as a concept expands. My interpretation of where these authors' concepts of sustainability entrepreneurship fall in this possibility-space is presented in Figure 7.

3.2 Sustainability Enterprise

Research on sustainability enterprise takes place at the intersection of organisation and sustainable development research. Here an enterprise is understood as a formal organisation that operates through earned income, making the class 'enterprise' a subset of the class 'organisation'. Research on sustainability enterprise usually goes under the heading of 'corporate sustainability'. To date, most of this research has focused on how environmental and social concerns can be incorporated into business operations and management. In this way 'corporate sustainability' becomes synonymous with 'corporate responsibility' (e.g. Blackburn 2007), and when put into practice becomes a mixture of corporate social responsibility initiatives and eco-efficiency initiatives. For example, the World Business Council for Sustainable Development writes of "promoting the role of eco-efficiency, innovation, and corporate social responsibility toward sustainable development" (WBCSD 2002: 2). Birkin (2001) reviewed a number of these approaches, including environmental and social accounting, stakeholder management, environmental management systems, energy and mass balance accounts, and efforts to internalise externalities. He then identified a number of dimensions in which these conventional approaches to corporate sustainability need to be extended, including the need for new knowledge, values, skills, metrics, and goals that embody an appreciation for "the interconnectedness and interdependence of 'individuals' within an ecosystem", and that are expressed in practice (2001: 55, 51).

This suggests an important distinction between those enterprises that are driven by a sense of *duty* to act responsibly toward society and the environment as they pursue their private interests, and those enterprises that are driven by a sense of *purpose* to contribute to the sustainable development of the social-ecological system of which they are a part. Both are important to understand, but the literature focuses almost entirely on the former to the exclusion of the latter. This focus has resulted in a plethora of studies that examine how enterprises can effectively manage their environmental and social impacts while pursuing financial goals, and have resulted in recommendations for achieving 'sustainable business' by, for example, addressing the communication challenges between an environmental manager and the 'mainstream' manager (Sweet et al. 2003), developing environmentally sensitive enterprise strategies (Stead and Stead 1994), or packaging 'green reforms' in the language of self-interest (Egri and Pinfield 1996). As Birkin states: "If what we are really working for is money in the bank, then environmental and social aspects will always remain obstacles to our 'real' goals" (2001: 54). While these studies have their place, they provide little insight for understanding how sustainability purpose-driven enterprises can achieve their goals.

In contemplating "what is a sustainable corporation?", Sharma suggested it "is possible that by integrating the concepts of carrying capacity and the laws of thermodynamics…as well as measuring and reporting an organization's ecological

footprint and the triple bottom line, we will provide clues to sustainable organizational forms" (2002: 13-4). The 'triple bottom line' (Elkington 1997), together with a stakeholder perspective (Clarkson 1995; Freeman 1984) are probably the most common frameworks used to apply principles of sustainable development at the organisational level. For example, Tencati and Perrini defined a "sustainability-oriented company" as one that "develops over time by taking into consideration the economic, social and environmental dimensions of its processes and performance affecting the quality of stakeholder relationships" (2006: 95). Similarly, Dyllick and Hockerts defined corporate sustainability as "meeting the needs of a firm's direct and indirect stakeholders…without compromising its ability to meet the needs of future stakeholders as well" (2002: 131). They argued that to do this an enterprise must focus on the 'triple bottom line' by growing their economic, social, and natural capital basis. However, Springett (2003) cautioned against using standard business discourse to imbue such concepts with meaning. For example, she noted that the triple bottom line "is a handy indicator for full-cost accounting, but not an equivalent for sustainable development", and instead argued for taking a wider view to avoid reifying sustainable development discourse to this trichotomy and other concepts based in eco-modernism (2003: 72). She suggested that some concepts, such as 'needs,' can be construed to mean "the 'creation of need' to raise consumption and thereby production and profit", while other terms central to sustainable development, such as 'futurity,' are only vaguely understood (2003: 73).

At a practitioner level Rossi and colleagues observed that "most businesses continue to equate sustainability performance with environmental performance" (2000: 277). Similarly, Sharma and Ruud observed that "Extant scholarship in corporate sustainability has been mainly focused on theoretical and empirical advances in describing and explaining how organizations interact with the natural environment at various levels of analysis" (2003: 207). For example, Starik and Rands use a contingency theory approach to suggest ecologically sustainable organisations become so by strategically adapting to ecological feedback signals at multiple levels. They focused on the obstacles such organisations face and speculated on a number of characteristics that an organisation would exhibit as they approach ecological sustainability. These characteristics include "absence of targeted protests by environmental activists", "encouragement of pro-sustainability legislation", "utilization of natural resource inputs at sustainable rates", and 24 others (Starik and Rands 1995: 516). However, they refrained from speculating on how an organisation can actually achieve ecological sustainability.

Keijzers (2002) suggested an agenda for the 'modern' sustainability enterprise consisting of energy-related issues, resource stock dissipation, and encroachment on scarce land, and the then detailed a fairly standard programme for enterprises and governments to meet these challenges, including increased stakeholder dialogue and incentives for technological innovations to address resource constraints. In contrast to this technical and technocratic approach, Purser and colleagues (1995) argued that there is a need for an 'ecocentric responsibility paradigm' in which 'ecological choice', 'ecological learning', and 'ecological democracy' will emancipate humans and ecosystems from the exploitation and control of management hierarchies. Gladwin and colleagues argued that both the technocentric and ecocentric paradigms, "by setting in motion self-defeating counterforces, fail to promote development or to conserve nature" (1995: 889). They attempted to bridge these two

extremes with an integrated paradigm of 'sustaincentrism', which the authors suggested "offers a vision of development which is both people centered (concentrating on improvements in the human condition) and conservation based (maintaining the variety and integrity of nonhuman nature)" (1995: 894).

One point of consensus in the literature is that enterprises exist within an interactive network of individuals, groups, agencies, and other organisations (Miles et al. 1974: 244), and that this should be reflected in the way the concept of sustainable development is applied at the enterprise level. While a static view of sustainability enterprise attempts to apply the concept of sustainability to an organisation directly, a dynamic view focuses on how the organisation contributes to macro-level sustainable development (Atkinson 2000; Figge and Hahn 2004). Sandström criticised this perspective by arguing that "Casting the firm as merely one actor out of many in a complicated web of interdependent relations can play down each actor's responsibility to change any destructive structures. It might also play down the crucial role that certain, more powerful, actors have in the network" (2005: 156). However, if one recognises the systemic nature of both organisational life and sustainable development, then there is really no alternative but to take a dynamic view of sustainability enterprise. Thus, at a basic level, sustainability enterprise can be understood as an enterprise that is able to sustain its own activities while contributing to sustainable development of the larger social-ecological system of which it is a part. As Atkinson explained:

> From society's point of view the interesting question can be thought of in terms of the contribution of a given entity (e.g. business or sector) to sustainability defined in the wider sense (e.g. nation). From the entity's own perspective, the extent to which its contribution impinges on the sustainability of its own activity will also be of concern. The key to defining corporate sustainability is to reconcile these two outlooks… (Atkinson 2000: 240)

This perspective provides a useful definition of sustainability enterprise, but two important questions that remain are how can an enterprise truly contribute to sustainable development, and how can an enterprise achieve concordance between this contribution and sustaining its own activities? O'Hara provided a useful clue to the first question in her discussion of sustainable production, which she defined as "production which sustains the social and biophysical context within which it takes place" (1997: 142). She identified ecological sustaining services such as maintaining atmospheric gas balances, nutrient cycles, and absorptive capacity of ecosystems to maintain water quality, and social sustaining services such as the physical, emotional, and spiritual support provided by households and communities, and argued that sustaining production requires that these social-ecological system functions be maintained. Thus, one way to think about the contribution of enterprises to sustainable development is to consider the ways in which they can bolster these sustaining services. A complementary perspective is offered by Twomey, who suggested that for a sustainability enterprise to achieve its purpose of "creating long-term success for itself by serving social needs", this purpose must be manifest in the enterprise's "core principles and values evidenced in ongoing bevahiors and relationships" (2006: 13, 15). In so doing, he argued, a sustainability enterprise becomes "an organic, mutually emergent system that is connected economically, environmentally, and socially to the world" (2006: 12). Together, O'Hare and

Twomey's ideas provide useful starting points for considering how an enterprise might be able to contribute to sustainable development, as understood by either of the 'humans-*in*-ecosystems' perspectives described in section 2.3 above. In a previous article I have developed these ideas into a model of successful sustainability enterprise, in which such an enterprise ensures its own capacity to survive and thrive *by* contributing to the capacity of its stakeholders and the social-ecological system to do the same (Parrish 2007).

3.3 Organisation Design

As conventionally understood, organisation design is about the way human actors structure their organisations to achieve their purposes within the context of a wider environment. It is in this problem space that the fields of entrepreneurship and organisations intersect, though each field has approached the topic from different perspectives (Katz and Gartner 1988). As Dunbar and Starbuck (2006) explain, organisation researchers have viewed organisation design as a technical problem concerning the best *fit* between organisation *structure* and the *environment*, for a given *goal* (e.g. Galbraith 1973; Lawrence and Lorsch 1969; Perrow 1970; Woodward 1970). 'Structure' was historically viewed in terms of formal structures, technologies, and coordination mechanisms, though the concept has since been broadened to include organisation processes such as decision making, information processing, leadership style, and so on (Daft and Lewin 1990; Volberda 1998). But in either case the subject is very much approached as a technical problem requiring a technical solution. As Daft and Lewin state: "the point of organization design research is to discover how things work and how they ought to work" (1990: 3).

In the field of entrepreneurship, organisation design is usually studied as new venture creation or organisation emergence. Thus, entrepreneurship researchers have tended to study organisation design as an interactive process of mobilising resources, building social networks, acquiring knowledge, and establishing exchange relations with the environment, all configured around a negotiated vision or purpose (e.g. Jack and Anderson 2002; Katz and Gartner 1988; Lichtenstein et al. 2006; Starr and Fondas 1992; Ucbasaran et al. 2001; Van de Ven 1993; Yamada 2004). From this perspective organisation design research is more about understanding how certain interactive design processes produce the outcomes that they do. As Sarasvathy suggests, organisations are "an outcome (however unexpected or novel) of serious design, motivated and negotiated by particular aspirations forged in entrepreneur-stakeholder networks that evolve over time" (2004a: 522).

Recently a number of organisation design researchers have based their work on Simon's ideas of a science of design (1996). A review of this literature suggests the elaboration of these ideas have generally produced two different approaches that correspond to the technical and interactive process views discussed, both of which stem fundamentally from the way organisations are viewed. The technical approach arises from the early view of organisations as akin to machines, and later as akin to organisms (Morgan 1997). From this view organisation design research is often compared with research in other design-intervention fields such as engineering and medicine (Van Aken 2004). The technical approach focuses on developing *technological* or *prescriptive rules* to achieve a preconceived result. As Van Aken explains, "a technological rule is 'a chunk of general knowledge linking an

intervention or artefact with an expected outcome or performance in a certain field of application'", taking the form of "if you want to achieve Y in situation Z, then perform action X" (2005: 23). This rational, calculated approach assumes a static organisation with well-defined properties and well-defined problem situations, none of which is well suited to the constant flux of dynamic organisations in dynamic environments. As Romme explains, the "technical, instrumental concept used by managers trying to bring their organisations under control…is no longer useful or relevant" because "managers are not viewed as all-powerful architects of organizations: Their influence on organizational processes is assumed to be limited, because they are not the only participants in the discursive and collaborative processes that shape organizational systems" (2003: 565).

By contrast, the interactive process approach is based on a view of organisations as sites of flux and transformation (Morgan 1997). As Gartner argues, "New venture creation is the organizing (in the Weickian sense) of new organizations" (1993: 232). In this view, organisation design is part of an ongoing process of organisational 'becoming' in which organisational actors continuously reweave their "webs of beliefs and habits of actions to accommodate new experiences obtained through interaction"(Tsoukas and Chia 2002: 567). Victor Papanek, a prominent 20th century Austrian-American designer, defined design as "the conscious and intuitive effort to impose meaningful order" (1984: 4). If, as discussed in section 2.2 above, organisations are collective endeavours to create order in an uncertain world, then organisation design is more aptly understood as the efforts of people to consciously and intuitively order their activities and resource flows as coordinated, boundary-maintaining, relatively persistent systems that engage with an uncertain world to achieve intended purposes.

Papanek's emphasis on both "conscious" and "intuitive" efforts is important. Navigating the dynamic process of organisation design, entrepreneurs cannot rely on rational thought alone, as Bird (1988) made clear in her description of the interplay between rational and intuitive thinking during organisation emergence. But if we recognise that organisation design is a purposeful activity and therefore inherently instrumental, and also acknowledge that the role of both rational and intuitive reasoning precludes a strictly technical approach, how can organisation design research, as "explicit efforts to improve organizations" (Dunbar and Starbuck 2006: 171), proceed?

An alternative approach to assisting organisation designers focuses on identifying *generative rules* to create new possibilities for realising design intentions. Rather than prescribing strict imperatives, this approach assumes design "is rule-governed to the extent that the process is guided by general rules of action" (Niiniluoto 2001: 375). MacIntosh and MacLean explain that "Whilst the exact form of such emergent structures cannot be predicted, the range of broad possibilities is to some extent contained within the set of simple rules which was applied to generate the new order" (1999: 301). In a similar but slightly different interpretation of the design process, Yoo and colleagues suggest research should focus on the use of *design gestalts*, which have a "generative, form-giving capacity" (2006: 227). These approaches embrace both novelty and unity in design (Yoo et al. 2006), by moving from the 'how/why?' questions of technical design research to questions of 'how/why?' and 'what-if?' (see Ravetz 1997).

The capacity for generative rules and design gestalts to both fulfil and transcend design purposes by generating new possibilities resonates with the views of successful entrepreneurship as a form of expertise or 'maturity' discussed previously in section 2.1. Thorpe and colleagues suggested "The entrepreneur is someone who is acutely aware of the reality in which they find themselves, and yet able to adopt sufficient critical distance to see how it might be otherwise" (2006: 239). And Sarasvathy suggested that "In the firm design perspective of entrepreneurship, what is *found* in the world is not opportunity but *possibility.* Designing entrepreneurs take up possibility as a tool and fashion it into opportunity through imaginative interaction both with their tools and with the society in which they live" (Sarasvathy 2004a: 526).

4 Possibility: Sustainability Enterprise Design

Taken as a group, what do these research fields tell us about the relationship between entrepreneurship, enterprise, and sustainable development? First, it is evident that we are dealing with a phenomenon that operates at *multiple levels*, from the acts of individual entrepreneurs to the coordinated activities of organisations, and the institutionalised activities of whole societies. Second, whether it is the process of creating and realising opportunities for new value creation we call 'entrepreneurship', or the coordinated organising process of multiple actors we call 'organisation', or the unending process of adapting human activities to correspond with a vision of the future worthy of human aspiration we call 'sustainable development', each level constitutes an ongoing *process* of flows and flux.

Third, these multilevel processes are *interactive,* in that they influence and are influenced by one another in complex ways. The social-ecological context provides the medium with which entrepreneurs construct their new visions, and yet their actions can lead to large-scale transformations of this social-ecological system. And in between the two, organisations restrict the activity choice of participants, but also expand both the spatial and temporal reach of human influence. Organisations have been shown to reproduce the prevailing social conditions both inside and out, but they have also demonstrated deviations that can shift the regulative, normative, and cultural-cognitive features of wider society. Fourth, each of these processes is driven by the interplay between *intention* and *contingency*. Sustainable development represents a vision for the relationship between humans and the environment, but both human systems and ecosystems are characterised by surprise and unpredictability. Organisations are formed around organisational goals, and yet they must contend with an ever-changing operating environment to realise those goals. And entrepreneurship is driven by entrepreneurial intention, though it thrives by leveraging unexpected contingencies to realise those intentions. Taken together, these points suggest we need to appreciate the phenomenon as multilevel, interactive processes that are ongoing outcomes of both intentions and contingencies.

With this view, two crosscutting themes seem particularly relevant. One theme is that both entrepreneurship and organisations have been shown to be continuously reinterpreted for their times. With the concept of sustainable development, and the vision that it describes, becoming increasingly prevalent the world over, it is perhaps inevitable that entrepreneurship and organisations will start to be reinterpreted in light

of this vision. The challenge is to determine which of our current assumptions about entrepreneurship and enterprise should be relaxed to accommodate this new vision, and which provide promise for deepening our understanding of it.

The other crosscutting theme is the role of intentions in the face of uncertainty. The concept of sustainable development arose out of uncertainties about the prospects for the future wellbeing of humanity. The enormous amount of effort and resources being devoted to initiatives to understand and improve humanity's prospects for sustaining improvements to the human experience of life on earth can be viewed as a large-scale effort to reduce this uncertainty. This brings the role of enterprise and entrepreneurship more clearly to the fore. Organisations have been described as a coordinated attempt to reduce uncertainty, and entrepreneurship has been described as a process of leveraging uncertainties into new opportunities to create value for society. This suggests that sustainability entrepreneurship and sustainability enterprise could play an important role in advancing sustainable development, not just because entrepreneurial actors are recognised change agents, but also because the entrepreneurial approach to problem solving may serve a unique function for society as it faces a range of social-ecological challenges with which conventional approaches to problem solving are unable to contend.

To that end, I suggest the concept of 'sustainability enterprise design' could act as a useful unifying concept to link these various research fields. Sustainability enterprise design describes the process of creating sustainability enterprises that are able to contribute to the sustainable development of the greater social-ecological system while also sustaining their own activities indefinitely. This unifying concept can accommodate both sustainability management and sustainability entrepreneurship. In distinguishing the two the difference might be framed as a matter of degree in organisational changes sought. If the focus is on designing *incremental* changes to the organising process it would be about 'sustainability-driven management' (see Boland and Collopy 2004). If the focus is on designing *new* or *transformative* changes to the organising process it would be about 'sustainability-driven entrepreneurship'.

However, it is possible the two may be different in kind rather than in degree. Gilbert (2002) sees entrepreneurs and managers as fundamentally different, based on their capacity to use the word 'no'. He suggested the logic of management renders managers incapable of ever saying 'no' to the ongoing pursuits of their enterprise. This raises the question of whether the concept of 'sustainability management' can ever be more than an empty and misleading construct as managers are fundamentally unable to stop their enterprises from infringing on the critical limits of society or the ecosystem. Gilbert raised the possibility of the entrepreneur as being at heart an existentialist who rejects the meaning and values of their situation and seeks instead to create new meaning for their pursuits. He suggested such an entrepreneur is someone who "*autonomously incorporates 'no' into the definition and conduct of her personal projects*", and for these entrepreneurs a new venture "is, in effect, a declaration of 'no' about a currently dominant way of arranging economic activities" (2002: 117). From this perspective, a sustainability entrepreneur is an existentialist who says 'no' to our dominant assumptions about the way to organise, and through saying 'no' is liberated to build a new form of organisation based on a new set of values, principles, and ideals that reflect the vision of sustainable

development. Sustainability entrepreneurship, then, becomes less a technical exercise of reducing negative impacts, and more an expressive exercise of new possibilities for the ways humans can positively interact with each other and the natural environment that are supportive, restorative, and contributory.

Acknowledgements

References

Abrecht P, editor. 1979. Faith, Science and the Future: Preparatory Readings for the 1979 Conference of the World Council of Churches. Geneva: World Council of Churches.

Ahmed A, McQuaid RW. 2005. Entrepreneurship, Management, and Sustainable Development. *World Review of Entrepreneurship, Management and Sustainable Development* 1(1):6-30.

Aldrich HE. 1979. *Organisations and Environments*. Englewood Cliffs, NJ: Prentice-Hall.

Aldrich HE. 2005. Entrepreneurship. In: Smelser NJ, Swedberg R, editors. *The Handbook of Economic Sociology*. 2nd ed. Oxford: Princeton University Press. p 451-477.

Aldrich HE, Ruef M. 2006. *Organizations Evolving*. Thousand Oaks, CA: Sage.

Alkire S. 2002. Dimensions of Human Development. *World Development* 30(2):181-205.

Anderson AR. 1998. Cultivating the Garden of Eden: Environmental Entrepreneuring. *Journal of Organizational Change Management* 11(2):135-144.

Argote L, Greve HR. 2007. A Behavioral Theory of the Firm - 40 Years and Counting: Introduction and Impact. *Organization Science* 18(3):337-349.

Atkinson G. 2000. Measuring Corporate Sustainability. *Journal of Environmental Planning and Management* 43(2):235-252.

Austin J, Stevenson H, Wei-Skillern J. 2006. Social and Commercial Entrepreneurship: Same, Different, or Both? *Entrepreneurship Theory and Practice* 30(1):1-22.

Azzone G, Noci G. 1998. Seeing Ecology and "Green" Innovations as a Source of Change. *Journal of Organizational Change Management* 11(2):94-111.

Bamford CE, Dean TJ, McDougall PP. 1999. An Examination of the Impact of Initial Founding Conditions and Decision upon the Performance of New Bank Start-ups. *Journal of Business Venturing* 15:253-277.

Barnard CI. 1938. *The Functions of the Executive*. Cambridge, MA: Harvard University Press.

Baumol WJ. 1993. Formal Entrepreneurship Theory in Economics: Existence and Bounds. *Journal of Business Venturing* 8:197-210.

Beckerman W. 1994. 'Sustainable Development': Is it a Useful Concept? *Environmental Values* 3(3):191-209.

Beckerman W. 2003. *A Poverty of Reason: Sustainable Development and Economic Growth*. Oakland, CA: The Independent Institute.

Benneftt SJ. 1991. *Ecopreneuring: The Complete Guide to Small Business Opportunities from the Environmental Revolution*. New York: John Wiley and Sons.

Berle G. 1991. *The Green Entrepreneur: Business Opportunities that Can Save the Earth and Make You Money*. Blue Ridge Summit, PA: Liberty Hall Press.

Beveridge R, Guy S. 2005. The Rise of the Eco-preneur and the Messy World of Environmental Innovation. *Local Environment* 10(6):665-676.

Bird B. 1988. Implementing Entrepreneurial Ideas: The Case for Intention. *Academy of Management Review* 13(3):442-452.

Bird BJ. 1989. *Entrepreneurial Behavior*. London: Scott, Foresman.

Bird BJ. 1992. The Operation of Intention in Time: The Emergence of the New Venture. *Entrepreneurship Theory and Practice* 17(1):11-20.

Birkin F. 2001. Steps to Natural Capitalism. *Sustainable Development* 9:47-57.

Blackburn R. 2007. *The Sustainability Handbook: The Complete Management Guide to Achieving Social, Economic and Environmental Responsibility*. London: Earthscan.

Blau PM. 1974. *On the Nature of Organizations*. New York: Wiley and Sons.

Blau PM, Scott WR. 1963. *Formal Organizations: A Comparative Approach*. London: Routledge & Kegan Paul.

Blue RJ. 1990. *Ecopreneuring: Managing for Results*. London: Scott Foresman.

Boland RJJ, Collopy F, editors. 2004. *Managing as Designing*. Stanford, CA: Stanford University Press.

Bornstein D. 2003. *How to Change the World : Social Entrepreneurs and the Power of New Ideas*. Oxford, UK: Oxford University Press.

Brockhaus RH. 1980. Risk Taking Propensity of Entrepreneurs. *Academy of Management Journal* 23:509-520.

Brunsson N. 1982. The Irrationality of Action and Action Rationality: Decisions, Ideologies and Organizational Actions. *Journal of Management Studies* 19(1):29-44.

Bruyat C, Julien P-A. 2000. Defining the Field of Research in Entrepreneurship. *Journal of Business Venturing* 16:165-180.

Bryant TA, Bryant JE. 1998. Wetlands and Entrepreneurs: Mapping the Fuzzy Zone Between Ecosystem Preservation and Entrepreneurial Opportunity. *Journal of Organizational Change Management* 11(2):112-134.

Bull I, Willard GE. 1993. Towards a Theory of Entrepreneurship. *Journal of Business Venturing* 8:183-195.

Burt RS. 1983. *Corporate Profits and Cooptation*. New York: Academic.

Carson R. 1962. *Silent Spring*. Boston, MA: Houghton Mifflin.

Carter S, Ram M. 2003. Reassessing Portfolio Entrepreneurship. *Small Business Economics* 21(4):371-380.

Chiles TH, Bluedorn AC, Gupta V. 2007. Beyond Creative Destruction and Entrepreneurial Discovery: A Radical Austrian Approach to Entrepreneurship. *Organization Studies* 28(4):467-493.

Cho AH. 2006. Politics, Values and Social Entrepreneurship: A Critical Appraisal. In: Mair J, Robinson J, Hockerts K, editors. *Social Entrepreneurship*. New York: Palgrave MacMillan. p 34-56.

Choi DY, Kiesner F. 2007. Homeboy Industries: An Incubator of Hope and Businesses. *Entrepreneurship Theory and Practice* 31(5):769-786.

Choi YR, Shepherd DA. 2004. Entrepreneurs' Decisions to Exploit Opportunities. *Journal of Management* 30(3):377-395.

Clark ME. 1994. Integrating Needs into Our Vision of Sustainability. *Futures* 26(2):180-184.

Clarkson MBE. 1995. A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance. *Academy of Management Review* 20(1):92-117.

Clegg SR. 1990. *Modern Organizations: Organization Studies in the Postmodern World*. London: Sage.

Clifford A, Dixon SEA. 2006. Green-Works: A Model for Combining Social and Ecological Entrepreneurship. In: Mair J, Robinson J, Hockerts K, editors. *Social Entrepreneurship*. New York, NY: Palgrave MacMillan. p 214-234.

Cohen B, Smith B, Mitchell R. *Forthcoming*. Toward a Sustainable Conceptualization of Dependent Variables in Entrepreneurship Research. *Business Strategy and the Environment*.

Cohen B, Winn MI. 2007. Market Imperfections, Opportunity and Sustainable Entrepreneurship. *Journal of Business Venturing* 22(1):29-49.

Cornelius B, Landström H, Persson O. 2006. Entrepreneurial Studies: The Dynamic Research Front of a Developing Social Science. *Entrepreneurship Theory and Practice* 30(3):375-398.

Costanza R. 2000. Social Goals and the Valuation of Ecosystem Services. *Ecosystems* 3:4-10.

Cowen MP, Shenton RW. 1996. *Doctrines of Development*. New York: Routledge.

Crals E, Vereeck L. Sustainable Entrepreneurship in SMEs. Theory and Practice.; 2004; Copenhagen, 12-14 February.

Cyert RM, March JG. 1963. *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.

Daft RL, Lewin AY. 1990. Can Organization Studies Begin to Break Out of the Normal Science Straightjacket? An Editorial Essay. *Organization Science* 1(1):1-9.

Daly HE. 1990. Sustainable Development: From Concept and Theory to Operational Principles. Population and Development Review 16(Supplement: Resources, Environment, and Population: Present Knowledge, Future Options):25-43.

Daly HE. 1996. *Beyond Growth: The Economics of Sustainable Development*. Boston: Beacon Press.

Davidson-Hunt IJ, Berkes F. 2003. Nature and Society Through the Lens of Resilience: Toward a Human-in-Ecosystem Perspective. In: Berkes F, Colding J, Folke C, editors. *Navigating Social-Ecological Systems*. Cambridge, UK: Cambridge University Press.

Davis GF. 2005. Firms and Environments. In: Smelser NJ, Swedberg R, editors. *The Handbook of Economic Sociology*. 2nd ed. Oxford: Princeton University Press. p 478-502.

Davis GF, Marquis C. 2005. Prospects for Organization Theory in the Early Twenty-First Century. *Organization Science* 16(4):332-343.

De Groot R. 1987. Environmental Functions as a Unifying Concept for Ecology and Economics. *The Environmentalist* 7(2):105-109.

De Groot RS, Wilson MA, Boumans RMJ. 2002. A Typology for the Classification, Description and Valuation of Ecosystem Functions, Goods and Services. *Ecological Economics* 41:393-408.

Dean TJ, McMullen JS. 2007. Toward a Theory of Sustainable Entrepreneurship: Reducing Environmental Degredation Through Entrepreneurial Action. *Journal of Business Venturing* 22(1):50-76.

Dees JG. 1998. The Meaning of "Social Entrepreneurship". Ewing Marion Kauffman Foundation and Standford University.

Dees JG, Economy P, Emerson J. 2002. *Enterprising Nonprofits: A Toolkit for Social Entrepreneurs*. New York: John Wiley and Sons.

DiMaggio PJ, Powell WW. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review* 48:147-60.

Dimov D. 2007a. Beyond the Single-Person, Single-Insight Attribution in Understanding Entrepreneurial Opportunities. *Entrepreneurship Theory and Practice* 31(5):713-731.

Dimov D. 2007b. From Opportunity Insight to Opportunity Intention: The Importance of Person-Situation Learning Match. *Entrepreneurship Theory and Practice* 31(4):561-583.

Dincer I. 2000. Renewable Energy and Sustainable Development: A Crucial Review. *Renewable and Sustainable Energy Reviews* 4(2):157-175.

Dixon SEA, Clifford A. 2007. Ecopreneurship - A New Approach to Managing the Triple Bottom Line. *Journal of Organizational Change Management* 20(3):326-345.

Drucker PF. 1985. *Innovation and Entrepreneurship*. London: Heinmann.

Dunbar RLM, Starbuck WH. 2006. Learning to Design Organizations and Learning from Designing Them. *Organization Science* 17(2):171-178.

Dutta DK, Crossan MM. 2005. The Nature of Entrepreneurial Opportunities: Understanding the Process Using the 4I Organizational Learning Framework. *Entrepreneurship Theory and Practice* 29(4):425-449.

Dyllick T, Hockerts K. 2002. Beyond the Business Case for Corporate Sustainability. *Business Strategy and the Environment* 11(2):130-141.

Egri CP, Pinfield LT. 1996. Organizations and the Biosphere: Ecologies and Environments. In: Clegg SR, Hardy C, Nord WR, editors. *Handbook of Organization Studies*. London: SAGE. p 459-483.

Elgin D. 1994. Building a Sustainable Species-Civilization: A Challenge of Culture and Consciousness. *Futures* 26(2):234-245.

Elkington J. 1997. *Cannibals with Forks*. Oxford: Capstone Publishers.

Erekson OH, Loucks OL, Strafford NC. 1999. The Context of Sustainability. In: Loucks OL, Erekson OH, Bol JW, Gorman RF, Johnson PC, Krehbiel TC, editors. *Sustainability Perspectives for Resources and Business*. New York: Lewis.

Etzioni A. 1960. Two Approaches to Organizational Analysis: A Critique and a Suggestion. *Administrative Science Quarterly* 5:257-278.

Etzioni A. 1964. *Modern Organizations*. Englewood Cliffs, NY: Prentice-Hall.

Falk J, Ryan C. 2007. Inventing a Sustainable Future: Australia and the Challenge of Eco-Innovation. *Futures* 39:215-229.

Figge F, Hahn T. 2004. Sustainable Value Added -- measuring corporate contributions to sustainability beyond eco-efficiency. *Ecological Economics* 48:173-187.

Freeman RE. 1984. *Strategic Management: A Stakeholder Approach*. Marshfield, MA: Pitman.

Galbraith JR. 1973. *Designing Complex Organizations*. Reading, MA: Addison-Wesley.

Gartner WB. 1985. A Conceptual Framework for Describing the Phenomenon of New Venture Creation. *Academy of Management Review* 10(4):696-706.

Gartner WB. 1989. "Who Is an Entrepreneur?" Is the Wrong Question. *Entrepreneurship Theory and Practice* 13(4):47-68.

Gartner WB. 1993. Words Lead to Deeds: Towards an Organizational Emergence Vocabulary. *Journal of Business Venturing* 8:231-239.

Gartner WB, Carter NM, Hills GE. 2003. The Language of Opportunity. In: Steyaert C, Hjorth D, editors. *New Movements in Entrepreneurship*. Cheltenham, UK: Edward Elgar. p 103-124.

Gibb AA. 1996. Entrepreneurship and Small Business Management: Can We Afford to Neglect Them in the Twenty-First Century Business School? *British Journal of Management* 7(4):309-322.

Giddings B, Hopwood B, O'Brien G. 2002. Environment, Economy and Society: Fitting Them Together Into Sustainable Development. *Sustainable Development* 10:187-196.

Gilbert DRJ. 2002. Ethics, Management, and the Existentialist Entrepreneur. In: Freeman RE, Venkataraman S, editors. *Ethics and Entrepreneurship*, The Ruffin Series No. 3. Charlottesvilles, VA: Society for Business Ethics. p 113-124.

Gladwin TN, Kennelly JJ, Krause T-S. 1995. Shifting Paradigms for Sustainable Development: Implications for Management Theory and Research. *Academy of Management Review* 20(4):874-907.

Goodland R. 1995. The Concept of Environmental Sustainability. *Annual Review of Ecological Systems* 26:1-24.

Goodland R, Daly HE. 1996. Environmental Sustainability: Universal and Non-Negotiable. *Ecological Applications* 6(4):1002-1017.

Gross E, Etzioni A. 1985. *Organizations in Society*. Englewood Cliffs, NJ: Prentice-Hall.

Gunderson LH, Holling CS. 2002. *Panarchy: Understanding Transformations in Human and Natural Systems*. Washington, DC: Island Press.

Gundry LK, Welsch HP. 2001. the Ambitious Entrepreneur: High Growth Strategies of Women-Owned Enterprises. *Journal of Business Venturing* 16(5):453-470.

Hage J, Aiken M. 1969. Routine Technology, Social Structure, and Organizational Goals. *Administrative Science Quarterly* 14:366-376.

Hajer MA. 1995. *The Politics of Environmental Discource: Ecological Modernization and the Policy Process*. Oxford: Oxford University Press.

Hall C, Lindenberger D, Kummel R, Kroeger T, Eichhorn W. 2001. The Need to Reintegrate the Natural Sciences with Economics. *BioScience* 51(8):663-673.

Hall R. 1996. *Organizations: Structures, Processes, and Outcomes*. Englewood Cliffs, NJ: Prentice-Hall.

Hannan MT, Freeman J. 1977. The Population Ecology of Organizations. *The American Journal of Sociology* 82(5):929-964.

Harris JM, Goodwin NR. 2001. Volume Introduction. In: Harris JM, Wise TA, Gallagher KP, Goodwin NR, editors. *A Survey of Sustainable Development, Social and Economic Dimensions*. Washington: Island Press. p xxvii-xxxvi.

Hart SL. 2005. *Capitalism at the Crossroads: The Unlimited Business Opportunities in Solving the World's Most Difficult Problems*. Upper Saddle River, NJ: Wharton School Publishing.

Haugh H. 2007. Community-Led Social Venture Creation. *Entrepreneurship Theory and Practice* 31(2):161-182.

Haugh HM, Pardy W. 1999. Community Entrepreneurship in North East Scotland. *International Journal of Entrepreneurial Behaviour and Research* 5(4):163-172.

Hébert RF, Link AN. 1988. *The Entrepreneur, Mainstream views and radical critiques*. New York: Praeger.

Hockerts K. 2006. Entrepreneurial Opportunity in social Purpose Business Ventures. In: Mair J, Robinson J, Hockerts K, editors. *Social Entrepreneurship*. New York Palgrave MacMillan. p 142-154.

Holling CS, Berkes F, Folke C. 1998. Science, Sustainability and Resource Management. In: Berkes F, Folke C, Colding J, editors. *Linking Social and Ecological Systems: Managing Practices and Social Mechanisms for Building Resilience*. Cambridge, UK: Cambridge University Press. p 342-362.

Holling CS, Gunderson LH, Peterson GD. 2002. Sustainability and Panarchies. In: Gunderson LH, Holling CS, editors. *Panarchy: Understanding Transformations in Human and Natural Systems*. Washington, DC: Island Press. p 63-102.

Hornaday R. 1982. Research About Living Entrepreneurs. In: Kent C, Sexton D, Vesper K, editors. *Encyclopedia of Entrepreneurship*. Englewood Cliffs, NJ: Prentice Hall.

Hueting R, Reijnders L. 1998. Sustainability is an Objective Concept. *Ecological Economics* 27:139-147.

Hull DL, Bosley JJ, Udell GG. 1980. Reviewing the Heffalump: Identifying Potential Entrepreneurs by Personality Characteristics. *Journal of Small Business Management* 18:11-18.

Ingold T. 1997. Life Beyond the Edge of Nature? or, The Mirage of Society. In: Greenwood JD, editor. *The Mark of the Social*. Lanham, MD: Rowman and Littlefield. p 231-252.

Isaak R. 2002. The Making of the Ecopreneur. *Greener Management International* 38(Summer):81-91.

Isaak RA. 1999. *Green Logic: Ecopreneurship, Theory, and Ethics*. Hartford, CT: Kumarian Press.

IUCN. 1980. World Conservation Strategy: Living Resource Conservation for Sustainable Development. Gland, Switzerland: International Union for Conservation of Nature and Natural Resources, United Nations Environment Program, and World Wildlife Fund.

Jack SL, Anderson AR. 2002. The Effects of Embeddedness on the Entrepreneurial Process. J*ournal of Business Venturing* 17:467-487.

Jacobs M. 1995. Sustainable development, capital substitution and economic humility: a response to Beckerman. *Environmental Values* 4(1):57-68.

Katz D, Gartner WB. 1988. Properties of Emerging Organizations. *Academy of Management Review* 13(3):429-441.

Katz D, Kahn RL. 1978. *The Social Psychology of Organizations*. New York: John Wiley & Sons.

Keijzers G. 2002. The Transition to the Sustainable Enterprise. *Journal of Cleaner Production* 10(4):349-359.

Kemp R. 1994. Technology and the Transition to Environmental Sustainability. *Futures* 26(10):1023-1046.

Keynes JM. 1935. *The General Theory of Employment, Interest, and Money. Cambridge*, UK: Cambridge University Press.

Kirzner IM. 1973. *Competition and Entrepreneurship*. Chicago: University of Chicago Press.

Kirzner IM. 1997a. Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach. *Journal of Economic Literature* 35(1):60-85.

Kirzner IM. 1997b. *How Markets Work: Disequilibrium, Entrepreneurship and Discovery*. London: Institute for Economic Affairs.

Knight FH. 1921. *Risk, Uncertainty and Profit*. Boston: Houghton Mifflin Company.

Kodithuwakku SS, Roas P. 2002. the Entrepreneurial Process and Economic Success in a Constrained Environment. *Journal of Business Venturing* 17:431-465.

Koh HC. 1996. Testing Hypotheses of Entrepreneurial Characteristics. *Journal of Managerial Psychology* 11:12-25.

Kottak CP. 1999. The New Ecological Anthropology. *American Anthropologist* 101(1):23-35.

Krueger Jr N. 1998. Encouraging the Identification of Environmental Opportunities. *Journal of Organizational Change Management* 11(2):174-183.

Krueger Jr NF, Reilly MD, Carsrud AL. 2000. Competing Models of Entrepreneurial Intentions. *Journal of Business Venturing* 15:411-432.

Kuehr R. 2007. Towards a Sustainable Society: United Nations University's Zero Emissions Approach. *Journal of Cleaner Production* 15:1198-1204.

Kunkel SW. 1991. *The Impact of Strategy and Industry Structure on New Venture Performance*. Athens, GA: University of Georgia Press.

Lawrence PR, Lorsch JW. 1969. *Developing Organizations: Diagnosis and Action*. Reading, MA: Addison-Wesley.

Leadbetter C. 1997. *The Rise of the Social Entrepreneur*. London: Demos.

Lélé SM. 1991. Sustainable Development: A Critical Review. *World Development* 19(6):607-621.

Leopold A. 1933. *Game Management*. New York: Charles Scribner's Sons.

Leopold A. 1949. *A Sand County Almanac*. Oxford, UK: Oxford University Press.

Lewin AY, Long CP, Carroll TN. 1999. The Coevolution of New Organizational Forms. *Organization Science* 10(5):535-550.

Lewin AY, Volberda HW. 1999. Prolegomena on Coevolution: A Framework for Research on Strategy and New Organizational Forms. *Organization Science* 10(5):519-534.

Lichtenstein BB, Dooley KJ, Lumpkin GT. 2006. Measuring Emergence in the Dynamics of New Venture Creation. *Journal of Business Venturing* 21:153-175.

Linnanen L. 2002. An Insider's Experience with Environmental Entrepreneurship. *Greener Management International* 38:71-80.

Littunen H, Tohomo T. 2003. the High Growth in New Metal-Based Manufacturing and Business Service Firms in Finland. *Small Business Economics* 21(2):187-200.

Lounsbury M, Crumley ET. 2007. New practice Creation: An Institutional Perspective on Innovation. *Organization Studies* 28(7):993-1012.

Low MB, MacMillan IC. 1988. Entrepreneurship: Past Research and Future Challenges. *Journal of Management* 14(2):139-161.

Lumley S, Armstrong P. 2004. Some of the nineteenth century origins of the sustainability concept. *Environment, Development and Sustainability* 6:367-378.

Lutz M. 1992. A humanistic approach to socio-economic development. In: Ekins P, Manfred M-N, editors. *Real-life Economics, Understanding Wealth Creation*. New York: Routledge. p 165-167.

MacIntosh R, MacLean D. 1999. Conditioned Emergence: A Dissipative Structures Approach to Transformation. *Strategic Management Journal* 20(4):297-316.

Mair J, Martí I. 2006. Social Entrepreneurship Research: A Source of Explanation, Prediction, and Delight. *Journal of World Business* 41:36-44.

Maiteny P. 2000. The Psychodynamics of Meaning and Action for a Sustainable Future. *Futures* 32:339-360.

Malaska P. 2001. A Futures Research Outline of a Post-Modern Idea of Progress. *Futures* 33:225-243.

March JG. 1962. The Business Firm as a Political Coalition. *The Journal of Politics* 24(4):662-678.

Marcketti SB, Niehm LS, Fuloria R. 2006. An Exploratory Study of Lifestyle Entrepreneurship and Its Relationship to Life Quality. *Family and Consumer Sciences Research Journal* 34(3):241-259.

McDonough W, Braungart M. 2002. Design for the Triple Top Line: New Tools for Sustainable Commerce. *Corporate Environmental Strategy* 9(3):251-258.

McMullen JS, Shepherd DA. 2006. Entrepreneurial Action and the Role of Uncertainty in the Theory of the Entrepreneur. *Academy of Management Review* 31(1):132-152.

Meadows D, Meadows DL, Randers J, Behrens WWI. 1972. *The Limits to Growth*. New York: Universe Books.

Meyer JW, Rowan B. 1977. Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology* 83(340-363).

Miles RE, Snow CC, Pfeffer J. 1974. Organization-Environment: Concepts and Issues. *Industrial Relations* 13(3):244-264.

Miner JB. 1997. *A Psychological Typology of Successful Entrepreneurs*. London: Quorum Books.

Mitchell RK. 1995. Enhancing Entrepreneurial Expertise: Experiential Pedagogy and the New Venture Expert Script. *Simulation and Gaming* 26(3):288-306.

Mitchell RK, Agle BR, Wood DJ. 1997. Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. *Academy of Management Review* 22(4):853-886.

Mitchell RK, Busenitz L, Lant T, McDougall PP, Morse EA, Smith JB. 2002. Toward a Theory of Entrepreneurial Cognition: Rethinking the People Side of Entrepreneurship Research. *Entrepreneurship Theory and Practice* 27(2):93-104.

Mitchell RK, Busenitz LW, Bird B, Gaglio CM, McMullen JS, Morse EA, Smith JB. 2007. The Central Question in Entrepreneurial Cognition Research 2007. *Entrepreneurship Theory and Practice* 31(1):1-27.

Morgan G. 1997. *Images of Organization*. Thousand Oaks, CA: Sage.

Nelson RR, Winter SG. 1982. *An Evolutionary Theory of Economic Change*. Cambridge, MA: Harvard University Press.

Nicholls A, editor. 2006. *Social Entrepreneurship: New Models of Sustainable Social Change*. Oxford, UK: Oxford University Press.

Niiniluoto I. 2001. Futures Studies: Science or Art? *Futures* 33:371-377.

Norgaard RB. 1994. *Development Betrayed, The End of Progress and a Coevolutionary Revisioning of the Future*. New York: Routledge.

O'Hara SU. 1997. Toward a sustaining production theory. *Ecological Economics* 20:141-154.

Odum EP. 1997. *Ecology: A Bridge Between Science and Society*. Sunderland, MA: Sinauer Associates.

Ouchi WG. 1980. Markets, bureaucracies and clans. *Administrative Science Quarterly* 25:129-141.

Papanek V. 1984. *Design for the Real World: Human Ecology and Social Change*. London: Thames & Hudson.

Paredo AM, McLean M. 2006. Social Entrepreneurship: A Critical Review of the Concept. *Journal of World Business* 41:56-65.

Parrish BD. 2007. Designing the Sustainable Enterprise. *Futures* 39(7):846-860.

Parrish BD. 2008a. *Sustainability Entrepreneurship: Design Principles, Practices, and Paradigms*. Leeds, UK: University of Leeds.

Parrish BD. 2008b. Sustainability Entrepreneurship: Organizational Innovations at *Native*Energy. In: Schaper M, editor. *Making Ecopreneurs: Developing Sustainable Entrepreneurship*. 2nd ed. Aldershot, Hampshire: Ashgate.

Pastakia A. 1998. Grassroots Ecopreneurs: Change Agents for a Sustainable Society. *Journal of Organizational Change Management* 11(2):157-173.

Pastakia A. 2002. Assessing Ecopreneurship in the Context of a Developing Country. *Greener Management International* 38:93-108.

Pearce D. 1988. Economics, Equity and Sustainable Development. *Futures* 20(6):598-605.

Pearce DW, Markandya A, Barbier EB. 1989. *Blueprint for a Green Economy*. London: Earthscan.

Pearson CJ. 2003. Sustainability: Perceptions of Problems and Progress of the Paradigm. *International Journal of Agricultural Sustainability* 1(1):3-13.

Pepper D. 1996. *Modern Environmentalism: An Introduction*. London: Routledge.

Perrini F, Vurro C. 2006. Social Entrepreneurship: Innovation and Social Change Across Theory and Practice. In: Mair J, Robinson J, Hockerts K, editors. *Social Entrepreneurship*. New York Palgrave MacMillan. p 57-85.

Perrow C. 1970. *Organizational Analysis: A Sociological View*. London: Tavistock.

Perrow C. 1991. A Society of Organizations. *Theory and Society* 20(6):725-762.

Pettigrew AM. 1973. *The Politics of Organizational Decision-making*. London: Tavistock.

Pezzoli K. 1997. Sustainable Development: A Transdisciplinary Overview of the Literature. *Journal of Environmental Planning and Management* 40(5):549-574.

Pfeffer J. 1981. *Power in Organizations*. Marshfield, MA: Pitman.

Pfeffer J. 1997. *New Directions for Organization Theory: Problems and Prospects*. New York: Oxford University Press.

Pfeffer J, Salancik GR. 1978. *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper and Row.

Porter ME, Kramer MR. 2002. The Competitive Advantage of Corporate Philanthropy. *Harvard Business Review* 80:56-68.

Post JE, Altman BW. 1994. Managing the Environmental Change Process: Barriers and Opportunities. *Journal of Organizational Change Management* 7(4):64-81.

Prahalad CK. 2006. *The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits*. Upper Saddle River, NJ: Wharton School Publishing.

Pressman S. 1999. *Fifty Major Economists*. New York: Routledge.

Purser RE, Park C, Montuori A. 1995. Limits to Anthropocentrism: Toward an Ecocentric Organization Paradigm? *Academy of Management Review* 20(4):1053-1089.

Rahman A. 1992. People's self-development. In: Ekins P, Manfred M-N, editors. *Real-life Economics, Understanding Wealth Creation*. New York: Routledge. p 167-180.

Ravetz JR. 1997. The Science of 'What-If?' *Futures* 29(6):533-539.

Reed MI. 1992. *The Sociology of Organizations: Themes, Perspectives and Prospects*. New York: Harvester Wheatsheaf.

Robinson J. 2006. Navigating Social and Institutional Barriers to Markets: How Social Entrepreneurs Identify and Evaluate Opportunities. In: Mair J, Robinson J, Hockerts K, editors. *Social Entrepreneurship*. New York: Palgrave MacMillan. p 95-120.

Romme AG. 2003. Making a Difference: Organization as Design. *Organization Science* 14(5):558-573.

Rossi MS, Brown HS, Baas LW. 2000. Leaders in Sustainable Development: How Agents of Change Define the Agenda. *Business Strategy and the Environment* 9:273-286.

Rostow WW. 1960. *Stages of Economic Growth: A Non-Communist Manifesto* Cambridge, UK: Cambridge University Press.

Sagawa S, Segal E. 2000. Common Interest, Common Good: Creating Value Through Business and Social Sector Partnerships. *California Management Review* 42(2):105-122.

Sahlman WA. 1996. Some Thoughts on Business Plans. In: Sahlman WA, Stevenson HH, Roberts MJ, Bhide AV, editors. *The Entrepreneurial Venture*. Boston, MA: Harvard Business School Press. p 138-176.

Sandberg WR, Hofer CW. 1987. Improving New Venture Performance: The Role of Strategy, Industry Structure, and the Entrepreneur. *Journal of Business Venturing* 2:5-28.

Sandström J. 2005. Extending the Discourse in Research on Corporate Sustainability. *International Journal of Innovation and Sustainable Development* 1/2:153-167.

Sarason Y, Dean T, Dillard JF. 2006. Entrepreneurship as the Nexus of Individual and Opportunity: A Structuration View. *Journal of Business Venturing* 21(3):286-305.

Sarasvathy SD. 2001. Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency. *Academy of Management Review* 26(2):243-263.

Sarasvathy SD. 2002. Entrepreneurship as Economics with Imagination. In: Freeman RE, Venkataraman S, editors. Ethics and Entrepreneurship, The Ruffin Series No. 3. Charlottesville, VA: Society for Business Ethics. p 95-112.

Sarasvathy SD. 2003. Entrepreneurship as a Science of the Artificial. *Journal of Economic Psychology* 24:203-220.

Sarasvathy SD. 2004a. Making It Happen: Beyond Theories of the Firm to Theories of Firm Design. *Entrepreneurship Theory and Practice* 28(6):519-531.

Sarasvathy SD. 2004b. The Questions We Ask and the Questions We Care About: Reformulating Some Problems in Entrepreneurship Research. *Journal of Business Venturing* 19:707-717.

Schaltegger S. 2002. A Framework for Ecopreneurship. *Greener Management International* 38:45-58.

Schaper M. 2002. The Essence of Ecopreneurship. *Greener Management International* 38(Summer):26-30.

Schaper M, editor. 2005. *Making Ecopreneurs: Developing Sustainable Entrepreneurship*. Burlington, VT: Ashgate Publishing.

Schick H, Marxen S, Freiman J. 2002. Sustainability Issues for Start-up Entrepreneurs. *Greener Management International* 38:59-70.

Schildt HA, Zahra SA, Sillanpää A. 2006. Scholarly Communities in Entrepreneurship Research: A Co-Citation Analysis. *Entrepreneurship Theory and Practice* 30(3):399-415.

Schlange LE. 2006. What Drives Sustainable Entrepreneurs? Applied Business and Entrepreneurship Association International Conference. Kona, HI, USA. 16-20 November.

Schlange LE. 2007. Stakeholder Perception in Sustainable Entrepreneurship: The Role of Managerial and Organizational Cognition. First World Symposium on Sustainable Entrepreneurship as part of the Corporate Responsibility Research Conference. University of Leeds, Leeds, UK. 15-17 July.

Schneitz KE, Epstein MC. 2005. Exploring the Financial Value of a Reputation for Corporate Social Responsibility During a Time of Crisis. *Corporate Reputation Review* 7:327-345.

Schumpeter JA. 1934. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. New York: Oxford University Press.

Schumpeter JA. 1943. *Capitalism, Socialism, and Democracy*. London.

Scott WR. 1964. Theory of Organizations. In: Faris REL, editor. *Handbook of Modern Sociology*. Chicago: Rand McNally & Company.

Scott WR. 1992. *Organizations: Rational, Natural, and Open Systems*. Englewood Cliffs, NJ: Prentice Hall.

Scott WR. 2001. *Institutions and Organizations*. Thousand Oaks, CA: Sage.

Scott WR. 2004. Reflections on a Half-Century of Organizational Sociology. *Annual Review of Sociology* 30(1):1-21.

Seelos C, Ganly K, Mair J. 2006. Social Entrepreneurs Directly Contribute to Global Development Goals. In: Mair J, Robinson J, Hockerts K, editors. *Social Entrepreneurship*. New York: Palgrave MacMillan. p 235-275.

Selznick P. 1948. Foundations of the Theory of Organizations. *American Sociological Review* 13(1):25-35.

Shane S. 1996. Explaining Variation in Rates of Entrepreneurship in the United States: 1899-1988. *Journal of Management* 22(5):747-781.

Shane S, Venkataraman S. 2000. The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review* 25(1):217-226.

Sharma S. 2002. Research in Corporate Sustainability: What Really Matters? In: Sharma S, Starik M, editors. Research in *Corporate Sustainability: The Evolving Theory and Practice of Organizations in the Natural Environment*. Northampton, MA: Edward Elgar Publishing. p 1-30.

Sharma S, Ruud A. 2003. On The Path to Sustainability: Integrating Social Dimensions into the Research and Practice of Environmental Management. *Business Strategy and the Environment* 12:205-214.

Simon HA. 1964. On the Concept of Organizational Goal. *Administrative Science Quarterly* 9:1-22.

Simon HA. 1991. Organizations and Markets. *The Journal of Economic Perspectives* 5(2):25-44.

Simon HA. 1996. *The Sciences of the Artificial*. Cambridge, MA: MIT Press.

Springett D. 2003. Business Conceptions of Sustainable Development: A Perspective from Critical Theory. *Business Strategy and the Environment* 12:71-86.

Starbuck WH. 2003a. The Origins of Organization Theory. In: Tsoukas H, Knudsen C, editors. *The Oxford Handbook of Organization Theory*. Oxford, UK: Oxford University Press.

Starbuck WH. 2003b. Shouldn't Organization Theory Emerge from Adolescence? *Organization* 10:439-452.

Starik M, Rands GP. 1995. Weaving an Integrated Web: Multilevel and Multisystem Perspectives of Ecologically Sustainable Organizations. *Academy of Management Review* 20(4):908-935.

Starr JA, Fondas N. 1992. A Model of Entrepreneurial Socialization and Organization Formation. *Entrepreneurship Theory and Practice* 17:67-76.

Stead WE, Stead JG. 1994. Can Humankind Change the Economic Myth? Paradigm Shifts Necessary for Ecologically Sustainable Business. *Journal of Organizational Change Management* 7(4):15-31.

Stern PC. 1993. A Second Environmental Science: Human-Environment Interactions. *Science* 260:1897-1899.

Stevenson HH, Jarillo JC. 1990. A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal* 11:17-27.

Stevenson HH, Roberts MJ, Grousbeck HI. 1985. *New Business Ventures and the Entrepreneur*. Homewood, IL: Richard D. Irwin.

Steyaert C. 1998. A Qualitative Methodology for Process Studies of Entrepreneurship. *International Studies of Management and Organization* 27(3):13-33.

Stinchcombe AL. 1965. Social Structure and Organizations. In: March JG, editor. *Handbook of Organizations*. Chicago: Rand McNally. p 142-193.

Sweet S, Roome N, Sweet P. 2003. Corporate Environmental Management and Sustainable Enterprise: The Influence of Information Processing and Decision Styles. *Business Strategy and the Environment* 12(265-277).

Tencati A, Perrini F. 2006. The Sustainability Perspective: A New Governance Model. In: Kakabadse A, Morsing M, editors. *Corporate Social Responsibility*. New York: Palgrave MacMillan. p 94-111.

Thin N. 2002. *Social Progress and Sustainable Development*. Bloomfield, CT: Kumarian Press.

Thompson J. 2002. the World of the Social Entrepreneur. *International Journal of Public Sector Management* 15(5):412-431.

Thompson J, Alvy G, Lees A. 2000. Social Entrepreneurship - A New Look at the People and the Potential. *Management Decision* 38(5):328-338.

Thompson JD. 1967. *Organizations in Action: Social Science Bases of Administrative Theory*. New York: McGraw-Hill.

Thompson JD, McEwen WJ. 1958. Organizational goals and environment: goal-setting as an interaction process. *American Sociological Review* 23(1):23-31.

Thorpe R, Gold J, Holt R, Clarke J. 2006. Immaturity: The Constraining of Entrepreneurship. *International Small Business Journal* 6(24):232-250.

Tilley F, Parrish BD. 2006. From Poles to Wholes: Facilitating an Integrated Approach to Sustainable Entrepreneurship. *World Review of Entrepreneurship, Management and Sustainable Development* 2(4):281-294.

Tilley F, Young W. 2004. Can Sustainable Entrepreneurs Become the True Wealth Generators of the Future? Business Strategy and the Environment Conference. University of Leeds, UK, 13-14 September.

Timmons JA, Smollen LE, Dingee ALM. 1985. *New Venture Creation*. Homewood, IL: Irwin.

Tsoukas H, Chia R. 2002. On Organizational Becoming: Rethinking Organizational Change. *Organization Science* 13(5):567-582.

Twomey DF. 2006. Designed Emergence as a Path to Enterprise Sustainability. *E:CO* 8(3):12-23.

Ucbasaran D, Westhead P, Wright M. 2001. The Focus of Entrepreneurial Research: Contextual and Process Issues. *Entrepreneurship Theory and Practice* 25(4):57-80.

United Nations Conference on the Human Environment. 1972. Declaration of the United Nations Conference on Human Development. Stockholm, Sweden [Available online   at: http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=97&ArticleID= 1503].

Van Aken JE. 2004. Management Research on the Paradigm of the Design Sciences: The Quest for Field-Tested and Grounded Technological Rules. *Journal of Management Studies* 41(2):219-246.

Van Aken JE. 2005. Management Research as a Design Science: Articulating the Research Products of Mode 2 Knowledge Production in Management. *British Journal of Management* 16(1):19-36.

Van de Ven AH. 1993. The Development of an Infrastructure for Entrepreneurship. *Journal of Business Venturing* 8:212-230.

Van de Ven AH, Engleman RM. 2004. Event- and outcome-driven explanations of entrepreneurship. *Journal of Business Venturing* 19:343-358.

Van de Ven AH, Huber GP. 1990. Longitudinal Field Research Methods for Studying Processes of Organizational Change. *Organization Science* 1(3):213-219.

Venkataraman S. 1997. The Distinctive Domain of Entrepreneurship Research: An Editor's Perspective. In: Katz J, Brockhaus R, editors. *Advances in Entrepreneurship, Firm Emergence, and Growth*. Greenwich, CT: JAI Press. p 119-138.

Vesper KH. 1980. *New Venture Strategies*. Englewood Cliffs, NJ: Prentice Hall.

Volberda HW. 1998. *Building The Flexible Firm: How To Remain Competitive*. Oxford, UK: Oxford University Press.

Volery T. 2002. An Entrepreneur Commercialises Conservation. *Greener Management International* 38:109-116.

Waddock SA. 1988. Building Successful Partnerships. *Sloan Management Review* 29(4):17-23.

Wallace SL. 1999. Social Entrepreneurship: The Role of Social Purpose Enterprises in Facilitating Community Economic Development. *Journal of Developmental Entrepreneurship* 4:153-174.

Walley EE, Taylor DW. 2002. Opportunists, Champions, Macericks...? *Greener Management International* 38:31-43.

Walsh JP, Meyer AD, Schoonhoven CB. 2006. A Future for Organization Theory: Living in and Living with Changing Organizations. *Organization Science* 17(5):657-671.

Walsh JP, Weber K, Margolis JD. 2003. Social Issues and Management: Our Lost Cause Found. *Academy of Management Journal* 29(6):859-881.

Wambugu F. 1999. Why Africa Needs Agriculture Biotech. *Nature* 400:15-16.

WBCSD. 2002. Corporate Social Responsibility: The WBCSD's Journey. Geneva: World Business Council for Sustainable Development.

WCED. 1987. *Our Common Future*. Oxford: Oxford University Press.

Weber M. 1947. The Theory of Social and Economic Organisation. Parsons T, editor. Glencoe, IL: The Free Press & The Falcon's Wing Press.

Weerawardena J, Mort GS. 2006. Investigating Social Entrepreneurship: A Multidimensional Model. *Journal of World Business* 41:21-35.

Weick KE. 1979. *The Social Psychology of Organizing*. Reading, MA: Addison-Wesley.

Weick KE. 1984. Small Wins: Redefining the Scale of Social Problems. *American Psychologist* 39(1):40-49.

Weick KE. 2001. *Making Sense of the Organisation*. Malden, MA: Blackwell.

Westley F, Carpenter SR, Brock WA, Holling CS, Gunderson LH. 2002. Why Systems of People and Nature Are Not Just Social and Ecological Systems. In: Gunderson LH, Holling CS, editors. *Panarchy: Understanding Transformations in Human and Natural Systems*. Washington: Island Press. p 103-119.

Woodward J. 1970. *Industrial Organisation: Behaviour and Control*. London: Oxford University Press.

Wright M, Robbie K, Ennew C. 1997. Serial Entrepreneurs. *British Journal of Management* 8(3):251-268.

Yamada J-i. 2004. A multi-dimensional view of entrepreneurship: Towards a research agenda on organization emergence. *Journal of Management Development* 23(3/4):289-320.

Yoo Y, Boland RJ, Lytinen K. 2006. From Organization Design to Organization Designing. *Organization Science* 17(2):215-229.

Young W, Tilley F. Can Businesses Move Beyond Efficiency? The Shift toward Effectiveness and Equity in the Corporate Sustainability Debate; 2003; San Francisco.