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Sustainability-driven entrepreneurship: Principles of organization design

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ABSTRACT

Concern about whether the social–ecological processes that provide for human wellbeing can be sustained has given rise to sustainable development as a broad social goal. As a dynamic force for change, entrepreneurship is increasingly expected to contribute to this goal. This article reports on the results of an intensive empirical study investigating the organization design expertise necessary for sustainability-driven entrepreneurs to succeed in a competitive market context. Results reveal five principles of organization design that diverge in important ways from the conventional principles of entrepreneurship, suggesting the expertise required for venture success differs depending on entrepreneurial values and motives.

1. Executive summary

With growing recognition that businesses need to more directly support, rather than undermine, the ecological and social processes on which society depends, researchers have begun to explore how entrepreneurship can usefully contribute to the goal of sustainable development. Much of the research on this topic is based on the assumption that entrepreneurship involves economic activity driven by self-interested profit-seeking motives. As a consequence of this assumption, the field has been primarily occupied with developing the so-called 'business cases' for sustainable development. This directs attention toward the problems of developing market incentives and 'win–win' scenarios to motivate entrepreneurs to contribute to sustainable development. However, this restricted focus fails to account for the scope of contributions that can be made by entrepreneurs who do not require a 'business case.' It also neglects to consider the importance of making difficult tradeoffs to achieve these contributions. This study takes a different tact based on the recognition that some entrepreneurs are driven by the motivation to build enterprises that directly contribute to sustainable development. In so doing, the research problem is reframed from a problem of motivating action to the problem of ensuring the effectiveness of action. The aim of this study is to explore how such entrepreneurs are able to reconcile their sustainability-driven values and motives with the organizational imperatives for an enterprise to survive and thrive in a competitive market context.

This reframing of the research problem suggests research is needed that explores the organization design expertise of successful sustainability-driven entrepreneurs. An empirical field study was conducted to compare the unique design processes of four cases of sustainability entrepreneurship, each in a different industry and region. The industries were marketing and finance, import–export and wholesaling, training, and hospitality; the regions were North and Central America, Europe, East Africa, and Asia-Pacific. Enterprises were chosen based on a strict set of criteria to ensure they were successful (each was between 5 and 15 years old, and was stable or growing) and embodied sustainability-driven values (mechanisms for enhancing environmental quality and social wellbeing were embedded in core business activities). An intensive, qualitative research strategy was used to identify the design constants that were used by these entrepreneurs to guide the process of organizing. These design constants took the form of heuristic, generative rules of action. Such rules serve as an adaptable basis for reasoning through a variety of context-specific design problems, and reflect the way entrepreneurs grapple with both intention and contingency during new venture creation.

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Analysis of the case data revealed five generative rules, presented as principles of organization design. These are the principles of resource perpetuation, benefit stacking, strategic satisficing, qualitative management, and worthy contribution. Together, these design principles constitute a logically consistent interpretive scheme, termed 'perpetual reasoning,' which is distinct from the interpretive scheme used by conventional entrepreneurs. The source of this divergence is found in the instrumental purpose for which an enterprise is created. Conventional entrepreneurs view enterprises as a means of profiting from the exploitation of resources, with the underlying logic of using resources for one's own advantage to generate maximum financial returns in the shortest time possible. In contrast, sustainability entrepreneurs view enterprises as a means of perpetuating resources, with the underlying logic of using human and natural resources in a way that enhances and maintains the quality of their functioning for the longest time possible. This approach positions people and the natural environment not only as a means of generating wealth, but also as ends in their own right. The design principles used by these entrepreneurs are a manifestation of these values and beliefs as applied to the requirements of organizing.

The findings of this study suggest the values and motives that give rise to sustainability entrepreneurship, based on equanimity between self, other people, and nature, result in specific organizing tensions that have the potential to challenge the viability of these enterprises in a competitive market context. The significance of the design principles employed by successful sustainability entrepreneurs is that they enabled these organizing tensions to be overcome. The skillful use of perpetual reasoning, then, is likely one of the key features that distinguishes successful from equally motivated, but ultimately unsuccessful, sustainability entrepreneurs. If sustainability entrepreneurship is to be supported in practice, the implication is that such aspiring entrepreneurs require more than the right set of values and motives to succeed — they also require the right practical expertise. The design principles identified and described in this study represent one important aspect of this expertise.

2. Introduction

The rationale for studying entrepreneurship rests in the perceived contributions it makes to public policy goals, most usually economic growth, job creation, increased productivity, technological innovation, and structural realignments (Gibb, 1996; Shane, 1996). Since the 1970s sustainable development has emerged as a broader social goal, focusing on the need to integrate the pursuit of improved human wellbeing with the necessity of halting and reversing systematic ecological degradation. With the growing appreciation of sustainable development as a legitimate and increasingly urgent public policy priority, researchers, policy makers, and entrepreneurs themselves are beginning to ask what role entrepreneurship can play in contributing to this social goal. The small but rapidly growing literature in this area builds on research on entrepreneurs driven by alternative motives, including environmental and social entrepreneurs (e.g. Mair et al., 2006; Schaper, 2009), but is unique in focusing on entrepreneurs who integrate both environmental *and* social purposes into a single venture (Parrish and Tilley, 2009; Tilley and Parrish, 2009). Schlange (2009) has described this as sustainability-*driven* entrepreneurship, drawing attention to the distinct motives and values that define these entrepreneurs. This construct is supported by recent empirical studies that demonstrate a growing movement of such entrepreneurs in practice (Clifford and Dixon, 2006; Johanisova, 2007; Schlange, 2007).

Some have posited that the alternative motives and values that drive sustainability entrepreneurs may be significant for stimulating larger socio-economic changes toward sustainable development (Tilley and Young, 2009), and recent empirical work has found support for this argument (Parrish and Foxon, 2009). However, Gibbs (2009: 65) warns that the concept of sustainability entrepreneurship is currently a "black box," as "simply stating that economic, social and environmental aims are combined within the firm's organizational logic and practices does not get at how (and if) this is achieved." The aim of the research reported in this article is to open up this 'black box'. This study explores how entrepreneurs were able to reconcile their sustainability-driven values and motives with the organizational imperatives for an enterprise to survive and thrive in the competitive marketplace. This was accomplished with an empirically grounded, comparative field study of successful cases of sustainability-driven entrepreneurship.

This study departs from the main current of entrepreneurship and sustainable development literature in two important ways. First, it reorients the focus of research from the problem of motivating action to the problem of the effectiveness of action by exploring the particular *expertise* demonstrated by successful sustainability entrepreneurs. Second, it departs from the traditional approach to organization design research, which attempts to identify design constants in the form of prescriptive technical–rational rules leading to a predetermined organizational structure. Instead, this study investigates the more adaptable *generative rules* that serve as heuristics to guide the process of organizing and result in an enterprise that may take any number of diverse forms, but which embodies a particular organizational character.

In addition to informing our understanding of entrepreneurship for sustainable development, the results of this study also contribute to entrepreneurship research more generally. They help to demonstrate where some of the assumptions that are taken for granted in entrepreneurship research are no longer appropriate, or are appropriate for only a subset of cases. Mitchell et al. (2007: 15) observed that "the highly economic orientation of strategy research led many studies to equate entrepreneurial motive with the desire for profit," and suggested more needs to be known about how "individuals with personal motivations other than profit maximization perceive opportunity, apply decision logics, etc."

To accomplish these aims, the article is organized as follows: First, a conceptual foundation for the study is provided by defining key terms of reference and discussing the connection between sustainable development, entrepreneurship, and organization design literatures. Then the study's research design and methods are described, as well as a brief summary of the cases studied. The empirical findings are then presented in the form of five design principles of sustainability entrepreneurship, followed by a discussion of their implications in terms of organizing tensions and the resolution of those tensions. The article concludes with a

consideration of how this informs the theory and practice of entrepreneurship in general, and entrepreneurship for sustainable development in particular.

3. Conceptual foundations

3.1. Sustainable development in the context of enterprise and entrepreneurship

Sustainable development is a concept that describes the social goal of improving and maintaining human wellbeing over a long-term time horizon within the critical limits of life-sustaining ecosystems (UN Conference on the Human Environment, 1972). From the earliest articulations of this concept it has emphasized the importance of the interdependence of ecosystem health and sustained human wellbeing (Abrecht, 1979; IUCN, 1980). The central idea is that activities that provide for human wellbeing must not undermine the ecological and social processes on which they depend. While the concept describes a property of the macro-scale system of people and nature, efforts to achieve sustainable development in practice provoked questions about how this concept could be meaningfully interpreted for smaller social units, such as private enterprises. Here an enterprise is understood as a formal organization that operates through earned income. While a static (closed systems) view attempts to apply the concept to an enterprise itself, a dynamic (open systems) view focuses on how the organization contributes to sustainable development of wider society (Figge and Hahn, 2004). The latter is a more meaningful interpretation, as it recognizes that enterprises exist within a dynamic milieu of individuals, formal and informal institutions, and other organizations, and that this must be reflected in the way the concept is applied at the enterprise level. Thus, a successful sustainability-driven enterprise must be able to sustain its own activities while contributing to sustainable development of the larger social–ecological system of which it is part (Atkinson, 2000; Parrish, 2007). O'Hara (1997: 142) provides an important degree of specificity to this view with her discussion of sustaining production, explained as "production which sustains the social and biophysical context within which it takes place". 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 rather than undermine these sustaining services.

Researchers exploring the question of entrepreneurial contributions to sustainable development have tended to assume that entrepreneurs are by definition driven by self-interested profit-seeking motives. From this perspective, contributing to sustainable development is valued primarily as a means of earning profits (e.g. Cohen and Winn, 2007; Dean and McMullen,2007), and this assumption leads researchers to focus on how entrepreneurs can be motivated to contribute to sustainable development by making it profitable to do so. This has led to a preoccupation with the so-called 'business case' for sustainable development, which posits that reducing environmental harm and engaging in corporate social responsibility initiatives can reduce operating costs and improve firm reputation. Environmentally and socially responsible business activities are legitimized as a source of competitive advantage. This notion is manifested in such 'business case' concepts as cleaner production (De Larderel, 1993), dematerialization (Schmidt-Bleek, 1999), industrial ecology (Frosch and Gallopoulos, 1989), and other approaches based on improving eco-efficiency (Schmidheiny, 1992). The focus was originally on reducing the production of environmental and social 'bads' (e.g. Larson, 2000), though more recently attention has also turned to the possibility of producing 'goods' as well. This line of research explores how conventional approaches to entrepreneurship can satisfy growing humanitarian and ecological needs, such as the need for clean water, rural electrification, health services, cleanup of environmental toxins, and so forth. The argument is that satisfying society's most pressing quality-of-life needs represents a vast source of profitable opportunities. This stream is represented most notably by the 'bottom of the pyramid' works of Prahalad and Hart (2002), which has been extolled as the "real business case" for sustainable development (Carpenter and White, 2004).

A significant limitation of these 'business case' approaches is that they restrict the scope of entrepreneurial contributions to sustainable development to those that result in 'win–win' outcomes. This excludes any consideration of serious tradeoff decisions. They also imply market incentives are a prerequisite for entrepreneurial contributions. Given recent attention to the diversity of entrepreneurial values and motives (e.g. Cohen et al., 2008), continuing to rely on the assumption of self-interested profit-seeking motives as the basis for entrepreneurial action appears increasingly out of step with the reality of practice. There is, therefore, a need for researchers to recognize that there are other 'cases' besides the 'business case' (Young and Tilley, 2006). Since self-interested profit-seeking entrepreneurs are the textbook case that have been studied most often by entrepreneurship researchers, many of the taken-for-granted assumptions underlying entrepreneurship research may be misleading when applied to entrepreneurs who are not driven by these motives. This study considers cases where the rationale for entrepreneurial contributions to sustainable development is reversed: contributing to improved ecological and social wellbeing is a primary purpose of the enterprise, and market-based income is valued as a means of achieving these ends. Several prescriptive approaches to organization design, such as Hock's (1999) concept of 'chaordic' organizations, or Senge et al.s' (2006) concept of 'learning' organizations, have been proposed to explain how enterprises can come to embody the values of sustainability. This study, in contrast, takes an empirically grounded approach to this problem by investigating cases in which entrepreneurs have been successful in doing just that. Understanding how these entrepreneurs achieved these outcomes within the context of new venture creation requires an investigation of the dynamic process of organization design.

3.2. In search of organization design constants

As Sarasvathy (2004: 522) explained, organizations 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". Organization design is

used here as a verb rather than a noun: as an ongoing activity rather than a fixed outcome. It is the unfolding of entrepreneurial intentions and situational contingencies manifest as organizational 'becoming' (Gartner, 1993; Steyaert, 1998; Tsoukas and Chia, 2002). Directing attention to the "thinking–doing connection" (Mitchell et al., 2007) of this process has led to the study of successful entrepreneurship as a form of expertise (Mitchell, 1995) or 'maturity' (Thorpe et al., 2006), in which the practical and mostly intuitive knowledge and abilities of entrepreneurs are used to co-produce new opportunities and new possibilities through skillful interpretation and interaction with changing social and ecological contexts (Dimov, 2007; Dutta and Crossan, 2005; McMullen and Shepherd, 2006; Sarason et al., 2006). The notion of 'maturity' refers to the "contextually sensitive learning peculiar to entrepreneurs," and avoids the information processing view of individuals, "preferring to analyze cognition as the largely intuitive and habitual recognition of patterns and pattern fit" (Thorpe et al., 2006: 233–4). Empirical research has demonstrated that successful sustainability-driven entrepreneurs are notable for their ability to simultaneously meet competing objectives in the environmental, social–ethical, and economic realms (Schlange, 2007). This suggests that not only are the values and motives of sustainability entrepreneurs distinct from other types of entrepreneurs, but also that those who are successful exhibit a distinct ability to embody these in the organizations they design.

An important challenge for researchers, then, is to identify which aspects of these entrepreneurs' organization design expertise enable them to create sustainability-driven enterprises that successfully survive and thrive in a competitive context. For such a project the traditional approach to organization design research is unhelpful, in so far as it treats organization design as a technical problem concerning the best fit between an organizational structure and the environment for a given goal (cf. Dunbar and Starbuck, 2006). This focuses the search for design constants on developing prescriptive technical–rational design rules taking the form of: "if you want to achieve Y in situation Z, then perform action X" (Van Aken, 2005: 23). However, given the dynamic realities of organizations, the appropriateness of a prescriptive technical–rational approach to organization design research has been challenged (Romme, 2003). Victor Papanek, a prominent twentieth century Austrian-American designer, defined design broadly as "the conscious and intuitive effort to impose meaningful order" (Papanek, 1984: 4). Papanek's attention to both "conscious" and "intuitive" efforts is informative. Navigating the dynamic process of organization 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 organization emergence. Although organizational actors may not be fully 'rational,' in the sense of calculated, pre-planned behavior, they do rely on 'rationales,' in the sense of having reasons for their actions (Brunsson, 1982). If we recognize that organization design is a purposeful activity and therefore inherently instrumental, but also acknowledge that the combined role of rational and intuitive reasoning precludes a strictly prescriptive or technical–rational approach, then an alternative approach for identifying design constants is clearly required.

One powerful alternative is to focus on locating the generative rules that create possibilities for realizing 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 (1999: 301) explained 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". Enterprise design is a creative process that mixes novelty with such heuristic rules (Sarasvathy, 2004). Novelty plays an important role in capitalizing on unpredictable situational contingencies, and, by definition, cannot be prescribed. Heuristics, however, serve to guide the unfolding creative design process. In a comparable interpretation, Yoo et al. (2006: 227) suggested research should focus on the use of design gestalts, which have a "generative, form-giving capacity," and which embrace both novelty and unity in design.

The notion of generative rules of action or design gestalts for entrepreneurship and organizing more generally is reflective of a recurring theme in the literature, although different terminologies are used by different authors, including 'interpretive scheme' (Ranson et al., 1980), 'logics of action' (DiMaggio, 1997), 'organizational frames of reference' (Shrivastava and Schneider, 1984), 'implicit theories of organizing' (Brief and Downey, 1983), 'organizing principles' (McEvily et al., 2003), and so on. Such terms are used to describe "a heuristic for how actors interpret and represent information and how they select appropriate behaviors and routines for coordinating actions" (McEvily et al., 2003:92). It is therefore in these heuristic generative rules that design constants can be found which do not dictate the structural outcome of organizing, but rather guide an actor's identification, framing, and responses to perceived problems. Doing so creates an organization of a particular character (Birnholtz et al., 2007; Selznick, 1957), rather than of a predetermined structure. From this perspective, the relevant guiding research question for investigating the organization design expertise of successful sustainability-driven entrepreneurs can be stated as: What generative rules of organizing are rationally and intuitively used by entrepreneurs who have successfully created enterprises with a sustainability-driven character?

4. Methods and cases

4.1. Research design

To answer the guiding research question, this study was conducted from a critical realist perspective (Sayer, 1992; Tsoukas, 1989) using the 'data interrogation' tradition of the grounded theory approach (Locke, 2001; Strauss and Corbin, 1998). Both practical and methodological considerations supported using a 'pure naturalistic-qualitative strategy' (Patton, 2002). Practically, the twin challenges of identifying and negotiating access to successful instances of sustainability entrepreneurship limited the pool of cases available. Methodologically, examining the unique design histories of successful sustainability entrepreneurship required an intensive research strategy in which a select number of cases were examined in their situated contextual complexities. By

Table 1
Interview data.

Case	Individuals interviewed	Length (hh:mm)	Transcribed pages
*Native*Energy	7	10:40	200
ForesTrade	10	09:15	228
Hill Holt Wood	7	11:45	268
Chumbe Island	8	08:45	214
Total study	32	40:25	910

focusing on select cases of *successful* sustainability entrepreneurship, in which "rare conjunctures… may lay bare structures and mechanisms which are normally hidden", those structures and mechanisms could be identified and described (Sayer, 1992: 249). The cases were multilevel phenomena stretching between individual entrepreneurs and collective organizations. Temporally and spatially they began with the intention for the enterprise in the mind of the entrepreneur, and ended with the scope of the current enterprise activities and its mix of stakeholders. These cases, then, were not static objects but dynamic processes of continuity and change. To capture these processes the research took the form of a longitudinal retrospective study (Pettigrew, 1990; Van de Ven and Huber, 1990), which are studies that "take the present as a base and seek information about recent history" (Blaikie, 2000: 230).

A purposeful sampling strategy was used, with cases deliberately chosen for their ability to reveal important information about the phenomenon of interest (Eisenhardt, 1989; Gummesson, 2000; Yin, 2003). Pettigrew (1990: 275) suggested studies using a limited number of cases should focus on extreme exemplars that make the process "transparently observable." With the aim of identifying critical processes responsible for the outcome of interest, cases were chosen with the intention of maximizing the variation in the contextual conditions in which they operated (see below and Table 2). This strategy involved conceptually-driven sequential sampling (Miles and Huberman, 1994: 27), which reconciles the need for both consistency and flexibility. Consistency was provided by fixed selection criteria that allowed for systematic comparison across cases. Flexibility was important to allow case selection to be directed toward increasing understanding of the evolving theory (Strauss and Corbin, 1998). Thus, a combination of criterion-based, maximum variation, and conceptually-driven sequential sampling was employed.

This was expressed in the form of three sets of criteria used for case selection: a class of enterprises, a performance level, and differing operating contexts. The class of enterprise, based on Alter's (2004: 15) enterprise typology, was to be a 'mission-centric' enterprise, meaning it was "created for the express purpose of advancing the mission using a self-financing model". Selected enterprises were to have both social *and* environmental purposes, and these had to be 'embedded,' meaning the beneficial environmental and social activities were "one and the same" with business activities (2004: 18). The performance requirement for case selection was that the enterprises had to be successful sustainability-driven enterprises. To be considered 'successful' they had to be organizationally secure (growing or stable, not in decline or at risk of insolvency) and embody their sustainability-driven purpose. Consequently, the enterprises had to be old enough to be proven successful but young enough that the original founders and some original stakeholders were available to participate in the study, which in practice was between five and fifteen years old. In the study of formal organizations, operating domain (Selznick, 1957), geographic location (Hofstede, 1991), scale (Williamson, 1967), and business model (Amit and Zott, 2001) have all been shown to be important dimensions of divergence. In the interest of maximizing differences in operating context, cases were sought that differed in as many of these dimensions as possible. However, enterprises were deliberately restricted to the tertiary, service sector to isolate the role of innovation in organizational rather than technological design to achieve sustainability purposes.

4.2. Data collection and analysis

While the quantity of data collected does not signify its quality, nonetheless, a summary of the quantity and type can give some idea of the depth of data which have been used for analysis of the cases. These data included: over 40 h of semi-structured interviews with multiple organizational stakeholders, the majority of which were entrepreneurs, senior managers, or directors (see Table 1); 60 primary documents totaling over 1600 pages, including both internal plans, records, and memoranda, and external communications; 15 secondary documents published by other researchers or journalists; and digital photographs documenting site visits. In total, 31 of the 38 interviews were conducted in person, with the remainder conducted over the telephone. The first portion of the interviews focused on what participants knew ('facts') and what they did (behavior), while the latter portion focused on what participants thought (beliefs) or felt (attitudes) (Robson, 2002: 272). Interviews were recorded using a digital audio recorder, and because this was an exploratory study they were transcribed in their entirety so the resulting transcripts could be "mined" for themes that were not always immediately obvious (Weiss, 1994: 55). While retrospective studies can suffer from recall bias, the multiple data sources were used to mitigate this limitation, thereby enhancing descriptive validity.[1] Additionally, interpretive validity was enhanced by checking interpretations with participants during interviews. There was

[1] Maxwell (1992) identifies descriptive, interpretive, and theoretical validity as the three most directly pertinent types of validity in qualitative research.

especially ample scope for this with the entrepreneurs because multiple, sequential interviews were conducted with them, and toward the end of the study a summary of findings was provided with opportunities for feedback.

Initial data reduction and description was carried out using two parallel methods, reflecting the importance of both connecting and categorizing types of analyses (Maxwell, 2005; Maxwell and Miller, n. d.). Case narratives were used to emphasize *connections* between the flow of events and the contexts in which those events were situated. Thematic coding was used to group case elements into conceptually relevant *categories* to facilitate comparisons within and between cases. The intermediate results yielded both a holistic redescription of activities in terms of continuity and change over time, and a reduction to the "constitutive components" of these activities (Tsoukas, 1989: 558). The within-case and cross-case comparative analyses that accompanied this re-organization involved resolving activities into 'generative rules' (Tsoukas, 1989) by examining the accounts of activities and associated reasoning (as revealed by the categorical analysis) in relation to the contextual flow of events (as revealed by the case narratives). These rules were considered to be "immanent in the practice" of organizational participants (Harré, 2002: 116). Interpretations of these rules were strengthened by interrogating the data to reveal the values and beliefs that underpinned them, the rationale or logic associated with their use, and the practical organizing problems to which they were applied. Interpretations were also strengthened by comparing these rules to extant concepts from the sociology of organizations and economic sociology literatures (e.g. the concepts of domain consensus, economizing, satisficing, and inducement-contributions). In this way, the framework was developed through a process of "iterative grounding" (Orton, 1997) in both case data and theoretically informed concepts. By grounding the framework in the available data it should be a valid account of sustainability entrepreneurship in practice, and by grounding it in established theoretical concepts it should provide an analytically general explanation of the phenomenon.

4.3. Summary of the cases

The cases included in this study all met the criteria for being classed as successful sustainability-driven enterprises, and they differed on the key contextual dimensions of operating domain, geographic region, scale, and business model. The operating domains were in the training, hospitality, marketing and finance, and export–import and wholesaling sectors, and included business operations

Table 2
Key characteristics of cases.

	*Native*Energy, LLC.	ForesTrade, Inc.	Hill Holt Wood, Ltd.	Chumbe Island Coral Park, Ltd.
Scope				
Founded	2001	1996	1995	1993
Location	HQ and operations in Vermont, USA: customer and suppliers in USA	HQ in Vermont, USA; operations in USA, Europe, Indonesia, Guatemala; customers in USA, Europe; suppliers from Indonesia, Guatemala	HQ, operations, and customers in Lincolnshire, UK	HQ and operations in Zanzibar, Tanzania; customers from across the world
Size	15 employees	80+ employees	19 employees	41 employees
Operating domain				
Service	Marketing and finance	Exporting, importing and wholesaling	Training	Hospitality
Niche	Marketing carbon offsets and financing new renewable energy projects owned by Native American tribes, family farmers, and local communities	Exporting, importing, and wholesaling organic and fair trade specialty food commodities from biodiversity-rich developing countries to the US and Europe	Job skills training for at-risk, socially excluded, and unemployed young adults through restoration of an ancient woodland	Low-impact nature resort for international tourists and environmental education programs for local children and fishing communities
Business model				
Customers	Revenues from sales to corporate and individual customers to offset carbon emissions	Revenues from corporate clients buying commodities in bulk	Revenues from government contracts to train socially excluded individuals residing in the county	Revenues from international tourists
Suppliers	Supplied primarily by western Native American tribes, but also some family farms and local cooperatives	Farmers in developing countries located near vulnerable ecosystems	Local youth who have been excluded from school and chronically unemployed adults	Facilities in the nature reserve managed by the company and staffed locally
Contribution				
Environmental goods	New renewable energy production to reduce air pollution and greenhouse gas emissions	Reduces encroachment and chemical use in watersheds and national park buffer zones	Restoration of ancient woodland	Conservation of a fringing coral reef of high biodiversity and terrestrial coral rag forest
Social goods	Income, increased capacity, and market access to disadvantaged tribal and family-farmer communities	Income, infrastructure, increased capacity, and market access to rural producers	Develops social skills and job skills of at-risk individuals; community access to ancient woodland	Local employment and professional development; environmental education for children and fishing communities; increased fish stocks for local fishers

in North and Central America, Europe, Asia Pacific, and East Africa.[2] Scale ranged from small, local enterprises to multinational enterprises, with employee numbers from fifteen to upwards of 80. A brief summary of each case follows, and key characteristics are presented in Table 2.

*Native*Energy, LLC. is a private, for-profit enterprise that retails carbon offsets and renewable energy credits to consumers and businesses, and finances new renewable energy projects owned by Native Americans, family farmers, and local communities.[3] The company pioneered a new business model that supports the construction of new renewable energy projects and the economic development of marginalized communities. With operations across the US, including projects with Alaskan Native villages, the company is recognized as an industry leader. An international study of carbon offset retailers ranked *Native*Energy among the top of the industry for quality of offsets, and second in total number of offsets sold (Clean Air-Cool Planet, 2006). The company's reputation has led to partnerships with leading 'ethical' brands, such as Ben and Jerry's, Clif Bar, and Stonyfield Farm, and to the company being selected as the sole offsets provider for Al Gore's film on climate change, "An Inconvenient Truth." In recognition of his leadership in the industry, one of the founders was called to give expert testimony at a Congressional hearing on global warming and energy independence. In 2005, *Native*Energy became majority owned by some of its Native American tribal partners, though the original founders remained as CEO and Vice President.

ForesTrade, Inc. is a private, for-profit enterprise that exports, imports, and wholesales organic spices, essential oils, and fair trade coffee from producers located in remote buffer zones of biodiversity-rich national parks in Indonesia and Guatemala to food companies in North America and Europe. The company works directly with over 5700 producers in regions of high social and ecological vulnerability to promote community development, sustainable agriculture, and biodiversity conservation. Based in the US, ForesTrade has a subsidiary in The Netherlands and employs over 80 local employees at subsidiaries in Indonesia and Guatemala. In 2002 ForesTrade was the only US company to win a Sustainable Development Partnerships Award at the World Summit on Sustainable Development in Johannesburg, and the company was recognized five years in a row as one of Vermont's '5×5×5' companies (five fastest growing companies in five categories over five years). In 2006 the founders handed over day-to-day operations to a new CEO, though they remained actively involved in the company's initiatives and governance.

Hill Holt Wood, Ltd. is a private enterprise engaged in job skills training for at-risk, socially excluded, and unemployed young adults through the ecological restoration of a degraded ancient woodland in Lincolnshire, UK. The enterprise is pioneering a new model of countryside management that creates income generating opportunities to support the maintenance of healthy ecosystems, provide rural employment, and address the needs of some chronically disadvantaged members of society. Founded as a for-profit enterprise, Hill Holt Wood has been held up as a model for rural sustainable development by the UK Environment Secretary, the UK Forestry Commission, and the UK Department for Agriculture, Food, and Rural Affairs, and has won numerous social business awards. In 2002 the founders conferred ownership to a community-controlled governing board, converting their own status from owners to employed managers.

Chumbe Island Coral Park, Ltd. is a private enterprise that manages a coral reef sanctuary and coral rag forest reserve on an uninhabited island in Zanzibar, Tanzania, runs free environmental education programs for fishing communities and school children, and finances these activities through the operation of low-impact nature resort facilities catering to the high-end international tourist market. All but two of Chumbe Island's 41 employees are local nationals. The enterprise has been recognized internationally as a model for effective, economically viable, and locally beneficial marine conservation. Marine ecologists have found there to be higher fish biomass in Chumbe's marine sanctuary than other area reefs, including three species important to the local fishing industry (Francis et al., 2002). The enterprise has received a dozen major awards, including the United Nations Environment Programme's Global 500 Award for Environmental Achievement. Day-to-day management was handed over to a project manager in 1999, though the founder retained sole ownership and continued to provide oversight and general promotion.

5. Findings

Analysis of the case data revealed five generative rules that guided the organization design process of these sustainability-driven entrepreneurs. All five are evident across each of the cases, and together they represent facets of a logically consistent interpretive scheme. This interpretive scheme is distinct from that which is conventionally ascribed to entrepreneurship in that it positions people and the natural environment not only as a *means* of generating wealth, but also as *ends* in their own right. Human and natural 'resources' are therefore not to be 'exploited,' in the sense of being used for one's own advantage, but to be treated in a way that is mutually restorative, supportive, and enriching in the broadest sense. The generative rules used by these entrepreneurs are a manifestation of these values and beliefs as applied to the requirements of organizing. They were manifested not as strict imperatives of 'must' or 'must not,' but as a more adaptable basis for reasoning through a wide variety of design problems that had to be confronted as new situational contingencies arose. It is significant that the entrepreneurs demonstrated this form of reasoning as a response to design requirements in a range of different organizing situations, from broad decisions such as the operating domain and business model, to more day-to-day concerns such as performance targets and staff assignments. This reasoning (termed 'perpetual reasoning'[4]) was often exercised intuitively rather than in a calculated fashion, but the entrepreneurs were nevertheless keenly aware

[2] While the cases included business activities in these regions, it should be noted that all of the entrepreneurs were either North American or European in origin.

[3] 'Carbon offsets' represent an investment leading to a reduction of CO_2 emissions from one activity equivalent to the emissions generated by the activity being offset, so that there is no net increase in the carbon content of the atmosphere.

[4] The concept of 'perpetual reasoning' was derived directly from the case data. Although different in many respects, it does resonate well with Cohen et al.'s (2008) use of 'perpetuity' to describe environmental performance objectives for entrepreneurs.

Table 3
Comparison of 'perpetual' and 'exploitative' reasoning as response to organization design requirements.

Organization design requirement	Principles of 'perpetual reasoning'	Principles of 'exploitative reasoning'
Purpose — justifying existence	Resource perpetuation Produce benefit streams by enhancing and maintaining quality of human and natural resources for the longest time possible	Resource exploitation Produce profits by using human and natural resources to generate maximum financial return in the shortest time possible
Efficiency — achieving synergies	Benefit stacking Stack as many benefits as possible onto each operational activity	Least-cost economizing Reduce inputs without a parallel reduction in outputs
Tradeoffs — balancing competing objectives	Strategic satisficing Strategically identify satisfactory outcomes of multiple objectives	Single-objective maximizing Maximize the outcome of a single overriding objective
Criteria — prioritizing decision choices	Qualitative management Use expected quality of outcomes and processes as decision criteria	Quantitative management Use expected quantity of outcomes as decision criteria
Inducements — allocating benefits	Worthy contribution Structure benefit streams to privilege worthy recipients by providing opportunities for contributing to the enterprise	Claims of power Structure benefit streams such that claims by recipients with more power are privileged over those with less power

of how their actions would change if they were confronting the same tasks with conventional entrepreneurial reasoning (termed 'exploitative reasoning'). The heuristic generative rules are summarized in Table 3 and elaborated below as a set of five principles of organization design. Some illustrative examples from the case data are provided to demonstrate the principles in practice.

5.1. Principle of resource perpetuation

A foundational task of organizing is justifying the existence of an enterprise based on a common purpose. The purpose of an organization is broader than specific goals, and is perhaps best understood with reference to Thompson's (1967: 29) concept of 'domain consensus,' which sets expectations "about what the organization will and will not do," and "serves as a guide for the ordering of action in certain directions and not in others". In fact, it is the fundamentally different views on the instrumental purpose for which an enterprise is being created that can be traced as the source of the divergence between the interpretive schemes employed by conventional and sustainability entrepreneurs. In conventional entrepreneurship, the enterprise is viewed instrumentally as a means of profiting from the *exploitation of resources*, with the underlying logic of using resources to generate maximum financial returns in the shortest time possible. In contrast, sustainability entrepreneurs viewed the enterprise instrumentally as a means of producing benefit streams through the *perpetuation of resources*, with the underlying logic of using human and natural resources in a way that enhances and maintains the quality of their functioning for the longest time possible. [5] The concept of 'resources' should be understood broadly to include both natural resources, in the sense of ecosystem functioning, and human resources, in the sense of human functioning. For example, the link between the entrepreneur's instrumental purpose for their enterprise and this alternative design principle is evident in statements made by the ForesTrade entrepreneurs. They described the primary purpose of their venture: "That's actually why we started it. I mean, we weren't really necessarily thinking of spices and coffee; we were really thinking about rainforest preservation and community development."

From this standpoint, the entrepreneurs clearly experienced a contradiction with the logic of conventional entrepreneurship: "We ended up discovering that [our] business partner and we were incompatible because like so many others [he] had much less patience — wanted to make a quick buck and really get a large ROI." Similarly, one of Hill Holt Wood's founders described how a business model he devised was 'perpetual,' in that it could continue financially to enhance and maintain environmental and social outcomes indefinitely. Of this business model, he reflected: "That strikes me as a viable business for 1500 years… You can start that cycle again. So it's perpetual… I've come up with this long-term model." Thus, with the principle of resource perpetuation, maintaining the quality of specific, identified natural resources indefinitely into the future becomes a legitimate objective of the enterprise. The types of natural resource functioning perpetuated by these enterprises included both private (rival and exclusive) resources (e.g. a forested ecosystem) and public (non-rival and non-exclusive) resources (e.g. the atmosphere), but the logic employed was the same. Similarly, the healthy functioning of individuals and social processes, such as the experiential quality of participating in the enterprise, become legitimate outcome objectives.

5.2. Principle of benefit stacking

As with any organization, the need for economizing, "in the sense of effective accomplishment of objectives without undue cost" (Blau and Scott, 1963: 49), is important for the design of sustainability enterprises. However, in many cases sustainability entrepreneurs took a uniquely qualitative approach to economizing. In the conventional approach to economizing a target

[5] This should not be confused with the 'cradle-to-cradle' principle (McDonough and Braungart, 2002), which is a 'waste equals food' approach of the industrial ecology genre describing the repeated use of material resources as inputs to an indefinite sequence of industrial processes or benign waste products.

outcome is specified (such as a target quantity of output at a given quality) and then a particular means of producing that outcome is selected based on a logic of least cost. By contrast, the approach to economizing regularly taken by the sustainability entrepreneurs involved structuring enterprises so that as many beneficial outcomes for as many different stakeholders as possible were produced by each organizational activity. In this approach to economizing, when a particular outcome was required a decision on the means of achieving that outcome was based on a logic of multiplying the range of benefit streams that could be produced. Each of the enterprises' business models was structured with this principle, but so were many other enterprise activities. For example, the *Native*Energy entrepreneurs devised an innovative 'tag-for-equity' financing mechanism to obtain much-needed investment capital and an eventual exit strategy while also enabling their Native American tribal partners, who functioned as their suppliers, to buy into the business and eventually assume full ownership. This one financing mechanism produced multiple benefits to multiple stakeholders, as one of the entrepreneurs explained:

> "It's a win–win in that it provides the company what it needs, but then also makes, at the same time, the company more attractive to our potential customers, and at the same time potentially creates more economic benefits for the tribes. So it was compelling to us for all three reasons."

Benefit stacking served as a guiding principle for major organizing problems such as structuring business models, investment mechanisms, and succession plans, but the principle also guided the structuring of more day-to-day activities such as the method chosen for digging ditches. One of the Hill Holt Wood entrepreneurs explained how he once answered a visiting businessman's question:

> "'Why have you got ten young people digging a ditch out when you could bring a JCB [mechanical digger] in and do it in an hour and they're going to take weeks?' I said, it's not about that, it's about the team building, it's about the learning, it's about all sorts of things. It's not about digging the ditch, but we get the ditch done as well."

In each instance, when a particular outcome is deemed necessary, such as new investment financing, or wood maintenance, devising a means of achieving this outcome is guided by the number of different beneficial outcomes that can be stacked onto the activity. This is a method of developing organizational synergies, in that the same activity can have multiple and, ideally, reciprocal benefits. While the approach to developing synergies in conventional economizing involves reducing inputs without a parallel reduction in output, in benefit stacking it is about the co-production of multiple benefits from a single activity.

5.3. Principle of strategic satisficing

Despite their innovative efforts to align objectives, not all conflicts of competing ends could be avoided. When organizational tradeoffs were inevitable, the principle of strategic satisficing was employed to balance competing ends. In practice this meant strategically identifying levels of both quantitative and qualitative outcomes that were deemed satisfactory, and managing operations to ensure those targets were met on a continuous basis. This principle operates on a logic of satisfaction, in that satisfaction can be achieved by reaching a certain threshold, rather than the constant striving for maximization of one single, prioritized outcome. Simon identified satisficing as problem-solving activity that leads to a satisfactory rather than an optimal outcome (March and Simon, 1967: 140), and argued that because of the cognitive limitations of humans, satisficing is a trait characteristic of all organizational actors, even if their intention is to maximize (Simon and Stedry, 1969). But what makes sustainability entrepreneurs distinct is that they satisfice *strategically*, that is, explicitly and deliberately to achieve their multiple ends. Rather than treating satisficing as an unfortunate limitation of human ability, sustainability entrepreneurs embraced satisficing and used it as a tool for balancing tradeoffs.

Avoiding the logic of single-objective maximization allowed these entrepreneurs to make complicated tradeoff decisions between different domains because one target did not receive an elevated status. When, for example, profit maximization, maximizing shareholder value, or cost minimization are specified as overriding objectives, other outcomes and targets can only be advanced to the extent that they can demonstrate no impingement on those priorities. This severely limits the capacity to manage for social and environmental outcomes. Strategic satisficing provides considerable latitude for making tradeoffs among different ends once a target level of satisfaction is realized, enabling the effective management of a diverse range of outcomes. For example, *Native*Energy's entrepreneurs described their financial goals this way: "I wouldn't say it's maximizing profits for shareholders as much as increasing the viability of the business model and in the long term an exit strategy that gets a reasonable return for the investors." By seeking threshold goals such as a 'viable' business and 'reasonable' return, this allowed *Native*Energy latitude to choose projects that more strongly benefited communities in need and to directly contribute to new renewable energy production by financing smaller projects. Depending on the domain in which targets are set, the criteria for satisfactory thresholds, such as 'viable,' 'fair,' or 'reasonable' are likely to be less easy to quantify, though in practice it is no easier to determine whether an outcome is a true maximum or minimum than to determine if it is fair or viable (cf. March and Simon, 1967). In the end, the decision maker must be reasonably confident that the outcome has satisfied the desired criteria.

5.4. Principle of qualitative management

A prevalent form of decision making employed by the sustainability entrepreneurs involved evaluating decision options based on foreseen qualitative effects. In practice, criteria for decision making were less often about 'more' and more often about 'better,' and

therefore operated on a logic of outcome quality rather than quantity. Even quantitative questions, such as growth and financial resource allocation, were translated into qualitative outcomes to enable options to be evaluated and effective decisions to be made. For example, on the question of enterprise growth, two sets of entrepreneurs, those from Chumbe Island and Hill Holt Wood, decided they could be most effective environmentally and socially by stopping growth at a certain level, while the other two, those from *Native*Energy and ForesTrade, decided they could be most effective by growing their enterprises indefinitely. Taking one example, the case of ForesTrade, the entrepreneurs felt that the more producers they could partner with as suppliers, the greater their positive social and environmental impacts would be. For this reason they have sought a high growth strategy, as one of them explained: "Why did we choose to grow so fast? Part of it was to create as much of an impact… Our idea was to not just shoot for a niche market, but to try to mainstream it."

The quality of *processes* was also viewed as an outcome to be managed, either in terms of the developmental quality of ecosystem processes, or the experiential quality of stakeholders' participation. For example, conventional logic suggests resources should be invested in productive 'revenue centers' that are responsible for increasing earned income, such as sales and production departments, while 'cost centers' that are seen as necessary but ultimately unproductive, such as human resource and accounting departments, should be kept to a minimum. Internal resource allocation at Chumbe Island was instead very much driven by the quality of work experienced by the staff. Specifically, resources were increased to support those staff members who were overwhelmed by their workload, regardless of whether they functioned as a 'cost center' or a 'revenue center.' As with the other cases, the quality of the work experience itself became an outcome to be managed. The enterprises' project manager explained: "It's done by need. So for example, with my accountant… I knew she was overworked. So therefore, what can I do to improve the working situation and get an assistant?… And then we can look at whether we can afford it or not."

The questions of resource allocation, optimal scale, and growth are important issues both for sustainable development and for entrepreneurs. These are traditionally thought of as decisions involving tradeoffs between quantitative outcomes. Rather than taking an ideological stance on, for example, whether enterprise growth is inherently desirable or undesirable, these entrepreneurs addressed the issues by focusing on outcome quality. This demonstrates why sustainability entrepreneurs, though guided by the same principles, may respond to the same general design problems in radically divergent ways.

5.5. Principle of worthy contribution

The continued existence of an organization requires inducing contributions from stakeholders through the allocation of monetary and non-monetary benefits (Simon, 1957). In conventional enterprises, stakeholders with the most control over the organization's resources are also expected to make the biggest claim to benefits from the enterprise. Thus, shareholders and senior management's interests are privileged above the interests of workers and other less powerful stakeholders. In terms of informal claims, depending on the operating context, bribes and other illicit benefits can be captured by influential power brokers. But the sustainability entrepreneurs worked hard to structure their enterprises so as to give preference to those stakeholders deemed most 'worthy.' This principle operates on a logic of 'worth,' in that being deemed more worthy rather than more powerful entitles a stakeholder to a stronger claim to benefits. These benefits included monetary rewards as well as other types of benefits, such as personal development and access to resources and opportunities. For example, the ForesTrade entrepreneurs explained the rationale behind the design of their payment systems:

> "The goals were around sustainable development — creating livelihoods within rural communities and helping micro enterprises so that as much of the income could remain in these communities. So we designed the projects and the payment systems in ways that would make the most difference to the most people."

But all of the entrepreneurs were equally adamant that they were not operating charities, and that stakeholders needed to contribute to the enterprise to receive benefits. Statements such as, "I never thought of it in terms of charity," and "We're not a charity — we're driven by a business model," were common. Thus, 'worthiness' is a function of both *need* and *contribution* to the enterprise. This design principle integrates the goal of helping those in need with the justification, and necessity, of using benefits to induce contributions to the enterprise. In practice, this involved efforts to provide those of greater need with the opportunity to earn benefits by contributing to the enterprise. For example, at *Native*Energy, this principle guided the entrepreneurs' selection of suppliers. They specifically targeted projects located on Native American tribal lands and small family farms so these groups could benefit from the revenues and development opportunities associated with renewable energy production. One of the entrepreneurs explained why Native American tribes were thought to be particularly worthy of opportunities to earn benefits, and how they contributed to the enterprise's success:

> "Tribes had been terribly disadvantaged for several hundred years, basically, and are really struggling in many cases. And the ability to provide a very positive sustainable economic growth opportunity for the tribes seemed like just a very good thing to do. So when you combine that with the environmental benefits of promoting renewable energy and direct greenhouse gas reductions, it just to us was a natural fit and a way to differentiate us from anyone else in our business."

This principle was not limited to human stakeholders, but also included natural systems. In such instances, a certain quality of natural resources was framed as making crucial contributions to the enterprise's other purposes. For example, one of the Hill Holt Wood's entrepreneurs explained about the contribution of the woodland to their goal of helping disadvantaged young people:

"The countryside is a great healer… That's the edge that allows us to really work with these young people. Bring them from these urban estates into this woodland environment and they actually change."

6. Discussion

To appreciate the significance of these design principles for successful sustainability-driven entrepreneurship, this section considers the organizing tensions that are created by the instrumental purpose embodied by these enterprises, and how the principles of perpetual reasoning enabled the entrepreneurs to effectively overcome these tensions.

The entrepreneurs in this study used the authority that implicitly accompanies resource ownership and the entrepreneurial role to design organizations that embody a specific set of values. This authority is evident in Whittington's (1988: 533) argument that "entrepreneurial ideologies and capitalist rights" allow entrepreneurs the latitude to be rash, conservative, or even eccentric in how they build their enterprises. For sustainability entrepreneurs, these values were based on the potential for enterprises to serve as effective means of enhancing and sustaining the quality of human and natural resources, as well as satisfying the entrepreneurs' own personal quality-of-life aspirations. These values recognize equanimity between 'self' and 'other,' where 'other' includes other people and nonhuman nature. Critically, the entrepreneurs made clear that none of these three primary purposes were accorded priority over the others. For example, the chair of Hill Holt Wood's board stated clearly of the enterprise's purposes: "It's not one that is of overriding importance or overarching importance than the other." In fact, even framing the three as distinct purposes that could be traded off is a distortion of the interpretive scheme demonstrated by these entrepreneurs. For example, when questioned about the primary reason for hiring local nationals at Chumbe Island – cost savings, local employment opportunities, furthering community environmental education, and so on – the founder expressed frustration with the question and was unable to identify one of these as the overriding rationale. As she emphatically responded: "No, it's part of it. It's part of it. It's also for, just, it's just a mix of things. It's a win–win situation." These entrepreneurs saw the *raison d'être* of their enterprises as being a means to the mutual co-production of benefits to multiple ends. Neglecting any one of these three primary ends would be a distortion of the embodied values.

This characteristic of equanimity is different than both the conventional values of businesses, which prioritize the interests of the self, and the conventional values of charities, which prioritize the interests of the other. However, equanimity between the ends of self, other people, and nature, when confronted with the practical requirements for organizations to survive and thrive in a competitive market context, result in organizing tensions that are debilitating if approached with the interpretive scheme conventionally used for organizing. To understand these tensions it is helpful to consider some of the necessary conditions for organizing to be successful. For any organization success implies both (1) the continued existence of the organization and (2) effectively achieving the intended purpose as a going concern. The first is dependent on the organization's ability to continually attract contributions from stakeholders. This is achieved by inducing stakeholders to contribute to the enterprise's activities through the allocation of benefits produced (Clarkson, 1995; Simon, 1957). Second, choices must be made between alternative ways of organizing to realize the enterprise's intended purpose. This is addressed both in the initial process of organization creation and also as an ongoing process of responding to changing operating contexts both inside and outside the enterprise. Where possible, effectiveness is enhanced through economizing by seeking synergies in organizational activities (so-called 'win–win' scenarios), but where not possible it is achieved only by making tradeoff decisions between alternative activities.

By way of comparison, the interpretive scheme conventionally used for organizing businesses provides a logic for guiding design decisions to address these organizational imperatives. Three aspects of this interpretive scheme are the legitimacy of power differentials to determine claims to benefit flows, the priority ranking of a single group of beneficiaries over others, and, based on this prioritization, the implicit categorization of activities and resource flows as either 'benefit' or 'cost.' In general, stakeholders with greater power have the capacity to claim greater benefits from an enterprise. This capacity is supported by the legitimacy provided by a taken-for-granted assumption of appropriateness for benefits to flow according to power gradients. Beneficiaries are priority ranked, with a single group of *primary intended beneficiaries* given top priority. In businesses, the primary intended beneficiaries are those with the most power, typically the owners of scarce resources. By prioritizing one group of primary intended beneficiaries, actors in an economizing organization implicitly, and at times explicitly, enact a cost-benefit framework to guide design decisions. Those benefits that flow to other, *instrumental beneficiaries*, in order to ultimately benefit owners are considered the costs of doing business. With this framework, the benefit flows to instrumental beneficiaries are minimized under the logic of least-cost efficiency and sacrificed in tradeoff decisions under the logic of single-objective maximizing.

In the case of charities, organizations are intended to benefit a client population other than the organization's resource owners. With the legitimacy of claims to benefits based on need rather than power, the capacity for using power to make claims on benefits is delegitimized. This results in an organizing tension between power gradients and legitimate claims to benefits. To resolve this tension, organizational mechanisms have been designed to decouple power from benefit flows, such as the establishment of a disinterested governing board to oversee the use of resources, and a legally binding non-distribution clause to prevent benefits from being diverted to powerful contributors (see Hansmann, 1996). As a result of these structures, the priority ranking of beneficiaries and the cost-benefit framework that guides the logics of least-cost efficiency and single-objective maximizing remain a valid interpretive scheme for organizing activities, as benefits that flow to instrumental beneficiaries, such as salaries for professional staff, are considered the costs of providing services to clients, the intended primary beneficiaries.

The tripartite purpose of sustainability entrepreneurship, however, creates organizing tensions that challenge the premises of this conventional interpretive scheme regarding the legitimacy of claims to benefits, the ranked prioritization of beneficiaries, and the use of a cost-benefit framework to guide many design decisions. Taking responsibility for the environmental and social impacts that result from enterprise operations is usually framed as internalizing costs that have been externalized, that is, caused but not borne by the

enterprise. But for sustainability entrepreneurs, responsibility for environmental and social outcomes is not simply a cost of doing business, but a central purpose for being in business. In these cases, many of the internalized 'costs' cannot be considered costs at all, but intended primary benefits. If one of the three purposes were deemed the intended primary beneficiary, then resource flows to the other two could be treated as costs, as they are in the conventional interpretive scheme used for organizing businesses and charities. But if more than one, or as in sustainability entrepreneurship, all three, are deemed intended primary beneficiaries, then the taken-for-granted cost-benefit framework implicit in economizing organizations is rendered ineffectual. How does one economize when significant resources and activities can be classified as both cost and benefit? This creates difficulty for effectively organizing enterprise activities and balancing the contributions and inducements (benefit flows) to organizational stakeholders.

Responding to the need to induce stakeholder contributions and prioritize activities to achieve organizational purposes, yet unwilling to elevate one organizational purpose or intended beneficiary over the other two, the sustainability entrepreneurs instead employed a skillful mix of alternative design principles to achieve organizational effectiveness and efficiency. The legitimacy of both power and need for claiming benefits was satisfied with the principle of worthy contribution, in which those with need were given priority for opportunities to contribute to the enterprise, and therefore to earn legitimate claims to benefits. However, any potential organizational activity has variable consequences for the enterprise's three purposes. Through the principle of benefit stacking, possible conflicts between the multiple intended outcomes were transformed into synergies of efficient organizational activities that contributed to a number of desired outcomes. This approach to designing synergies is reflected in the way these entrepreneurs embedded the production of positive social and environmental outcomes in the very same activities needed to sustain the enterprise, and also in the entrepreneurs' frequent mention of 'win–win' outcomes. However, where this was not possible, the principle of strategic satisficing enabled the conflicts that did remain to be balanced without sacrificing the importance of any one purpose. Setting threshold criteria for desired outcomes rather than maximizing or minimizing any single objective allows tradeoffs to be made between any number of intended outcomes, provided they remain within a satisfactory range. Employing the principle of qualitative management, satisfactory outcomes can be evaluated in terms of the quality of both the ends achieved and the means of achieving them. This provides a framework for ordering decisions, even those involving quantitative choices by giving questions of 'more or less' meaning in terms of 'better or worse' as regards the expected outcomes. The consistency with which this principle was applied is reflected in the way the entrepreneurs' approached their own self-interests by aiming for a level of personal income that provided a satisfactory quality of life and work, rather than fixating on maximizing incomes.

The findings of this study therefore suggest that the values and motives that give rise to sustainability entrepreneurship, based on equanimity between self, other people, and nature, result in specific organizing tensions that have the potential to challenge the viability of enterprises that embody these values. However, the findings also suggest that the distinct competencies of these successful sustainability entrepreneurs provided a set of design principles, derived from the same values and motives, that enabled these organizing tensions to be effectively overcome. This means that not only are enterprises able to survive in a competitive context, but also that they are able to do so while remaining true to their sustainability-driven values and purpose. This is not to suggest that sustainability entrepreneurs never use any of the principles associated with the conventional entrepreneurial interpretive scheme, but that in many cases, as detailed in this study, such conventional approaches are inappropriate given the values and purpose of sustainability-driven enterprises. The skillful use of perpetual reasoning, then, is likely one of the key features that distinguishes successful from equally motivated, but ultimately unsuccessful, sustainability entrepreneurs.

7. Conclusions

This research supports the findings of other studies that demonstrated the existence of sustainability-driven entrepreneurship in practice, but covers new ground by exploring the distinct expertise and competencies employed by these entrepreneurs during the organization design process. The findings have a number of implications for the theory and practice of entrepreneurship in general, and for sustainability-driven entrepreneurship in particular.

First, these findings suggest that if we want to understand the contributions entrepreneurship can make to sustainable development we must be willing to look beyond those entrepreneurs motivated primarily by self-interested profit seeking. Failing to do so confines the field to the narrow study of win–win approaches and opportunities dependent on market incentives. As a consequence, the field has been slow to appreciate the unique contributions of entrepreneurial activity that does not conform to these assumptions, such as the distinct ability of sustainability entrepreneurs to balance activities that benefit self, other people, and nature. In addition to win–win approaches, this study explored the largely neglected role of tradeoffs in achieving these outcomes. A somewhat surprising finding from this is that the interpretive scheme conventionally associated with entrepreneurship can actually be detrimental to the success of organizing sustainability-driven enterprises. This could help to explain why conventionally designed enterprises have a difficult time embodying sustainability values. This suggests the entrepreneurial expertise required for venture success differs depending on entrepreneurial motives, and therefore that the field of entrepreneurship research more generally is likely hampered by entrenched assumptions about the values and motives that drive entrepreneurial activities.

Second, if sustainability entrepreneurship is to be supported in practice, the implication is that aspiring sustainability entrepreneurs require more than the right set of values and motives to succeed — they also require the right practical expertise. The design principles identified and described in this study represent one aspect of this expertise. The findings suggest the difference between successful and unsuccessful sustainability entrepreneurship depends in part on whether the entrepreneurs are attempting to design enterprises using the design principles of conventional entrepreneurship. Going forward, it would be useful to explore the relevance of these principles to the design of organizations in primary and secondary industries, which interact more directly with

biophysical systems. This would include exploring how these design principles apply to enterprises that manage ecosystems for biological productivity (e.g. farms, forests, fisheries), and also how they interact with other novel technological and organizational innovations in manufacturing enterprises (e.g. attempts to shift from material products to low-intensity service systems).

Third, this study demonstrates the value of research aimed at identifying design constants construed as generative rules of action rather than prescriptive technical–rational design rules. Generative rules provide a more adaptable basis for reasoning through a variety of context-specific design problems, and reflect the way entrepreneurs grapple with both intention and contingency during the process of new venture creation. Identifying generative rules, such as the five design principles of perpetual reasoning, provides a means of codifying the practical and mostly intuitive expertise of successful entrepreneurs. This is important because it can be used to assist other aspiring entrepreneurs to be more effective in their approach to organizing, without prescribing predetermined outcomes. Generative rules embrace the power of novelty inherent in entrepreneurship, while guiding the emerging enterprise toward a particular organizational character embodying a set of values and beliefs. This helps to explain the diversity of innovative business models and organizational forms emerging that nevertheless succeed in embodying the values of sustainability-driven entrepreneurship.

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