Article

Relevance of Systems Thinking and Scientific Holism to Social Entrepreneurship

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Abstract

Social enterprises are said to meet two conditions—they address long-standing social problems, and they develop innovative solutions to do so. However, many social enterprises satisfy these two conditions but are unsuccessful in creating sustained positive social change. This article argues that a necessary condition for social enterprises to create and sustain social change is the ability to cognise the *ecology of the social problem*—the relationship and interaction between a social problem and its context. This article scrutinises how social enterprises conceptualise and address social problems by applying the principles of scientific holism and systems thinking to social entrepreneurial theory and practice. It presents social problem archetypes and develops key lessons for devising effective strategies for addressing social problems.

Keywords

ecology of social problems, scientific holism, systems thinking, social problems, archetypes

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Various conceptualisations of social entrepreneurship have emphasised one common purpose of social entrepreneurial ventures (SEVs)—that of devising creative ways to address long-standing social problems (Alter, 2004; Alvord, Brown & Letts, 2004; Bornstein, 2007; Dees, 2001; Mair & Martí, 2006; Martin & Osberg, 2007; Trivedi & Stokols, 2011). Despite their orientation towards the mitigation of intractable social problems, many social enterprises are unsuccessful in creating positive and sustained social change (Hamschmidt & Pirson, 2011). Ventures starting out as social enterprises more often than not have become akin to charitable organisations or have perished all together (Hamschmidt & Pirson, 2012; Peredo & Chrisman, 2006). This article argues that in order to create and sustain social change, and successfully address social problems, social enterprises must cognise the *ecology of the social problem*. The ecology of the social problem refers to the relationship and interaction between a social problem and its context, which includes other social problems. It is argued that by understanding the ecological context of social problems, social enterprises can unmask the underlying structures causing behavioural patterns, identify systemic bottlenecks and leverage points, and devise sustainable and effective strategies to address the social problem.

In developing this argument this article: (i) critiques the dominant social entrepreneurship discourse and identifies a crucial deficiency resulting from these conceptualisations—that is, the lack of attention to *the process by which social problems are understood and addressed by social enterprises*; (ii) emphasises the importance of *systems thinking and scientific holism* in understanding the process of social change creation; and (iii) applies this holistic, ecological and systems understanding of social problems to social entrepreneurship practice by citing examples of diverse archetypes that social entrepreneurs are likely to encounter in their work.

Social Entrepreneurship: A Brief Critical Perspective

Social enterprises are oriented towards reversing an *imbalance*[1] *in the social, structural and political system* by producing and sustaining *positive social change.* The objectives of such organisations are to provide goods and services that the market or public sector is either unwilling or unable to provide, to develop skills, create employment and *foster pathways for the integration of socially excluded people*

(Trivedi, 2010b; Trivedi & Stokols, 2011). They provide a private means to pursue public purposes outside the confines of the market and the state (Halpern, 1997). Because of their unique combination of private structure and public purpose, and their generally smaller scale, connections to citizens, flexibility and capacity to tap private resources to support public purposes, SEVs have surfaced as strategically important partners in efforts to forge new solutions to existing social problems. Social enterprises are member-controlled and people-centred and the benefits of their activities are frequently non-monetary in nature. Their primary socio-economic purpose is to contribute to the maintenance of economic and social cohesion within a particular community or society (Oatley, 1999). Whether intentional or otherwise, SEVs have blurred the boundaries between government, business and the non-profit sector in the quest for more effective and sustainable solutions to social problems. While academics have agreed on some of the essential characteristics of a 'social enterprise' and 'social entrepreneur', the meaning of social entrepreneurship in the practice-oriented realm remains muddled and incoherent (Trivedi, 2010b, 2013). The idea of balancing social value with economic value has created a surge in the pseudo branding of organisations as social enterprises. Corporations have been quick to respond to the concept of social entrepreneurship with the idea of 'corporate social responsibility' to cast off some of the burdens of social costs while achieving what is known as the 'double bottom line' (Doane, 2005; Pendleton, 2004).[2] Moreover, increased stakeholder activism has created an environment where businesses can no longer afford to focus solely on profits and are compelled to be more responsive to broader societal needs. Similarly, non-profits are increasingly under pressure to adopt commercial approaches to self-sufficiency in an increasingly neoliberal world. A plethora of terms such as 'social purpose venture', 'community wealth venture', 'non-profit enterprise', 'venture philanthropy', 'caring capitalism', 'social enterprise' (Cannon, 2000) and 'civic entrepreneurship' (Henton, Melville & Walesh, 1997) that are considered to be similar to the concept of social entrepreneurship have been introduced in the scientific literature, further complicating efforts to define and conceptualise social entrepreneurship. Popular media have added to the conceptual confusion by jumping on to the social entrepreneurship band wagon and labelling organisations as social enterprises according to their own understandings (and misunderstandings) of the concept. Many of these organisations are remotely social in their orientation over and above their primary profit-maximising interests. Moreover, foundations such as Ashoka, Skoll and Schwab have

played a major role in shaping the popular and academic understanding of social entrepreneurship by supporting ventures and organisations that they regard as social enterprises. Adding to this definitional and conceptual ambiguity are divergent conceptualisations of social entrepreneurship in different economic, sociocultural and political contexts (Trivedi & Stokols, 2011). Scholars in the United States have emphasised entrepreneurial culture and the individual entrepreneur's efforts in creating, managing and sustaining the venture more than collective or community-owned efforts (Boschee & McClurg, 2003; Dees, 2001). By contrast, in European countries social enterprises are characterised by stakeholder democracy where SEVs must benefit the community, have group objectives and shared aims, and decision-making power should be distributed and not based on capital ownership (Bull, 2008). Moreover, the lack of a common understanding of the terms 'entrepreneur' and 'entrepreneurship' (Jones & Spicer, 2010) has left the field in disarray resulting in many different and at times divergent conceptualisations of social entrepreneurship (Alvord et al., 2004; Mair & Martí, 2006; Martin & Osberg, 2007; Wei-Skillern, Austin, Leonard & Stevenson, 2007).

Because of the lack of conceptual clarity, the terms 'social entrepreneur' and 'social enterprise' are used so indiscriminately that any and every organisation or individual can brand itself/himself/herself as a social enterprise or social entrepreneur. Social entrepreneurship has become an oversimplified concept identified with the production of goods and/or services for people at the bottom of the pyramid, but for a profit (cf. Prahalad, 2005). The poorest socio-economic groups are mere customers and potential business markets in this oversimplified and rudimentary framework of social entrepreneurship (cf. Hamschmidt & Pirson, 2011). For-profit ventures reaping the benefits of ethical consumerism have a vested interest in maintaining the status quo and thrive on the murky conceptualisation of social entrepreneurship.

Academics also have failed to engage in the moral and intellectual criticism of the dominant social entrepreneurship discourse by silently observing and sometimes even embracing this simplistic notion of social entrepreneurship. Most theory development attempts in this area have been guided by management theories and terminology and have tried to differentiate social entrepreneurship from corporate entrepreneurship (cf. Guclu, Dees & Anderson, 2002; Thompson, Alvy & Lees, 2000; Wei-Skillern et al., 2007). A recent bibliography of social entrepreneurship reveals that most of the literature in this area originates from the fields of business, non-profit and voluntary sector management

(Trivedi, 2010a). Since these theories build on and adapt existing management theories of entrepreneurship, terms and phrases such as 'identifying an opportunity', 'procurement of resources', 'leadership skills' and 'social value creation' are commonly found (Mair & Martí, 2006; Martin & Osberg, 2007; Thompson, 2002; Thompson et al., 2000; Wei-Skillern et al., 2007). Whereas these conceptual frameworks and definitional attempts are valuable in that they expand and refine existing management theories and broaden the meaning of entrepreneurship, they also have created a situation in which almost every type of for-profit organisation, non-profit and charitable foundation can be classified as a social enterprise. Many case studies on social entrepreneurship are heavy on management and business jargon, such as 'business opportunity', 'business plan', 'viability of the business', 'time management', 'business model' and 'scalability' (Hamschmidt & Pirson, 2012). The case writers seem to be stuck in a conceptual rut of management terminology. Such *conceptual ethnocentrism* (Campbell, 1969) circumvents the progress of the field and our understanding of social entrepreneurship. Repeated usage of traditional business management concepts perpetuates an unnecessary comparison of social enterprises with business enterprises. Further, such perspectives assume that business strategies can and should be applied to SEVs even though corporate and social enterprises differ from each other in their worldviews, goals and their approach to achieving their goals (Trivedi & Stokols, 2011). From a Foucauldian discourse analysis perspective one must ask whether what is being represented is the truth or the norm. How are these ideas constructed, what is being left out, what interests are being mobilised and served? What identities, actions and practices are made more desirable and/or required by the prevailing discourse?

If addressing a social problem is the only necessary and sufficient condition to rightfully gain the title of social entrepreneur or social enterprise, then why are we ignoring a silent majority of failed attempts to enact positive change? Some have argued that an innovative solution is a necessary component along with attempts to address a social problem. But this criterion does not hold up to the evidence either. A recent compilation of case studies on social entrepreneurship and sustainability (Hamschmidt & Pirson, 2011) includes attempts to address social problems by P&G and WaterHealth International, which reveal that even innovative solutions can fail to create positive and sustained social change.

Clearly, simply attempting to address a social problem and/or devising an innovative solution to address the social problem are insufficient

conditions for positive and sustained social change creation and the long-term success of SEVs. Past conceptualisations of social entrepreneurship have given short shrift to the *process by which successful SEVs approach social problems.* Specifically, questions concerning the significance of *systems thinking in understanding the ecology of social problems*, the importance of *collaboration*, *the value of meaningful community involvement*, the unique *organisational and structural context* that enable the emergence of SEVs, and the *personal and collective circumstances* that allow SEVs to successfully mitigate social problems and create sustained positive social change have been given almost no attention in prior work.

Addressing these questions and challenges requires a holistic and ecological understanding of social entrepreneurship (Trivedi, 2010b). In fact, one of the primary drawbacks of prior theoretical work is that it has been conceptually grounded in a single discipline (mainly management studies). Social problems cannot be satisfactorily understood from the vantage point of a single discipline. Nor can successful attempts to address social problems be accomplished in a unidisciplinary fashion. Moreover, understanding the sociopolitical and cultural context is critical to developing effective solutions to social problems. The specific characteristics and qualities of social problems, as well as potential strategies for approaching and resolving them, are rooted in and defined relative to particular societal contexts (Blumer, 1971). Therefore, it is imperative to understand the *ecology of the social problem* and how SEVs *leverage contextual circumstances* in their efforts to mitigate social problems and bring about social change. The sections below provide a brief overview of systems thinking and scientific holism to explain their relevance to the conceptualisation of social problems and approaches to address them.

Social Problems: A Systems Perspective

The societal definition of the social problem decides the life cycle of specified problems and determines how they are approached and what is done about them (Blumer, 1971). Understanding the process by which a society comes to see, define and handle a social problem is extremely important since the social problem is always a focal point for the operation of divergent and conflicting interests, intensions and objectives, and this interplay of interests influences the ways in which the society deals with the problem.

To develop such a holistic understanding it is necessary to conceptualise society itself as a complex social system. But this is hardly a new idea. In the early eighteenth and nineteenth centuries, societies were considered *mechanistic*[3] and *organistic*[4] structures. This was followed by the development of the fields of cybernetics and general systems theory in the early and mid-twentieth century (Sawyer, 2005). In both these approaches society is conceptualised as a complex configuration of many systems engaged in overlapping and interlocking patterns of relationships with one another. These subsystems are generally arranged in a hierarchy and work in an integrated fashion to accomplish the goal of the system (Dörner, 1997; Sawyer, 2005). Each such subsystem has its own boundaries, goals and input and output processes and continually exchanges feedback with other subsystems. Since they interact with their environment, they are considered open or dynamic systems. A high functioning system continually exchanges feedback among various subsystems to ensure that they are closely aligned in order to achieve the overall goals of the system. When this is achieved, the system can move from its original state to a more desired state (Dörner, 1997).

Complex social systems have one or more highly organised subsystems that interact with each other and depend upon one another. For the last few centuries, science has followed the path of breaking matter down into smaller and smaller bits in the pursuit of understanding (Christakis, 2011). But this approach has only worked to an extent in enhancing our knowledge of how complex systems work. Dividing the problem into parts often makes the problem more complex and many a time annuls the leverage points (points of effective intervention) because the leverage lies in the interaction between the parts (Senge, 1993). The reason for this is what Morgan (1923) calls 'emergent properties', whereby each level of complexity in the system is governed by its own laws.

An important implication of the emergent properties of systems is that in order to develop a theory of a system at a particular level of complexity, we need to study the entire system at that level of complexity instead of its parts because the system has properties that its subsystems lack (Rigler & Peters, 1995). Social systems comprise complex subsystems in mutual interactions with each other and the behaviour of the system depends on all the interactions among all the parts from which the whole emerges. Thus, the interactions between the parts are as important as the parts. Scientific holism pays attention to the parts and the interactions between them primarily in terms of how they give rise to and sustain the new entity that is the whole.

Scientific Holism and Its Relevance to Social Systems

All natural systems (physical, biological, chemical, social, economic, mental and linguistic) function as a whole and their functioning cannot be understood solely in terms of their component parts (von Bertalanffy, 1950, 1952). Social systems are complex and often the behaviour appears to be new and emergent making it difficult to deduce information from the components of the system. What needs to be understood here is that in addressing social problems, social enterprises are not dealing with isolated entities, but with one or more highly organised systems in which the parts interact with and depend upon one another. *Scientific holism* argues that the behaviour of a system cannot be accurately predicted because of certain 'surprises' in the behaviour of some elements due to the *principle of interconnectivity*[5] (von Bertalanffy, 1950, 1952). Further, in a social system such interconnectivities are highly abstract and opaque making them even harder to identify (Dörner, 1997). But to not adopt such teleology presupposes that social enterprises can somehow identify the important parts of a system a priori. Thus, if social enterprises approach a social problem as a sum of its parts, their interventions will always be inadequate to address the problem effectively.

Scientific holism has three principles that effectively translate to social systems. Social problems are a type of social system (Wilson, 1988):

1. Such ecosystems are complex in nature.
2. Descriptions of patterns can lead to identification of correlations among variables, but patterns cannot explain the workings of larger systems.
3. Social systems have a metaphysical hierarchy whereby the causal relationships between the variables in the larger system are understood without the need to break the system down into smaller subsystems.

Another reason why *holism* is important to the study of social systems, such as social problems, is that it generates explanatory theories compared to *reductionism*, which produces empirical theories. Empirical theories are useful but they only make predictions about correlated variables. They lack the ability to generate unexpected predictions about

other aspects of the phenomenon or the entity and thus cannot satisfy our desire to explain our environment. Furthermore, a reductionist approach cannot cope with the complexity, diversity and change in complex systems. Nevertheless, empirical theories are crucial steps towards understanding social phenomena.

Explanatory theories, on the other hand, provide us with system-wide knowledge to produce theories that can then successfully predict the 'future state' of the system (Rigler & Peters, 1995). This is important for developing a theory of social entrepreneurship because, in essence, an SEV's primary goal is to create a new desired state in the society (i.e., sustained positive social change). Thus, one significant issue for social scientists and practitioners is developing and cultivating research at the systemic level when trying to understand, address and mitigate social problems. Instead, academics have tended to accept holism in principle but behave like reductionists (cf. Boschee, 1997; Boschee & McClurg, 2003; Dees, 2001; Thompson, 2002) becoming mechanistically inclined analysts (Rigler & Peters, 1995).

Successful SEVs recognise that complex social problems require an understanding of the non-linearity of cause and effect that are or may be distant in time and space. Equally important is the understanding of the intangible and unfamiliar factors that may alter the social system (i.e., the social, political, environmental and cultural context) in which the problem is embedded. The ability to discern the inter-causal relationships in the structure that reveal key interdependencies and how one variable affects others comes from *the ability to think holistically and systemically*. Such a holistic and systems approach to addressing social problems also helps in the identification of closed-loop structures. This means that causal relationships are not unidirectional. Instead, effects feedback to change one or more of the causes and therefore causes affect other causes. This helps in understanding how dominance among causes may change over time. Engaging in such higher order cognition allows the construction of accurate *structural knowledge*—the knowledge of how the variables in a system are related and how they influence one another. It guides the formation of a cohesive picture of the social system and helps determine what aspects of the system belong together. Structural knowledge is one's assumptions about these variables, which can be partly implicit and partly explicit, but it is the crucial factor for finding order in apparent chaos (Dörner, 1997).

More often than not, complexity is confused with complicatedness. In attempting to understand and address complex problems, people are engrossed in the details of problems and lose sight of the larger structure

of the social problem. Failures and setbacks discourage them and they tend to take them at face value and regard them as disconnected rather than digging deeper to identify mutually causal variables and their relationships (Dörner, 1997; Senge, 1993). People tend to simplify overwhelming complexity and identify faulty causal relationships (Nisbett & Ross, 1980). In his research, Sterman (1989) has found that people are insensitive to feedback and underestimate the time lag between cause and effect. Systems thinking has been found to be highly germane for dealing with complex problems, but most individuals and organisations appear to have considerable difficulty in thinking systemically. In fact, many SEVs fail with time because of the challenges inherent in thinking systemically. Organisations break down despite innovative products and individual brilliance because of their inability to pull their diverse functions and talents into a productive whole (Senge, 1993). Possessing general awareness or knowledge about the holistic aspect of the system does not necessarily foster the application of systems thinking mainly because of the abstract nature of these relationships and the inability to depict complex inter-causal relationships (Hung, 2008). The unsuccessful outcomes of the Millennium Development Goals are a classic example of the challenges inherent in the capacity to think systemically.

The Ecology of Social Problems

'Systems thinking provides valuable insights into the workings of complex phenomena, including social systems. However, social systems have one additional layer of complexity compared to other complex systems. For most social systems, cause and effect are generally distant in time and space, making them much harder to comprehend (Sterman, 2002). Systems thinking is a conceptual framework—a body of knowledge and tools—that has been developed to understand systems holistically. Using a systems thinking perspective, it is possible to understand the interactions between the parts of a system so that they can be changed, if needed. Systems thinking is essential to understanding the subtle but powerful interconnectedness of parts that give living systems their unique character (Senge, 1993). To understand the relevance of systems thinking to social entrepreneurship, we need to understand the ecology of social problems. *The ecology of social problems means the relationship and interaction between a social problem and its context, which includes other social problems.* To explain the nature and

complexity of social problems and their interrelations with their context, we describe below a typical scenario in developing countries.

In many developing countries, the urban poor live in makeshift homes built of mud that cannot withstand heavy rain, floods or strong winds, making the margin between having a home and becoming homeless very narrow. Basic amenities such as access to drinking water, electricity or toilets are non-existent. No electricity means reduced productive time and shorter working days. Hence children are forced to work during the day time. Most urban poor are unskilled and engage in hard physical labour that requires good health. After a full day's work they earn a day's worth of food for their families. Such hand-to-mouth existence is further compounded by inadequate food and nutrition. Illnesses are frequent. Once ill, they lose their income, food and physical strength leading to decreased ability to work. The poor are under pressure to get back to work in order to make ends meet. This pressure to return to work precedes the need for medication or medical attention. Hence, relapses of the illness are common, leading to alienation, exploitation and falling into a downward spiral of poverty and despair. Further compounding the problem is inadequate infrastructure, caste and religious discrimination, violent environments and lack of government commitment to alleviate poverty. For the working poor, the banking systems are beyond reach. The need for housing, health care, nutrition, social security, sanitation, protection against child labour, employment, access to a peaceful environment and communal harmony are dire all at once. Figure 1 provides a graphical representation of this scenario. This figure shows how social variables are related to each other and how they form feedback loops. The ability to see interconnections between the variables is the first step in identifying leverage points for devising effective solutions. For example, the variable 'children in the labour force' is connected with the variables 'low income', 'illiteracy' and 'illness'. Devising solutions that simply encourage school attendance, such as the provision of the mid-day meal in municipal schools by the Ahmedabad city government in India to encourage children to attend school (http://mdm.nic.in/), are not effective because the primary reason why children are in the workforce is to supplement the family income. A programme or intervention that does not address the issue of low family income will therefore not be successful in addressing the problem of child labour.

Understanding the local and regional dynamics of a social system is essential for social change. At the same time local actions and policies aggregate resulting in larger scale consequences. Regional dynamics cannot be analysed without considering interactions between different

spatial, temporal and institutional scales. Thus, in order to mitigate a social problem and create social change, it is crucial to understand the ecology of that social problem. Social problems are invariably embedded in the particular social, physical, political, economic and cultural context, and are connected to other social problems forming an ecosystem (Figure 1). These *contextual circumstances are the ecology of the social problem*. Understanding the ecology of the social problem allows SEVs to identify areas of highest leverage that are often least obvious. Leverage points refer to small, well-focused actions that can produce significant and enduring improvements. Adopting a holistic view enables SEVs to understand the forces at play in the social system, making the underlying structure of the system visible and enabling them

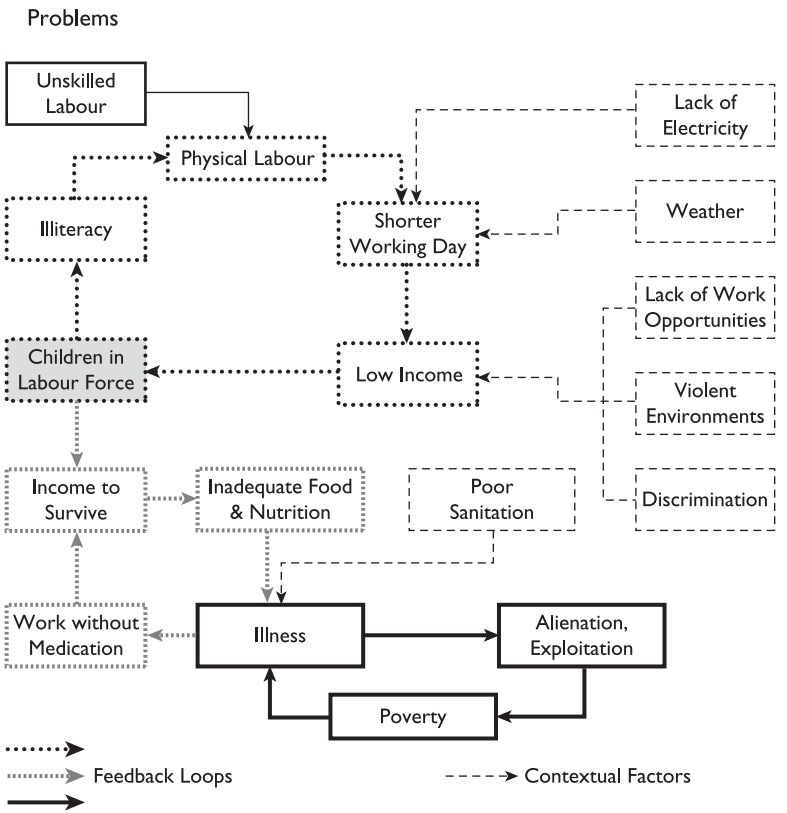

Figure 1. The Ecology of Social

Source: Authors' own.

to think in terms of identifying leverage points for understanding and alleviating the social problem.

Every ecosystem is governed by a basic set of rules or archetypes (Wolstenholme, 2003). Identifying these rules or structures can be helpful in comprehending the interconnectivity and complexity of the system. Through structural knowledge gained by understanding the interconnectivities between system variables, one can identify the pattern of interaction between different social problems in the system which can lead to new insights into potential interventions to address the problem. These patterns of interaction or set of rules or *archetypes* are the building blocks of social ecological interactions. They expose underlying processes and assist social entrepreneurs in decision-making (Eisenack, Lüdeke & Kropp, 2006). The analysis of archetypes helps us understand the dynamics of the social ecological system in a way that is sufficiently fine grained to account for local particularities.

System dynamics in general and archetype analysis in particular characterises systems in terms of feedback loops arising from a combination of actions and outcomes. Such action–outcome situations generate either a negative/balancing feedback or a positive/reinforcing feedback. Feedback refers to any reciprocal flow of influence. Tracing these flows of influence helps SEVs see the patterns that repeat themselves for better or for worse. More importantly, it illuminates the fact that all entities of a system share responsibility for the problems generated by a system. Wolstenholme (2003) argues that the behaviour of such feedback loops depends on the specific combination of components defined, delays present, effects of policies and system boundaries. The number and strength of feedback loops present in the system will govern whether the system becomes a *deviation amplifying*[6] or *deviation countering system*[7] as a whole (Maruyama, 1963). It is essential, therefore, to study both types of loops and the relationship between them to gain a systems understanding of the ecology of the social problem (Sastry, 1998). Further, the interrelationship between key variables in the structure is very important as the structure influences the behaviour of the system variables (cf. Zimbardo, 1973). This is because of a non-linear relationship between the variables, delays at different levels of the system and across system boundaries, limited information available at each level, distortions, biases, errors and other known or unknown factors. Thus, it is important to recognise structural patterns for two reasons. First, identifying such structural patterns helps us identify and possibly avoid systemic bottlenecks. And second, it assists in influencing the system in a desired way as leverage points are often present where there are systemic bottlenecks (Senge, 1993).

Social System and Social Problem Archetypes

System archetypes are well-defined and validated sets of general structures that can serve as building blocks to develop insights into causes, consequences and treatments of social problems (Wolstenholme, 2003). The main purpose of identifying and focusing on such archetypes is to enhance structural knowledge to understand how concepts within a domain are interrelated. Structural knowledge provides a basis for creating *explicit awareness* of these interrelationships and to explicate these relationships, as the meaning of these concepts is implicit in the pattern of relationships to other concepts (Jonassen, Beissner & Yacci, 1993).

Based on Senge's (1993) and Wolstenholme's (2003) research on generic archetypes, we present different types of archetypes with examples of typical situations that social entrepreneurs are likely to encounter in their work in the sections below. As these are system archetypes, the basic components are two feedback loops (positive/reinforcing and negative/controlling) initiated by action/decision that generates an intended and/or unintended outcome. Since cause and effect or action and outcome are or may be distant in time and space and have non-linear causal relationships, it is highly likely that the responses are delayed. Delay could also be present due to unintended effects of actions generated from outside the perceived system boundaries. The archetypes presented below are generic and simple with only two feedback loops, whereas in reality social problems are complex in nature often with more than two mutual feedback loops within a specified system and its broader social context. The key here lies in understanding the number of loops present, magnitude of delay, interconnections between the systems and nature of system boundaries. System archetypes can help in the identification and minimisation of the effects of unintended consequences and in understanding system boundaries that conceal such unintended consequences. In doing so, they expose the context in which the system is embedded to reveal the interconnections of the system with its environment (Wolstenholme, 2003).

Underachievement

The first generic archetype is called *underachievement*, where we fail to realise the desired level of achievement. There is one positive loop and one negative loop in such an archetype. The positive loop reinforces the

desired outcome that is achieved as a result of the action. But there is a reaction or unintended effect of this outcome which creates a negative feedback loop affecting the outcome in a negative way over time. While addressing social problems, the reaction to interventions often comes from outside the perceived system boundaries and is generally delayed. The inability to recognise the negative feedback loop due to the delay leads to more corrective action which in the long run makes the problem worse. This results in a deviation amplifying process where the returns gradually start diminishing causing intensified efforts that erode the presumed benefit significantly or completely. The key insight in approaching such an archetype is to continuously refine one's structural knowledge by constantly scanning for possible negative loops generated outside the perceived system boundaries and take appropriate action to minimise their effects. This requires attention to subtle, broader or porous system boundaries, as well as the capacity to see the whole. But more importantly it requires *collective effort*, *autonomy* and an *appropriate organisational context to foster the creation of collective wisdom* (Trivedi, 2013). An important issue that needs to be understood here is that it is the outcome that produces negative unintended side effects. Such an archetype is represented in Figure 2.

An example of such an archetype is soil erosion resulting from mono-crop plantation of cash crops in many regions of the world. For example, the Dongria Kondh is an indigenous group living in the remote hills of the Niyamgiri range in the eastern state of Orissa, India. Known as Dongrias, they earn their food and livelihood through hill agriculture and grow their food using a traditional mixed farming system (grain, pulses, oilseeds, vegetables, pineapples, roots and tubers). Fifty years ago, non-tribals came to this region and discovered the potential for trading pineapples. They persuaded Dongrias to grow this crop on a large scale

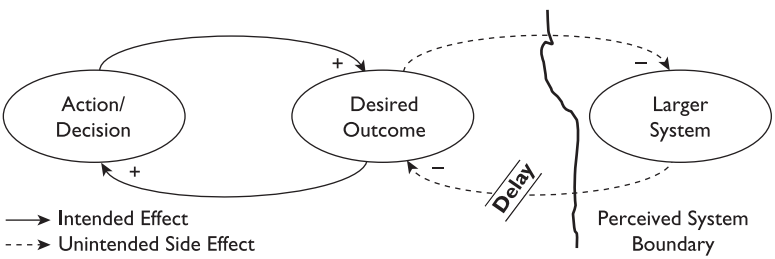

Figure 2. Underachievement Archetype

Source: Authors' own.

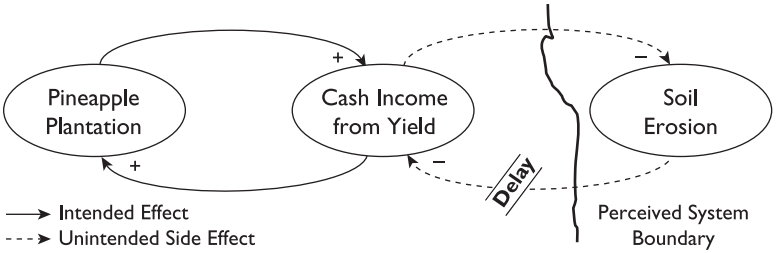

Figure 3. Underachievement Archetype Example

Source: Authors' own.

to gain cash income. This led to pineapple being grown as a mono crop on fertile food-growing land. Growing pineapple over and over again resulted in soil erosion and a 60 per cent decline in the yield per acre. Failure to understand gradual soil erosion led to even more aggressive plantation to gain more income, which led to a decline in the dense vegetation surrounding the region reducing the availability of uncultivated food as well. This had an adverse impact on total food availability at the household level leading to less income per household after the initial growth period (http://www.living-farms.org/site/action/projects/84?start=1). Figure 3 represents the underachievement archetype with respect to this specific example.

Another example of the *underachievement archetype* is the eventual fallout between collaborating entities in some public–private partnerships. Oftentimes, NGOs, non-profits and private enterprises join hands to work on specific programmes and address certain short-term goals. As the partnership matures and programmes are successful their collaboration strengthens, leading to the growth of the collaborative enterprise and larger scale projects. However, this positive outcome has an unintended negative side effect. As partners with disparate goals and agendas work on large-scale projects, they require more specific and longer term strategies for achieving their goals. As the entities communicate more, they realise that their fundamental goals and aspirations are not aligned. The power balance in the partnership can be disturbed leading to conflict and a gradual dissolution of the partnership.

Out-of-Control

The main difference between the *out-of-control archetype* and the *underachievement archetype* is that here it is the control action that

provokes the negative feedback rather than the outcome. This often happens when a symptomatic solution is employed instead of a fundamental solution to the social problem at hand. Sometimes symptomatic solutions seem to work in the short term before eventually collapsing because of the delay present in the negative feedback loop. There is always a tension between devising a symptomatic solution to visible problems versus devising a long-term fundamental solution that requires deeper understanding of the structures that produce the pattern of behaviour in the first place. Fundamental solutions require deeper understanding, more time, greater commitment, more resources and greater patience. This archetype demonstrates the challenges and difficulties inherent in forward thinking leadership compared to leaders who devise quick fixes for problems. That is, the negative unintended side effect in this archetype is the result of the action and not the outcome. The pressure of producing results (quantifying results over a short time period) often runs the risk of eroding goals (Braun, 2002). The inability to recognise potential solutions also alludes to the need for expanding mental boundaries or learning horizons.[8] Equally important is the understanding that quick fixes can be useful if a temporary solution is needed while time is taken to plan or devise a longer term strategy to address the issue at hand. Braun (2002) argues that identifying such archetypes can be extremely challenging as it requires setting aside mental models.[9] Figure 4 represents the *out-of-control* archetype.

The Slum Networking Project in Ahmedabad lead by Arvind Mills is an example of such an archetype in action. In 1995, six entities came together to improve the basic infrastructure in slum settlements in Ahmedabad, India. Infrastructure development was to include the construction of roads and the paving of passageways, individual water supply and sewerage connections, storm water drainage, street lighting,

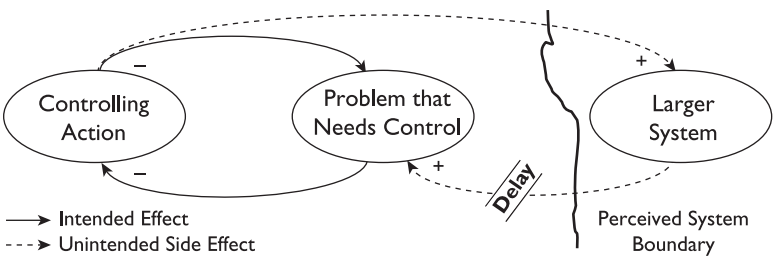

Figure 4. Out-of-Control Archetype

Source: Authors' own.

solid waste management and landscaping. The community development portion of the project was to be comprised setting up neighbourhood groups, mobilising community savings, mounting educational activities for school children, school dropouts and adults, setting up health education programmes and promoting income generation and skill development (Tripathi, 1999). The residents of the slum community were responsible for maintaining the infrastructure through a community corpus fund. It took almost 18 months to complete the project through a collaborative effort by different entities, but it also created a sense of dependence among the slum dwellers. The slum community was seldom actively involved in the planning and implementation process and increasingly saw themselves as secondary actors viewing the project as a government-led initiative. Their lack of involvement in the project kept them from fully realising their responsibilities towards post-project management and limited their learning. Because each entity was working based on their own understanding of their responsibilities and duties, they did not perceive the delayed feedback of the resultant community dependence because of the community's lack of involvement in the planning and implementation of the project. After just couple of years, the community corpus fund was no longer functional and the infrastructure was once again in peril (Tripathi, 1999). Figure 5 represents this scenario.

Another example of such an archetype is when nations (e.g., Zimbabwe, Angola and Argentina) are unable to limit government expenditure in line with their tax revenues and create huge deficits primarily by printing money. Over time, inflation increases requiring even greater assistance from the federal government. The same pattern is observed in the case of non-profits and NGOs that rely primarily on charities and foundations for long-term external funding to sustain their

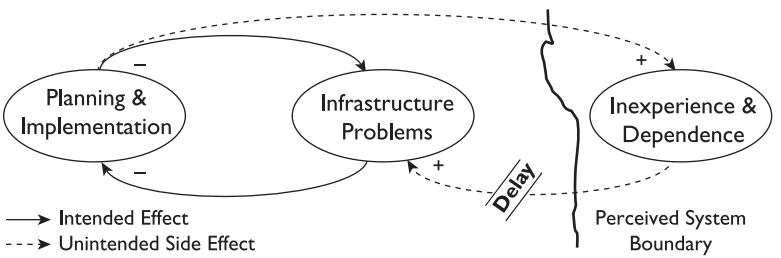

Figure 5. Out-of-Control Archetype Example

Source: Authors' own.

social programmes. Once the funding dries up, the social programme is abandoned.

Relative Achievement

The third archetype is called Relative Achievement where there are two reinforcing loops acting in combination. Simply put, it is the practice of rewarding good performance with more resources with the expectation that the performance will improve. Often it happens that we are faced with a choice of an action or decision that favours one outcome over the other. Sometimes such decisions are conscious while at other times they are unconscious. Choosing one decision over the other can also be a result of our inability to recognise the relative importance and priority of problems. It could also be the result of resource constraints or simply our inability to devise alternative solutions. Hence, the action oriented towards one outcome is fulfilled at the expense of an alternative outcome. The consequence is that the favoured outcome improves while the neglected outcome worsens. In order for the whole system to succeed, every subsystem needs to succeed. Failing to understand this systems principle can obscure the long and slow decline of certain subsystems. This archetype differs from the other two in that the unintended outcome is not the result of either the action or outcome, but rather the choice of alternative actions. Figure 6 represents such an archetype.

There are many examples of this archetype in practice. At the national level we see many countries paying more attention to needs of the capitalistic 'free' market rather than domestic social problems. There are countless cases in India where the government has created landless

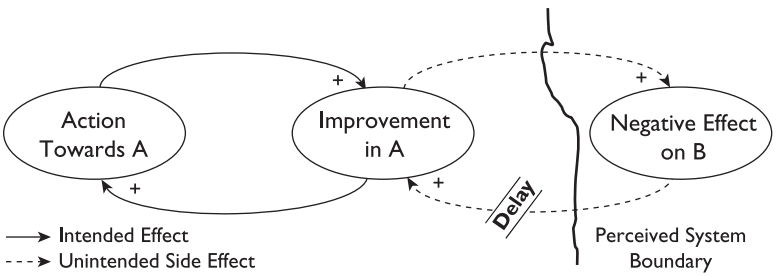

Figure 6. Relative Achievement Archetype

Source: Authors' own.

labourers by taking away people's land in the name of development. This has been the favoured strategy in the hope that progress will eventually trickle down to the marginalised sectors of the society, which rarely happens in reality (Harvey, 2005; Stiglitz, 2008; Wallerstein, 2008). At the organisational level, Non-Profit Organizations (NPOs) struggle with decisions about which social issues to address in order to demonstrate a quantifiable positive impact despite the inaccuracies and incompleteness of social impact assessments. As it is extremely difficult to demonstrate a tangible positive impact of interventions in the poorest segments of the society within a brief time span, NGOs often push aside the concerns of the poorest of poor further marginalising this section of the society (Sanyal, 1998).

Relative Control

There are two balancing/negative loops present in the system in this archetype. Here, instead of achieving a desired outcome we try to control a negative outcome. We achieve success in controlling the outcome but only for a short period of time until the other negative feedback loops kick in and bring the larger system to its original state nullifying the control we achieved. There might be delays present in the loops that hamper the desired control and all we achieve is relative control rather than absolute control. Figure 7 represents the relative control archetype.

We see such an archetype in practice in many international programmes addressing social problems because the solutions to problems are based on the NPO's or development agency's interpretation of the community needs without knowledge of their actual needs. For example,

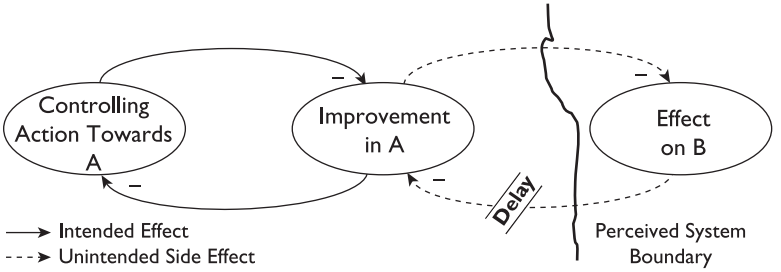

Figure 7. Relative Control Archetype

Source: Authors' own.

scores of NGOs work with communities to improve personal and public health through personal and home hygiene education (UN News Center, 2013). But their success rates are low as personal health is very closely tied to sanitary conditions of the community. Lack of proper sewage disposal systems seriously undermines their efforts in health promotion and disease prevention.

Lessons for Social Entrepreneurial Practice

This article makes three contributions to the theory and practice of social entrepreneurship. First, it critiques the dominant discourse of social entrepreneurship. In doing so, it uncovers that an important way in which successful SEVs differ from non-profits and NGOs and other SEVs is the one in which they conceptualise and approach social problems. Successful SEVs employ scientific holism and systems thinking to understand and address social problems and create social change. SEVs are able to create positive social change by locating social problems within their ecological context. That is, they grasp the ecology of social problems by unravelling the hierarchically arranged overlapping and interlocking patterns of local and regional dynamics of a social system. Finally, this article applies a systems understanding of social problems to social entrepreneurship practice by presenting examples of different types of system archetypes that social entrepreneurs are likely to encounter.

A number of lessons for social entrepreneurship practice emerge from this research.

1. Systems do not work in isolation. Understanding the ecology of the social problem helps in the identification of external variables as probable feedback loops. It helps SEVs see the underlying structure of the system and the relationship between the social variables that govern the behaviour of the system.
2. Negative unintended side effects can originate from organisational actions, outcomes of programmes or simply from the choices it makes.
3. Identifying effective leverage points requires an understanding of the ecology of the social problem, broader learning horizons, focus on long-term patterns of change and moving away from symptomatic solutions.
4. Reducing the problem into smaller parts or defining system boundaries narrowly can render interventions ineffective.

5. Understanding and applying these system archetypes to their work can assist SEVs in recognising their system boundary. When the focus is only on the current system, SEVs are not aware of how their actions extend beyond the boundaries the system.
6. Employing these systems principles can prevent SEVs from being 'event oriented'. Events are mainly manifestations of actions or feedback rather than the cause itself, and can deter SEVs from recognising and understanding the causes of longer term patterns of change.
7. Through the understanding and application of systems thinking, SEVs can be mindful that the absence of immediate obvious negative effects of their interventions or actions does not necessarily mean that they are taking correct measures.
8. Understanding of complex social problems is often gained progressively and requires constant evaluation and re-evaluation of action, outcomes and choices to constantly assess what is working and what is not.

Social entrepreneurs can engage in systems thinking through an incremental and iterative process involving direct experience, reflection and self-evaluation. Combining practical and normative thinking requires: (i) explicit awareness of one's own assumptions and understanding of the world, as well as how this understanding influences one's actions; (ii) knowledge of time and space within which they evaluate the effectiveness of their actions; and (iii) tracing the flow of influences in a certain context by making explicit their knowledge-building process.

In sum, this article argues why and how systems thinking and scientific holism are relevant to the theory and practice of social entrepreneurship. It is hoped that the key lessons emerging from this research inspires practitioners to engage in systems thinking and apply its principles to understand the complex ecology of social problems, identify system level leverage points and develop effective and long-term interventions to create and sustain positive social change.

Notes

1. Imbalance is defined as a widely accepted and salient lack of equilibrium in the social justice and power equation of a community or society.
2. An even more fashionable term used by some authors these days is 'triple bottom line' [i.e., the purported concern for the planet (ecology), people (society) and profits (economy) by corporate enterprises].
3. Comparing societies to artificial mechanisms like clock (cf. La Mettrie, Busey, Calkins & Frederick, 1912).

4. Comparing various institutions of society to the organs of the human body (cf. Paul von Lilienfeld's work on human society as real organism, 1873).
5. All parts of a system interact with and rely on one another simply by virtue of the fact that they occupy the same system, and because a system is difficult or sometimes impossible to analyse by considering its individual parts alone. This is called the principle of interconnectivity.
6. A system where all the processes in a mutual causal relationship amplify and build on the initial deviation and diverge from its original state.
7. A system where all the processes in a mutual causal relationship amplify and counteract the deviations and keep the system in its original state.
8. Learning horizon is a breadth of vision in time and space within which we assess our effectiveness (Senge, 1993).
9. Mental models are deeply ingrained assumptions, generalisations or even pictures or images that influence how we understand the world and how we take action (Senge, 1993).

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