**RADICAL SUSTAINABLE ENTREPRENEURSHIP:**

**A TYPOLOGY AND A PROCESS MODEL**

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This paper contributes to a “varieties of entrepreneurship” literature in two ways, by developing an enriched understanding of social, environmental and sustainable entrepreneurship. First, it introduces a three-dimensional typological framework that considers the relative emphasis placed on: 1) negative vs neutral vs positive social externalities; 2) negative vs neutral vs positive environmental externalities; and 3) value creation vs value capture. Second, the paper develops a process model of sustainable entrepreneurship that is paradigmatic in scope and grounded in triple-loop learning theory. The result is an elegant understanding of social and sustainable entrepreneurship that is welcome for both practice and theory. Implications are discussed.

**Keywords**: social vs environmental vs sustainable entrepreneurship, typology, process model, radical vs conventional, value creation vs value capture, externalities

 There is emerging consensus within the social entrepreneurship literature that theory development depends on addressing at least two issues. First, there is merit in distinguishing social entrepreneurship from other “varieties of entrepreneurship,” including conventional (commercial) entrepreneurship, environmental entrepreneurship, and sustainable entrepreneurship (e.g., Bhowmick 2011; Zhang and Swanson 2014). Second, there is great interest in developing theory that might lead to a “process model” of social entrepreneurship.

 This paper addresses both these issues, but in a somewhat indirect way that considers social entrepreneurship within a larger understanding of entrepreneurship that ranges from “conventional entrepreneurship” at one extreme to “radical sustainable entrepreneurship” at the other. First, the paper provides a helpful 3x3x2 framework that essentially yields 18 different types of entrepreneurship, including several varieties of social entrepreneurship. Second, the paper develops a four-phase process model, drawing from relevant literatures, that presents social entrepreneurship as a paradigmatic phenomenon that spans various levels of analysis.

 The paper will proceed as follows. It begins by briefly reviewing two illustrative but key shortcomings associated with conventional business and entrepreneurship (climate change and economic inequality). It then develops the three-dimensional typology that differentiates conventional entrepreneurship from other types. The framework distinguishes between i) *creating* social and ecological problems, ii) *eliminating* social and ecological problems, and iii) *enhancing* social and ecological well-being. It also distinguishes between conventional varieties of entrepreneurship (emphasis on value capture) versus radical varieties (relative emphasis on value creation). The paper then goes on to present a paradigmatic four-phase process model of sustainable entrepreneurship, drawing from the sustainable development literature, configuration theory, and triple-loop organizational learning. The final part of the paper discusses implications for practice and future research.

**Shortcomings of BUSINESS-as-usual**

 This is not the time or place for a comprehensive review of the social and ecological problems facing humankind. However for illustrative purposes it is worthwhile to highlight two key social and ecological problems that are prompting an interest in sustainable entrepreneurship. First, in terms of social concerns, perhaps the most pressing concern is related to economic inequality. For the past fifty years, coinciding with the modern era of shareholder-wealth-maximizing capitalism, there has been a growing gap between rich and poor between countries, within countries, and within organizations (e.g., Rees 2002). US President Obama has identified the rising level of economic inequality as “the defining challenge of our time” (Hiltzik 2013). In short, the greater the income inequality, the lower a society’s overall quality of life measured in terms like obesity, mental health, anxiety, homicides, crime, life expectancy, gender differences, social mobility and social trust (Wilkinson and Picket, 2010). How do conventional entrepreneurs respond to this? Although Kevin O’Leary (from ABC’s television show *Shark Tank*) should not be considered representative of conventional entrepreneurs, when he found out that the world richest 85 people are as wealthy as the poorest half of the world combined, he enthused: “this is a great thing because it inspires everybody, and gets them the motivation to look up to the 1 per cent and say, I want to become one of those people. I’m going to fight hard and get up to the top” (Kanani 2014).

 Second, in terms of ecological concerns, perhaps the most important problem is climate change.[[1]](#footnote-1) Scientists generally agree that climate change is real (the 10 warmest years since 1880 have been in the last 15 years), and is caused by increased greenhouse gases (GHG) in the atmosphere caused by the activities of humankind. In particular, the burning of fossil fuels in the past 150 years has played a major role in increasing atmospheric CO2 levels from 280 to 400 parts per million and growing,[[2]](#footnote-2) whereas a maximum level of 350 parts per million is considered sustainable (the Earth’s atmospheric CO2 had not been greater than 300 units per million for the 650,000 years prior to 1950). Emissions from automobiles account for about 31 percent of USA CO2 emissions into the atmosphere (Overview of Greenhouse Gases, 2014), and methane gas produced to agriculture livestock causes even greater damage (Livestock a major threat, 2006).

The generic term “externalities” is often used to refer to negative and positive social and ecological effects on society that businesses have, but which are not reflected in the firms’ financial statements. For example, a firm can have a positive externality if it hires ex-convicts and thereby reduces the likelihood (and social and financial costs) of repeat offenders (e.g., Greyston Bakery). Unfortunately, firms often create more negative than positive externalities, and at a global level such negative externalities are estimated to amount to about $7 trillion (about 11 percent of the global economy in 2008 according to Hohensee [2013, 156]). Moreover, these negative effects often worsen the aforementioned problems of climate change and income inequality. For example, the largest 3000 public companies alone cause negative externalities estimated at $1.44 trillion in terms of damages from their GHG emissions (Sukhdev 2013, 151). On average these 3000 firms cause about $200 worth of negative externalities per each one of the 7 billion people on the planet. To consider the ripple effects on social and economic inequality, consider that one-third of the world earns less than $2 per day (Poverty Overview 2014) and is unlikely to own any “shares” in those firms and thus “benefit” from these negative externalities.

This differentiation between firms’ social and ecological externalities lies at the heart of on-going and recent debates about the size of the “tent” for social entrepreneurship (e.g., Mueller *et al*. 2014, Newbert 2014, Newbert and Hill 2014). Is it an all-encompassing term, that can include both social and ecological concerns, and that refers both to neutralizing negative externalities as well as to creating positive externalities (Newbert and Hill 2014, Santos 2012)? Or is its focus explicitly on enhancing positive social externalities, with little regard for ecological concerns (Ormiston and Seymour 2011) or with (merely) minimizing negative externalities? How is social entrepreneurship linked with sustainability (Zhang and Swanson 2014)?

Social entrepreneurship scholars are right to note the explosion of interest in the field, which is consistent with an increased interest in issues related to sustainable entrepreneurship more generally (e.g., Binder and Belz 2014; Hall, Daneke and Lenox 2010, Osburg 2014, Shepherd and Patzelt 2011). Recent reviews of the sustainable entrepreneurship literature point to an emerging consensus on two things. First, although there is considerable variation among definitions of sustainable entrepreneurship, there is agreement that its emphasis on addressing *both* social and ecological concerns is what makes it unique from conventional entrepreneurship (e.g., Shepherd and Patzelt 2011), and that this is what differentiates it from both social entrepreneurship and environmental entrepreneurship more narrowly defined. Second, akin to the social entrepreneurship literature, there is considerable agreement within the literature that sustainable entrepreneurship is a process, and that the few process models that have been developed would benefit from improved theoretical grounding (e.g., Binder and Belz 2014).

 Businesses are becoming increasingly aware of social and ecological issues. In a recent study involving 1,847 respondents from about 100 countries (Kiron et al. 2013), two-thirds rated social sustainability issues as significant for their firm (30% as “very significant,” 36% as “significant”), and over half claimed that their firm had “fully addressed” (11%) or “largely addressed” (41%) social sustainability issues. Along the same lines, 70 percent of respondents rated environmental sustainability as significant for their firm (40% as “very significant,” 30% as “significant”), and about half indicated that their firm had “fully addressed” (13%) or “largely addressed” (38%) environmental sustainability issues. Although such numbers are encouraging, and taken together point to the importance of social and environmental intra/entrepreneurship, many environmentalists and social activists would find them over-stated.

**Radical sustainable entrepreneurship: AN Ideal-Type**

It is helpful to understand social entrepreneurship in terms of its place in a larger varieties-of-entrepreneurship conceptual framework. Figure 1 presents three key dimensions that help to distinguish “conventional entrepreneurship” from other types.

*Insert Figure 1 About Here*

First, the horizontal dimension describes a firm’s *social* externalities. *Negative* social externalities occur when the social costs that a firm creates (e.g., stressed out employees, employees who lack adequate benefits) are not reflected in the firm’s financial statements, and these costs are borne by government and other agencies. The presence of negative social externalities helps to explain the growing interest in social entrepreneurship. Negative social externalities often occur when firms focus on reducing their own financial costs via adopting a “Cost Leader” strategy associated with conventional entrepreneurship and business as usual, and when these financial costs are “off-loaded” to society at larger. *Neutral* social externalities are associated with social entrepreneurs who are “less bad” thanks to their efforts to decrease negative social outcomes. This might happen, for example, when firms design jobs to cause less negative stress and reduce physical hardship for employees. Such behavior is evident when social entrepreneurs adopt a “Minimizer” strategy which “provides desired goods and services in a way that limits a *variety* of costs (e.g., financial, social, ecological)” (Neubert and Dyck 2014, 304, emphasis added here). Finally, a firm creates *positive* social externalities when it bolsters social well-being. This might happen, for example, when a company hires ex-convicts, or provides meaningful volunteer opportunities for seniors, or provides on-the-job counseling services for substance abuse. These actions are evident in social entrepreneurs who adopt a “Transformer” strategy that “provides desired goods and services in a way that redeems what were previously discarded or underappreciated resources (e.g., waste, pollution)” (Neubert and Dyck 2014, 304).

Second, the vertical dimension has a parallel depiction the firm’s *ecological* externalities. *Negative* ecological externalities occur when the ecological costs a firm creates (e.g., clean-up costs associated with its waste and pollution) are not reflected in the firm’s financial statements. *Neutral* ecological externalities are evident when entrepreneurs use a Minimizer strategy to decrease their environmental degradation (e.g., reducing pollution; York and Venkataraman 2010). Such firms still have a negative impact on the ecological environment, but it is not as bad as their competitors. This neutral position is consistent with a narrow understanding of the oft-quoted Brundtland Commission definition of sustainability development, which focuses on “meeting the needs of the present generation *without compromising* the ability of future generations to meet their needs” (Brundtland 1987, 8, emphasis added here). Here the emphasis is on preserving (rather than on enhancing) the natural world (e.g., Shepherd and Patzelt 2011). *Positive* externalities are associated with bolstering ecological well-being, and are reflected in a Transformer strategy that improves the ecological environment. For example, environmental entrepreneur Tom Szaky started his company TerraCycle by taking food scraps from a university cafeteria, feeding it to worms, and selling the resulting worm poop in recycled bottles as plant food (Neubert and Dyck 2014).

Finally, the third dimension in Figure 1 (depth) focuses on the relative emphasis a firm places on “value capture” versus “value creation,” which serves to differentiate “Conventional” from “Radical” varieties of entrepreneurship (this draws heavily from Santos, 2012). “Value creation,” which is measured at the societal level of analysis, occurs when a firm’s activities result in the provision of goods or services that enhance the overall well-being of society. In order to remain viable, all firms need to provide some level of value creation. “Value capture” refers to the portion of value creation that accrues to a specific actor, and is typically measured by the level of financial profits generated by a firm (Santos 2012, Santos in Zeyen et al. 2013, see also Florin and Schmidt 2011). Firms are vulnerable to generating negative externalities when their concern for “value creation” is out-trumped by an emphasis on “value capture.” Conventional firms place a relatively high emphasis on value capture, seeking to maximize their profits by *maximizing* their portion of the financial value that they help to create (and sometimes by creating self-serving negative externalities). In contrast, Radical firms place relatively high emphasis on “value creation,” seeking to optimize the overall well-being of society while themselves remaining financially viable. Because Radical firms need only to be financially viable (rather than to maximize financial value capture), they are open to pursuing a much broader range of opportunities to “create value” (Santos 2012, see also Shepherd and Patzelt 2011). This increased “range” frees and enables Radical entrepreneurs to enhance value creation in areas of ecological and social well-being that are out-of-bounds for Conventional firms restricted by a goal to maximize value capture.

**Describing the Various Types of Entrepreneurship**

The various types of entrepreneurship depicted in Figure 1 will now be introduced, though rather than attempt to present a detailed description each of the 18 “cells” in the figure, the focus will be on types that have been most often referred to in the larger literature, thereby highlighting the efficacy of the typology to provide clarity to existing issues.

***Conventional (Commercial) Entrepreneurship***. There is considerable agreement that conventional (commercial) entrepreneurship is one-dimensional and primarily focused in value capture, generating financial wealth for the firm (e.g., Binder and Belz 2104, Santos 2012). This is not to say that value creation is unimportant for conventional entrepreneurship. Indeed, discovering an opportunity (Kirzner 1979) and/or introducing an innovation that disrupts the market (Schumpeter 1942) are crucial aspects of conventional entrepreneurship, but such value creation typically remains subservient to the value capture that occurs in the “exploitation” phase (Binder and Belz 2014). Moreover, because conventional firms have a primary focus on financial value capture, they may be predisposed and poised to take advantage of and thus contribute to negative social and ecological externalities. Taken together, this helps to explain the perception that conventional entrepreneurship exploits opportunities/innovations that serve to decrease socio-ecological value creation (e.g., which thus widens gaps between rich and poor, and leads to pollution and climate change).

“Historically, entrepreneurship has been operationalized with regard to one dimension, which is the economic performance of the enterprise [value capture]. The vast majority of conventional entrepreneurship research emphasizes profit creation as the central construct for entrepreneurship” (Binder and Belz 2014; drawing on Amit et al. 2000, Davidsson and Wiklund 2001).

***Conventional Social Entrepreneurship.*** According to Binder and Belz (2014), there is widespread agreement that “social value creation is at the heart of social entrepreneurship,” a concept that dates back to the 1990s and has over 30 definitions (e.g., Dacin, Dacin and Matear 2010; see also Austin, Stevenson and Wei-Skillern 2006; Waddock and Post 1991). Conventional social entrepreneurship adopts a double-bottom line approach, and seeks to optimize financial value capture as it addresses social concerns. Note Figure 1 distinguishes between “Conventional Minimizer social entrepreneurship” which seeks to maximize profits by *decreasing* a social ill (reduce workplace stress), and “Conventional Transformer social entrepreneurship” which seeks to maximize profits by *improving* social good (e.g., hiring and training ex-convicts in order to gain valuable publicity that generates sales).

***Conventional Environmental*** ***Entrepreneurship.*** Interest in entrepreneurship related to environmental issues also dates back at least to the 1990s, and typically adopts a conventional double-bottom line approach where environmental and economic considerations are equally important. This is illustrated in the definition provided by Dean and McMullen (2007, 58), who coined the term environmental entrepreneurship as “the process of discovering, evaluating and exploiting economic opportunities that are present in environmentally relevant market failures” (cited in Belz and Binder 2014; see also Anderson and Huggins 2008, Larson 2000). Similar to its social cousin, conventional environmental entrepreneurship can further be divided into two sub-types. “Conventional Minimizer environmental entrepreneurship” seeks to maximize profits by minimizing environmental degradation for future generations (e.g., use less packaging for their products). In contrast, “Conventional Transformer environmental entrepreneurship” seeks to improve the environment for future generations (e.g., purchasing carbon off-sets in order to gain valuable publicity that generates sales). Note that a firm can create positive environmental externalities but simultaneously create negative social externalities as occurs, for example, when an agricultural firm uses organic practices but does not pay a living wage to its employees (e.g., Amatucci, Pizarro and Friedlander 2013).

***Conventional Sustainable Entrepreneurship****.* In general, conventional sustainable entrepreneurship is characterized as having a triple-bottom line approach, with an emphasis on economic, social and environmental measures of success (e.g., Amatucci Pizarro and Friedlander 2013, Binder and Belz 2014, Cohen, Smith and Mitchell 2008, Hall, Daneke and Lenox 2010, Kuckertz and Wagner 2010, Patzelt and Shepherd 2011, Thompson, Kiefer and York 2011). For example, Weidinger, Fischler and Schmidpeter (2014, xviii) argue that conventional sustainable entrepreneurship “increases the [financial] bottom-line results of corporations and creates societal and ecological value for people and nature at the same time.” According to Binder and Belz (2014), Hart and Milstein were among the first to recognize that attending to sustainability issues could improve entrepreneurs’ value capture: “innovators and entrepreneurs will view sustainable development as one of the biggest business opportunities in the history of commerce” (1999, 25). Another example is in the International Standard Organization’s (ISO) 26000 standard which states that: “sustainable business for organizations means not only providing products and services that satisfy the customer, and doing so *without jeopardizing the environment*, but also operating in a socially responsible manner’ (Frost, 2011)” (cited in Zhang & Swanson, 2014, 179).

Although framed as a triple-bottom line, reviews of sustainable entrepreneurship often suggest that a firm’s economic well-being is given primacy over social and environmental well-being. The main question is “how to increase competitiveness and economic value by integrating sustainability in the core business” (Schmidpeter and Weidinger 2014, p. 2). “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” (Parrish 2010, p. 512). This is illustrated by several typologies found in the empirical literature on sustainable entrepreneurship. For example, Hockerts and Wüstenhagen (2010) found firms they called “Goliaths” whose economic objectives dominate over their socio-environmental objectives. Similarly, Spence, Gherib and Biwolé (2011) found “Aware” type of sustainable entrepreneurs who: “are mainly driven by making profits, with sustainable considerations only playing a subordinate role to the economic ones” (Binder and Belz 2014).

Figure 1 depicts four sub-types of Conventional sustainable entrepreneurship: i) Conventional Transformational sustainable entrepreneurship (a triple-bottom line approach which pursues positive social and ecological externalities); ii) Conventional Minimizer sustainable entrepreneurship (a triple-bottom line approach which pursues neutral social and ecological externalities); iii) Conventional Eco-transformational sustainable entrepreneurship (a triple-bottom line approach which pursues neutral social and positive ecological externalities) and; iv) Conventional Socio-transformational sustainable entrepreneurship (a triple-bottom line approach which pursues positive social and neutral ecological externalities).

***Radical Sustainable Entrepreneurship.*** This is a double-bottom line approach, where the primary emphasis is on social and ecological value creation, and where financial value capture for the firm is a secondary emphasis. This relative de-emphasis on financial value capture is often perceived as off-putting or even threatening to people with conventional business education and experience (Kuckertz and Wagner 2010). Radical sustainable entrepreneurship is evident in

“cases where the rationale for entrepreneurial contributions to sustainable development is reversed [compared to a conventional approach]: contributing to improved ecological and social wellbeing is a *primary* purpose of the enterprise, and market-based income is valued as [merely] a means of achieving these ends” (Parrish 2010, 512; emphasis added here).

Whereas conventional sustainable entrepreneurship is confined to pursuing a relatively smaller set of business opportunities that offer potential for triple-bottom line success, radical sustainable entrepreneurship has less-stringent financial value capture constraints and thus is open to pursuing a wider range of entrepreneurial opportunities that are desired by society. Radical Transformer sustainable entrepreneurship is not about being “less bad”—it is not enough to stop negative externalities or even to seek to be neutral in terms of externalities—the time is ripe for entrepreneurs to *improve* on the social and ecological ills facing humankind (Zhang and Swanson 2014, 79). Radical sustainable entrepreneurship is consistent with firms whose socio-ecological objectives are at least as important as their economic objectives. In the empirical research, this is evident in the firms called “Davids” (in the typology found in Hockerts and Wüstenhagen 2010) and “Committeds” (in the typology found in Spence *et al*. 2011). It is also consistent with entrepreneurs who start new organizations that they hope will become obsolete (e.g., Mohammed Yunus started Grameen Bank to fight poverty, and is hoping one day to visit a Poverty Museum).

Figure 1 points to four sub-types of Radical sustainable entrepreneurship: i) Radical Transformational sustainable entrepreneurship (a double-bottom line approach which pursues positive social and ecological externalities); ii) Radical Minimizer sustainable entrepreneurship (which pursues neutral social and ecological externalities); iii) Radical Eco-transformational sustainable entrepreneurship (which pursues neutral social and positive ecological externalities) and; iv) Radical Socio-transformational sustainable entrepreneurship (which pursues positive social and neutral ecological externalities).

***Radical Social Entrepreneurship.*** Radical social entrepreneurship is a single bottom-line approach characterized by individuals and organizations who are motivated by social value creation considerations beyond their own self-interest and financial returns (Thompson et al. 2011, 208). Although Radical Sustainable social entrepreneurs may seek to successfully capture *some* financial value from their firm, this is “by no means the focus of social entrepreneurs. Rather, [Radical] social entrepreneurs utilize profit returns as a reinvestment of their social mission (Bacq & Janssen, 2011).” According to Binder and Belz (2014), most of the research on social entrepreneurship research takes place in the not-for-profit or non-governmental sectors, where it places social value creation ahead of value capture at the firm level (e.g., Cornwall 1998, Lasprogata and Cotton 2003).

There are two sub-types of Radical social entrepreneurship: i) Radical Transformer social entrepreneurship focuses on positive social externalities, whereas ii) Radical Minimizer social entrepreneurship emphasis neutral social externalities (not shown on Figure 1, Radical Minimizer social entrepreneurship lies directly “behind” Conventional Minimizer social entrepreneurship).

***Radical Environmental*** ***Entrepreneurship.*** Radical environmental entrepreneurship is a single bottom-line approach where the desire to enhance ecological well-being trumps the desire to maximize profits. This might be evident in NGOs like Greenpeace or political parties like the Greens. Again, there are two sub-types of Radical environmental entrepreneurship: i) Radical Transformer environmental entrepreneurship focuses on positive social externalities, whereas ii) Radical Minimizer environmental entrepreneurship emphasis neutral social externalities (also not shown on Figure 1, Radical Transformer environmental entrepreneurship lies directly “behind” Conventional Transformer environmental entrepreneurship).

**A process model of radical sustainable entrepreneurship**

 The literature suggests that, because they challenge the status quo, the processes underpinning both social and environmental entrepreneurship—and thus also sustainable entrepreneurship—will differ from conventional (commercial) entrepreneurship. The main reason for this seems to be that social and sustainable entrepreneurship challenges the conventional “common sense” that financial value capture is an integral part of entrepreneurship. In other words, whereas the processes associated with conventional commercial entrepreneurship are accepted within the dominant economic paradigm, the processes associated with social and environmental entrepreneurship must be able to challenge that paradigm.

The authors are not aware of any process models of radical sustainable entrepreneurship per se, but there is considerable agreement that sustainable entrepreneurship should be understood as a process, and that this process has the four general steps: 1) opportunity identification/discovery; 2) taking initiative/creation; 3) develop plans/evaluation; and 4) mobilize resources/exploitation (e.g., see review in Binder and Belz 2014; see also Aygoeren 2014). This “generic” four-step sustainable entrepreneurship model is most fully developed in Neubert and Dyck (2014) who contrast and compare it to conventional entrepreneurship (for a somewhat similar process model within social entrepreneurship, see Zhang and Swanson 2014).

Existing theory related to sustainable organizations can be drawn upon to adapt this generic model and suggest that radical sustainable entrepreneurship has four phases as follows: 1) identifying a *problem* and recognizing an opportunity it affords; 2) initiating new *behavior* in order to seize the opportunity to address the problem; 3) developing an appropriate plan for how to proceed based on evaluating/reflecting upon different options/experiences (*worldview*); and 4) mobilizing resources and implementing new *structures and systems*. In particular, the model presented here draws from studies which: a) emphasize the paradigmatic nature of radical sustainable entrepreneurship, and b) suggest that the four phase process can be seen an instance of a triple-loop organizational learning framework. Each will now be looked at in turn.

**Paradigmatic Change**

 There is considerable agreement in the larger literature that radical sustainable entrepreneurship calls for paradigmatic change *vis a vis* conventional entrepreneurship (e.g., Amatucci, Pizarro and Friedlander 2013, Gladwin, Kennelly and Krause 1995, Kurucz et al. 2013, see also Zeyen et al. 2013). This paradigmatic change has been suggested to occur along at least three inter-related dimensions—behavior, worldview, and structures and systems—which are aligned generally with research on configuration theory and organizational archetypes (e.g., Hinings and Greenwood 1988, Meyer, Tsui and Hinings 1993, Starke et al. 2011).

First, radical sustainable entrepreneurship calls for qualitative change in *behavior.* For example, this may be evident in organizations who make deliberate efforts to use fewer fossil fuels and more alternative energy sources (e.g., greater reliance on solar and wind energy, cycling and public transportation), and in actions that help to reduce economic inequality and enhance treating everyone with dignity (e.g., hiring socially marginalized people, implementing livelihood-based pay scales, creating and supporting holistically-healthy jobs in low-income countries). Such behaviors are consistent with what Grant (2013) calls “giving” (vs “taking”), and what Weber and Murnighan (2008) call being a “consistent contributor,” both of which improve overall well-being in the long-term.

Second, radical sustainable entrepreneurship calls for change in *worldview*, away from a “value capture paradigm” toward a “value creation paradigm” (Santos 2012), away from consequential utilitarianism toward virtue theory, away from self-interested profit maximization and toward seeking to balance multiple forms of well-being for multiple stakeholders (Neubert and Dyck 2014), away from short-term gain toward caring for future generations (Brundtland 1987), away from seeing rare and inimitable organizational resources as something to be hoarded toward seeing them as something to be shared (e.g., the Earth is a rare resource that needs to be shared responsibly; Bell and Dyck 2012). Within the configuration theory literature, this change in worldview is akin to changing one’s “interpretive scheme,” which refers to “the set of ideas, beliefs, and values that determine what an organization should be doing, how it should be doing it, and how it should be judged” (Starke *et al.* 2011, p. 29). Within the entrepreneurship literature, this changed worldview is associated with adopting a “sustainability orientation” (e.g., Kuckertz and Wagner 2010; see also Zhang and Swanson 2014).

Finally, radical sustainable entrepreneurship calls for changes in social *structures and systems*. For example, the structures and systems associated with radical sustainable entrepreneurship replace “least-cost economizing” (reducing inputs without equivalent reduction in outputs) with “benefit stacking” (getting as much holistic benefit as possible from each organizational activity), replace quantitative management (decision criteria based on quantified outcomes) with qualitative management (base decisions on difficult to measure forms of well-being), and replace structures designed to safeguard the power of the elite with structures that permit many people to benefit from the firm (Parrish, 2010). Similarly, this may means replacing standardization (specify desired actions) with experimentation (nurture constant improvement), specialization (detailed job descriptions) with sensitization (adapt to situation), centralization (chain of command) with dignification (treat everyone with respect), and departmentalization (formal job groupings) with participation (foster mutuality) (Neubert and Dyck, 2014).

The defining feature of a paradigmatic change is that these behaviors, worldviews, and structures and systems are inter-related both within and across social levels of analysis. For example, the three dimensions are inter-related at a personal household level, within organizations, and within societies. As will be described in the next section, processes are at work so that over time a social unit’s behaviors, worldviews, and structures and systems form an integrated, internally-consistent “whole” (e.g., configuration theory). Moreover, as will be discussed further below, opportunities for potential radical sustainable entrepreneurship can exist within these three components at any of level of analysis (e.g., opportunities to facilitate sustainability within an household, within an organization, or within a society).

**A Triple-loop Learning Framework**

 Through the lens of a triple-loop learning framework, these three key components of paradigmatic change in combination with the generic entrepreneurship process model give rise to a four-phase dynamic model of radical sustainable entrepreneurship that unfolds as follows: 1) a problem/opportunity is recognized; 2) this prompts behavior that is designed to take advantage of the opportunity to solve the problem; 3) this in turn prompts self-reflection/evaluation and change in worldview and plans; 4) which prompts changing structures and systems and (re)mobilization of resources. As will become apparent, a triple-loop learning framework, which has been invoked by other organizational scholars looking at sustainable organizations (e.g., Kurucz, Colbert and Wheeler 2013), is particularly appropriate for thinking about and managing issues related to sustainable organizations for three reasons: a) it can be applied at different levels of analysis (e.g., global, national, organizational, personal); b) it is a process-based model (e.g., recognizes the inherent processual nature of sustainable entrepreneurship); and c) each of its basic components are of considerable practical (and theoretical) relevance to the questions of sustainable management and organizations (for more on triple-loop learning, see Argyris 1990, Dyck 2013, and Nielsen 2001).

 As its name may suggest, triple-loop learning encompasses both “single-” and “double-loop learning.” As shown in Figure 2, each of the three consecutive “loops” has both a “feedforward” and a “feedback” component which taken together, constitutes the loop. Let us look at each loop in turn.

*Insert Figure 2 About Here*

**Moving Through the Four Phases of the Process Model**

 ***From Opportunities to Behavior***. In the first loop (left-hand side of Figure 2), an identified *problem* that has been coupled with the recognition of an opportunity for how the problem might be addressed, prompts a *behavioral* response. Put in terms of the four-phase sustainable entrepreneurship model, someone recognizes a social or ecological need and takes the initiative to address the problem. For an example at the household level, consider a person who becomes aware of climate change (problem) and decides to stop driving to work in a car and instead opts to take a bicycle (behavior). Riding a bike not only reduces GHG emissions (neutralizes externalities), but it also promotes the health and well-being of the cyclist (positive externalities). An organizational example comes from Mohammed Yunus, who noticed that the micro-entrepreneurs living around the university in Bangladesh where he was teaching were impoverished (problem), and so he sought to do something about it. He visited the urban slums and talked to the people, and when he realized that very small amounts of money would free the micro-entrepreneurs from being virtually in bonded labor, he acted on this opportunity by using his own money to provide micro-loans (he provided micro-loans to 42 people for a total of $27) (behavior). A societal example comes from Curitiba, Brazil, where mayor Jamie Lerner identified problems associated with traffic congestion, and took the initiative to introduce legislation that created dedicated bus lanes to improve the ability of public transport to move people in a timely manner and thereby enticed citizens to take a bus instead of driving downtown for their daily commute.

 ***From Behavior to Worldview***. In the second loop (middle of Figure 2), the changed behavior from the first loop subsequently gives rise to a changed worldview. This changed worldview is associated with developing a “sustainability orientation” (e.g., Kuckertz and Wagner 2010; see also Zhang and Swanson 2014). For example, the person riding the bike from the previous example reflects on this experience. After six months of cycling, the person realizes that her physical endurance has improved, that she has lost some unnecessary weight, and that she have saved a considerable sum of money thanks to reduced fuel costs, reduced parking costs, and less wear and tear on her car. Taken together, she starts to change her worldview. Rather than judge people who cycle during snowy winter weather as “odd” or “silly,” she starts to think of cycling as a desirable lifestyle choice. *Her way of seeing the world changes.* That is, the behavior change in the first loop feeds forward to worldview change in the second loop, and this informs her plans and vision going forward. The changed worldview also feeds back by influencing her subsequent *behavior*; for example, she may start cycling more often to other events, perhaps purchase special clothing for cycling in different kinds of weather and new lights for cycling at night, and so on. And this increased cycling in turn further reduces climate change (original problem) and enhances her physical fitness and quality of life.

Similarly, in the organizational level example, as Mohammed Yunus reflected on what he had learned from his visits to the micro-entrepreneurs and on his experience showing that his micro-loans were consistently paid back, he started to develop a richer understanding of the situation and began to develop a vision to address the problem more comprehensively going forward. At first this meant going to existing financial institutions and asking them to start programs to loan money to the poor. Unfortunately, the training and experience of conventional bankers rendered them incapable of adopting the Yunus’s worldview based on his first-hand experience with the poor. In terms of the model in Figure 2, the past behavior and resulting worldview of conventional bankers rendered them “blind” to the structures and systems Yunus envisioned.

Finally, in the societal level example, Lerner’s experience with public transportation—today Curitiba’s buses carry about 75% of the city’s commuters, with an 89% satisfaction rating—informed his larger vision for Curitiba. He envisioned a city where people treated each other and the environment with respect, where many stakeholders would have voice in enhancing its overall well-being. This helped city officials to listen to and learn from citizens in refining the bus system, and also informed the city’s approach to other (related) issues and problems.

***From Worldview to Structures and Systems***. In the third loop (right-hand side of Figure 2), the new behaviors and associated worldview begin to influence social structures and systems (again, this can be at the household, organizational, societal and global level). For example, the cyclist begins to feel miffed that there are not enough bike lanes in the city. Why should all the tax dollars go to paving roads for drivers who are contributing to climate change? Shouldn’t more people be encouraged to cycle by creating infrastructure for cyclists? This would reduce road costs (it is cheaper to build a bike lane than to add another road/traffic lane), improve the environment, and reduce health care costs (thanks to long-term health benefits of cycling), and so on. So she begins to lobby her employer for more bike stands at her workplace and the installation of showers for employees who choose to cycle/jog to work, to lobby the government and write letters to her city counselor, attends bike rallies and signs petitions, and so on. In other words, the changed worldview in the second loop feeds forward to prompt efforts to mobilize resources and change social structures and systems in the third loop. And after awhile employers do adopt cycle-friendly policies and infrastructure, and politicians get the message and start to build more cycling and walking trails. These new structures and systems in turn re-enforce the cyclist’s emerging worldview (feedback to second loop) and behavior (feedback to first loop) and help to save the planet (the original problem to be solved)! Moreover, these new structures and systems influence other car commuters, who notice the bike lanes and the cyclists and are prompted to see the merits in active commuting (changed worldview). In time they also begin to take advantage of the cycling infrastructure, perhaps at first on weekends for recreational purposes, but then after awhile to commute to work (changed behavior), all of which help to address the original problem.

 In the organization level example, Mohammed Yunus gave up trying to change existing (conventional) financial institutions, and decided to mobilize resources and establish a new bank whose structures and systems were consistent with his pro-poor worldview. The resulting Grameen Bank became a huge success. When it was awarded the 2006 Nobel Peace Prize it had over 6 million borrowers, almost 19,000 employees in over 2000 branches in over 70,000 villages, disbursed over $5 billion to help people escape poverty, enjoyed a loan recovery rate of 98.85 percent, and was financially viable. Little wonder that many international development agencies are trying to replicate Grameen Bank structures and systems. (Unfortunately, in many cases this replication is coming from commercial banks, whose worldview and goal to maximize “value capture” has decreased the overall “value creation” which has often resulted in grave results for poor clients; e.g., Burke 2011).

Finally, Lerner’s worldview and the success of Curitiba’s transportation structure and systems has informed many innovations that have made it into a model city. For example, food-for-trash programs have made Curitibans world leaders in recycling household waste, and its green space has grown from 5 square feet per inhabitant to over 500! Little wonder that 99% of Curitibans would not want to live anywhere else.

**A Holistic Model of Radical Sustainable Entrepreneurship**

Combining the paradigmatic and processual nature of radical social and environmental entrepreneurship gives rise to a holistic model of radical sustainable entrepreneurship. As depicted in Table 1, this model basically suggests that sustainable entrepreneurship (and, for similar reasons, social or environmental entrepreneurship more generally) encompasses multiple levels of analysis, even though it is typically examined at the level of a focal organization. Specific opportunities to engage in sustainable entrepreneurship will be evident in different “boxes” and at different levels of analysis in the table, which must be understood as part of the larger whole in order to understand any particular box.

*Insert Table 1 About Here*

In other words, Table 1 reminds us that the radical sustainable entrepreneurship process does not take place in a social vacuum (e.g., Patzelt and Shepherd 2011, Shepherd and Patzelt, 2011). Moreover, despite society’s need and desire for entrepreneurs to address urgent social and ecological problems, the larger institutionalized structures and system, dominant worldview, and accepted behaviors will often be in tension with those of radical sustainable entrepreneurship. In particular, recall that, as depicted in Figure 1, in fundamental ways conventional entrepreneurship theory and practice is diametrically opposed to radical sustainable entrepreneurship.

A clear benefit for organizational practitioners and scholars to use something like Table 1 as a template, and filling in the boxes vis a vis their issue(s) of interest, is that this compels them to look at their situation holistically and processually. This means understanding how factors at higher and lower levels of analysis influence their organization, and also how to advance their interests and agenda over time. Which “boxes” are in greatest need of change, which are the most strategically “significant”? How should change be attempted? When is it best to target a significant box directly, and when might it be advisable to try to create change in neighboring boxes, and thereby indirectly “soften” or prepare the significant box for change? These are issues for future research, and will be addressed again in the Discussion section.

Note that the holistic model is helpful not only for understanding how social and environmental entrepreneurial behaviors, worldview, and structures and systems can be implemented. The model is also useful for understanding how conventional behaviors, worldview and structures and systems are deliberately managed and maintained. Consider the following simple example drawn from Leanard (2013). Why is it that so much attention is focused on “reduce, reuse, recycle” at the individual household level of analysis, compared to the attention at the organizational level? It’s not because the bulk of the waste occurs in households -- even if all households were to have zero waste, this would only solve 3 percent of the waste problem in the USA. In contrast, about 76 percent of waste is produced by industry. Why is the focus not on becoming more sustainable at the organizational level of analysis? How is it that businesses that create so much waste have been largely able to avoid public scrutiny for so long?

In terms of the holistic model presented here, Leonard (2013) contends that businesses have taken opportunities to act to set up structures and systems that deliberately promote the worldview that pollution can be solved at the household level. In particular, Leonard provides the example of how businesses who profit from disposable beverage containers worked together to create organizational *structures and systems* (in this case “Keep America Beautiful” and similar campaigns) in order to promote the *worldview* that pollution is caused by and can be solved by individuals at the household level of analysis, emphasizing that *individual behavior* is key to address *problems* of waste and pollution:

“In 1953, a number of companies involved in making and selling disposable beverage containers created a front group that they maintain to this day, called Keep America Beautiful (KAB) [conventional entrepreneurship]. *Since the beginning, KAB has worked diligently to ensure that waste was seen as a problem solved by improved individual responsibility, not stricter regulations or bottle bills.* It even coined the term “litterbug” to identify the culprit—individuals. By spreading slogans like “people start pollution, people can stop it,” KAB effectively shifted attention away from those who design, produce, market, and profit from all those single-use disposable bottles and cans that were ending up in rivers and on roadsides. … It worked. Over the last few decades, the theme of the individual’s role in wrecking the environment, and the individual’s responsibility in fixing it, has only grown stronger—driven not just by KAB but by hundreds of businesses, by the government, even by well-meaning individuals and organizations” (Leonard 2013, 244-45, emphasis added here).

In terms of the holistic framework in Table 1, individuals who *behave* responsibly at the household level of analysis, and think that they are thereby doing their part to solve the world’s *problems*, are exhibiting single-loop learning that is consistent with the worldview: “People start pollution. People can stop it.” Such individuals are not likely to attempt to change overarching *structures and systems* that represent the deeper cause of the problem. In terms of the model in Table 1, these people fail to go beyond (conventional) single-loop learning.

Even so, for some people, exhibiting “green” *behavior* at the household level does prompt them to engage in double- and triple-loop learning where they question the mainstream *worldview* promoted by industry. Such people might ask why industry started and promoted the use of disposable bottles and bags in the first place. Was promoting this unsustainable innovation influenced by the dominant worldview that maximizing profits (value capture) without regard for externalities is acceptable (and even laudable)? Such people will start to challenge this dominant worldview and develop an alternative/sustainable view (double-loop learning), and demand that governments introduce legislation to prevent the sale of disposable containers (triple-loop learning).

Consistent with the triple-loop framework, Leonard describes how, when it comes to truly solving sustainability *problems*, two additional steps are required in order to “move people beyond [the first single-loop learning step of] easy green *actions [behavior].*” The second step it to foster double-loop learning by developing a more radical *worldview* or vision:

“an inspiring, morally compelling, powerful, and inviting vision comparable to that in transformative social movements of the past—compelling enough that people are eager to work long and hard to achieve it, because that is what it is going to take. Fortunately, we have that [radical worldview already developed, as follows]: Let’s build a new economy that puts people and the planet first. Let’s aim for nothing less than healthy, happy communities and a clean and thriving environment. Let’s ensure that economic activity *serves* the goals of public health and well-being, environmental sustainability, and social justice *rather than undermining them in the name of growth and profit* [i.e., radical sustainable entrepreneurship]” (Leonard, 2013, 250, emphasis added here).

The third step is to foster triple-loop learning by mobilizing resources and developing *structures and systems* that consistent with the radical worldview:

“Once we have a compelling [radical] vision, we need to join with others to build the power necessary to make it real. Building a mass movement strong enough to achieve the level of change needed is an inherently collective endeavor. … The missing ingredient is not more information or more individual eco-perfectionists, it is *collective engagement for political and structural change*[i.e., triple-loop learning]” (Leonard 2013, 250-51, emphasis added here).

**DISCUSSION**

The paper has made several noteworthy contributions to the literature. First, it has a developed a multidimensional conceptual framework regarding what constitutes conventional/ radical/social/environmental/sustainable entrepreneurship, which draws attention to conceptual nuances implicit in the literature. In particular, the framework is unique in that it explicitly differentiates between: a) negative vs neutral vs positive social and ecological externalities; and b) radical (emphasis on value creation) versus conventional (emphasis on value capture) varieties of entrepreneurship. Second, the paper promotes an understanding of entrepreneurship that is both paradigmatic in scope, as well as processual in nature grounded in triple-loop learning theory. The result is an elegant understanding of entrepreneurship that is welcome for both practice and theory, as will now be discussed.

**Conceptual Contribution Related to the Typological Framework**

The model depicted in Figure 1 represents an important contribution because it provides helpful language and concepts that are valuable to practitioners and scholars alike. In particular, distinguishing between negative vs neutral vs positive socio-ecological externalities provides at least two benefits. First, it may motivate practitioners to “aim higher,” that is, to not be content to be simply “neutral” but also to think more deeply about how to nurture “positive” socio-ecological externalities. Simply by “naming” the difference between neutral and positive externalities, practitioners will be compelled to seek more positive externalities (Patzelt and Shepherd 2011 offer similar observations; see also Newbert and Hill 2014).

Second, this distinction enables researchers to examine at least two research questions: i) What, if any, are there differences between social/environmental/ sustainable approaches to entrepreneurship that adopt a Minimizer strategy (i.e., reduce negative externalities) versus ones that adopt a Transformer strategy (i.e., increase positive externalities)?; and ii) Does “naming” the difference between neutral and positive externalities result in the creation of more positive externalities? This latter question could be examined in a lab setting, for example, by providing a group of budding sustainable entrepreneurs a definition of sustainable entrepreneurship that does not explicitly distinguish between neutral and positive externalities (control group), and providing an experimental group with a definition that does. Then the two groups could be asked to come up with a sustainable business plan to solve some sort of a problem, and researchers could test whether the experimental group had higher levels of positive socio-ecological externalities.

**Seeing the Entrepreneurial Process as a Form of Triple Loop Learning**

Grounding the processes associated with non-conventional approaches to entrepreneurship within the triple-loop learning model provides additional insight. Even if the content of the four “steps” of the model presented here are substantively similar to the four “generic” steps of sustainable entrepreneurship, simply understanding them as part of the triple-loop model has two advantages for practitioners. First, it encourages them to see sustainable entrepreneurship as an on-going and dynamic learning process (rather than following a static “laundry list” of four steps). Second, it sensitizes them to the feedforward and feedback dynamics implicit in sustainable entrepreneurship (which will further facilitate learning).

For researchers, the model enables future studies to examine: i) Does sensitizing practitioners to the feedforward/feedback dynamics of the process facilitate learning?; and ii) Are there identifiable patterns in how this four step process unfolds depending on a variety of factors (e.g., the level of experience of the entrepreneurs, the number of entrepreneurs in a firm, whether the firm is small or large, and so on).

**Holistic Nature of Radical Sustainable Entrepreneurship**

Third, understanding the larger holistic context that social/environmental/sustainable entrepreneurship takes place within also has substantial benefits. In particular, this enables and encourages sustainable entrepreneurs and scholars to develop “maps” (e.g., filling in the boxes as in Table 1) of the larger context of their entrepreneurial efforts. The benefits of such a map are at least threefold. First, it forewarns and draws practitioners’ attention to issues (e.g., in neighboring boxes) that may be particularly important or challenging for them to address. Second, it helps entrepreneurs identify which stakeholders are key to the success of the endeavor. Third, it may help entrepreneurs to identify previously-unseen sustainable entrepreneurship opportunities in other boxes that may be relatively “low hanging fruit” (e.g., there may be many firms already trying to selling a new sustainable product at the household level, but few firms promoting the product within organizations, or vice versa).

Similar benefits are evident for researchers, who can examine: i) Are some types of “boxes” are easier to achieve results in than others (e.g., should sustainable entrepreneurs target relatively malleable households rather than more complex organizations)?; ii) Does having a network of sustainable entrepreneurs in neighboring boxes make a difference?; iii) How do entrepreneurs fill and/overcome “holes” in the map (e.g., boxes where the conventional approach is particularly strong)?; and iv) Prepare case studies that develop knowledge regarding how to introduce sustainable changes in boxes that have a strong conventional stronghold (e.g., is it more effective to invest resources that target the stronghold, or is it better to target and “convert” the neighboring “boxes” so as to cut the stronghold off at its knees)?

**The Primacy of Value Creation**

Finally, the distinction between Radical versus Conventional social/environmental/ sustainable entrepreneurship—in particular, the difference between value capture versus value creation—represents valuable contribution for a variety of reasons. Building on Santos (2012), the analysis presented here emphasizes that sustainable entrepreneurship can take either form (Radical and Conventional), and that there may be important differences between in the two. The primacy of “value capture” is well-entrenched in the literature, and has often been able to co-opt previous attempts to place greater emphasis on “value capture” (e.g., see Margolis and Walsh 2003 on co-optation in Corporate Social Responsibility literature; Ferraro, Pfeffer and Sutton 2005 on self-fulfilling prophecies related to value capture). This process of co-optation may be mitigated by *explicitly* defining (and thus legitimating) Radical social/environmental/ sustainable entrepreneurship as placing value creation over value capture. The beginnings of such a shift are already taking place, as is as is evident in the growth of Benefit Corporations, the promotion of Management 2.0 to replace Management 1.0 (Hamel 2009), and critiques of the status quo (e.g., Ghoshal 2005, Giacalone and Thompson 2006). Past research suggests that students who learn about such “radical” alternatives are more likely to embrace them and are less likely to adopt the “value capture” mentality of the status quo (e.g., for related studies, see Dyck et al. 2011, Frank, Gilovich and Regan 1993). Similarly, future researchers may wish to examine whether students and practitioners who learn that “value creation” may be more important than “value capture” will be more likely to pursue radical sustainable intra/entrepreneurship.

In conclusion, the concepts and theory presented in this paper help to further understand and legitimate the idea that it is possible and noble to develop organizations that primarily seek to improve social (and environmental) well-being, and to do so in a way that is financially viable for the organization. In particular, the conceptual framework depicted in Figure 1 identifies various types of social entrepreneurship, environmental entrepreneurship, and several combinations of the two in terms of sustainable entrepreneurship. Moreover, the paper provides a triple-loop learning process model that describes and emphasizes the paradigmatic nature of social entrepreneurship specifically, and sustainable and environmental entrepreneurship more generally.

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**Figure 1**: Differentiating “Radical sustainable entrepreneurship” from other ideal-types





**Table 1**: Example of the holistic model of radical sustainable entrepreneurship

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Level of analysis*** | **Problem** | **Behavior** | **Worldview** | **Structures and systems** |
| ***World*** | Climate change (caused in significant part by emissions from automobiles) | Develop and use alternate modes of transport/ energy sources | Humankind must live in harmony with the planet (it can exist without us) | Bio-regional economies, international climate change agreements (e.g., Kyoto Protocol) |
| ***Society*** | Traffic congestion, smog, health care costs, unproductive time spent commuting | Emphasize *local* shopping/ entertainment events/sports;walkable neighborhoods | Socially-reconstruct the meaning of cars (no longer status symbols, need) | Bike lanes, rapid transit, active urban planning, gasoline/carbon taxes, incentives for alternate forms of transportation (e.g., velomobiles) |
| ***Organi-zation*** | Commuting to work by car creates the following negative externalities: i) social (stress), ii) ecological (ghg) iii) economic  (parking costs)  | Use video-conferencing for off-site meetings; car pool for group travel; usebicycle courier services when practical  | “Sustainability orientation;” - purpose of business is to optimize socio-ecologicalvalue creationand ensure financial viability | Institute policies that pay for employees’ bus passes and facilitate telecommuting; add bike racks and install showers at work; perform social and ecological audits |
| ***Individual/Household*** | Car fumes are unhealthy; driving may lower fitness | Ride a bike, walk | “I am part of solution” | Garages designed for bikes; routine stretching exercises for cyclists |

1. Much of the information in this section is from the Award-winning website maintained by National Aeronautics and Space Administration, “Global Climate Change: Vital Signs of the Planet” http://climate.nasa.gov/key\_indicators [↑](#footnote-ref-1)
2. As of January, 2015, it is at 399.85 part per million, according to http://co2now.org/. [↑](#footnote-ref-2)