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Escaping the green prison: Entrepreneurship and the creation of opportunities for sustainable development

Desirée F. Pacheco [a,*], Thomas J. Dean [b,1], David S. Payne [c]

[a] Portland State University, School of Business Administration, P.O. Box 751, Portland, OR 97207-0751, United States
[b] Colorado State University, Department of Management, 225 Rockwell Hall, Ft Collins, CO 80523-1275, United States
[c] University of Colorado-Boulder, Leeds School of Business, 419 UCB, Boulder, CO 80309-0419, United States

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A B S T R A C T

While entrepreneurial activity has been an important force for social and ecological sustainability; its efficacy is dependent upon the nature of market incentives. This limitation is sometimes explained by the metaphor of the prisoner's dilemma, which we term the green prison. In this prison, entrepreneurs are compelled to environmentally degrading behavior due to the divergence between individual rewards and collective goals for sustainable development. Entrepreneurs, however, can escape from the green prison by altering or creating the institutions—norms, property rights, and legislation—that establish the incentives of competitive games. We provide a variety of evidence of such entrepreneurial action and discuss its implications for theory and practice.

> "…in the condition of mere nature, where all men are equal and judges of the justness of their own fears, he which performeth first, does but betray himself to his enemy; contrary to the right (he can never abandon) of defending his life, and means of living." Thomas Hobbes, 1651 (from Van Mill, 2001)

1. Executive summary

Much attention has been focused on the need for sustainable development, development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987). Many recent writers view entrepreneurship as the engine of sustainable development, expecting that the innovative power of entrepreneurship will bring about the next industrial revolution and a more sustainable future. In line with this characterization, the popular global vernacular now includes terms such as sustainable entrepreneurship (Dean and McMullen, 2007), green entrepreneurship (Berele, 1991), environmental entrepreneurship (Anderson and Leal, 2001; Dean and McMullen, 2007; Keogh and Polonsky, 1998), eco-preneuring (Bennett, 1991; Blue, 1990; Shaper, 2002), and social entrepreneurship (Dees, 2001).

Despite growing interest and enthusiasm for the positive role of entrepreneurs in sustainable development, existing research in economics suggests that under certain conditions, markets—and therefore, entrepreneurial activity—are unable to effectively allocate environmental and social resources (Bator, 1958; Hardin, 1968; Pigou, 1932). These limitations can often be attributed to a prisoner's dilemma problem: where even though sustainable business models may carry collective benefit (for example, to an entire industry), entrepreneurs face a disadvantage when pursuing *costly* sustainable actions, as such costs may not be borne by

* Corresponding author. Tel.: +1 303 775 9974.
E-mail addresses: pacheco@pdx.edu (D.F. Pacheco), tom.dean@colostate.edu (T.J. Dean), david.payne@colorado.edu (D.S. Payne).
[1] Tel.: +1 303 818 7094.

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competitors (Carraro and Fragnelli, 2004; Hardin, 1968; McWhinnie, 2009; Schelling, 1978;). Under these circumstances, sustainable actions are punished rather than rewarded. We label this phenomenon “the green prison”; wherein entrepreneurs face a system of incentives that fail to encourage sustainable practices.

Transcending this type of prisoner's dilemma—what we refer to as “escaping the green prison”—involves changing the competitive rules of the game by transforming economic incentives. We argue that entrepreneurs possess the agency to develop the necessary institutions that enable the exploitation of sustainable opportunities. Such agency implies the expansion of the concept of the sustainable entrepreneur from discoverer of opportunity in extant economic structures to the creator of institutional structures that improve the competitiveness of sustainable behaviors.

Sustainable entrepreneurs transform institutions by altering and/or creating norms, property rights, and government legislation. Examples of norms developed in the realm of sustainable entrepreneurship include codes of behavior among tourism operators in Australia (Huybers and Bennett, 2003), international sustainable coffee partnerships (4C, 2009a; Muradian and Pelupessy, 2005), third-party certification programs for organic foods (Fromartz, 2006), and the nanotechnology industry's codes of conduct (Krupp and Holliday, 2005). In addition, sustainable entrepreneurs motivate the development of property rights to exploit profit opportunities and protect resources from unsustainable behavior. This is illustrated in the distribution of rights that has taken place in the Maine lobster fisheries (Acheson, 1987; Anderson and Huggins, 2003) and the assignment of rights to private land in Japan (Ostrom, 1990). Sustainable entrepreneurs may also encourage cooperative institutions through mandatory rules that are codified and enforced by governmental bodies. Legislation ensures that when individuals are not otherwise incented to act in the interest of society, they will be required to do what is collectively beneficial. Examples of the entrepreneurial encouragement of mandatory legal standards include Khosla Venture's efforts to eliminate subsidies for oil and gas companies (Little, 2006; PR Newswire, 2006), the solar energy industry's promotion of renewable energy portfolio standards (Solar Energy Industries Association, 2007), and the organic industry's lobbying for the Organic Foods Labeling Act (Fromartz, 2006).

Our analysis suggests important implications for entrepreneurs escaping the green prison. We present a variety of strategies used in such circumstances; most of which include the use of collective action through partnerships with industry and civil organizations. Using these relationships, entrepreneurs seek the implementation of collectively approved rules of conduct, third party certification schemes, the assignment of property rights, and favorable legislation that improve the competitiveness of sustainable initiatives. Important amongst these actions, is their ability to pave the way for further entrepreneurial activity that takes advantage of the institutional structure created by these sustainable entrepreneurs.

2. Introduction

Both popular and academic writers have asserted that the innovative process of entrepreneurship can serve as a central force in the development of an ecologically and socially sustainable economy (Anderson and Leal, 1997, 2001; Bennett, 1991; Blue, 1990; Dean and McMullen, 2007; Hawken, 1994; Hawken et al., 1999; Shaper, 2002). Unfortunately, theoretical and empirical research on the topic has lagged well behind both entrepreneurial activity and popular interest in the phenomenon. To date, little research on entrepreneurship and sustainable development has appeared in the academic literature and we are only just beginning to understand their relationship, let alone the complexities of the phenomenon (Dean and McMullen, 2007; Shaper, 2002).

Foremost among the issues in the study of entrepreneurship and sustainable development is the paradox between normative claims of entrepreneurship as the solution to sustainable development challenges, and research in environmental and welfare economics that emphasizes the limits to sustainable entrepreneurial action. Indeed, the assertions of sustainable entrepreneurship proponents stand in contrast to well-known theoretical prescriptions in the economics literature. Most important amongst the latter, is the conclusion that the public and non-excludable character of social and environmental resources often creates a divergence between individual and collective incentives, which is revealed in the incidence of self-interested behavior that degrades social and environmental conditions (Carraro and Fragnelli, 2004; Hardin, 1968; Tietenberg, 2000; Pigou, 1932). This conclusion raises the question of *whether and how the process of entrepreneurship can contribute to sustainability*, when a large body of research concludes that many social and environmental goods are not amenable to market allocation (see Section 3.2 for some examples) (Bator, 1958; Hardin, 1968; Carraro and Fragnelli, 2004; Cropper and Oates, 1992; McWhinnie, 2009; Pigou, 1932). The implication of this is that sustainable entrepreneurship is constrained to contexts where individual and collective incentives are aligned under the existing system of economic institutions. In contrast, in the absence of such conditions, sustainable entrepreneurship would fail to exist and fulfill its normative implications.

We suggest, however, that this conclusion is often misguided. Developments in institutional economics and entrepreneurship theory can help to explain how entrepreneurs overcome suboptimal market incentives to create sustainable entrepreneurship opportunities and enhance both global and competitive sustainability (Aldrich and Kenworthy, 1999; Alvarez and Barney, 2007; Anderson and Leal, 1997; Anderson and Leal, 2001; Langlois, 1992; North and Thomas, 1970; Sarasvathy, 2001). We follow this rationale to answer the question of whether and how entrepreneurs can engender institutional incentives to sustainable development and achieve the normative expectations implied in the concept of sustainable entrepreneurship.

Following a body of research in game theory (Axelrod, 1984; Maynard Smith and Price, 1973; Schelling, 1978), environmental economics (Carraro and Fragnelli, 2004; Oses-Eraso and Viladrich-Grau, 2007; Tietenberg, 2000), and institutional economics (Bromley, 1989; North, 1991; Schotter, 1981; Sugden, 1986), we view sustainability challenges as a prisoners' dilemma problem wherein entrepreneurs face a potential competitive disadvantage when pursuing *costly* sustainable actions, as such costs may not be borne by competitors. We refer to this entrepreneurial predicament as the “green prison”: wherein entrepreneurs are