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Toward a Theory of Sustainability Management: Uncovering and Integrating the Nearly Obvious

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Abstract

The continuing evolution and increasing salience of the concept and practice of sustainability among individuals, organizations, and societies worldwide appears to warrant the development of conceptual approaches to theories of sustainability management for application to management research, education, and practice. While other management theories have been employed by many management scholars to help explain the need for and advancement of sustainability management, none of those theories appear to have the unique features, benefits, opportunities, challenges, or orientations to assist individuals, organizations, and societies to move toward sustainability as much and as soon as appears necessary. However, since the consideration of theories of sustainability management is relatively new for most management scholars, the authors hope this article begins a dialogue among those stakeholders to better describe, develop, and apply this and related theories of sustainability management as significantly, effectively, and urgently as possible.

Keywords

social issues, ecosystems, multilevel, multisystems, theory building, sustainability management theory

Introduction

Global business, as well as society in general, is in the midst of one of the most significant changes since the information revolution of the 1990s. The sustainability revolution, that is, the movement of individuals, organizations, and societies toward developing the capacity for environmental and socioeconomic long-term quality of life improvements, could even be characterized as encompassing the information revolution and may be the most transformative cultural phenomenon since the industrial and agricultural revolutions (Edwards, 2005). The importance of this movement can be better understood with the consideration that information, industrialization, and agriculture all vitally depend on a multitude of aspects of both environmental and socioeconomic evolutionary realities. This effort to realize healthier long-term futures for the

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world's population and for future generations, one could argue, may be the pinnacle (to date) of human civilization endeavors (Brown, 2010; Edwards, 2005; Friedman, 2008).

In its full conceptualization, a sustainable world has been suggested to include enough access to resources for even multiple billions of people to meet their various environmental and socioeconomic needs, as well as for multiple millions of other species to coexist and thrive with humans, as both humans and the rest of nature continue to evolve (Cortese, 2010). This vision can include global scale aspects such as a healthy biosphere, stabilized world human population, intra- and intergenerational equity, universal human rights, and the resolution of social and economic challenges of the world's poor, among other mega-challenges and opportunities, such as our energy future (Lovins, 2011). Given the monumental change at individual, organizational, and societal scales that would be required to move most humans substantially toward the realization of such a sustainability vision, the thoughtful management scholar and practitioner might ask "what theory of human management can account for (or otherwise address and/or advance) such an enormous change in human civilization?" A number of possibilities developed and prescribed by current management theories have been called to the task of addressing the need for and effective application of sustainability values, actions, and results. But, as will become clear throughout this article, as well-intentioned, -researched, and -argued as these theories have been, none of the traditional management theories seem to adequately reflect the essence of the sustainability challenges of and potential approaches to the current and emerging human individual, organizational, and societal sustainability-related realities.

What does apparently exist is a global interest in and an evolving human capacity for achieving a more sustainable world (Esty & Winston, 2006; Hawken, 2008; Jacobson & Delucchi, 2009; Marcus, Geffem, & Sexton 2002; Orr, 1994; Russo, 2008; Starik & Heuer, 2002). More people than ever appear to be learning about and trying to take more substantive, more frequent, and/or more numerous actions in reducing energy consumption, improving water quality, recycling or reusing "waste" products, upgrading their own or their stakeholder network's health, and assisting in improving their community's socioeconomic sectors (Danaher, Biggs, & Mark, 2007).

The emergence of this reality probably should not surprise anyone, given that human individuals, their organizations, and their societies are not only completely and continuously surrounded by the natural environment but are essentially composed of the natural environment and would not exist and could not survive without the rest of the natural environment (Driscoll & Starik, 2004). Everything in and on this planet, including our set of socioeconomic environments, is intricately and inextricably tied to the natural environment (here defined as Earth's atmosphere, hydrosphere, lithosphere, biosphere, and the forces, cycles, and phenomena that affect or are affected by these spheres). Even spiritual (Egri, 1997), cognitive, and psychological entities have biophysical bases, since if humans and other sentient species had no biophysical brains and nervous systems, these characteristics, too, would not be possible. However, the awareness of the mutual embedding of humans and the rest of nature may be so obvious that many of us take this special connection for granted and may not effectively employ it to advance our collective sustainability vision (Roszak, 1992; Throop, Starik, & Rands, 1993). The authors' intention in this article is to bring attention to this obvious-but-hidden aspect of human–natural environment interactions. In addition, we are interested in providing information that would help in the development of one or more theories of sustainability management and offer an initial statement of one possible such theory (which we call a *proto-theory* to signify it as an initial attempt). We provide the justifications for, as well as the values and scope of, such a proto-theory, continue the development of a multilevel/multisystems approach in the literature and connect it to this proto-theory, and conclude by offering one major suggestion regarding an overall characteristic of such a proto-theory, which is the cultural sustainability immersion concept.

One important note before we proceed further about this article's use of the term *values*, which we employ in several different but complimentary ways. First, *values* is used to identify one paradigm in particular—the integration of environmental and socioeconomic sustainability. Since the latter is a main topic of our article, that "value" is an all-encompassing one here. Our second use of the term *values* is to include it in our suggested proto-theory of sustainability management, as one of several system components, along with strategies, processes, and other systems elements. Integration and coordination are two open systems values initially and conceptually suggested by Katz and Kahn (1978). The third use of the term *values* in this article is as a sustainability theory evaluation criterion, suggested by Gladwin, Kennelly, and Krause (1995). Our interpretation is that the latter researchers identified that the types of values such a theory might include and advance, such as the precautionary principle, could provide insight into how that theory compares to other sustainability-related theories. So while we use the term *values* in several different contexts in this article, these uses are related to one another in that they connote a conceptual characteristic about which most people care most of the time and want to either maintain or increase over time.

Why Are New Theories of Sustainability Management Needed?

Several justifications prompted us to consider the suggestion that one or more new theories of sustainability management may be needed in the management literature. First, as we have identified and will explain in greater detail later in this article, most other organization/management theories that have been used in sustainability research do not either explicitly or implicitly recognize the obvious (or near-obvious) fact that all human organizations are embedded within the natural environment, and that, all of those which have human managers and other employees, also contain the natural environment inside of their respective biophysical bodies. This mutually embedded aspect could be a key element of sustainability research and practice, encouraging natural environment phenomena to be considered at the center of and throughout all human organizational activity and acknowledging that the natural environment is present throughout all organizational stakeholder networks (including value and supply chains), directly or indirectly affecting (or affected by) the decisions and actions of multiple organizational decision makers (Waddock & McIntosh, 2011). By logical extension, the human social environment is also central to most organizational management decisions and interweaves throughout all organizational networks (Husted & Allen, 2011). Ignoring either the natural or social environment aspects of human organizational decisions and actions by either researchers or practitioners can lead to short-term thinking and short-sighted action, with potential negative environmental, social, and/or organizational consequences (Diamond, 2005). So the first reason one or more sustainability management theories are needed is because they may best reflect the current and future biophysical and social realities of human organizations and the contexts and impacts of their decisions and actions.

A second major justification for suggesting the need for the potential initial development of one or more sustainability management theories is that we humans apparently need to pay much more attention to sustainability challenges and related potential catastrophic outcomes. Numerous modern-day intractable environmental and social issues, such as climate disruption, debilitating poverty, biodiversity loss, human rights and child labor abuses, ecosystem toxic pollution, overpopulation, and overconsumption, among many others, such as deforestation and gender discrimination, have exacerbated traditional human maladies of war, violence, crime, illiteracy, and disease to the extent that these "wicked problems" appear to hold an ever-tightening vice-grip on both human development and ecosystem health and survival (Brown, 2010;

Busch & Shrivastava, 2011; Hoffman, 2011; Meadows, Meadows, & Randers, 1992; Victor, 2011; World Commission on Environment and Development, 1987; The Worldwatch Institute, 2012). While many different reports have emerged on the global sustainability challenge in the past several decades, from an ecosystem perspective, the UN Millennium Ecosystem Assessment in 2005 identified that 15 of 24 (nearly two thirds) of global ecosystems were under severe stress, with only 4 of the 24 ecosystems out of danger of severe degradation (United Nations, 2005). On the socioeconomic front, more failed states exist today than in all of human-recorded history; world military spending has continued to surge; the global economy has just experienced a massive, worldwide "great recession"; and the gap between rich and poor worldwide continues to widen (Brown, 2010). Theories of sustainability management, because they can include and integrate human and other natural environment and human socioeconomic phenomena, have the potential to describe, analyze, and prescribe both scientific and practical approaches for the survival of human civilization on Earth, a presumably worthy human management (and research) goal. Human development, including its burgeoning population (now more than 7 billion and expanding by a net amount of more than 200,000 humans per day) and evermore powerful technology and expanding economies, have become leading contributors to natural environment deterioration and destruction, much to the detriment of significant proportions of the human population (Brown, 2010). Clearly, human overpopulation and overconsumption need to be urgently reduced on a significant scale around the planet by as many individuals, organizations, and societies as possible, as much as possible, for human civilization to survive and thrive on Earth (Starik & Gribbon, 1993). Theories of sustainability management may possibly provide more and/or better guidance than any other management theories on how those systems can advance in that desirable direction. The time appears ripe for management scholars to question whether current management theories actually address the unique features, challenges, opportunities, and urgency to help advance individuals, organizations, and societies toward a more sustainable future.

While business as an institution has its limits, few have suggested that the business sector, as well as governments and nonprofit organizations, and their cross-sector collaboration, are hopeless to address many of these issues or to potentially halt or reverse some of them. The management profession, including business academics, appears to have the opportunity, even the responsibility, to play significant roles in examining and addressing many of these challenges, and one way to do so is to put those environmental and social issues squarely at the center of and throughout their scholarly work, which the development of one or more sustainability theories can do. While not a panacea, given the limitations of academia to affect practice, business academics can play a nonnegligible role in doing their part to base their research around these issues and some potential ways to effectively address them (Sharma, Starik, & Husted, 2007).

A third justification for considering new theories of sustainability management is a combination of the first two: other theories of management do not focus on sustainability and, therefore, do not systematically address pressing sustainability issues, so one or more sustainability management theories may be needed to match these two phenomena. Like many theories of management (which have the advantage over organizational theories in that management can be performed at multiple levels, from individual through organizational to societal levels), theories of sustainability management can exhibit both descriptive/empirical and prescriptive/normative elements. Sustainability (both socioeconomic and environmental) is currently being managed by individuals, organizations, and society, if not as efficiently or effectively as it could be, since many observers would suggest that these same entities could manage sustainability issues with much more positive results. For instance, at the individual level, who among us uses energy as efficiently as we could, and how many of us are actually tracking our individual use of energy in

its many forms to even know whether we can manage our energy consumption more efficiently? Regarding organizations, much the same could be asked of our own universities: Have our places of academic employment adequately assessed their respective roles in alleviating poverty, homelessness, and/or drug addiction in society? One aspect of sustainability management theories with which we conclude this article is that the more that individuals, organizations, and societies are immersed in both environmental and socioeconomic sustainability phenomena, the more likely one or more sustainability cultures will begin to emerge, with more values, attitudes, perceptions, decisions, and actions being informed by ever-improving sustainability results. The use of other organization and/or management theories in previous sustainability management research has produced interesting and helpful findings and recommendations, but most of these studies, with a few notable exceptions, could be viewed as incremental and more focused on the business organization or their industries than on socioeconomic and environmental sustainability issues, impacts, and futures (de Lange, 2010).

We acknowledge and appreciate the stellar work of sustainability scholars who have developed and/or used more traditional organizational/management theories in their respective research efforts, and we encourage them to continue to explore how traditional theories can be used to examine and advance sustainability management (Starik, Marcus, & Ilinitch, 2000). We are also interested in encouraging these and other scholars to consider the proposed and other sustainability management theories to perhaps better reflect our societies' collective current sustainability challenges and opportunities and to potentially advance both researcher and practitioner capabilities in addressing those challenges and opportunities.

If sustainability management theories gain some traction in the management researcher and practitioner communities, we foresee an increasing amount of attention being developed on sustainability management topics by other academics and practitioners, given that more articles will likely be written and more presentations will likely be made on the topic. We would also expect that more interviews and social media will likely be generated on it and, hopefully, that more support for overall or particular sustainability concepts and practices will likely develop, reinforcing our prediction that more sustainability inputs will help produce more sustainability outputs, processes, values, strategies, feedbacks (such as outcomes), and connections to other systems. More attention to this and other sustainability management theories will likely help increase our understanding of its components, processes, potential improvements and applications, and results.

Yet a fourth reason that motivated us to engage in this conversation about a proto-sustainability management theory was the set of several meetings of the Academy of Management that have occurred over the past 3 years in which numerous scholars proposed various justifications and aspects of one or more new sustainability management theories. At those same meetings, an average of several dozen Academy members attended and participated in those sessions. The proposers were a very diverse group of scholars, representing different age groups, divisions, genders, and countries of origin, indicating potential widespread interest in this topic. These discussions indicated that sustainability management theory is a topic of interest, even if they identified that the need for these theories had not yet achieved consensus. In fact, in numerous conversations with Academy scholars on the topic of sustainability management theories, we have found both support (mild-to-strong) and opposition (also mild-to-strong), which in itself is a contributing reason for further topic exploration.

Finally, a fifth justification for suggesting the consideration of one or more sustainability management theories is that most other management theories are based on a very limited number of disciplines, and often only on one or a small number of these, primarily neoclassical economics, psychology, political science, business, and public affairs. Since sustainability in this article deals with the multifaceted long-term quality of life aspects of human individual,

organizational, and societal levels, it necessarily would draw from not only the several disciplines mentioned above. It would also require knowledge from a wide range of natural science disciplines, philosophy, humanities, other social sciences, such as sociology and anthropology, and several professional fields, including from medicine (including modern, alternative, and preventive), engineering (including systems), public health, education, and law. Other management theories, of course, still have applicability within a theory of sustainability management when more focus is desired (see, e.g., Russo & Harrison, 2005). But the greater breadth, especially when its components are integrated, allows theories of sustainability management to better reflect a more comprehensive view of reality, including biophysical and biophysically based socioeconomic reality, which can have greater global applicability for human behavior over a longer, multigenerational timeframe.

What Is Sustainability Management?

Human language processes can derive words for concepts that have meaning but are either difficult to define precisely or are still evolving their meanings (or both). Examples are numerous and include such terms as *love, trust, courage, freedom*, and *fairness*, among many others. Except in highly legalistic or philosophical discussions, most people have a general idea about what these words mean (in their own languages), at least in casual conversation. The lack of a single, narrow definition of these terms has not prevented people from using them or from acting on their broad conceptualizations.

Sustainability appears to be such a term (P. A. C. Smith & Sharicz, 2011). While, from its roots of "sustain" and "ability," the term seems to have come to generally mean "the capacity to maintain," in the past few decades, it has probably most often been applied to a type of human societal development—sustainable development. Sustainability might also mean the capacity to endure and adapt, prompting the question of what existing conditions need to and should be maintained. Most often, the term *sustainable development* has been interpreted to mean "meeting the (human) needs of the present without compromising the ability of future (human) generations to meet their own (human) needs" (Brundtland Commission, 1987). However, this definition has been criticized on a number of fronts, including not being sufficiently specific about whose or which needs should be addressed first and foremost (though inclusion of the world's poor in its development is an important, recurring theme), and about what constitutes "needs" (vs. "wants"), especially between present and future (human) generations and between humans and other species. A number of other definitions, perceptions, and interpretations have emerged and been used by individuals, organizations, and societies (Bell & Morse, 2008; Welcomer, 2011), and many of these appear to coalesce specifically around the concepts of carrying capacity, futurity, and environmental and socioeconomic long-term quality of life (Starik & Rands, 1995). This article employs the latter set of concepts and interprets "life" as primarily, but not exclusively, human life, and recognizes that "long-term" is a relative term and could mean "into the foreseeable future" or "in perpetuity."

We define sustainability management as the formulation, implementation, and evaluation of both environmental and socioeconomic sustainability-related decisions and actions (Bell & Morse, 2008; Dunphy, Benveniste, Griffiths, & Sutton, 2000; Elkington, 1998; Laszlo, 2003; Stead & Stead, 2004) and, for the purposes of this article, includes decisions and actions at the individual, organizational, and societal levels. Individual sustainability management decisions and actions might include the reduction of energy overconsumption in the areas of personal or household transportation, housing, and purchasing, including food production and purchasing. Organizational sustainability management decisions and actions may involve some of the same sustainability aspects, but at a larger, more collective scale (Sharma et al., 2007). So while

individuals' and households' transportation-related sustainability management might include commuting choices, organizations often need also to account for in-bound and out-bound transportation related to the distribution of their products and services, among other operational and ancillary activities (Aras & Crowther, 2009). At the societal level, which could vary from local communities (Hopkins, 2008; Roseland, 2005) to entire countries and cultures (Edwards, 2005; Starik, 2010), sustainability management could include the environmental and socioeconomic aspects of major institutions, sectors, and trade and professional associations involved in transportation system planning, development, operations, and upgrades, including those spanning countries and continents (de Lange, 2010).

What Is Missing in Current Management Theories?

As we mentioned earlier, sustainability management appears to require one or more dedicated theories because no other theories of management appear to have expressly included attention to human individuals, organizations, and societies and multiple other systems and their mutual embedding with the natural environment. A theory of sustainability management would likely specifically recognize quality of life at different levels of existence through time and space (Bell & Morse, 2008). A theory of sustainability management has the potential advantage over other management theories in more comprehensively reflecting the biophysical-based reality of human individuals, organizations, and societies and their integration with human cultures and economies. Traditional management theories are virtually silent on the application, consideration, or discussion of multilevel quality of life and on our individual, organizational, and societal management efforts to ensure that all life, human, other animal, plant, and microbial is viewed holistically, over long-time periods, in multiple settings, under a wide range of conditions. In short, current management theories, even those that have been "greened" (including by one of the coauthors of this article), do not account for the various types of, risks to, and potential impacts on both human biophysical and ecosystem health, for current and future generations, nor do they address the integration of these systems with more familiar (but sometimes just as intractable) socioeconomic challenges (Driscoll & Starik, 2004). In addition, current management theories also appear to be lacking in a number of other elements compared to potential theories of sustainability management.

Research in the general field of sustainability management has increasingly employed existing management theories to explore, for example, how sustainability enables firms' unique capabilities/resources (Hart, 1995; Russo & Fouts, 1997), increases environmental legitimacy (Bansal & Clelland, 2004; Bansal & Roth, 2000; Berrone & Gomez-Mejia, 2009), and enhances performance (Hart & Ahuja, 1996; King & Lenox, 2001; Margolis, Elfenbein, & Walsh, 2007).

Despite the increasing importance of sustainability in the management literature, theoretical development in sustainability has yet to yield a model that fully acknowledges: the changing organization-and-environment field and its implications in the long term; the interdependence and integration of relationships of humans, organizations, and society; and the paradoxical demands inherent in a dynamic society.

Current management theories, for example, have generally not accounted for the changing organizational environment (Corley & Gioia, 2011; Suddaby, Hardy, & Huy, 2011). Suddaby et al. (2011) observe that many management theories were developed in the 1960s and 1970s and have remained almost intact since that period. Corley and Gioia (2011) explicitly argue that sustainability is an important theoretical management issue, but it is currently viewed by many scholars as "atheoretical." According to these researchers, more effort needs to be invested in

developing a theoretical framework of sustainability to help forecast events and to influence managers and academics to address specific sustainability phenomena or problems.

Most current management theories have also not explicitly recognized that organizations are not isolated entities but, instead, are part of a complex network of relationships with other beings (Sandberg & Tsoukas, 2011; Waddock & McIntosh, 2011). Pogutz and Winn (2009) argue that the growing literature in sustainability has not adequately recognized the interdependence of organizations and the natural environment. For example, social network theory apparently needs to acknowledge that organizations are not only embedded in economic, social, and cultural life but also in biophysical ecosystems. Ecosystem embedding implies that individuals, organizations, and societies depend on ecosystem resources and that individuals, organizations, and societies can have a significant (positive or negative) impact on ecosystems (Dauvergne & Lister, 2010).

Ecosystems are complex, evolve, and can be overly stressed. Pogutz and Winn (2009) define sustainability fit as

> the ability of the firm to adapt and align dynamically with the resilience of the ecosystem where it is embedded, preserving ecosystem health to the extent that the provisioning of ecosystem services on which the firm depends is not jeopardized. (p. 32)

A "fit" between organizations and ecosystems is therefore temporarily and spatially dynamic and should reflect the consequences of exceeding ecosystem carrying capacity. It can be argued that individuals and societies also need to "fit" their ecosystems to stay within its carrying capacity.

While the concepts of nature's carrying capacity and ecosystems have been raised by management scholars, the promise of infusing management theory with biophysical foundations remains largely unrealized. Much of the literature on management continues to ignore sustainability issues, such as biodiversity, habitat protection (Dauvergne & Lister, 2010; Etzion, 2007), overpopulation, overconsumption (Starik, 1995), and a host of other issues.

Finally, existing management theories may be too simplistic and static to fully explain the complexity of the paradoxical demands inherent in the management of sustainability (W. K. Smith & Lewis, 2011). A paradox is composed of two components: (a) an apparent contradiction between two elements and (b) a response that addresses the resulting tensions simultaneously. Paradoxical demands arise from diverse stakeholders with conflicting demands. For example, firm maximization of profits for shareholders is said to often conflict with its social and ethical responsibilities (Husted & Allen, 2011). A theory of sustainability management could potentially address such a paradox by examining how individuals, organizations, and societies could environmentally and socioeconomically thrive in the long term, while allowing shareholders to also thrive by ensuring that their respective organizations' sustainability management programs reduce firm costs, increase firm revenues, add value to firm assets, or reduce firm risks and liabilities (Fisk, 2010).

W. K. Smith and Lewis (2011) concluded that purposeful and cyclical responses to paradoxical demands enable sustainability—which they define as "peak performance in the present that enables success in the future" (W. K. Smith & Lewis, 2011, p. 389). The ability to respond to paradoxical demands is characterized by a dynamic equilibrium in which there is constant motion in opposite directions. "A dynamic equilibrium enables sustainability through three mechanisms: (1) enabling learning and creativity; (2) fostering flexibility and resilience; and (3) unleashing human potential" (W. K. Smith & Lewis, 2011, p. 393).

In summary, although current managerial theories have advanced our understanding of sustainability to a certain extent, these theories present fundamental sustainability omissions. Table 1 presents those theory omissions regarding environmental sustainability, however,

Table 1. Current Managerial Theories: Environmental Sustainability Connections and Omissions.

Theory	Environmental sustainability connections	Environmental sustainability omissions	Contrast between dominant emphases in current theory versus those in sustainability management theories
Institutional theory	External shocks influence environmental strategy. Firms gain environmental legitimacy by complying with external/societal environmental pressures.	The natural environment is external to an organization while in reality an organization is embedded in, connected to, dependent on, and integrated with the natural environment.	Reaction versus integration External pressures versus embedded pressures
Resource-based view	Sustainability strengthens organizational competitiveness by enabling its unique resource capabilities.	Potentially accelerated changes in ecosystems may cause highly unpredictable impacts, due to the change magnitude, period of disturbance, and cascading effects at multiple levels. Turbulent conditions would require new organizational capabilities to respond to such uncertainty.	Unique resource capabilities versus shared resources capabilities Competitiveness versus cooperation
Natural resource based-view	The natural environment is seen as a provider of source and sink resources for human usage and should not be abused or exceed related to carrying capacity.	Nature is not only a collection of disaggregated resources for human business use but also a set of complex, interacting phenomena that need to be available to humans, their businesses, and the rest of nature, both now and in the future.	Respect for limits versus respect for possibilities Natural resources versus natural phenomena
Agency theory	Principals and agents may have similar or divergent interests related to organizational interactions with the natural environment.	Very limited assessment of the value of the natural environment to the extent that environmental actions may enhance firm performance.	Risks versus opportunities Divergent interests versus convergent interests
Transaction cost	Economic transaction costs should include costs associated with use of environmental resources.	Transaction cost barriers are not established for the natural environment to the extent that nature (i.e., water, air) property rights, usage, and terms of trade are not known.	Transaction costs versus full transaction costs Public goods versus universal biome
Resource dependency theory	Firm survival depends on its ability to procure critical resources from the external environment.	The interdependence between organizations and ecosystems is not addressed to the extent that they are mutually interactive and integrated with each other.	Dependency versus interdependency External environment versus embedded ecosystems
Stakeholder theory	The natural environment may or may not be recognized as one or more stakeholders. Environmentalists may or may not be legitimate and/or powerful stakeholders.	Long-term quality of life for all stakeholders, making connections between and among them is not addressed.	Current human stakeholders only versus systems of stakeholders that can include future generations and non-human nature Rights versus enduring rights
Strategic choice theory	Businesses are affected by the external environment and the interactions between them.	Business is not a separate entity but is in fact embedded in nature. The interdependence between and among individuals, organizations, and societies, and the rest of nature are not addressed.	Affected by versus embedded in External environment versus embeddedness
Social network theory	Sustainability issues may affect how individuals interact and relate to each other.	Human individual, organizational, and societal interactions are important, and can be applied to natural environment issues, but typically, interactions between humans and the rest of nature are not addressed.	Interactions versus interdependence Humans versus all types of life

those same omissions would equally apply to socioeconomic sustainability, since most current management theories (with some exceptions) do not include significant attention to at least the multiple levels of socioeconomic phenomena.

What Might a Theory of Sustainability Management Include?

As implied above, a theory of sustainability management would likely encompass several aspects of both sustainability and management. First, such a theory would necessarily need to focus significant attention on both natural and socioeconomic environments, ideally describing, predicting, and prescribing their systemic existence, value, and integration (at least of their inputs, processes, and outputs, and, if possible, their mutual feedbacks within multiple environments). We believe that both environmental and social aspects need to be included in the concept of sustainability and that most academics and practitioners accept that interpretation, although the degree to which each is considered to be within the sustainability concept probably varies significantly from one scholar or practitioner to another. We are also inclined to treat each as equally important, and to identify that, while humans are dependent on (and significantly composed of) the natural environment, most sustainability challenges cannot be addressed except by aspects of society, whether these are human individuals, organizations, communities, or cultures. Since we include both environmental and social sustainability in our concept of sustainability management, the following questions are the type that one or more theories of sustainability management would likely address (but are beyond the scope of this article):

- How can the science of climate disruption be best understood by as many of the decision-making and action-taking entities in as timely a manner as possible?
- How can the human species better relate to the millions of other species on this planet to preserve ecosystems and biodiversity that both humans and nonhumans need?
- What are the socioeconomic problems connected with the use of fossil fuels and other toxic substances that play such a large role in the world's millions of organizations and multiple societies?

Such questions imply that sustainability management theories may need to address what may be very deeply embedded and entwined challenges and to do so on an ongoing, or frequent, basis for these issues to be effectively resolved, rather than to be treated only on the surface and only when they are perceived to reach a high level of severity.

Second, a theory of sustainability management would likely include attention to both environmental and socioeconomic sets of sustainability issues at multiple levels (at least, at the individual, organizational, and societal levels) and in many different contexts (global to local, multiple biomes, under a variety of atmospheric, hydrospheric, and geospheric conditions, and, of course in multiple cultures, economies, and communities (Sharma et al., 2007).

Third, since management approaches often are organized into stages (such as formulation, implementation, and evaluation) and are attempted or adopted at least at the three levels of individual, organizational, and societal, applying systems analyses and developing conclusions and recommendations for humans at each of these levels appears to be another sensible aspect of a theory of sustainability management (Starik, 2006). This aspect implies the quality of genuineness, or seriousness, in focusing human concern and capability in addressing sustainability issues at multiple levels.

Fourth, a theory of sustainability management would likely also need to account for a wide range of quality of life phenomena, and do so for multiple forms of life and over various timeframes. We humans have typically regarded the quality of our own lives and those of other humans as the main, if not only, concern of our species, but in recent decades, a wider array of

life, presumably not just their survival but their development, as well, has also warranted increasing human individual, organizational, and societal concern (Waddock & McIntosh, 2011). However, in addition to humans themselves, members of our species have been increasingly paying attention to the welfare of other primates, and to cetaceans and other mammals, and to other animals that are pets, or that dwell in habitats within or nearby human habitats. Selected species of the rest of the animal kingdom, especially those that appear endangered, and even plants and other life, are also of interest to an increasing number of human individuals, organizations, and societies (Starik, 1995; Wilson, 1984). So, sustainability management theories are likely to address a broad range of sustainability challenges and opportunities.

Fifth, one of the main features likely to be a part of a theory of sustainability management, in contrast to incremental or evolutionary approaches (Boons, 2009), would be the recognition of the need for transformational perspectives, decisions, actions, and results to begin to address looming catastrophes, whether environmental or socioeconomic or combined (Brown, 2010; Hopkins, 2008). Environmental sustainability catastrophes are probably the most important and urgent of those to address, since socioeconomic phenomena are dependent on environmental quality of life. Whether the sustainability issue is climate disruption (Blockstein & Weigman, 2009), biodiversity extinction, widespread deforestation and desertification, microbial epidemics, air, water, or land toxic pollution, or natural (including cosmic-originating) disasters, the prevention, or at least amelioration, of the pervasive destruction and/or deterioration of life associated with these survival issues is a potential distinguishing feature of theories of sustainability management. While such a theory would likely not include efforts to micromanage solutions to these catastrophes, it would likely provide a framework for developing and implementing broad sustainability solutions. It would also imply competence in identifying and eventually resolving sustainability challenges.

Sixth, another distinguishing feature of theories of sustainability management would likely be the exploration and development of sustainability solutions that are multilevel, systematically integrated (including their inputs, processes, outputs, and feedbacks), and multi-stakeholder-oriented, rather than incremental, single media-focused, and narrowly (human) elite-dominated. As such, theories of sustainability management may become one of the most holistic, strategic, participatory, and time-and-space–related theories that management scholars have forwarded and, hopefully, which are applicable to a wide range of human individual, organizational, and societal environmental and socioeconomic opportunities and challenges (Edwards, 2005). This last distinguishing feature highlights the need for the several aspects mentioned in the previous five points, which are included in our proto-theory below.

A preliminary statement of our proto-theory of sustainability management that we tentatively forward in this article is as follows:

> The greater the frequency, breadth, depth, genuineness, competency, and systems-orientation of human involvement in addressing sustainability management phenomena at multiple levels, the greater the possibilities for improvements in both the capacities for and achievements of environmental and socioeconomic long-term quality of life on a significant scale.

While the above several descriptors of features of our proto-theory of sustainability management may be somewhat intuitive, we want to emphasize the latter feature of systems-orientation, since this phenomenon has been identified by other researchers as a key sustainability management characteristic (Capra, 1996; Maser, 2012; Rands et al., 2007; Stead & Stead, 2004; Townsend, 2006).

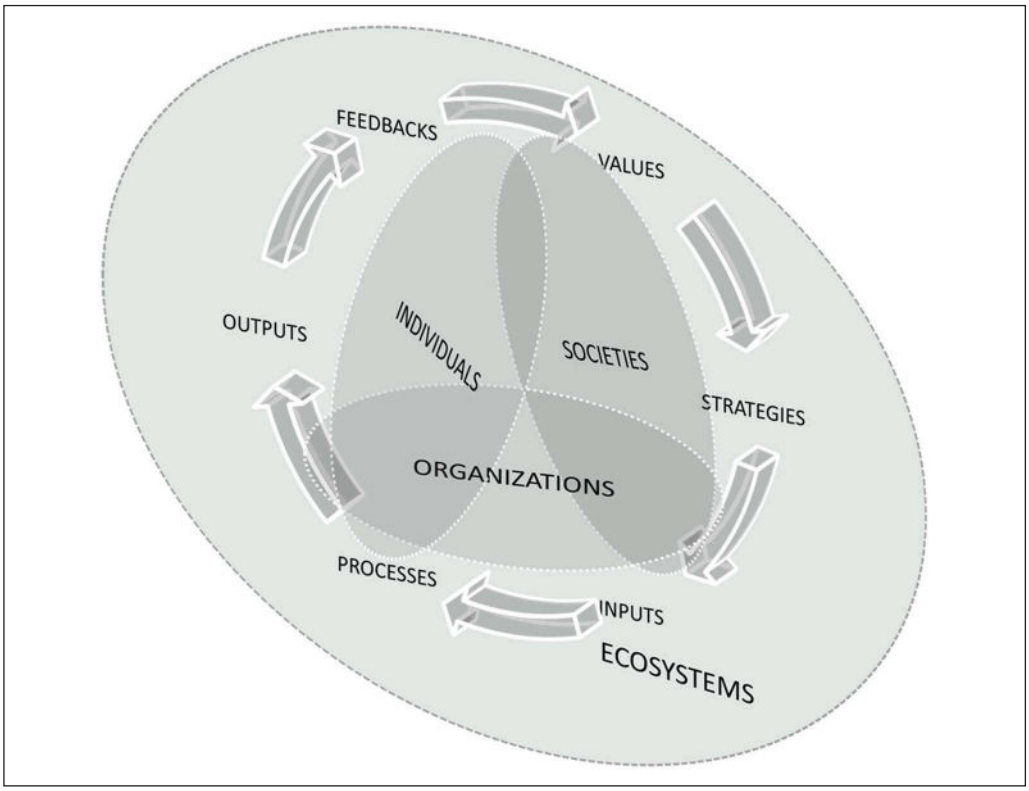

Figure 1. A multi-level, multi-system perspective of a proto-theory of sustainability management.
Note. Systems of individuals, organizations, and societies are comprised of and are embedded in ecosystems. Such systems include humans and nonhumans (i.e., plants, animals, microbial organisms, and all forms of life). Feedback loops between and within systems have a focus on human long-term social, economic, and environmental needs. Policies prescribe integrated solutions to urgently address environmental and socioeconomic challenges.

A systems-oriented expression of our proto-theory of sustainability management would include several elements identified with the systems concept, including values, strategies, inputs, processes, outputs, feedbacks, and connections to other systems (Starik & Rands, 1995). Systems-oriented values would likely highlight connectivity, resource flows, and internal/external boundaries and conduits and systems-oriented strategies would likely include selecting goods and services to help conserve and restore both ecosystems and socioeconomic systems. Finally, we can project that sustainability management systems would likely affect and be affected by (at least) political-economic systems, sociocultural systems, and, of course, natural ecosystems (see Figure 1; Starik & Rands, 1995; Rands et al., 2007).

What Would a Theory of Sustainability Management Probably Not Include?

The proto-theory of sustainability management presented in this article is a comprehensive theory, but it does have its limits, as would all sustainability management theories. First of all, these theories would likely not include or encourage an excessive amount of attention on short-term phenomena. Theories of sustainability management would likely include and

encourage attention to longer term or discounted perspectives, which are usually ignored by other management theories. Focusing too much attention on the short-term, or not explicitly recognizing medium- and long-term aspects of human individuals, organizations, or societies, and on both the environmental and socioeconomic contexts, can lead to suboptimal decisions, such as not saving for or investing in current and future technologies which could have a major positive sustainability impact in the medium- and long-terms (Forbes & Jermier, 2010; Hawken, Lovins, & Lovins, 1999; Norton, 2005). For example, consuming energy inefficiently may be convenient or hidden in the short term, but investing in energy efficiency and/or clean energy technologies today may have high environmental and socioeconomic payoffs in the medium and long terms. Theories of sustainability management are likely one of the extremely few sets of management theories of which the authors are aware that explicitly acknowledges the precious resource of time, the ever-present reality of space, and ensures that all due attention is focused on medium- and long-term aspects of human individual, organizational, and societal (including economic) interactions (Bell & Morse, 2008).

Second, theories of sustainability management (Bell & Morse, 2008; Dunphy et al., 2000; Elkington, 1998; Laszlo, 2003) probably do not include the denial or devaluing of human-natural world interactions nor include a near-autistic fixation on the human species as the figurative universal center of existence, as do many other management theories, at least implicitly. Theories of sustainability management likely would not adopt an anti-science orientation, but also not deny that modern science has much yet to learn about our biophysical and socioeconomic realities (and, in the case, of learning from indigenous cultures, to re-learn lessons lost; Egri, 1997). Theories of sustainability management would also likely explore how human individuals, organizations, and societies can better integrate their activities with those of the rest of the planet and with one another, including through a recognition that multidisciplinary approaches (Uiterkamp & Vlek, 2007) and those that are based on communities of practice have much to contribute to our collective movement toward more human and ecosystem sustainability.

Third, theories of sustainability management probably would not include an obsession with encouraging the continued attainment of material wealth, excess consumption, and most of the other neoclassical economic values that many other management theories appear to assume (or, for those that are neoclassical economics-based, make explicit). While adequate levels of various material needs are important for both human survival and development, theories of sustainability management would likely recognize the limits of our natural and socioeconomic systems to provide for human needs beyond their respective capacities, especially when those basic "needs" evolve into excessive "wants" (Ricketts, 2010). Sustainability management theories would likely not dismiss the possibility that, in addition to instrumental value, much of the nonhuman natural environment has intrinsic value and that socioeconomic systems need to account for that intrinsic value, beyond the surface-level human "use" value as a "resource" only that is often emphasized in traditional socioeconomic-based perspectives (Armstrong & Botzler, 1993; Berry, 1988; Daly & Townsend, 1993; Nash, 1989; Schumacher, 1973; Stone, 1977).

Fourth, theories of sustainability management would likely also not be a panacea or a statement about a quest for human perfection. Much needs to be learned about how humans have interacted with and how they do, can, will, and should interact with the rest of the natural environment, for both their own long-term biophysical and socioeconomic benefit, as well as for the benefit of the continuation and restoration of Earth's biosphere. Learning appears to be a key sustainability management value, given that both humans and the rest of the natural environment continue to co-evolve (Sinclair, Dudick, & Fitzpatrick, 2008).

What Are Some Scope and Values Features of a Theory of Sustainability Management?

The next section of this article discusses the scope and values elements of our proto-theory of sustainability management to better highlight aspects of this theory that are often neglected (or not stated) in other management theories. "Scope," which here includes multiple levels and multiple system elements, describes the applicability and limits of the proposed proto-theory of sustainability management, while "values" illuminates the deeply perceived human concerns and interests that underlie sustainability management.

Scope

Since long-term quality of life can encompass many different scales, a proto-theory of sustainability management in this article identifies three levels of potential sustainability management, macro or societal, meso or organizational, and micro or individual sustainability management (Cavagnaro&Curiel, 2012). Of course, many other levels of human-to-human and human-and-environment interaction are and could be considered, including ecological, global, multinational, regional, national, multiorganizational, suborganizational, community, and household, among others (Rands et al., 2007; Starik & Rands, 1995). However, the authors believe that identifying at least one macro level, one meso level, and one micro level illustrates the point that sustainability can be perceived as a multiscale concept and that improvements in long-term quality of life occur not only at these levels but also between and among them. For example, a sufficiently influential individual (such as former U.S. Vice President, Al Gore, related to climate crises) can change both organizational and societal sustainability phenomena (Gore, 2006; Starik, 2004). Only these three sustainability management levels are highlighted here to reduce any unnecessary complexity in the understanding and applicability of this proto-theory, but the authors of this article encourage the exploration of other levels, as well as their sustainability management-related interactions.

In addition, sustainability management seems best conceptualized as a systematic approach to long-term quality of life improvement (Starik & Rands, 1995), probably requiring a holistic series of connected steps or stages in generally sustainable, though not necessarily linear, directions, including at least inputs, processes, outputs, and feedbacks. For instance, a manufacturing organization's attempt to reduce the toxic components of its products (outputs) needs to ensure that not only its own processes are not responsible for the toxicity, it needs to ensure its inputs (which are its suppliers' outputs) are also as free of toxic substances as possible (Fullana i Palmer et al., 2011). The systems approach also is illustrative of the concept of linkages between or connections among various other sets of inputs, processes, outputs, and feedbacks. So, the scope of sustainability management theories would likely account for interactions between and among effects on environmental systems, such as tropical forests, by socioeconomic system activities, such as timber company operations that result in deforestation. Scope includes not only the decisions, actions, and outcomes of sustainability management but also the socioemotional aspects of desiring, needing, creating, promoting, and appreciating the various stages, elements, and results of sustainability management.

Values

Values are deeply held beliefs, assumptions, and desires that are often the bases for voluntary (as opposed to involuntary) human actions (Joyner & Payne, 2002). Since many sustainability actions, such as recycling, are most typically voluntary, a theory of sustainability management

needs to recognize the values that form the basis of related perceptions, thoughts, affinity, actions, and results. Given that sustainability attitudes, behaviors, and other psychoemotional phenomena can cover a wide range of possibilities, sustainability values are themselves numerous and multilayered and several are presented below (Leiserowitz, Kates, & Parris, 2006).

First, the most basic set of human values contributing to sustainability, especially at the individual level, but also extant at the organizational and societal levels, is survival, that is, the maintenance of life processes. Most typically, this value involves meeting the basic requirements of a living system, which in the case of human individuals, organizations, and societies, means meeting human biophysical and psychoemotional needs at multiple levels. Satisfying just these human requirements for all 7 billion-plus humans on 24-7-365 basis for each of our average nearly 70-plus years each is no mean feat. And, doing the same with at least biophysical needs, nearly 9 million other species on our planet have similar, at least biophysical, requirements for their own life processes (Mora, Tittenson, Adl, Simpson, & Worm, 2011).

Second, a related sustainability value is resilience, or the ability of a system to withstand multiple and various life stresses and to recover from any related damage. Again, in humans, and probably in other primates, and in cetaceans and other higher order animals, as well, this would include not only biophysical resilience but also psychoemotional adapting. (United Nations, 2012). Human individuals both experience and cause such stresses, from which they need to "bounce back." These include their own birth, maturation, and near-death experiences, as well as their need for power, affiliation, and other psychoemotional needs.

Third, sustainable systems are expected to not only deliver this recovery capacity from intrinsic factors but also from extrinsic forces, such as violence, conflict, disease, and accidents. Both intrinsic and extrinsic stresses can be reduced in advance, and not just confronted after they occur, in sustainability management approaches (United Nations, 2012).

In climate change conversations, the terms *mitigation* and *adaptation* have often been employed to reflect this idea that human problems do not only need to be solved after-the-fact but also can be foreseen and addressed before they occur (Lovins, 2011). So the resilience value is related to not only crisis management but also to planned behavior theory (Ajzen, 1991). One of the advantages of our proto-theory of sustainability management is that its breadth is wide enough to connect with other management theories and concepts such as these, potentially resulting in a wider application and acceptance of this proto-theory.

Fourth, another important sustainability value is efficiency, or the amount of input that results in useful output, which is sometimes addressed in economic terms in some traditional management theories. Efficiency can be applied to nearly any system (since all systems, by definition, have inputs and outputs). In the sustainability sense, again in the case of human individuals, organizations, and societies, efficiency can be considered in both biophysical and psychoemotional realms, in the sense of not wasting natural resources or human mental, temporal, and relational resources or efforts. Biophysical efficiency appears to be an automatic phenomenon of many natural systems (including nonhuman living systems), but humans do not appear to practice biophysical efficiency as automatically as do other living systems (Hawken et al., 1999). Rather, humans generate significant, sometimes overwhelming, amounts of wasted natural resources in nearly all of their activities, whether these involve basic functions such as producing and eating food, more involved functions such as sheltering, and some higher order functions such as consuming energy to do work, such as electricity for manufacturing activities. Sustainability management systems would identify opportunities for humans to reduce their waste of both biophysical and other resources.

Fifth, the set of values of protection, conservation, preservation, and restoration are another key aspect of a theory of sustainability management, as these are the human-ascribed sets of relationships with the rest of the natural environment that best identify harmonizing or integrating

human and nonhuman phenomena, with the intent of increasing the long-term survivability and "thrive-ability" of both. This value set includes both an action component and an inaction component, in that humans need to take actions, such as land use zoning and ocean dumping regulation, to prevent other human actions, such as excessive logging, hunting, or other depletion and pollution activities for harmonization or integration to be achieved. Much of the world's environmental law (and enforcement) is designed to advance these values, and worldwide, these have been credited with addressing at least some of the most egregious violations of these values, such as species extinction, to a minimal extent. However, past and current human depletion and pollution activities have endangered nearly two thirds of the world's ecosystems (United Nations, 2005), and future human population growth, affluence, and related technology portends continuing deterioration of these sustainability values (Meadows et al., 1992). Human individuals, organizations, and societies apparently need to protect, conserve, and preserve the Earth's ecosystems, and to restore those ecosystems when they have been damaged. Cultivation of and mobilizing on these values may be among the most strategic sustainability actions that humans can plan, implement, and upgrade.

Finally, given the potential breadth of the concept and practice of sustainability, many other values in addition to those described above can be included in a theory of sustainability management. Innovation, evolution, learning, collaboration, tenacity, durability, adaptability, rationality, empathy, responsibility, justice, reflection, and spirituality would likely begin the list of additional sustainability values, all of which, to some degree, would have in common the characteristic of contributing to the overall multilevel improvement of quality of life. While many other management theories might also incorporate some of these values, the uniqueness and utility of a theory of sustainability management is its purpose in recognizing and encouraging humans at multiple levels to recognize, respect, and integrate their interests, actions, and results with the realities of the rest of the natural environment and with our ever-evolving socioeconomic milieu. The related ultimate goal of sustainability management theory would likely be the continuous enhancing of the ability of individuals, organizations, and societies to realize and appreciate multiple biophysical and socioeconomic (and related psycho-emotional) benefits. We are suggesting these additional values to provide the perspective that, over time, theories of sustainability management will likely undergo some changes, including the consideration of other long-term quality of life values, which we welcome and to which we hope to contribute.

What Are Some Possible Criteria for Evaluating a Theory of Sustainability Management?

More than 15 years ago, a set of management scholars suggested a number of criteria for assessing whether or not a management theory could be described as sustainable (Gladwin et al., 1995). These included the values of inclusiveness, connectivity, equity, prudence, and security. The theory of sustainability management suggested in the present article addresses each of these areas, but only two, inclusiveness and security, will be developed further here for the purposes of brevity. We are, however, interested in promoting the use of other criteria in evaluating the proto-theory in this article and other theories of sustainability management. This is especially the case for connectivity, since that concept is a key feature of systems, and our proto-theory is systems-based. The inclusiveness value would be advanced by the incorporation of concern for the rest of nature, in addition to humans, and an involvement of many more human stakeholders, including future generations, in sustainability-related decisions (Sharma & Ruud, 2003; this also partially addresses the evaluation criterion of equity). The security criteria would be advanced in theories of sustainability management by encouraging attention: to global security (Renner, 2005), by addressing rather than ignoring climate disruption and other human-induced natural

environment syndromes; to national security, by promoting cross-country agreements to protect valuable natural environments and their most vulnerable human citizens (this also partially addresses the evaluation criteria of prudence); and to community security, by addressing unemployment, violent crime, and social justice issues.

Numerous other criteria might be employed to assess the feasibility of a theory of sustainability management to actually provide the benefits mentioned in this article. In the environmental sustainability area, for instance, development and implementation of a theory of sustainability management would likely include the several most common categories that have come to characterize various sustainability management certifications, such as energy and water efficiency, waste reduction (including reuse and recycling), biodiversity (including ecosystem restoration), and health (both human and nonhuman; Edwards, 2005; Hitchcock & Willard, 2009). Socioeconomic sustainability could include a wide variety of well-known human "social responsibility" categories, including community cohesiveness, individual freedom, personal safety, satisfactory employment and income, and continuous education, to name just a few (Hitchcock & Willard, 2009; Hutchins & Sutherland, 2008). What is suggested here is that the advancement of theories of sustainability management could promote innovations, conversations, decisions, and actions about overall, multilevel improvement of human civilization, both in the environmental and socioeconomic realms.

What Are the Current Realities and Possible Future Developments of a Theory of Sustainability Management?

One of the main advantages of developing, implementing, and evaluating theories of sustainability management is that a number of individuals, organizations, and societies around the world have at least begun moving in the direction of advancing sustainability for at least several decades, indicating that the overall concept and practice of long-term environmental and socioeconomic quality of life is not completely alien or novel.

Many individual opinion-leaders through time have advocated for greater human concern for the natural environment, as well as for various socioeconomic reforms and innovations. One set of prominent examples are the "fellows" of Ashoka, social entrepreneurs who are provided several years of salary by this organization to champion various social and environmental causes in their home countries (Bornstein, 2007). At least as far back as Aristotle lamenting the loss of trees around Athens, Greece, individuals and communities, both traditional/indigenous and modern, have practiced (some experimentally) restorative agriculture, reuse of materials, and ethics of sufficiency and frugality (Diamond, 2005).

Organizations have developed policies and practices that at least partially help to advance either environmental or socioeconomic or both types of sustainability. As early as 1975, for instance, Minnesota Manufacturing and Mining (better known as 3M) promoted an environmental policy that included environmental and socioeconomic commitments to responsibility, compliance, and innovation (Starik & Carroll, 1992). Many other organizations have developed sustainability plans, programs, and reports (Blackburn, 2007), but these and most other organizations have appeared to be in the very early stages of producing sustainability results (Herman, 2010) and have found some aspects of putting sustainability into practice more challenging than others (Humes, 2011).

And, societies, again whether traditional, indigenous, or modern, have initiated climate, biodiversity, peace, and human rights practices or programs, whether on a global, multinational, regional, bilateral, or local community basis (Hawken, 2008). The proto-theory of sustainability management proposed in this article would both reflect the recent past and present reality of multilevel sustainability initial and incremental efforts and help point the way toward more effective

and substantive long-term quality of life improvements in the future. We also are attempting to unfold the near-obvious concept that individuals, organizations, and societies are intertwined and mutually dependent on both the natural and socioeconomic environments, and, therefore, sustainability prescriptions need to encompass this multilevel embedding phenomenon.

Regarding the future development of one or more theories of sustainability management, this article proposes that more frequent, broader, deeper, genuine, competent, and systems-oriented conversations be initiated among both academics and practitioners (and between these two stakeholder groups) on how such theories of sustainability management could be further specified and improved and, just as importantly, how they could be tested and implemented more effectively and efficiently on a wider and more urgent and systematic basis than is typical of most traditional management theories. Whether these theories of sustainability management would be more appropriately and alternatively developed as descriptive, instrumental, or normative might be a direction for future research, as might be increased attention to the integration of environmental and socioeconomic sustainability. Of course, like most human concepts, sustainability paradoxes, inconsistencies, and anomalies likely exist and will be uncovered, so these too have a role in improving the understanding of sustainability management (Krueger & Gibbs, 2007). But, given the urgent multilevel set of challenges that confronts our species, we hope that our profession quickly and genuinely becomes more aware of these environmental and socioeconomic quality-of-life challenges in order for us all to better understand and address these crises in time to prevent them from becoming catastrophes.

A special set of considerations for the development of sustainable management theories could be identified in several questions posed in the Call for Papers for this and future issues of *Organization & Environment*. Most obviously, the Call question "How have researchers in sustainability helped advance sustainability at one or more levels of human organization?" relates to the multilevel aspect of our sustainability management proto-theory. The question 'What are the antecedents and outcomes of organizational and inter-organizational sustainabilty capability generation at regional, national, and global levels?' speaks to both our multi-system and our multilevel aspects of sustainability management theory. In addition to exploring those two questions more broadly and deeply, we recommend future researchers consider investigating the major Call question—"How can social and environmental sustainability management phenomena be integrated for 'total' or 'holistic' sustainability approaches, whether through integrated sustainability indicators, approaches, policies, values, strategies, programs, or results?"—since, as can be seen from our article's title onward, we are interested in an integrated approach to sustainability management, including in the development, testing, and application of theories related to it.

Summary, Concluding Observation, Limitations, and Suggestions

This article highlighted the important role of sustainability management as an academic and practical concern for individuals, organizations, and societies. It has also identified some desirable features or criteria of a proto-theory of sustainability management and employed these and the authors' understandings of sustainability and management in advancing the need for and a preliminary statement of one possible proto-theory of sustainability management. In doing so, the article identified how some of the best-known management theories do not explicitly acknowledge the biophysical bases of both human existence and the interaction of human natural environment qualities with those of other entities in Earth's ecosystems and with human socioeconomic phenomena. The general scope of the proposed proto-theory and the many human potential values that underlie this and other possible theories of sustainability management have also been described. Finally, the article listed some of the potential applications of

the proposed proto-theory and some suggestions on the future development of this and other theories of sustainability management.

For sustainability to make a significant impact on human and planetary well-being in the next several decades, humans appear to need to be immersed in the rationales for environmental and social sustainability and how sustainability can be practiced in virtually all of our species' activities—professional and personal, public and private. Sustainability may need to be infused throughout our daily lives, from birth to death, similar to other all-encompassing desirable human values, such as health, freedom, peace, and affiliation. When cognitive, emotional, and physical codes are perceived, encouraged, and practiced on a frequent basis (incorporating the other features of our proto-theory) by as many humans as possible, we can potentially be said to be approaching a sustainability culture. Such a culture appears to need to be widely and immediately developed, initiated, and advanced to significantly address the ever-worsening challenges of climate disruption, biodiversity extinction, ecosystem "toxification," and the ongoing human tragedies of all forms of poverty, inequality, exploitation, enslavement, and violence. Such an immersion approach has been a key factor in numerous individual, organizational, and social change efforts, including foreign language acquisition, habit alteration, athletic skill development, manufacturing quality, and religious and sustainability education (Bodyscott, 2001; Maser, 2012; McKenzie-Mohr, 2011).

This immersion approach to sustainability-related behavior change follows previous research on the need for a change in human sustainability directions and on numerous change suggestions at multiple levels, in multiple systems, advancing multiple sustainability values. What an immersion approach contributes to those imperatives, considerations, and (hopefully) actions is the potential of scaling each of those in every "direction": up, down, in, and out. That is, sustainability via immersion could be initiated at any level of human experience or organization, by any individual, organization, or society, and "infect" other individuals, organizations, and societies to widen and deepen its perception, consideration, practice, and, hopefully, positive impact. In this way, sustainability can become a "viral" change in human psyches, households, communities, organizations, and societies, helping affect entire cultures to begin to feel, think, and act in more sustainable ways. As these changes begin to permeate human values, attitudes, and behaviors, we can expect to see changes in sustainability indicators, such as increased human health and ecosystem resilience and decreased carbon and other harmful footprints and negative social sustainability metrics. If these indicators trend in socially desirable directions for lengthy enough time periods, their associated practices may become self-reinforcing, creating positive feedback loops, helping to advance sustainability to ever greater levels, which, at this point in time, appears to be a highly desirable future.

Of course, given the breadth and depth of the factors involved in sustainability immersion, numerous caveats need to be considered. These warnings range from the necessity of promoting the approach to adopt an acceptable pace, of using appropriate means to encourage the changes, and of exercising collectively diligence and flexibility in both means and ends. Many potential value and logistical conflicts, some major, some minor, can be foreseen, and, of course, success (however defined) is not guaranteed. But the scope and immediacy of human and planetary challenges may be perceived as salient and obvious by enough decision-makers and action-takers to warrant moving forward in the direction a sustainability immersion. The time may be approaching in which we, as a species, may not have any other choice.

A number of limitations of the proposed proto-theory of sustainability management have already been identified in this article, including that it does not focus on the short term, on human beings only, and on unlimited economic growth, as do many other management theories, or on perfection, as some readers might perceive that a theory of sustainability management, even a

preliminary one, may involve. All these characteristics probably portend that the acceptance of such a theory may itself be a long-term proposition.

Given that sustainability management is a broad, multifaceted concept and that we are suggesting that it applies to multiple levels and involves multiple systems elements, the exact limits are still to be determined. However, broadly speaking, sustainability management may be limited in providing more than the minimal amount of long-term quality of life to its stakeholders, at least in the foreseeable future. Similar to the practice of first aid, the best that might be expected of researching and practicing sustainability management in the near-term is to address the least sustainable phenomena first and, to whatever extent is possible, move to focus attention on more restorative environmental and socioeconomic phenomena. Another potential limit is the extent of human knowledge, at any given time, about sustainability management challenges and solutions and the realization that both human and nonhuman evolution requires learning and adaptation, and some learning and adaptation will likely occur after disappointing and perhaps painful lessons learned.

The authors welcome the suggestions of other scholars (and practitioners) in the development of one or more theories of sustainability management, since this article appears to be one of the earlier attempts to advance such a theory. Additional advantages, disadvantages, justifications, and characteristics, as well as scope and value elements, can certainly be identified, developed, and critiqued, and eventually, some researchers may want to test the resulting theory(ies) for future refining and more efficacious application. We extend our figurative hands to our colleagues and other readers of this article to make the conceptual connections necessary to advance what may be the most vital management theory of our careers and, in practice, of our own, our children's, and our grandchildren's lifetimes. We invite our colleagues to contact us personally, to respond to this article with another submission to this same publication, and/or to engage us and the topic in relevant public settings, such as future Academy of Management meetings.

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References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179-211.

Aras, G., & Crowther, D. (2009). *The durable corporation: Strategies for sustainable development*. Surrey, England: Gower Applied Business Research.

Armstrong, S. J., & Botzler, R. G. (1993) *Environmental ethics: Divergence and convergence*. New York, NY: McGraw-Hill.

Bansal, P., & Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of Management Journal*, *47*, 93-103.

Bansal, P., & Roth, K. (2000). Why companies go green: A model of ecological responsiveness. *Academy of Management Journal*, *43*, 717-736.

Bell, S., & Morse, S. (2008). *Sustainability indicators: Measuring the immeasurable*. London, England: Earthscan.

Berrone, P., & Gomez-Mejia, L. (2009). Environmental performance and executive compensation: An integrated agency-institutional perspective. *Academy of Management Journal*, *52*, 103-126.

Berry, T. (1988). *The dream of the earth*. San Francisco, CA: Sierra Club Books.

Blackburn, W. R. (2007). *The sustainability handbook*. Washington, DC: Environmental Law Institute.

Blockstein, D., & Weigman, L. (2009). *The climate solutions consensus: What we know and what to do about it*. Washington, DC: National Council for Science and Environment.

Bodyscott, P. (2001). *Language and cultural immersion: Perspectives on short term study and residence abroad*. Hong Kong: Institute of Education.

Boons, F. (2009). *Creating ecological value: An evolutionary approach to business strategies and the natural environment*. Cheltenham, England: Edward Elgar.

Bornstein, D. (2007). *How to change the world: Social entrepreneurs and the power of new ideas*. New York, NY: Oxford University Press.

Brown, L. (2010). *Plan B 4.0*. Washington, DC: Earth Policy Institute.

Brundtland Commission. (1987). *Report of the World Commission on Environment and Development: Our common future*. Oxford, England: Oxford University Press.

Busch, T., & Shrivastava, P. (2011). *The global carbon crisis: Emerging carbon constraints and strategic management options*. Sheffield, England: Greenleaf.

Capra, F. (1996). *The web of life: A new scientific understanding of living systems*. New York, NY: Anchor Books Doubleday.

Cavagnaro, e. & Curiel, G. (2012). *The three levels of sustainability.* Sheffield, UK: Greenleaf Publishing.

Corley, K. G., & Gioia, D. A. (2011). Building theory about theory building: What constitutes a theoretical contribution? *Academy of Management Review*, *36*(1), 12-32.

Cortese, A. D. (2010). *Vision of sustainability in 2050*. Washington, DC: Second Nature.

Daly, H. E., & Townsend, K. N. (1993). *Valuing the earth: Economics, ecology, ethics*. Cambridge: MIT Press.

Danaher, K., Biggs, S., & Mark, J. (2007). *Building the green economy: Success stories from the grass roots*. Sausalito, CA: PoliPoint Press.

Dauvergne, P., & Lister, J. (2010). The prospects and limits of eco-consumerism: Shopping our way to less deforestation? *Organization & Environment*, *23*, 132-154.

de Lange, D. E. (Ed.). (2010). *Research companion to green international management studies: A guide for future research, collaboration and review writing*. Cheltenham, England: Edward Elgar.

Diamond, J. (2005). *Collapse: How societies choose to fail or succeed*. New York, NY: Penguin Group.

Driscoll, C., & Starik, M. (2004). The primordial stakeholder: Advancing the conceptual consideration of stakeholder status for the natural environment. *Journal of Business Ethics*, *49*, 55-73.

Dunphy, D., Benveniste, J., Griffiths, A., & Sutton, P. (Eds.). (2000). *Sustainability: The corporate challenge of the 21st century*. St. Leonards, Australia: Allen & Unwin.

Edwards, A. R. (2005). *The sustainability revolution: Portrait of a paradigm shift*. Gabriola Island, British Columbia, Canada: New Society.

Egri, C. (1997). Spiritual connections with the natural environment. *Organization & Environment*, *10*, 407-431.

Elkington, J. (1998). *Cannibals with forks: The triple bottom line of 21st century business*. Gabriola Island, British Columbia, Canada: New Society.

Esty, D. C., & Winston, A. S. (2006). *Green to gold: How smart companies use environmental strategy to innovate, create value, and build competitive advantage*. New Haven, CT: Yale University Press.

Etzion, D. (2007). Research on organizations and the natural environment: 1992-present. *Journal of Management*, *33*, 637-664.

Fisk, P. (2010). *People, planet, and profit: How to embrace sustainability for innovation and business growth*. London, England: Kogan Page.

Forbes, L.C. & Jermier, J.M. (2010) The new corporate environmentalism and *The Ecology of Commerce*. *Organization & Environment*. *23* (4): 465-481.

Friedman, T. L. (2008). *Hot, flat, and crowded: Why we need a green revolution: And how it can renew America*. New York, NY: Farrar, Straus, & Giroux.

Fullana i Palmer, P., Puig, R., Bala, A., Baquero, G., Riba, J., & Raugei, M. (2011). From life cycle assessment to life cycle management. *Journal of Industrial Ecology*, *15*, 458-475.

Gladwin, T. N., Kennelly, J. J., & Krause, T. (1995). Shifting paradigms for sustainable development: Implications for management theory and research. *Academy of Management Review*, *20*, 874-907.

Gore, A. (2006). *An inconvenient truth: The planetary emergency of global warming and what we can do about it*. Emmaus, PA: Rodale.

Hart, S. L. (1995). A natural resource-based view of the firm. *Academy of Management Review*, *20*, 986-1014.

Hart, S. L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business Strategy and the Environment*, *5*(1), 30-37.

Hawken, P. (2008). *Blessed unrest: How the largest social movement in history is restoring grace, justice, and beauty to the world*. New York, NY: Penguin.

Hawken, P., Lovins, A., & Lovins, L. H. (1999). *Natural capitalism: Creating the next industrial revolution*. Boston, MA: Little, Brown.

Herman, R. P. (2010). *The HIP investor: Make bigger profits by building a better world*. Hoboken, NJ: John Wiley.

Hitchcock, D., & Willard, M. (2009). *The business guide to sustainability*. Portland, OR: Axis Performance Advisors.

Hoffman, A. J. (2011). Talking past each other? Cultural framing of skeptical and convinced logics in the climate change debate. *Organization & Environment*, *24*, 3-33.

Hopkins, R. (2008). *The transition handbook: From oil dependency to local resilience*. White River Junction, VT: Chelsea Green.

Humes, E. (2011). *Force of nature: The unlikely story of Wal-Mart's green revolution*. New York, NY: HarperCollins.

Husted, B. W., & Allen, D. B. (2011). *Corporate social strategy: Stakeholder Engagement and competitive advantage*. New York, NY: Cambridge University Press.

Hutchins, M. J., & Sutherland, J. W. (2008). An exploration of measures of social sustainability and their application to supply chain decisions. *Journal of Cleaner Production*, *16*, 1688-1698.

Jacobson, M. Z., & Delucchi, M. A. (2009). A path to sustainable energy. *Scientific American*, *301*, 58-65.

Joyner, B. E., & Payne, D. (2002). Evolution and implementation: A study of values, business ethics, and corporate social responsibility. *Journal of Business Ethics*, *41* 297-311.

Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). New York, NY: Wiley.

King, A. A., & Lenox, M. J. (2001). Does it really pay to be green? An empirical study of firm environmental and financial performance. *Journal of Industrial Ecology*, *5*, 105-116.

Krueger, R., & Gibbs, D. (Eds.). (2007). *The sustainable development paradox: Urban political economy in the United States and Europe*. New York, NY: Guilford Press.

Laszlo, C. (2003). *The sustainable company: How to create lasting value through social and environmental performance*. Washington, DC: Island Press.

Leiserowitz, A. A., Kates, R. W., & Parris, T. M. (2006). Sustainability values, attitudes, and behaviors: A review of multinational and global trends. *Annual Review of Environmental Resources*, *31*, 413-444.

Lovins, A. (2011). *Reinventing fire: Bold business solutions for the new energy era*. White River Junction, VT: Chelsea Green.

Marcus, A. A., Geffem., D. A. & Sexton, K. (2002). *Reinventing environmental regulation: Lessons from Project XL*. Washington, DC: Resources for the Future.

Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2007). *Does it pay to be good? A meta-analysis and redirection of research on corporate social and financial performance*. Boston, MA: Harvard Business School.

Maser, C. (2012). *Decision-making for a sustainable environment: A systemic approach*. Boca Raton, FL: Taylor & Francis.

McKenzie-Mohr, D. (2011). *Fostering sustainable behavior* (3rd ed.). Gabriola Island, British Columbia, Canada: New Society.

Meadows, D. H., Meadows, D. L., & Randers, J. (1992). *Beyond the limits: Confronting global collapse, envisioning a sustainable future*. Post Mills, VT: Chelsea Green.

Mora, C., Tittensor D. P., Adl, S., Simpson, A. G. B., & Worm, B. (2011). How many species are there on Earth and in the ocean? *PLoS Biology*, *9*, e1001127. doi:10.1371/journal.pbio.1001127

Nash, R. F. (1989). *The rights of nature: A history of environmental ethics*. Madison: University of Wisconsin Press.

Norton, B. G. (2005). *Sustainability: A philosophy of adaptive ecosystem management*. Chicago, IL: University of Chicago Press.

Orr, D. W. (1994). *Earth in mind: On education, environment, and the human prospect*. Washington, DC: Island Press.

Pogutz, S., & Winn, M. (2009, August 10). *Organizational ecosystem embeddedness and its implications for sustainable fit strategies*. Paper presented at the 2009 Academy of Management Conference in Chicago, IL.

Rands, G.P., B.A. Ribbens, D. Casagrande& H. McIlvaine-Newsad, (2007). "Envisioning an ecologically sustainable society: An ideal type and an application."In Sharma, S., Starik, M., and Husted, B. (eds.), *Organizations and the sustainability mosaic: Crafting long-term ecological and societal solutions,* Cheltenham, UK: Edward Elgar Publishing, 22-59.

Renner, M. (2005). Security redefined. In Worldwatch (Ed.), *State of the world 2005: Redefining global security* (pp. 3-19). New York, NY: W. W. Norton.

Ricketts, G. (2010). The roots of sustainability. *Academic Questions*, *23*, 20-53.

Roseland, M. (2005). *Toward sustainable communities: Resources for citizens and their governments*. Gabriola Island, British Columbia, Canada: New Society.

Roszak, T. (1992). *The voice of the earth: An exploration of ecopsychology*. New York, NY: Touchstone.

Russo, M. V. (2008). *Environmental management: Readings and cases* (2nd ed.). Los Angeles, CA: Sage.

Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, *40*, 534-559.

Russo, M. V., & Harrison, N. S. (2005). Organizational design and environmental performance: Clues from the electronics industry. *Academy of Management Journal*, *48*, 582-593.

Sandberg, J., & Tsoukas, H. (2011). Grasping the logic of practice: Theorizing through practical rationality. *Academy of Management Review*, *36*, 338-360.

Schumacher, E. F. (1973). *Small is beautiful: Economics as if people mattered*. New York, NY: Harper & Row.

Sharma, S., & Ruud, A. (2003). On the path to sustainability: Integrating social dimensions into the research and practice of environmental management. *Business Strategy and the Environment*, *12*, 205-214.

Sharma, S., Starik, M., & Husted, B. (Eds.). (2007). *Organizations and the sustainability mosaic: Crafting long-term ecological and societal solutions*. Northampton, England: Edward Elgar.

Sinclair, A. J., Dudick, A., & Fitzpatrick, P. (2008). Conceptualizing learning for sustainability through environmental assessment: Critical reflections on 15 years of research. *Environmental Impact Assessment Review*, *28*, 415-428.

Smith, P. A. C., & Sharicz, C. (2011). The shift needed for sustainability. *Learning Organization*, *18*(1), 73-86.

Smith, W. K., & Lewis, M. W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of Management Review*, *36*, 381-403.

Starik, M. & Gribbon, C. (1993). European strategic environmental management.*Research in corporate social performance and policy*. Post., J. (ed.) Greenwich, CT: JAI Press. *14,* 167-197.

Starik, M. (1995). Should trees have managerial standing? Toward stakeholder status for non-human nature. *Journal of Business Ethics*, *14*, 207-218.

Starik, M. (2004). Holistic environmental leadership: Living sustainably beyond 9-to-5. *Human Ecology Review*, *11*, 280-284.

Starik, M. (2006). In search of relevance and impact. *Organization & Environment*, *19*, 431-438.

Starik, M. (2010). Multi-level, multi-system strategic approach to a sustainable economy. In M. Statler & P. Shrivastava (Eds.), *Managing the global financial crisis* (pp. 291-312). Stanford, CA: Stanford University Press.

Starik, M., & Carroll, A. B. (1992). Strategic environmental management: Business as if the Earth really mattered. In D. Ludwig & K. Paul (Eds.), *Contemporary issues in the business environment* (pp. 143-169). Lewiston, PA: Edwin Mellen Press.

Starik, M., & Heuer, M. (2002). Strategic inter-organizational environmentalism in the U.S.: A multi-sectoral perspective of alternating eco-policy roles. *Business Strategy and the Environment*, *11*, 221-235.

Starik, M., Marcus, A. A., & Ilinitch, A. (Eds.). (2000). Special research forum: The management of organizations in the natural environment. *Academy of Management Journal*, *43*, 539-736.

Starik, M., & Rands, G. P. (1995). Weaving an integrated web: Multi-level and multi-systems perspectives of ecologically sustainable organizations. *Academy of Management Review*, *20*, 908-935.

Stead, W. E., & Stead, J. G. (2004). *Sustainable strategic management*. Armonk, NY: M. E. Sharpe.

Stone, C. D. (1977). *Earth and other ethics: The case for moral pluralism*. New York, NY: Harper & Row.

Suddaby, R., Hardy, C., & Huy, Q. N. (2011). Where are the new theories of organization? *Academy of Management Review*, *36*, 236-246.

Throop, G. M., Starik, M., & Rands, G. P. (1993). Sustainable strategy in a greening world: Integrating the natural environment into strategic management. *Advances in Strategic Management*, *9*, 63-92.

Townsend, A. K. (2006). *Green business: A five-part model for creating an environmentally-responsible company*. Atglen, PA: Schiffer.

Uiterkamp, A. J. M. S., & Vlek, C. (2007). Practice and outcomes from multidisciplinary research for environmental sustainability. *Journal of Social Issues*, *63*, 175-197.

United Nations. (2005). *Millennium ecosystem assessment*. Retrieved from http://www.millenniumassessment.org/en/About.html#1

United Nations. (2012). *Resilient people, resilient planet: A future worth choosing. The report of United Nations Secretary-General's High Level Panel on Global Sustainability*. Lanham, MD: Bernan.

Victor, D. G. (2011). *Global warming gridlock: Creating more effective strategies for protecting the planet*. Cambridge, England: Cambridge University Press.

Waddock, S., & McIntosh, M. (2011). Business unusual: Corporate responsibility in a 2.0 world. *Business and Society Review*, *116*, 303-330.

Welcomer, S. (2011). Reinventing vs. restoring sustainability in the Maine Woods: Narratives of progress and decline 2010. *Organization & Environment*, *23*, 55-75.

Wilson, E. O. (1984). *Biophilia*. Boston, MA: Harvard University Press.

World Commission on Environment and Development. (1987). *Our common future*. Oxford, England: Oxford University Press.

The Worldwatch Institute. (2012). *State of the world 2012: Moving toward sustainable prosperity*. Washington, DC: Island Press.

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