Waiting for Godot: Leadership for sustainability in higher education and the emergence of Regional Centres of Expertise (RCEs).

Paul Kolenick
Saint Francis Xavier University
pkolenic@stfx.ca

Abstract
The question is raised about the nature of transformative change with respect to sustainability in higher education. In particular, should this change be reserved for senior administration? Or alternatively, should faculty and staff as the "institutional middle" of higher education be considered as best suited to lead sustainability on campus, and further, in partnership with stakeholders and others with interests in advancing sustainability within wider society? In this respect, Regional Centres of Expertise (RCEs), established by the United Nations' University (UNU) are considered as a way toward transformational change in higher education by bridging the gap between higher education and multiple stakeholders with interests in sustainability. Complexity theory, and particularly the notion of complex adaptive systems (CAS), is applied toward an understanding of RCEs as a venue for sustainability leadership in higher education.

Key Words
Complexity theory; complex adaptive system; Regional Centres of Expertise (RCEs); sustainability education; sustainability leadership; transformative change

Paul is an Assistant Professor of Adult Education at Saint Francis Xavier University in Antigonish, Nova Scotia, Canada, and a member of RCE Saskatchewan. His research interests include sustainability education, community-based education, and sustainability leadership among postsecondary institutions, especially through Regional Centres of Expertise (RCEs), as well as land-based Indigenous education, and participatory action research.

Introduction

In Samuel Beckett's (1956) monumental play, *Waiting for Godot,* Vladmir and Estagon spend

their entire time waiting for Godot, who does not appear. One might imagine a parallel with

sustainability in higher education, and particularly leadership for sustainability in higher

education. While institutions of higher education, notably universities, are placed uniquely to

play a leading role in the advancement of sustainability, the rhetoric found in the policies and

strategic documents, endorsed by senior administrators, is matched only rarely by reality. As

Shiel (2013) observes, "Most universities are failing to address this leadership role; few

universities are tackling the agenda in a systemic and holistic way. Examples of transformative

change are rare" (p. 110). In this article, the question is brought forward as to whether

transformative change for sustainability in higher education should necessarily be an

administrative responsibility (e.g., as sustainability policy or strategy, executed "top-down").

Further, the question may be raised as to whether there could be more "bottom-up" initiatives

undertaken by students, faculty and staff that extend laterally beyond campus toward potential

partners and stakeholders with shared interests in a sustainable future. Brinkhurst, Rose,

Maurice, and Ackerman (2011) argue that the key to sustainability leadership in universities may

be found in more active involvement by faculty as the "institutional middle," suggestive that the

direction of leadership for sustainability could be taken laterally, or horizontally, rather than

confined vertically within the institutional hierarchy of higher education.

In this sense, Regional Centres of Expertise (RCEs) of the United Nations University

(UNU, 2004; UNU-IAS, 2017) offer a way toward transformational change in higher education

with their potential to "bridge the gap" (Sedlacek, 2013) between universities, as higher education institutions, and multiple stakeholders with shared interests in sustainability, that includes communities, governmental departments, non-governmental organizations, businesses, industry and many others. The potential then of RCEs as a platform for sustainability leadership through higher education is considered in this article. Further, this article looks to complexity theory as a way to make sense of Regional Centres of Expertise as venues of leadership for sustainability among higher education institutions. Complexity theory offers a postmodern perspective on organizational leadership as decentered, relational and without the static designations of leader and follower (Hosking, 2007); that is, leadership for sustainability may occur from most anywhere, within or beyond higher education, instead of having to defer conventionally to the direction of administrative personnel, who increasingly have been constrained by budgetary and other institutional responsibilities.

What follows is a brief backgrounder on sustainability, with attention especially to sustainability in higher education and the potential role of Regional Centres of Expertise in the advancement of sustainability in higher education. Further, a short descriptive account of the complexity theory of leadership is given, with implications for how RCEs may be conceptualized in terms of providing a venue of leadership for sustainability. Finally, the potential of Regional Centres of Expertise in the advancement of sustainability in higher education is considered in light of complexity theory, particularly through the concept of complex adaptive systems as multistakeholder networks directed toward pressing problems associated with sustainability.

Envisioning Sustainability in Higher Education

While sustainability has been around for millennia, for example, as sustainable agriculture (Kirschenmann, 2004), and in the modern context through fisheries and forestry policy (Redclift, 2005), not until the 1980s did the term "sustainable development" find its way into the common vernacular when featured in the Brundtland Report as *Our Common Future* (World Commission on Environment and Development [WCED] 1987). The Brundtland Report was a "political strategy of global environment and resource management ... an attempt to reconcile environmental problems with those of development" (Brand, 2012, p. 28), which provided the grounding for the adoption of sustainability at the first Earth Summit in Rio de Janeiro in 1992, with its emphasis on ecological, economic and social sustainability. Sustainability education, as Robinson (2004) argues, however, should be understood principally as an integrative space for multiple points of view to come together instead of a single preconceived concept, such as an "education for" (e.g., education for peace, or education for environmental awareness), often accompanied by a set—and for many on campus, the perception of a threatening, sometimes tiresome, yet ironically marginalized—agenda (Jones, Selby, & Sterling, 2010; Wright & Wals, 2016). Likewise, de Andrade and Sorrentino (2014) maintain, "the future should be seen in terms of social plurality, of diverse sustainable societies *rather than only one sustainable development'* (p. 152; italics added), and as Leal Filho (2011) points out, sustainability ought to be inclusive, lifelong, holistic, connective, and especially, action-oriented "so as to convince people it works and makes sense" (p. 429). This latter point on the need for an action-orientation in sustainability education is significant given the recent emergence of Regional Centres of Expertise worldwide as the centerpiece of the Decade of Sustainable Development (2005-2014)

(United Nations University [UNU-IAS], 2017),[1] with their focus on local action and expertise, and over 150 registered to-date, spanning the continents of the Americas, Europe, Australasia, and Africa.

This article will consider the prospective role of RCEs as a catalyst of transformative change through sustainability education, notably through their reliance on partnerships and multistakeholder networks that include higher education, communities, government agencies, non-governmental organizations, businesses, and other stakeholders. Further, the prospect of sustainability among universities will be considered in light of their involvement with Regional Centres of Expertise as institutions of higher education. Beringer (2007, p. 447) notes, however, that the "campus sustainability movement" has evolved from its beginning as a descriptive, atheoretical and inchoate field (Fien, 2002), as no more than "a subset of sustainability science" (Leal Filho, 1999) into the now recognized field of sustainability in higher education (SHE), described in its own right as "a distinctive body of knowledge of inter-, multi- and trans-disciplinary expertise" (Brand & Karvonen, 2006; Scholz et al., 2006). In addition, Wals and Blewitt (2010) comment on the evolution of sustainability in higher education, beginning with the emergence of environmentally-based courses in the 1970s, followed by campus (or estates) greening in the 1990s, which has been accompanied by a steady progression of charters and declarations of sustainability in higher education. As Tilbury (2013)[2] indicates, this includes the often-cited Talloires Declaration in 1990, the first official statement of a global commitment to sustainability in higher education; the Halifax Declaration in 1991, with its call on the moral obligation of universities to address sustainability; the Kyoto Declaration on Sustainable Development in 1992, closely tied to Agenda 21 of the Earth Summit in Rio de Janeiro (1992);

the Copernicus Charter in 1993, which involved more than 320 universities and higher education institutions from 38 countries across Europe; and more recently, the Ubuntu Declaration in 2002, which had prompted a global learning environment for sustainability education, significantly through the creation of Regional Centres of Expertise as multistakeholder networks. In a study of sustainability in higher education declarations, however, Wright (2004) suggests that these statements offer at best a "utopian vision" of sustainability in higher education, as a reminder of what sustainability in higher education ought to look like. Typically, this involves a focus on the responsibility of higher education, particularly universities, to contribute to local, regional and global sustainability, and the need for these institutions to model and practice sustainability in their own communities.

This vision of sustainability in higher education is perhaps best articulated in the Rio+20 Declaration for Higher Education (United Nations Conference on Sustainable Development [UNCSD] 2011), which specifies certain commitments to sustainability through curricula, research, campus operations and community engagement that includes: i) teaching sustainability concepts, and ensuring that they form a part of the core curriculum across all disciplines; ii) encouraging research on sustainability issues, to improve scientific understanding through exchanges of scientific and technological knowledge; iii) supporting sustainability efforts among communities in which they reside; and notably, iv) greening their campuses through practices, including the adoption of sustainable mobility options for students and faculty, sustainable procurement practices, effective programmes for waste minimization, recycling and reuse. This latter commitment has received the most attention among universities, as higher education

institutions, and particularly its administrative leaders, who have attended principally to greening the campus (Wright, 2010) at the expense of more futuristic advances in curricular, research and community- and global-oriented programs for sustainability. As Sterling (2013) observes,

> [S]trangely, "the future"–-the planetary future and key trends that will affect people's lives in this century—hardly registers in most mainstream policy-making and practice in higher education, despite high-level calls over many years for a sufficient and appropriate response from higher education … [T]he fact remains that, aside from some notable pockets and centres of excellence, *most* HE research, taught programmes and initiatives make no reference to this overarching context, and sustainability—where it is acknowledged—is often seen as a special interest, or the province of campus management only, or is only understood in environmental terms. (pp. 17-18; italics in original)

While exceptions exist, the challenge for universities as higher education institutions is in making the shift from a heavily disciplined-based curricula and research agenda to a more integrated, multidisciplinary, and community-engaged environment that is problem-based in its approach. This is reminiscent of Robinson's (2004) argument that sustainability should be understood as an integrative space, or platform, in which multiple points of view may come together in dialogue over questions of economic and environmental sustainability, yet also those often marginalized inquiries of social, cultural, and political sustainability of interest to a diversity of stakeholders.

Taken further, however, the underlying and rarely unidentified challenge for higher education, as George (2010) contends, is not technical or financial, but political, intellectual, ideological, and perhaps even spiritual. This challenge, as understood in educational terms, is not

so much "out there" in the way global issues of ecological, social, political, or economic significance are reported typically with need for a short-term, technological fix, but "in here," deep within the well of human understanding, as rooted in the unquestioned and underlying perceptions particularly of the Western mind (Lazlo 1989 & Capra 1996, in Sterling, 2013). In this sense, O'Riordan and Voisey (1998, p. 3, in Sterling, 2007, p. 65) suggest that sustainability "is as much about *new ways of knowing, of being differently human* in a threatened but cooperating world, as it is about management and innovation of procedures and products" (italics in original). This is perhaps at the heart of the shift needed among higher education institutions, and notably their administrative leaders, from a concerted emphasis on operational efficiencies (e.g., energy use, waste management) to advancements in sustainability curricula, research, and community engagement that is reflective and responsive to a much wider spectrum of pressing needs and interests in sustainability.

Sustainability Leadership in Higher Education

The question is raised of the suitability of conventional approaches to leadership with respect to sustainability in universities, as higher education institutions, and notably its effectiveness in advancing sustainability within diverse societal contexts across the globe, with similar yet often conflicting interests. As an alternative, the complexity theory of leadership is proposed in light of the recent emergence of Regional Centres of Expertise (UNU, 2017) as a way toward advancing sustainability both on campuses and societies across the globe.

Challenging the status quo: Complexity theory and sustainability leadership in universities

In regard to sustainability leadership, universities as institutions of higher education have been characteristically in favour of the status quo, defined by Hopwood, Mellor, and O'Brien (2005) as normally conformist, receptive to the need for change, but view neither the environment nor society as currently facing insurmountable problems. In this sense, sustainability is assumed attainable through educational (i.e. behavioral) programs based upon increased information and awareness, combined with an unquestioned faith in new technologies, and attention to the financial bottom-line, while keeping an eye on optics; that is, higher education institutions, like other organizations, understand the value of sustainability as a public relations and reputation enhancing instrument of policy and its practice.

Among Canadian universities, one will likely find an overwhelming preference for "greening" programs associated with facilities and operations (e.g., energy efficiency, waste management, transportation), with relatively less emphasis overall on the development, for instance, of interdisciplinary curricula, collaborative research, and opportunities for engagement with communities, organizations, and others with an interest in sustainability (Universities Canada, 2017; Kolenick, 2016). Consequently, the take up of sustainability concepts and practices across Canadian campuses tends to be piecemeal, disconnected, and focused on the environmental aspects of sustainability, especially with respect to the operational efficiencies of the campus as an institution. Hopwood et al. (2005), however, suggest other ways toward a truly sustainable campus. In addition to the status quo on sustainability, the reform and transformative positions offer the potential for progress, with the reform position providing a "building-in" or an integration of sustainability concepts and practices, where assumptions can be questioned with the potential for meaningful change in higher education policy on sustainability, and particularly,

the manner in which that policy takes shape through research and curriculum development. The

transformative position takes matters further, with its emphasis on a complete shift in thinking

that begins with a fundamental challenge to the familiar reliance on senior administrators as

"agents of change" for sustainability leadership, to a new perspective on leadership as a shared

learning process (Rost, 1991); that is, sustainability leadership as a "subject of change" with

priority given to a collective, inclusive, and dialogical process focused on critical issues of

sustainability facing universities and society at large (see Sterling, 2003).[3] This is a view, I

suggest that is consistent with the complexity theory of leadership, a view of leadership that is

not limited to a heroic individual, but becomes reliant on the capacity of a diverse whole. This

transformative shift then is in reconceptualizing leadership as a shared, potentially democratic

and action-oriented process that requires higher education to work laterally, or collaboratively,

with communities, organizations and others on the pressing issues of local and global

sustainability.

The complexity theory of leadership became popular in the early 1990s through Margaret

Wheatley's *Leadership and the New Science*. Notably, Wheatley (2009) points to Fritjof Capra's

(1982) *The Turning Point,* as illustrative of a new worldview emerging from the science of

quantum physics that "provided my first glimpse of a new way of perceiving the world, one that

comprehended its processes of change, its deeply patterned nature, and its dense webs of

connections" (pp. 3-4); that is, a shift in perspective from administrative leadership, as grounded

in hierarchical ordering and control, to an understanding of leadership as an emergent order that

arises through the complex combinations of many individual actions and actors. Complexity

theory surmises then that leadership is not generated through authority and control (i.e., the formal administrative structure) but through the interconnected actions of individuals acting out of personal and shared values—and in terms of sustainability, engaged relationally with one another in dialogue on issues of local and yet also global significance.

Traditional strategies for leadership have been successful in the commodity-oriented organizations that characterized the twentieth century, a conceptualization of organizational leadership articulated decades ago by Chester Barnard (1938/1968), who proposed that the role of leadership is to align unstructured organizational forces (e.g., individual preferences, goals, and strategies, work habits, social behaviors, activities) with formal organizational goals. The legacy of this premise can be found in currently used textbook approaches to leadership, such as transformational leadership and leader-member exchange theory (Marion, 2008), that continue to serve organizations through Barnard's emphasis on top-down control of planning, structuring, and evaluating, as well as a centralized vision and focus. Uhl-Bien, Maslyn, and Opsina (2011) argue, however, that this view of leadership is limited and short-sighted when considering the broad scope of global environmental, social, and economic problems that have come to define the twenty-first century, such as those addressed by the United Nations' (2015) Global Goals of sustainability (e.g., eradication of poverty and hunger; gender equality; climate change) which require a significant measure of responsibility, adaptability, and collaborative learning in diverse, local contexts.

As an alternative, Uhl-Bien, Marion, and McKelvey (2007) propose a few central yet interrelated principles, wherein complexity leadership is understood as a phenomenon based on complex systems and processes that extend beyond an understanding of leadership from high

upon the organizational hierarchy, to a view of leadership (Heifetz, 1994) as an emergent and interactive process that occurs among diverse and conflicting points of view directed toward adaptive outcomes. In this sense, Fritjof Capra speaks of two types of leadership, including the familiar and well-known "traditional leader" oriented top-down, or hierarchically, within the organization, and conversely, the "enabler," as Uhl-Bien et al. (2007) suggest, where leadership is "about setting up organizations to enable adaptive responses to challenges through network-based problem solving" (p. 304). Capra describes this new-age leader (and leadership) as,

> [A] person who can facilitate change, who does not lead with ideas but provides an environment in which change can happen ... who makes sure that there are networks of communications ... that there are feedback loops, that people have the opportunity of getting together ideas, that they have the freedom to experiment, to question things ... the leader who facilitates emergence, to help the community to go somewhere collectively they haven't been. (Visser, 2008; see https://vimeo.com/24267375 for complete interview)

Thus, complexity theory views leadership from the vantage point of context, referring especially to the nature of interactions and interdependencies that occur among people and their ideas, whether from within the organizational hierarchy, outlying communities, or other points of view; and further, leadership within a complexity framework occurs naturally in response to problems and issues, as adaptive knowledge-based challenges, rather than as technical problems that have been the staple of the industrial era—resulting invariably, as proponents of complexity theory argue, in new learning and innovation that cannot be solved with knowledge already in hand (Heifetz, 1994; Heifetz & Laurie, 2001). Central to the complexity theory of leadership,

however, is the concept of complex adaptive systems (CAS), described as "neural-like networks of interacting, interdependent agents who are bonded in a cooperative dynamic" (Uhl-Bien et al. 2007, p. 299), comprised of agents, individuals and groups of individuals, "who 'resonate' through sharing common interests, knowledge and/or goals due to their history of interaction and sharing of worldviews" (Lichtenstein, Uhl-Bien, Seers, & Orton 2006, p. 3). Notably, this approach to leadership is reflective of the practice demonstrated globally among Regional Centres of Expertise as multistakeholder networks of partners (e.g., educational institutions, governmental departments, non-governmental organizations, communities, business and industry) with shared interests in the advancement of sustainability.

Sustainability leadership through the "institutional middle" (and the potential of RCEs)

The question has been raised with respect to the conventional belief, or expectation, that sustainability leadership in higher education is best initiated from the top of the organizational hierarchy, that is, by senior administrators. As Brinkhurst et al. (2011) maintain, however, sustainability projects and programs are described typically as originating from either the top, or bottom. Notably, administrative leaders through sustainability policies and strategies champion top-down and organizationally wide change as indicated among Canadian universities; for example,

- Dalhousie University "is working to incorporate sustainability concepts and criteria into all major planning, assessment, policy, reporting and communications products and procedures" (Dalhousie University, 2016);

- At Simon Fraser University, sustainability is declared "an institutional priority for all University activities, providing a foundation on which SFU may establish itself as a leading institution in the transition to a sustainable society" (Simon Fraser University, 2008);

- The University of British Columbia, has drafted a 20-year sustainability strategy "to provide a document outlining UBC's sustainability vision and aspirations, and in so doing set a long-term direction towards a more sustainable university" (University of British Columbia, 2014); and,

- York University intends to "bring vision, scholarship and high ethical standards to achieving and maintaining institutional leadership in sustainable operations and community engagement" (York University, 2011).

Efforts such as these have been successful, especially with respect to planning, policy-making, and regular assessment of sustainability if they are supported in practice beyond the promise of policy statements (Brinkhurst et al., 2011). This is possible when certain conditions and practices are already in place. In a recent study of sustainability policy among Canadian universities, Vaughter, Wright, and Herbert (2016) found "a relatively strong relationship between having a sustainability policy and the presence of other sustainability initiatives, such as a sustainability assessment or a sustainability office/officer, on Canadian campuses" (p. 94); and further, "a moderately positive relationship between the province in which a PSE [or HE] institution is situated and the presence of an environment/sustainability policy, an indication that the provincial policy environment may influence the directions of higher education" (2016, pp. 94-95). In other words, whether administrative leaders in higher education champion

sustainability depends in large part on whether the provincial government (in Canada) is, at the very least, supportive of sustainability for universities as institutions of higher education as a matter of policy, yet also in its implementation, which typically requires financial support.

As Howlett and Ramesh (2003) have observed, administrators are often constrained in the degree to which they can champion specific causes because of their role and responsibility to represent diverse stakeholders inside and outside their respective institutions, including governmental ministries to whom they are accountable, which may or may not be altogether in favour of sustainability-oriented policies among higher education institutions. In light of the conventional approach to organizational leadership based on Barnard's (1938/1968) emphasis on top-down control, Brinkhurst et al. (2011, p. 342) report, alternatively, that "groundswells of vision and action from the institutional 'bottom,' often in the form of student-led campaigns" have built support for new initiatives, and as a result, have applied pressure for change in university policy and operations; for example, at the University of Northern British Columbia a food recovery project has been initiated through the collaborative efforts of students and the University's food services with the savings given to charity for the local community of Prince George, British Columbia (University of Northern British Columbia, 2016); at the University of Waterloo, Campus Compost, as a student run initiative, features compost bins located throughout the Environment and Arts buildings.

In their study of student-led climate change initiatives, however, Helferty and Clarke (2009) have observed that awareness raising is the most common feature among student-led sustainability programs. Consequently, this leaves little room for initiatives directed toward transformative change in policy and planning with respect to operational practices, as well as

curriculum development, and multidisciplinary and community-engaged research targeted toward local issues of sustainability of interest to a diverse range of stakeholders found among communities, non-governmental organizations, and industry among others. Given this trend, Brinkhurst et al. (2011) argue that substantive change in sustainability policy and its practice in higher education requires the support of the "institutional middle"—that is, faculty and staff, as "internal agents of change on university campuses" (p. 340), as key stakeholders with the "potential to change universities from the inside out, given their understanding of how universities function, their diverse technical expertise, and their connection between the institutional top and bottom" (p. 340). Simply stated, faculty and staff as the institutional middle could play a vital leadership role for sustainability among higher education institutions in collaboration with partners and other stakeholders well beyond the campus gates. This implies that sustainability leadership in higher education, in addition to moving vertically along the organizational hierarchy, could move laterally, or perhaps horizontally, in partnership with communities, governmental and non-governmental agencies, as well as others with an interest in the advancement of sustainability.

This is a role that could be made realizable through Regional Centres of Expertise, which serve globally in bringing together higher education institutions with multiple stakeholders beyond campus. In 2002, the World Summit for Sustainable Development held in Johannesburg, revisited the need for a reorientation of education for sustainable development made at the Earth Summit in Rio de Janeiro in 1992, while marking the formal initiation and conceptual formation of Regional Centres of Expertise (United Nations University [UNU-AIS], 2004), as the

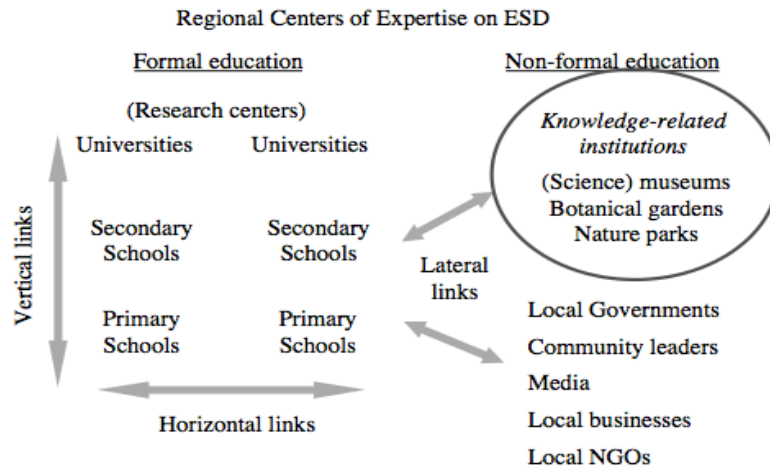centerpiece of the United Nations Decade of Education for Sustainable Development (DESD 2005-2014)

Figure 2: Conceptualization of RCEs (UNU, 2004)

The distinctively regional character of Regional Centres of Expertise, as Hans van Ginkel (Rector of United Nations University, 1997-2007) once observed, holds promise for RCEs in their role of advancing a highly engaged and action-oriented approach to sustainability education. In a recent interview, van Ginkel observed that, "People often feel that they belong to their region and they are prepared to work hard to improve its prospects for the future" (Glasser 2008, p. 111). The uniquely regional focus of Regional Centres of Expertise has potential then to bring universities (often positioned regionally) together with communities, businesses, governmental and non-governmental organizations, and others with interests and aspirations for a truly sustainable future.

As illustrated in *figure 2*, Regional Centres of Expertise serve as networks for sustainability, and sustainability education, both vertically through formal education (i.e., higher education, public schools), yet also horizontally, or laterally, with a diverse network of non-

formal education stakeholders, including a special relationship with ecomuseums (e.g., Heritage Saskatchewan, 2016, a partner of RCE Saskatchewan4). Ecomuseums offer a vibrant sense of place in the learning process, and potentially, the policy-making process for sustainability at a local or regional level (Davis, 2011). In this sense, the transformative value of RCEs may be realized through their capacity to bring together stakeholders with an interest in sustainability to tackle local, or regionally-based problems and challenges in the advancement of sustainable societies; and while universities, as higher education institutions, can play an integral part in the establishment and continued service of Regional Centres of Expertise, as Mochizuki and Fadeema (2008) point out, this does not rule of the possibility that a sound foundation can be established without their involvement. Conceptualized through complexity theory as complex adaptive systems, however, RCEs provide a venue for leadership and learning in sustainability through problem solving, not in the sense of the "technical application of facts and figures in a mechanistic manner or in a negative sense as a model of deficiency, inadequacy, imperfection, weakness or fault that needs to be remedied," but alternatively as "posing fresh, open-ended questions that have not just one answer (yes or no) but a range of possible solutions to complex, problematic social and organizational situations" (Zuber-Skerritt, 2011, p. 7). Such diversity in perspective and knowledge has been encouraged among Regional Centres of Expertise across the globe, thus serving as the foundation for a more open, inclusive and shared approach to leadership in sustainability.

While Regional Centres of Expertise are limited in terms of any formal, or institutional, influence over postsecondary education, and while their membership tends to be impermanent,

sometimes geographically dispersed, and often linked to specific projects or issues for a limited time—as regionally based informal networks (at times a source of frustration for administrators), they offer a flexible discursive space in response to ecological and social problems that is independent of the formal and potentially constraining hierarchy of higher education (Mochizuki & Fadeeva, 2008). In this capacity, RCEs serve typically in supportive or collaborative roles. At RCE Kitakyushu (Japan), for example, the collaborative efforts of universities, schools and citizen groups have come together in the promotion of the local consumption of food produced in the region, with special attention to the concept of "food mileage" to reduce greenhouse gas emissions (Fadeeva, Payyappallimanam, & Petry, 2012).

RCE PENANG

RCE Penang operates through the State of Penang, with its island, territories on the mainland and its neighbouring states. Penang has been acknowledged as among the most liveable places in Asia. It's rich in tropical and cultural treasures but, like any other state with rapid economic development, Penang faces challenges such as large scale property development and rapid urbanization, which are causing environmental and social stresses.

CURRENT ACTIVITIES:

RCE Penang is working to:

- Develop and promote sustainable development training opportunities for school teachers, teacher educators and school administrators;
- Develop and ESD strategy guide for local authorities;
- Increase volunteer opportunities around sustainable development;
- Coordinate the compilation of current ESD practices across Penang and neighbouring states in order to share and generate regional ESD good practices; and
- Cultivate sustainable development competencies in the existing workforce.

Figure 3: Overview of RCE Penang (UNU-IAS, 2017)

Similarly, RCE Penang (Malaysia) has brought together representatives from research institutions, industries, the agricultural sector and local communities through exploratory action research with particular attention given to the encouragement of local traditional knowledge associated with household health and nutritional care (Payyappallimana, Fadeeva, & O'Donoghue, 2013). In Europe, RCE Graz-Styria (Austria) is located in a region characterised by old industrial, mining and rural areas that have been impacted by migration and rising unemployment, alongside regions prospering from the burgeoning automotive industry, tourism and the influence of growing central urban areas like the city of Graz. Four universities (who are some of the major employers in the area) with shared concerns about the lack of interest and action on issues of sustainability, developed in collaboration among their own staff and students a group of initiatives referred to as the Sustainability4U project. This program was designed to engage students and neighboring communities in actions leading to better livelihood opportunities in the region and beyond (Fadeeva et al., 2012) including, for example, an annual lecture series with presentations held by experts with multidisciplinary backgrounds from the four universities, as well as governmental representatives and entrepreneurs who have provided their insights on sustainability-related topics, such as social banking, fair-trade, sustainable energy and health care (Diethart, Mader, Zimmerman, Mader, & Meyer, 2012).

These few examples of Regional Centres of Expertise worldwide offer a glimpse into the work that universities, as higher education institutions, have engaged in with communities, governments, entrepreneurs and others within multistakeholder networks, reminiscent of complex adaptive systems as "neural-like networks" of a diverse range of people in a region

working together toward the advancement of sustainable societies (Lichtenstein et al., 2006; Uhl-Bien et al., 2007). In this way, RCEs lend themselves well as a means of bridging the gap between higher education institutions, and particularly the institutional middle of faculty and staff, in partnership with communities (including indigenous communities) among others with a shared interest in critical issues of sustainability.

Conclusions

As part of the recent *Connecting Education and Environment* Conference at the University of Saskatchewan in Saskatoon (Canada), Wright and Wals (2016) shared a space for presentation, and conversation that followed with seminar participants, on the future of sustainability with implications for leadership in higher education. Among the points raised with respect to sustainability initiatives undertaken in higher education, the process of engaging people was viewed as most important; that is, through adherence to process, a culture of sustainability can be created, reminiscent of Robinson's (2004) view of sustainability as an emergent platform for dialogue, rather than as a predetermined agenda in itself.

Taken from the perspective of complexity theory, leadership is essentially an adaptive process, which makes Regional Centres of Expertise a particularly suitable venue for sustainability leadership in initiating the transformation toward the truly sustainable campus through openly engaged and collaborative work with communities, non-governmental organizations, and others. This is in contrast perhaps to conventional notions of sustainability leadership through the vertically laden channels of higher education institutions, particularly universities, with at times insular faculties and departments set within a competitive framework of performance for funding and resources. As one participant pointed out, much like Vladmir and

Estragon in Beckett's (1956) *Waiting for Godot*, "We believe we have to work through

organizational structure, but that's not happening" (Wals & Wright, 2016). The flexibility offered

through Regional Centres of Expertise as multistakeholder networks as independent of the

administrative structures within higher education, are able to carry out in collaboration with a

diverse range of stakeholders action oriented and realizable sustainability initiatives that may be

unrealizable within the conventional structures of higher education.

In closing, a further point was raised at the Wright and Wals (2016) seminar, which

broached the question of whether universities, as higher education institutions, can truly lead

sustainability. Can universities be leaders in sustainability? Or are they simply following trends?

Hence, as another participant noted, "When universities innovate, they do not innovate internally,

it begins from the outside and moves into universities." This, however, is problematic, as the

outside (i.e., "business as usual") may very well be the source of the problem. One might suggest

that just as sustainability leadership in higher education need not be restricted to internalized

influence from the top-down, or bottom-up, nor should the responsibility for leadership begin

internally necessarily, or for that matter, from the outside. Notably, Sterling (2003) agues for co-

evolutionary change in the relationship between formal education and wider society, as a

"holistic unfolding, not an interaction of separate parts" (Briggs & Peat, 1985, p. 207, in Sterling,

2003, p. 167); or as Sterling (2003, p. 167; italics in the original) observes further, "there is no

'outside intervention,' *but a change in the whole in which we are a part*." Arguably, such

transformative change is possible within higher education through Regional Centres of Expertise.

As complex adaptive systems, RCEs carry the inherent capacity to bring higher education

together—through the institutional middle of faculty and staff—with stakeholder networks

inclusive of communities, non-governmental organizations, governmental departments,

businesses and others in the advancement of sustainability within local contexts, yet also with

attention to global interests and issues.

Endnotes

1. See UNU-IAS (2017) for a complete listing of RCEs worldwide.

2. Tilbury (2013) provides a comprehensive listing and explanation of sustainability declarations.

3. See Sterling (2003) for an explanation of education as an "agent of change" and "subject of

change."

4. Dahm et al. (2008) present a narrative account of the history and process involved in

establishing RCE Saskatchewan.

References

AZ Quotes. (n.d.) *Samuel Becket quotes.* Retrieved from http://www.azquotes.com/author/1118-Samuel_Beckett

Barnard, C. I. (1938/1968). *The functions of the executive.* Boston: Harvard University Press.

Beckett, S. (1956 [1988]). *Waiting for Godot.* London: Faber and Faber.

Beringer, A. (2007). The Luneburg sustainable university project in international comparison. *International Journal of Sustainability in Higher Education, 8*(4), 446-461.

Brand, R. (2012). The green economy—The next oxymoron? *Gaia, 21*(1), 28-32.

Brand, R. & Karvonen, A. (2006). The ecosystem of expertise: Complimentary knowledges for sustainable development. *Sustainability: Science, Practice, & Policy, 3*(1), 1-11.

Brinkhurst, M., Rose, P., Maurice, G., & Ackerman, J. D. (2011). Achieving campus sustainability: top-down, bottom-up, or neither? *International Journal of Sustainability in Higher Education, 12*(4), 338-354.

Briggs, J. P., & Peat, F. D. (1985). *Looking glass universe: The emerging science of wholeness.* London: Fontana.

Capra, F. (1982). *The turning point: Science, society, and the rising culture,* New York: Simon and Schuster.

Capra, F. (1996), *The web of life.* London: Harper Collins.

Dalhousie University. (2016). *Office of Sustainability: Policies and guidelines.* Retrieved from https://www.dal.ca/dept/sustainability/resources/publications_policies.html

Dahm, T., McMartin, D., & Petry, R. (2008). Saskatchewan's (Canada) regional centre of expertise on education for sustainable development. *International Journal of Sustainability in Higher Education, 9*(4), 382-401.

Davis, P. (2011) (2nd ed.). *Ecomuseums: A sense of place*. New York: Continuum International Publishing Group.

de Andrade, F. D., & Sorrentino, M. (2014). Dialogue as a basis for the design of environmental pedagogies. *Journal of Education for Sustainable Development, 8*(2), 143-154.

Diethart, M., Mader, C., Zimmerman, F., Mader, M., & Meyer, J. (2012). RCE Graz-Styria: Influencing sustainable consumption and production in Styria. In Z. Fadeeva, U. Payyappallimana, & R. Petry (Eds.), *Towards more sustainable consumption and production systems and sustainable livelihoods* (pp. 64-67). Yokohama, JP: United Nations University: Institute of Advanced Studies

Fadeeva, Z., Payyappallimana, U., & Petry, R. (2012) Editorial: Learning and innovation for greener and social just societies. In Z. Fadeeva, U. Payyappallimana, & R. Petry (Eds.), *Towards more sustainable consumption and production systems and sustainable livelihoods* (pp. 8-27). Yokohama, JP: United Nations University: Institute of Advanced Studies.

Fien, J. (2002). Advancing sustainability in higher education: Issues and opportunities for research. *International Journal of Sustainability in Higher Education, 3*(3), 243-253.

George, S. (2010). *Whose crisis, whose future: Towards a greener, fairer, richer world, polity*, Cambridge, MA: Wiley.

Glasser, H. (2008). Hans van Ginkel: On the vision, history and status of the Regional Centres of Expertise in ESD programmes. *Journal of Education for Sustainable Development, 2*(2), 109-117.

Heifetz, R. A. (1994). *Leadership without easy answers*. Cambridge: Cambridge University Press.

Heifetz, R. A., & Laurie, D. L. (2001). The work of leadership. *Harvard Business Review, 79*(11), 131-141.

Helferty, A., & Clarke, A. (2009). Student-led campus climate change initiatives in Canada. *International Journal of Sustainability in Higher Education, 10*(3), 287-300.

Heritage Saskatchewan. (2016). *Ecomuseums.* Retrieved from https://heritagesask.ca/reframing-heritage/community-development/ecomuseums

Hopwood, B., Mellor, M., & O'Brien, G, (2005) Sustainable development: Mapping different approaches. *Sustainable Development, 13*, 38–52.

Hosking, D. M. (2006). Not leaders, not followers: A post-modern discourse of leadership processes. In B. Shamier, R. Pillai, M. Bligh, & M. Uhl-Bien (Eds.), *Follower-centered perspectives on leadership: A tribute to the memory of James R. Meindl* (pp. 243-264). Greenwich, CT: Information Age Publishing.

Howlett, M., & Ramesh, M. (2003). *Studying public policy: Policy cycles and policy subsystems* (2nd Ed.). Oxford: Oxford University Press.

Jones, P., Selby, D., & Sterling, S. (2010). Introduction. In P. Jones, D. Selby, & S. Sterling

(Eds.), *Sustainability Education: Perspectives and Practice Across Higher Education* (pp.

1-16). London: Earthscan.

Kirschenmann, F. (2004). *A brief history of sustainable agriculture*. Retrieved from http://

www.sehn.org/Volume_9-2.html#a2

Kolenick, P. (2016). Rethinking education for sustainable development: Interdisciplinarity,

community and environmental justice. In W. Leal Filho & M. Zint (Eds.), *The contribution of

social sciences to sustainable development at universities (world sustainability series)* (pp.

3-19). Dordrecht: Springer.

Lazlo, E. (1989), *The inner limits of mankind. One world*, London: ONEWorld Publications.

Leal Filho, W. (1999). Sustainability and university life. Frankfurt: Peter Lang.

Leal Filho, W. (2011). About the role of universities and their contribution to sustainable

development. *Higher Education Policy, 24*, 427-438.

Lichtenstein, B. B., Uhl-Bien, M., Marion, R., Seers, A., & Orton, J. D. (2006). Complexity

leadership theory: An interactive perspective on leading in complex adaptive systems.

Emergence: Complexity and Organization, 8(4), 2-12.

Marion, R. (2008). Complexity theory for organizations and organizational leadership. In M.

Uhl-Bien & R. Marion (Eds.), *Complexity leadership: Conceptual foundations* (pp. 1-15).

Charlotte, NC: Information Age. *Heroic leadership.*

Mochizuki, Y., & Fadeeva, Z. (2008). Regional Centres of Expertise on education for sustainable

development (RCEs): An overview. *International Journal of Sustainability in Higher

Education, 9*(4), 369-381.

O'Riordan, T. & Voisey, H. (1998). *The politics of Agenda 21 in Europe.* London: Earthscan.

Payyappallimana, U., Fadeeva, Z., & O'Donoghue, R. (2013). Traditional knowledge and biodiversity within Regional Centres of Expertise on education for sustainable development. In U. Payyappallimana & Z. Fadeeva (Eds.), *Traditional knowledge and biodiversity* (pp. 8-21). Yokohama, JP: United Nations University: Institute of Advanced Studies.

Redclift, M. (2005). Sustainable development and popular participation: A framework for analysis. In M. Redclift (Ed.), *Sustainability: Critical concepts* (Vol. 1) (pp. 23-49). London: Routledge.

Robinson, J. (2004). Squaring the circle? Some thoughts on the idea of sustainable development, *Ecological Economics*, *48*(4), 369-384.

Rost, J. (1991). *Leadership for the twenty-first century.* New York: Praeger.

Scholz, R. W., Lang, D. J., Wiek, A., Walter, A. I., & Stauffacher, M. (2006). Transdiciplinary case studies as sustainability learning. *International Journal of Sustainability in Higher Education, 7*(3), 226-251.

Sedlacek, S. (2013). The role of universities in fostering sustainable development at the regional level. *Journal of Cleaner Production, 48,* 74-84.

Shiel, C. (2013). Leadership. In S. Sterling, L. Maxey, & H. Luna (Eds.), *The sustainable university: Progress and prospects* (pp. 110-131). London: Routledge.

Simon Fraser University. (2008). *Simon Fraser University: Policies and procedures (Sustainability: GP 38)*. Retrieved from http://www.sfu.ca/policies/gazette/general/gp38.html

Sterling, S. (2003). *Whole systems thinking as a basis for paradigm change in education: Explorations in the context of sustainability*. Retrieved from http://www.bath.ac.uk/cree/ sterling/sterlingthesis.pdf

Sterling, S. (2007). Riding the story: Towards a connective cultural consciousness. In A. E. J. Wals (Ed.), *Social learning: Towards a sustainable world* (pp. 63-82). Wageningen, NL: Wageningen Academic Publishers.

Sterling, S. (2013). The sustainable university: Challenge and response. In S. Sterling, L. Maxey, & H. Luna (Eds.), *The sustainable university: Progress and prospect*s (pp. 17-50). London: Routledge.

Sustainable Development Knowledge Platform. (n.d.). *United Nations conference on sustainable development, Rio+20.* Retrieved from https://sustainabledevelopment.un.org/rio20

Tilbury, D. (2013). Another world is desirable: A global rebooting of higher education for sustainable development. In S. Sterling, L. Maxey, & H. Luna (Eds.), *The sustainable university: Progress and prospect*s (pp. 71-86). London: Routledge.

Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. *The Leadership Quarterly, 18*, 298-318.

Uhl-Bien, M., Maslyn, J., & Opsina, S. M. (2011). The nature of relational leadership: A multi-theoretical lens on leadership relationships and processes. In D. Day & J. Antonakis (Eds.), *The nature of leadership* (2nd Ed.) (pp. 289-330). London: Sage.

United Nations Environment Program (UNEP]. (2011). *Towards a green economy: Pathways to sustainable development and poverty eradication*. Retrieved from https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=126&menu=35

United Nations [UN]. (2015). *The global goals for sustainable development*. Retrieved from http://www.globalgoals.org

United Nations Sustainable Development [UNSD]. (1992). *Agenda 21*. Retrieved from https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf

United Nations University [UNU]. (2004). *Regional Centres of Expertise on education for sustainable development: Concept paper*. Tokyo, JA: United Nations University.

United Nations University–Institute of the Advanced Study of Sustainability [UNU-IAS]. (2017). *Global RCE network: Education for sustainable development (RCEs worldwide)*. Retrieved from http://rcenetwork.org/portal/rces-worldwide

Universities Canada (2017). *Member universities*. Retrieved http://www.univcan.ca/universities/member-universities/

University of British Columbia. (2014). 2*0-year sustainability strategy*. Retrieved from https://sustain.ubc.ca/sites/sustain.ubc.ca/files/uploads/CampusSustainability/CS_PDFs/PlansReports/Plans/20-Year-Sustainability-Strategy-UBC.pdf

University of Northern British Columbia. (2015). *UNBC group fights food waste and provides nutrition in Prince George community*. Retrieved from http://www.unbc.ca/releases/36013/unbc-group-fights-food-waste-and-provides-nutrition-prince-george-community

University of Waterloo. (2015). *Environment: Campus compost launches.* Retrieved from https://uwaterloo.ca/environment/news/campus-compost-launches

Vaughter, P., Wright, T., & Herbert, Y. (2016). 50 shades of green: An examination of sustainability policy on Canadian campuses. *Canadian Journal of Higher Education, 45*(4), 81-100.

Visser, W. (2008). *Fritjof Capra: Part 7 – Leadership.* Retrieved from https://vimeo.com/24267375

Wals, A., & Blewitt, J. (2010). Third-wave sustainability in higher education. In P. Jones, D. Selby, & S. Sterling (Eds.), *Sustainability education: Perspectives and practices across higher education* (55-74). London: Earthscan.

Wheatley, M. J. (2009). *Leadership and the new science: Discovering order in a chaotic world* (3rd ed.). Oakland, CA: Berrett-Koehler Publishers.

World Commission on Environment and Development. [WCED] (1987). *Our common future,* Oxford University Press, Oxford, UK.

Wright, T. (2004). The evolution of sustainability declarations in higher education. In P. B. Corcoran, & A. E. J. Walls (Eds.), *Higher education and the challenge of sustainability: Problematics, promise, and practice* (pp. 7-19). Dordrecht, NL: Kluwer Academic Publishers.

Wright, T. (2010). University presidents' conceptualizations of sustainability in higher education, *International Journal of Sustainability in Higher Education, 11*(1), 61-73.

Wright, T., & Wals, A. (2016). Future directions for sustainability in higher education research. Connecting education and environment: *Mobilizing sustainability in education policy, practice, and research.* June 11 Conference, University of Saskatchewan, Saskatoon, Canada.

York University. (2011). *Sustainability policy*. Retrieved from http://sustainability.info.yorku.ca/

psc/sustainability-policy/

Zuber-Skerritt, O. (2011). *Action leadership: Towards a participatory paradigm.* Dordrecht/

Heidelberg/London/New York: Springer.