Coffee, Courage, and Cannabis: Leading Change in the Regulated Marijuana Market

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As Washington approaches another anniversary of marijuana regulation, lessons learned serve as a reminder that courageous leadership is a critical component in successful forward movement in a complex, unstable authorizing environment. What does leadership look like in this context, and how is it experienced? Offered from the perspective of a pracademic and regulatory leader in the nascent marijuana industry in Washington State, this paper explores the underpinnings and practical application of complexity theory in both the public administration and leadership contexts, going beyond theoretical, metaphorical application, and actually engaging scholarship and complexity through the emerging theory of engaged complexity.

Keywords: complexity, complexity theory, complexity leadership theory, engaged complexity theory, leadership, transformational leadership, marijuana regulation, stakeholder engagement.

INTRODUCTION

In 2012, Washington State voters approved Initiative 502 (I-502) by a vote of 55.7% to 44.3%, allowing adults age 21 and over to possess up to one ounce of marijuana obtained from a state-licensed and regulated marijuana store. The idea was that a tightly regulated system would be established where all products would pass through the state's system from private producers, processors, and retail stores. The foundational constructs of the legal marijuana market included regulation and enforcement, seed-to-sale tracking, testing and labeling requirements, serving size limits, product restrictions, and taxation. However, before any of that could happen, expectations for these regulations had to be outlined by the federal government since marijuana was, and still is, illegal under federal law.

Following legalization in both Washington and Colorado, then Deputy United States Attorney James Cole provided a memo to all United States attorneys. Known simply as the Cole Memo, the document indicated that guidance "rests on the expectation that states and local governments that have enacted laws authorizing marijuana-related conduct will implement strong and effective regulatory enforcement systems" (Cole, 2014, p. 218). The Cole Memo listed nine enforcement priorities that were of particular importance to the federal government, and three formed the backdrop of Washington's marijuana regulatory structure. These priorities concentrated on public safety by identifying efforts to deter certain activity to the extent possible, and included:

- Preventing distribution of marijuana to minors;
- Determining if revenue from the sale of marijuana is going to criminal enterprises, gangs, and cartels; and

- Curbing diversion of marijuana from states where it is legal under state law in some form to other states.

Washington State opened its first retail store on July 8, 2014. In 2015, the Washington State legislature passed both the Cannabis Protection and Marijuana Taxation Reform Acts in response to industry evolution. These acts created a separate regulatory system for the medical use of marijuana, specific requirements for patients under the age of 18, a single system of licensed production, and consistent testing, labeling, and product standards. Legislation in 2017 established an additional structure that allowed authorized medical marijuana patients and their designated providers entered into Washington's medical marijuana database to purchase immature plants, clones or seed from a licensed producer.

In January 2018, under the Trump administration, United States Attorney General Jeff Sessions rescinded the Cole Memo. Even so, Washington State remained committed to its enforcement priorities, and that commitment is realized through current legislative, policy, and regulatory initiatives.

However, since I-502 was implemented, the regulated marijuana market in has changed in the following ways:

- A concentration on social equity by beginning to right the wrongs of criminalization under Nixon and Reagan;
- Increasing access to medical marijuana products;
- Redesigning and restructuring marijuana licensee penalty guidelines;
- Redesigning and updating packaging and labeling regulations, and assuring that marijuana-infused edible products are not appealing to persons under 21;
- Standardizing quality control and laboratory accreditation requirements;
- Adjusting and updating vapor product regulations to address the potential for vapor-associated lung illness (concerning marijuana concentrates and extracts).

While this brief history provides an abbreviated and tidy chronology of marijuana legalization, is does not begin to address the complexities associated with creation, implementation, and administration of the initial regulatory structure or the future of marijuana regulation in a continuously evolving and controversial area of both commerce and social change. Leadership in this dynamic environment is not a singular or linear event; rather, it is an ongoing, continual exercise, in the words of James T. Kirk, of boldly going where no one has gone before. There is no blueprint or precedent for this work. Regulators are making the road by walking in the spirit of Myles Horton and Paulo Freire (1990).

As Washington approaches another anniversary of marijuana regulation, lessons learned serve as a reminder that courageous leadership is a critical component in successful forward movement in a constantly changing and equally unstable authorizing environment. What does leadership look like in this context, and how is it experienced? What challenges do leaders face when the legitimization of a formerly illicit market collides with the stigmatization of not only the commodity, but the social norms and cultural context if its use? How do leaders balance contemporary, Western public health and safety concerns with centuries of non-Western history and belief?

Offered from the perspective of a pracademic and regulatory leader in the nascent marijuana industry in Washington state, this paper provides a practical application of complexity theory in both the public administration and leadership contexts, going beyond theoretical and academic discussion, and actually engaging scholarship. This paper questions the validity and practicality of complexity leadership theory on the front lines of real-time, controversial change. Relying on complexity theory in the public administration context to understand the systems in which change, and instability occur every day, this paper explores ways to understand and lead change that engage, leverage and embrace complexity rather than control it.

WHAT IS COMPLEXITY?

Origins, Progression and Development

Western science emerged out of the 17th century "in opposition to the biological model of a spontaneous and autonomous organization of natural beings" (Prigogine & Stengers, 1984, p. 291). Sir

Isaac Newton formulated laws of universal gravitation and motion and used these to describe a wide range of phenomena. Descartes, also known as Cartesius, held that one could discover certain universal, self-evident truths through reason alone, and that these truths could explain the content of philosophy and the sciences (Gunaratne, 2003). Together, these ideas formed the basis of reductionist classical science, and guided sociology/anthropology, economics, political science, and eventually, the humanities.

During the industrial age, natural and physical sciences traditionally followed "universal laws" and rationality associated with the Newtonian-Cartesian model. These models assumed that precisely determined conditions established every element of natural processes, and that the laws governing these processes never changed. The Newtonian-Cartesian model remained constant for more than three centuries, until it was met with a two-pronged challenge. The first was the law of entropy advanced by Clausius in 1865 (Prigogine & Stengers, 1984). The law of entropy was the second of the laws of thermodynamics, holding that the disorder of closed systems can never decrease, and when an isolated system reaches maximum entropy, it remains in equilibrium and can no longer change (Gunaratne, 2003). One implication of the second law is that heat flows spontaneously from a hotter region to a cooler region but will not flow spontaneously the other way. This applies to anything that flows: matter will naturally flow downhill rather than uphill. If a reversible process occurs, there is no net change in entropy. In an irreversible process, however, entropy always increases, so the change in entropy is positive. The total entropy of the universe is continually increasing. An example of this law, disturbing to most, is climate change. The second challenge came from quantum physics, emerging in the early part of the 20th century to offer a theoretical frame describing the "incessant transformation of particles into one another" (p. 438). Each of these was a shift toward questioning what had been the foundations of science for several centuries.

The Newtonian-Cartesian model was based on the presumption that science can be used to predict all outcomes because outcomes are completely predictable. This model drove most research agendas through the mid-20th century, and eventually complexity studies began to emerge from the Brussels school of the natural sciences under Ilya Prigogine. Prigogine's Nobel prize-winning theory of dissipative structures pointed out that the Newtonian paradigm made several unfounded and incorrect presumptions. He reasoned that although Newtonian theory implied that all matter and energy in the universe would ultimately degrade to a state in inert uniformity, or equilibrium, *it actually was an open system* where the disorder associated with a state of "far from equilibrium" would bring about order through spontaneous reorganization. Far from equilibrium is a term of art associated with the language of complexity referring to the dynamic state of a system that is constantly changing with time as a result of an external energy or matter input. Prigogine arrived at this conclusion through observing a phenomenon known as the Benard Instability, an event that occurs when a liquid it heated from below, and as the heat intensifies, the liquid begins to "self-organize, taking on a striking spatial structure sometimes resembling miniature stained glass cathedral windows…." (Gunaratne, 2003, p. 436). Prigogine argued that if this was possible in fluid dynamics, it would also be possible in chemistry, biology, and possibly other disciplines. This tendency toward extending the application of complexity by metaphor continues today across disciplines. Even so, Prigogne's comprehensive theory of change became one of the most important, foundational pillars of complexity theory. It offered the following notable points that are critical to understanding not only its origin, but its structure. These are important because they form the blueprint of the current understanding of complexity theory:

> Most parts of the universe are open systems, exchanging energy or matter with their environment. Some systems are isolated, others are near-equilibrium, and yet others are dissipated. Steady state systems, like mechanical systems, cannot evolve internally, and find themselves in the isolated category. Systems that are organized around the principle of minimum entropy production also cannot evolve internally but belong to the near-equilibrium category. However, evolving systems found in enriched, free-energy environments whose far from equilibrium configurations are non-replicable over time belong to the dissipative category (Harvey & Reed, 1994).

> Fluctuation occurs in an open dissipative structure when energy flows become too complex for the system to absorb. When a single fluctuation or combination of fluctuations gathers enough power through positive feedback, a single bifurcation point arises that forces the system to reorganize. Each reorganization produces greater complexity and a greater likelihood of random fluctuations, or evolution. It is impossible to determine in advance the direction of the systems change, whether it will spiral into chaos, or give rise to a new, possibly higher order. (Prigogine & Stengers, 1984).

> Non-linear relationships prevail when a system is in far from equilibrium state, where it becomes sensitive to external influences. A small fluctuation, or perturbation, can bring about startling, structure-breaking waves that replace the old with a new system, bring order out of chaos. In contrast, a system in equilibrium may have reached its entropy capacity, and becomes paralyzed (Gunaratne, 2003).

From these three points, the study of the science of complexity emerged, offering the notion that "instability, evolution, and fluctuation [are] everywhere" (Wallerstein, 2003, p. 165). Complexity saw a narrative (rather than a 'geometrical') universe, in which the problem of time was the central problem. In contrast to the Newtonian-Cartesian model, the only scientific truth there is, according to Wallerstein, is *probability*, not certainty or predictability. "Probability derives from the fact that there are always new statistical solutions of dynamic equations. Interactions within systems are continual, and this communication constitutes the irreversibility of the process, creating even more numerous correlations" (p. 166).

Complexity theory has since evolved and expanded as a way to understand and explain the structure and behavior of complex systems, with a particular focus on the cooperative interactions of individual components that give rise to unpredictable outcomes and events. Consistent with Prigogine's original concepts, complexity theory suggests that we shift our analysis from the individual parts of a system to the system as a whole; a network of elements that interact and combine to produce systemic behavior that cannot be broken down merely into the actions of its constituent parts. Rather, the aim of complexity theory is to identify what types of systemic output occur when system members follow the same basic rules, and how sensitive the system is, or what small changes in rules will produce changes in systemic behavior (Cairney, 2012). Complexity theory has been applied and extended to the study of neuroscience, ecology, epidemiology, memory coding, computer science and metabolic networks. It has also received strong support in the social sciences, has been used to understand international relations, public policy and policy making institutions, and has been used by think tanks, academics, and practitioners to recommend new forms of policy making.

It is important to note that complexity theory currently derives its current identity less from complexity in a broad sense and focuses more on complex systems. Current approaches to complexity hold that the world is not simply complicated, and that the distinction between simple, complicated, and complex is found in the introduction or early paragraphs of the majority of complexity literature reviewed. Glouberman & Zimmerman (2002) examine the distinction between the three processes in terms of problems. Simple problems, like following a recipe may involve basic issues of technique and terminology, but once these are mastered, following the recipe carries a very high assurance of success (for most people). Complicated problems contain subsets of simple problems but are not merely reducible to them. Their complicated nature is often related not only to the scale of a problem like sending a rocket to the moon, but also to issues of coordination or specialized expertise. Complicated problems, though generalizable, are not simply an assembly of simple components. Glouberman & Zimmerman (2002) offer an excellent example, adapted and displayed below in Table 1, illustrating the distinction between the three approaches, and identifies characteristics of each:

TABLE 1
SIMPLE, COMPLICATED, AND COMPLEX PROBLEMS

Simple: Following a Recipe	Complicated: Sending a Rocket to the Moon	Complex: Raising a Child
The recipe is critical	Formulae are critical and necessary	Formulae have a limited application
Recipes are tested to assure easy replication	Sending one rocket will increase assurance that the next will be successful	Raising one child provides experience but no assurance of success with the next
Expertise is not required, but cooking experience increases potential for success	High levels of expertise in a variety of fields is necessary for success	Expertise can contribute but is neither necessary or sufficient to assure success
Recipes generally produce standardized products	Rockets are similar in critical ways	Every child is unique and needs to be understood as an individual
Good recipes give consistent results every time	There is a high degree of certainty in outcome	There is not a high degree of certainty in outcome
Optimistic approach to the problem is possible	Optimistic approach to the problem is possible	Optimistic approach to the problem is possible

While there is general acceptance of these distinctions, there is also considerable variation in the way the theory is described, framed and applied (Cairney, 2012, Cilliers, 1998; Morçöl, 2014).

Philosophical Dimensions

A basic function of philosophy is to analyze the implicit assumptions behind our thinking, whether it is based in science, culture, or common sense. As such, philosophy can help us to clarify the principles of thought that characterize complexity science and that distinguish it from its predecessors. Similarly, complexity can help philosophy solve some of its problems, such as the origins of mind, organization or ethics. Traditionally, philosophy is subdivided into metaphysics and ontology – which examines the fundamental categories of reality; logic and epistemology, which investigates how we can know and reason about that reality (Heylighen, Cilliers, & Gershenson, (2007, pg. 2). But first, how do we define complexity*?*

Morçöl (2014), notes that "…complexity is partly in the eye of the beholder (p. 24). While it can be argued that complexity theory has some fundamental definitional similarities across authors and researchers, there are just as many dissimilarities that agreement on a uniform definition isn't possible. Snyder (2013) asserts that "…complexity theory posits that systems begin as collections of individual actors who organize themselves and create relationships. These relationships form in response to positive or negative feedback, though a degree of randomness is inarguably involved as well. New structures and behaviors then emerge as the actors act and react to each other" (p. 11). Marion (2008) asserts that "complexity theory is the study of dynamic behaviors of complexly interacting, interdependent, and adaptive agents under conditions of internal and external pressure" (p. 3). Cairney (2013) describes complexity theory being "sold" in the public administration context as "…a new approach to science in which we identify (and then explain) systems and processes that lack the order and stability required to produce universal rules about behavior and outcomes" (p. 347). Cilliers (1998) offers that, "Unfortunately the concept remains elusive at both the qualitative and quantitative levels. One useful description…states that complexity entails that, in a system, there are more possibilities than can be actualized. This can hardly serve as definition, but perhaps one should not be surprised if *complexity cannot be given a simple definition. Instead, an analysis of characteristics*" might be attempted (p. 2, emphasis added).

In contrast to Snyder, Marion, and Cairney's attempts to definitively frame it, the overarching definitional suggestion in the literature is that complexity theory offers that we consider characteristics of complexity in a new way (Morçöl, 2014). For instance, consider Mitchell's (2009) excellent discussion on the challenge of defining complexity theory, where she begins by describing the difficulty that the faculty at the Santa Fe Institute have in defining complexity: "If we can't agree on what is meant by complexity, then how can there begin to be a science of complexity?" (p. 94). Mitchell goes on to identify six different definitions articulated by complexity theorists, framing complexity and simplicity in terms of the nature of information content:

- Complexity as entropy or the degree to which a message is orderly;
- Complexity as "algorithmic information content" which are the number of steps it takes to describe a system;
- Complexity as "logical depth, " which is the measure of how difficult it is to reconstruct an object;
- Complexity as "thermodynamic depth," which is the amount of information required to reconstruct an object fully;
- Statistical complexity, or the minimal amount of information about past behavior of system that is needed to optimally predict statistical behavior of the system in the future; and
- Complexity as "fractal dimension," which is the extent an object can be reconstructed in fractal dimensions rather than discrete dimensions.

Similarly, Rescher (1998) notes that there are multiple "modes" of complexity and cites a lengthy inventory of the definitions of complexity compiled by physicist Loyal, although he suggests that "standards" might be a better characterization of Loyal's inventory (p. 2-3) and not complexity. However, Rescher goes on to identify "modes" of complexity in epistemic and ontological terms. Within the epistemic mode, he identifies formulaic complexity as descriptive, generative and computational complexity. Within the ontological mode, he identifies compositional complexity, which includes constitutional and taxonomical complexity (heterogeneity), and structural complexity, which includes organizational and hierarchal complexity (p. 9). Rescher asserts that the best overall index and definition we have of a system's complexity is the extent to which resources (of time, energy, and ingenuity) must be expanded on its cognitive domestication. Thus, Rescher finds that complexity isn't something purely ontological or epistemic, but involves both, and it "*hinges on the relationship between minds and things - on the ways in which the former can come to terms with the latter" (*p. 16, emphasis added).

Although both Mitchell and Rescher offer support for the contention that there is no single definition of complexity, they do suggest that complexity is in the nature of the reality of the sender who is sending information, and the receiver that receives and interprets it. The nature of both the sender and receiver determines to what extent the information is complex, further solidifying the concept that complexity theory truly is in the eye of the beholder, and embedded in context.

Epistemology

While a concrete definition of complexity theory remains unclear, its epistemology is also somewhat murky. There is no unified theory of complexity that is embedded in a single epistemology and this leads to a variety of ways in which researchers draw from complexity (Loubser, 2014). One might ask, why is the epistemology of complexity even relevant in the context of leadership, or in the public policy and public administration contexts?

Morçöl (2014) offers that many, if not most, foundational assumptions in the social sciences, and in public policy and administration particular, have their roots, as noted above, in Cartesian, Newtonian, and positivist world views. This is also true in the leadership context. Complexity cannot be simplified, and we need to unite ideas which seem mutually exclusive in the framework of reduction (Loubser, 2014, citing Morin, 1992). Although complexity theory challenges those views, the epistemology and principles of classical science are still very much at work when researchers are looking for the laws of complexity (Morin, 1992). For example, Cilliers (2008), offers:

> The problem is, however, severely compounded when the methods of the natural sciences are imposed upon, or, even worse, embraced in a simplistic way by the social sciences and humanities. The impression is then created that a traditional understanding of the truth, which is problematic even in natural science, should be the criterion for proper work in social science. (p. 53).

There are a handful of papers and book chapters that discuss the epistemology of complexity in various scientifically based disciplines, but the discussion is largely absent from leadership literature, or scholarship that examines complexity "thinking" around leadership. However, there are two other strains of thought, although not widely explored, that emerged in both the public administration and leadership literature. These are interesting and relevant to this analysis: phenomenology and post-structuralism.

Phenomenology

We know that the core epistemological assumption of Newtonian science is that the knowing subject can be removed or separated from their object (Morçöl, 2014, Loubser, 2014, Cairney, 2012, Cilliers, 1998). This allows the subject to test the truthfulness of any piece of knowledge by empirically testing its correspondence to reality. So, to assure that knowledge corresponds to reality, scientists should separate facts, which are testable, from their values, which are subjective. This objectivism makes Newtonianism possible and aligns with Descartes' notion that the mind should be separated from matter, allowing that matter to be special and divisible, and studied using reductionism and quantitative research methods.

In contrast, phenomenology (which is derived from the "phenomena," Greek for appearances) is the study of our experience, and how things and events appear to us (Tsoukas & Chia, 2011). Knowledge, beauty, right and wrong, the immaterial and the material are all understood experientially. It is in explicating the relationship between things and ourselves that we "get at" what is and what is to be. Tsoukas and Chia assert that "…phenomenology provides a new beginning, to release us from obscuring abstractions and scientific postures, and help us realize a prejudice-free understanding of ourselves and our world." Husserl, the founder of modern phenomenology, proposes this call of "getting back to the things themselves" as the primary goal of phenomenology (Tsoukas & Chia, 2011). In developing his phenomenology, Husserl was responding to what he understood as a crisis in the sciences that represented a world of false objectivity that left no space to consider consciousness. To Husserl, studying the world phenomenologically is to study how things become things from within the horizons in which they are given life and start to flourish, and these horizons are inevitably those of the experiencing, conscious mind. Thus, Husserl holds a more complex view of knowledge, asserting that objective scientific knowledge is not a true reflection of independently existing realities, but a product of the consciousness of the scientist (Morçöl 2014).

Ladkin (2010) asserts that to better understand a phenomenon such as leadership, we should pay attention to where it comes from rather than "through abstracted theoretical frameworks" (p. 17). Phenomenology is a way to connect the "knower' and "the known" consistent with the philosophies of Husserl and his student, Heidegger.

Heidegger saw the roots of all forms of human knowledge in the primordial, existential understanding which is constitutive of being in the world. Heidegger moved Husserl's thesis of intentional consciousness into "being there," existing in the real world, of Daesin, the German vernacular for existence. Heidegger believed that understanding pertained to being in the world, and interpretations and meanings were derivatives of understanding. "We must understand what is to be interpreted beforehand. Thus, philosophy and scientific knowledge are derivatives of understanding, hence Daesin" (Morçöl, p. 167). Although this argument seems circular, and Heidegger attempts to (in the most difficult and convoluted way) address it, it highlights and emphasizes the connection between knowledge, an individual's relationship with knowledge, and the dynamic nature of knowledge. It also speaks to scientific knowledge processes and can be viewed as the starting point for some post-structuralist theories.

Post-structuralism

Morçöl (2014) asserts there where complexity theorists like Prigogine seek to establish a new form of objectivity in science, and seek to establish some truthfulness through scientific investigation, post-structuralists deny any "epistemological privilege" to the products of any form of investigation or interpretation, scientific or otherwise (p. 179). Cilliers (1998) noted a similarity in structure between complexity theory and post-structuralism through neural, or connectionist models of the mind, although Morçöl finds these interpretations are "selective and narrow" (p. 184). Cilliers contends that post-structuralism reduces the knowledge process to a language game, and attributes equal standing to all kinds of knowledge. However, he also asserts that the most obvious conclusion drawn from post-structuralist perspective is that there is no overarching theory of complexity that allows us to ignore the contingent aspects of complex systems. If something is really complex, then it cannot be described by a simple theory.

Some complexity theorists have found parallels between phenomenology and post-structuralism and their implications for complexity theory. They have forwarded the notion that we can and should question Cartesian and Newtonian assumptions about reality and knowledge. Hence, as Morçöl asserts, "[u]nder complexity theory, it is no longer possible to assume that reality is stable or always trends toward equilibrium, and that as external observers, we can know the totality of reality objectively. The knowledge of a complex system is always contextual…[t]hose who favor phenomenology argue that the complexity of the world cannot be known externally, and that scientists and others are internal to the complex realities they study. Others find parallels between post-structuralist interpretations of language and self-organizational process in complex systems" (p. 187).

Both phenomenology and post-structuralism have been applied to better understand the underpinnings of leadership and public policy by scholars challenging the dominant assumptions of Newtonian science. These logic streams are important to understanding the epistemology of complexity theory and understanding each is relevant here.

Can Complexity Inform Public Policy and Leadership?

Complexity may help to consolidate existing concepts of public policy and leadership literature. Cairney & Geyer (2017) point to four main elements of complexity theory that link to both public policy and leadership:

1. Negative and positive feedback: the tendency in complex systems for some inputs of energy to be dampened while others are amplified;
2. Strange attractors: regularities of behavior that may be interrupted by short bursts of change;
3. Sensitivity to initial conditions and path dependencies: contribution of events and decisions made in the past to the formation of institutions that influence path dependence;
4. Emergence: behavior that results from local interaction based on locally defined rules.

WHAT IS COMPLEXITY LEADERSHIP THEORY?

Progression and Development

Uhl-Bien & Marion (2001) assert that, "In the simplest terms, complexity theory moves away from linear, mechanistic views of the world, where simple cause and effect solutions are sought to explain physical and social phenomena, to a perspective of the world as nonlinear and organic, characterized by uncertainty and unpredictability" (p. 389-390). They fashion their argument on the idea that complexity theory focuses leadership on efforts and behaviors that *enable* organizational effectiveness, as opposed to determining that effectiveness. Citing Prigogine regarding the difference between classical science and complexity theorists, they note that the latter sees nature as too unpredictable to be described by simple models.

Although Uhl-Bien & Marion rely on complexity as a framework for leadership in complex systems by connecting it to the foundational logic of complexity theory, it was not to engage the study of complexity, but to *revive the study and research of leadership*. They argue that there was a period of disillusionment in the field of leadership study at the turn of the millennium, and that approaches remained "heavily grounded in the premise that leadership is impersonal influence" (p. 391). They further assert that complexity theory offers a more holistic view of leadership by providing "linkages to emergent structures," and that "complexity concepts can augment (not replace) our existing approaches and help move the field forward" (p. 391). While they argue that their research contributes to the "evolving process of moving complexity study from the arena of metaphor to that of science and we operationalize the basic premises of complexity theory…." (p. 410), they also "outline a *simplified* structure for studying complex leadership" (p. 410, emphasis added). These assertions speak to the early study of complexity leadership theory (CLT), and offer research pathways to extend the theory further, but there is a fundamental flaw in the way that approach and those research pathways are framed: by trying to simplify, Uhl-Bien and Marion slip into the very structure, specifically, the very reductionist, Newtonian approach that complexity theory questions. A description of how one might actually engage CLT in practice isn't offered, nor is it clear how CLT moves from metaphor to science, or how any of the basic premises of CLT are or could be operationalized.

Complex Adaptive Systems and Control

As CLT developed and evolved, Uhl-Bien, Marion, & McKelvey (2007) began to narrow CLT to its leadership potential in complex *adaptive* systems (CAS). They define CAS as "a basic unit of analysis in complexity science….[consisting of] neural-like networks of interacting, independent agents who are bonded in a cooperative dynamic for a common goal, outlook, need, etc.….[t]hey are capable of solving problems creatively and are able to learn and adapt quickly" (p. 299), although this definition of CAS assumes that there is no conflict in organizations, and that all individuals and groups within an organization agree on a common goal. It also assumes that there are no superordinate goals that may cause division in organizations.

Even so, they introduce the argument that CLT adds a view of leadership as an emergent, interactive dynamic that produces adaptive outcomes, and they term this "adaptive leadership" (p. 299). They continue to contrast CLT to previous leadership theories that focus on leaders as individuals rather than the dynamic, complex systems and processes that can comprise leadership, and interestingly, cite Cillier's 1998 observations that traditional approaches to organization have sought to simplify or rationalize the pursuit of adaptation. They assert that these strategies have led to structures that define fixed boundaries, compartmentalized organizational responses, and simplified coordination and communication. However, discussion of the difference between a complex system and a complex *adaptive* system is completely absent from the argument for CLT. The jump from introducing the basics of complexity science to CAS is forwarded merely by comparing a CAS to a complicated system, bypassing any development of parallels or alignment with complexity theory, and thus, CLT does not sufficiently differentiate between complicated and complex systems. By selecting only portions of complexity science that fit their model, and asserting that CAS are unique and desirable in their ability to adapt rapidly and creatively to environmental changes, there seems to be no clear connection to complexity theory, and instead, only the elements of complexity theory that are convenient to and support CLT are applied to make the connection between CLT and complexity science. The elements of CLT are introduced for the first time: adaptive leadership, administrative leadership, and enabling leadership. The concept of "entanglement," (p. 305) as a descriptor for any of the elements of CLT that interact with bureaucratic functions of an organization is also introduced, and they suggest that by focusing on emergent leadership dynamics, CLT implies that leadership exists in, and is a function of interactions in CAS.

Connecting leadership and organizational dynamics with complexity theory was further explored by Simpson (2007). This is one of the few case studies in this area of scholarship that specifically examines how complexity theory informs leadership, as opposed to how complexity theory could conform to leadership by metaphor. Simpson applies Stacey's 1995 theory of the complex responsive process and

makes a distinction between systems thinking and process thinking. Complex Responsive Process (CRP) is the first complexity-based theory written specifically about human thought and communication, in contrast to other complexity theories based on natural or biological sciences and applied to humans by analogy or metaphor. Simpson notes that systems thinking describes the configuration of an organization in its context and tends to focus on the conditions required for improved performance and the changes required to move to that state, where in contrast, process thinking draws attention to the evolving dynamics of relating that make an organization what it is and how it is continuously evolving (p. 466). He points out that since complexity theory was not grounded in social or psychological systems, organizational theories relying on complexity theory provide only metaphorical insights. He offers the example of a well-known computer simulation of flocking birds that demonstrate emergent organization based on three simple rules: separation, alignment and cohesion. Noting that these have been used as a metaphor for emergent self-organization within human social systems based on schemas and mental models, he asserts that the significance of such insight is that the leader's role is not to plan to implement and implement change, but rather to foster the conditions that support emergent novelty. Although this seems to align with Uhl-Bien, Marion & McKelvey, Simpson notes that argument by analogy or metaphor does not carry enough rigor, leading to admittedly interesting but possibly misleading understandings of organizational and leadership dynamics (p. 466). He challenges the idea of CAS by discussing the "natural tendency of a complex social system in the creation of equilibrium rather than novelty," asserting that "The concept of the organization as a complex adaptive system may well be a myth" (p. 466). Simpson indicates that this has important ramifications in the nature of prescriptions for the leadership of organizational change that can be drawn from complexity theories. However, most important to this discussion is his assertion that, "There are those who wish to use complexity theory to promote the idea that leaders can control emergence within organizations. Complex responsive processes theory challenges us to work with awareness closer to that of Socrates, who famously claimed, "I know nothings except the fact of my ignorance" (p. 480). This is critical to this analysis because Simpson points out another fatal flaw in CLT: if complexity is the vehicle leaders use to "control" emergence within organizations, then it really isn't complexity at all. Control = power, and power over a system points us back to Newton.

The concept of controlling emergence as part of complexity as applied to the public administration context was part of an analysis prepared by Klijn (2008). According to Klijn, complexity theory is really collections of five distinct areas of research. Of those, the two most important to this essay are CAS and dissipative structures. Klijn discusses the dynamics of dissipative structures when exploring how complexity theories tend to emphasize that systems are best characterized neither by linear dynamics nor by stable equilibriums. He explains that dissipative structures refer to new structures formed when systems move from stability to chaos. This relates non-linear dynamics, equilibrium, and emergent patterns. He asserts that concepts around the edge of chaos or bounded stability that are more frequently used in CAS literature emphasize that systems seem to be constantly adapting and self-organizing in a zone between order and chaos. He further asserts that one finds the argument in organizational studies relying on complexity theory that organizations are most innovative in a zone between order and chaos, while a state of equilibrium implies death. He relies on Stacey (1995) for support of his position in the same way that Simpson does.

This idea regarding organizations being most innovative on the edge of chaos is extended into the leadership realm by the introduction of ideas around tension as a driver of adaptive leadership within CAS that leads to adaptive change, although the literature really does not give us a full description of what adaptive change is. Hazy, Goldstein, & Lichtenstein (2007) argue that because leadership is dynamic, it transcends the acts of individuals, and is the product of interactions, tensions, and exchange rules governing changes in perception and understanding. They assert that leadership is not an exogenous event, but rather "an emergent event, an outcome of relational interactions among agents" (p. 2). From a philosophical perspective this aligns with Husserl (2002) and Heidegger (2010), and with respect to complex systems, Waldrop (1992), Mitchell (2009) and Holland (2006). However, this assertion that from a complex systems perspective, the "logic" of leadership theory and research is based on an emergent

event as opposed to a single person, and that leadership lies within the interactions of individuals within CAS, including tension as a driver of change seems to extend the argument for CLT. So does the assertion that a complexity view of leadership suggests a form of "distributed" leadership that does not lie in a person, but rather in an interactive dynamic, within which any particular person will participate as leader or follower at different times and for different purposes (p. 3).

Uhl-Bien & Marion (2009) explore and attempt to qualify their 2001 assertions regarding CAS further by stating, "The value of adding a CAS perspective to leadership is that it offers a paradigm for thinking about leadership from which we can more easily explore issues that confound us from a traditional view - issues of shared, distributed, collective, relational, dynamic, emergent, and adaptive responses" (p. 631). Even though these issues are raised, much discussion concentrates on adaptive response, reviving the assertion from their 2001 article that CAS "function quite productively and adaptively at the edge of chaos" (p. 640). More interesting, however are broadly sweeping, unsupported assertions that adaptive leaders "tend to have a keen sense of timing" (p. 640) regarding when to take action within CAS on the edge of chaos, knowing when to leverage tension, inject ideas and information flows, all while "embracing diversity *and* being comfortable with divergent and conflicting ideas." This is one of the first times Uhl-Bien & Marion offer a hint, albeit vague, of what attributes or characteristics embody CLT. But again, this keen sense of timing suggests that a leader has or will have control over the system and will know when to assert that control. This directly conflicts with Hazy, Goldstein, & Lichtenstein's (2007) assertion that leadership lies in the interactions of individuals as opposed to a single person because according to Uhl-Bien & Marion, *only* the adaptive leader can sense or see interconnectivity and interdependencies in a system, and somehow know when to "inject ideas and information into the system for it to mull and process" (p. 640). The operative word here is "it" since this creates a bright line between the leader and the system – not the individuals within the system. The leadership activity, then, does not emerge from the interactions of those individuals, but how the leader controls the system itself to move toward predetermined outcome, and here, that is the edge of chaos. Uhl-Bien & Marion offer that CLT is a way to manage the fundamental tensions in bureaucratic organizations because it incorporates the notion of "managed chaos" into leadership research by offering a theory that they believe is grounded in complexity science—a science that they argue is based in concepts of tension, chaos, and change. As such, they believe that CLT helps address "…a key challenge for modern day organizational leaders: the need to loosen up the organization–stimulating innovation, creativity, responsiveness, and learning to manage continuous adaptation to change–without losing strategic focus" (p. 648). This paper seems to signal a point in the research stream where not only the boundaries around adaptation and adaptive leadership begin to stretch, but CLT theorists are struggling to truly align complexity theory with CLT as a "new" form of leadership as opposed to traditional leadership, or even management.

Application

Trying to make complexity fit in leadership theory and practice was not limited to solely to ideas around adaptation. Hazy & Uhl-Bien (2014) aptly entitle their piece, "Changing the Rules: Implications of Complexity Science for Leadership Research and Practice" and use it as a vehicle to introduce Complex Systems Leadership Theory (CLST). Relying on their previously described foundations of CLT, they define complex systems leadership as systems processes that change the rules of interaction and do so in specific ways that form human interaction dynamics (HID) into a complex adaptive system in a manner analogous to how physical and biological interactions are understood as systems. It is unclear how leadership is a part of this definition. They theorize, as in their previous work, that just as complexity has become an overarching theoretical paradigm in the natural sciences, it is also serving as the basis for a paradigm shift in the social sciences, particularly in the areas of leadership and organizational studies. By shifting the focus from the individual to the organizing process itself, "a key value of complexity is its strong implications for practice" (p. 710). However, there is nothing offered in this piece that connects any of the assertions to practice, and this seems to be exactly how CLT is framed to this point in the research – *it is implied but not applied*. The authors do distinguish CLST from CLT by framing how organizations evolve through variation, selection, and retention over many generations, and also learn to

adapt within a single organization. They offer that under certain exogenous constraints, a changing system of "fine-grained interactions can cause the emergent coarse-grained properties that are observed to undergo a qualitative transformation in coarse-grained patterns and structures" (p.713). They further offer another natural science metaphor – the phased transition of liquid to gas – as an insight for leadership researchers, and conclude by asserting that there are implications for practice, but that "the magnitude of the challenge in daunting " (p. 727), failing to fill in the actual blanks on what those implications are or could be. Interestingly, CLT is only briefly discussed as a research lens.

Yet, a year later, Hazy & Uhl-Bien (2015) shift the discussion around CLT to "explore[ing] *complexity-inspired* research that clarifies the functional contexts wherein leadership influence in its various forms enables organizations to both perform and adapt" (p. 80, emphasis added). They identify five functions of leadership for complex organizing: generative, administrative, community building, information gathering, and information using. In describing each, they tie administrative leadership to fine-grain interactions that implement management processes, policies and procedures, converging the actions of individuals toward coarse-grain properties of various types, such as cost targets. They more fully explain coarse-grain properties as generative, or the "regularities of life," like market performance or organizational routines and fine-grained interactions as administrative, or the interactions that individuals actually experience – such as meeting colleague in the hallway or running a project meeting, and tie these properties to the description of a complex organization (p. 86). They assert that administrative leadership acts according to the complexity mechanism of entrainment, which they contend promotes convergence towards patterns of action. The term "entrainment" was added by the authors based on concepts described a paper by Hazy (2011) discussing mechanisms of leadership influence in the complexity context, and on a paper by Phelps & Huber (2006) discussing leadership in youth organizations. The word is never defined or discussed in either of these papers, nor do Hazy & Uhl-Bien define it in their 2015 paper, and the reader is left to wonder where it came from or how it applies. The only clue offered is that it has something to do with convergence, or bringing things together, and as of this writing, it appears that the concept has not been extended or explored in other research. Despite this, they conclude that by focusing primarily on the complexity concepts of emergence and entrainment, and how these connect fine-grain interactions with coarse-grain properties, leadership functions are clarified, and that clarity helps individuals in an organization recognize relevant coarse-grain properties within developing events and then coordinate an effective collective response. All of this is designed to achieve successful performance of an organization, although it is unclear who decides what that means. While this offers an interesting and tortured "complexity inspired" (p. 80), analysis, it serves as confirmation that CLT supports the idea of a single leader influencing a system, by shifting control back to one person, and reminding us that despite arguments against reductionism, Newton is still very much in control in CLT narrative, regardless of packaging.

APPLIED ANALYSIS

Although this analysis suggests that other than metaphorically, CLT has minimal, if any application in actual practice, as noted above, complexity may help to consolidate existing concepts of public policy and leadership literature. The following describes the complexity of marijuana regulation, along with the textures and dimensions that set it apart from other challenging areas of public policy.

The Plant

The cannabis plant is unlike other agricultural product or drug. It is unclear where it falls between or within these two categories because it is federally recognized as a schedule I drug, and considered to have a high potential for abuse, but it is also a cultivated crop, similar to corn, wheat or other agricultural commodities. Cannabis can be broadly split into two varieties: marijuana, which has not been accepted or approved for medical use by federal regulatory agencies, such as the U.S. Food and Drug Administration (FDA) and the Drug Enforcement Administration (DEA)., and hemp, that has. As a result, federally funded research to explore the effects of marijuana are prohibited, even though these agencies routinely conduct studies on other products from cannabis, such as those derived from hemp. The only

distinguishing feature between marijuana and hemp is the amount of tetrahydrocannabinol, or THC, the active ingredient of cannabis, in the plant. Marijuana derived from the cannabis plant contains 0.3% THC or greater, while hemp derived from the cannabis plant contains less than 0.3% THC. Both were schedule I drugs until recently. Visually, the plants are exactly the same.

Consider that cannabidiol, or CBD, the compound extracted from the cannabis plant has been the subject of federal research, but only as it is derived from hemp. Hemp-derived CBD is the active ingredient in Epidiolex, the first FDA-approved prescription pharmaceutical formulation of highly purified, hemp-derived CBD in a new category of anti-epileptic drugs. This approval occurred in June of 2018, and by fall, hemp had been federally de-scheduled under the 2018 Farm Bill. It is now recognized as an agricultural product, extending the possibilities for future research in federally funded laboratories, programs, and a multitude of other venues. This is the tip of the complexity iceberg just from a production perspective.

Consider that United States research around the therapeutic use, safety and efficacy, and social stigma of cannabis beyond the narrative of a "gateway drug" has been and remains limited to privately funded projects, and only a handful of United States universities have offered resources and capacity to the study of cannabis. This research is important to my practice for a variety of reasons, but specifically because I am in the process of revising the framework around two interesting, but very different streams of regulation around marijuana: the packaging and labeling of various product types, and the ways that these products are tested for pesticides, heavy metals, microbials, mycotoxins and other substances. Neither stream is informed by robust research in the way that similar drugs or agricultural products are. Consider that tobacco has a lengthy history of research that has moved it from a socially and culturally accepted product with alleged health benefits to a product that can reduce life expectancy. Tobacco was normalized until robust federal research highlighted its less appealing and dangerous properties. This adds another layer of complexity.

The Authorizing Environment

Consider the multiple interests of licensees in the regulated market, which is highly competitive and closed. Licensed Washington State production is organized in a three-tier system, from the smallest (up to 2,000 feet of canopy) to the largest (up to 30,000 feet of canopy). There are over 1,400 producers in the state, ranging from larger, more automated indoor grows that harvest year-round to outdoor grows that harvest once or twice each autumn. Each wishes to maintain their placement in a market that is new and in the process of adjusting itself. Add to this licensed processors, who act as the "middle people" between producers and retailers. Processors take harvested marijuana and make a variety of products, including extracts, concentrates and tinctures, baked goods, candies, lotions, oils, and a variety of other products. Some producers are dual licensed as processors. Finally, licensed marijuana retailers sell only usable marijuana, marijuana concentrates, marijuana-infused products, paraphernalia, and lockable boxes to store marijuana at retail outlets to persons over 21 years of age and older, unless the person is in possession of a medical marijuana card.

Consider the interests of various trade organizations that represent these entities; municipalities that have opted in, and opted out, of allowing marijuana production, processing and retailing in their comminutes; legislative districts that voted to legalize and voted against it, along with their representatives; law enforcement on all levels with varying views of marijuana possession and use; public health and prevention community members, also with varying views of marijuana possession and use. Add this to air quality concerns, zoning, city and town planning, and top it with the social stigma of marijuana use, the ghost of marijuana criminalization, and the arguably hypocritical normalization of alcohol and tobacco use. Multiply all of that with consumer interest product safety, methods and modes of ingestion, concern about accidental exposure and adverse effects, along with confusion about the psychotropic and psychoactive properties of both marijuana and hemp, and how generally, no two people metabolize or experience either in the same way.

This is a brief overview of the complex authorizing environment that makes up the regulated marijuana market. It consists of many parts that are often competing, all moving in different directions, at different speeds, in different ways, and at different times.

Complexity Inspired Thinking?

CLT argues that to lead change in this complex environment, one must simply follow the prescribed three-pronged approach by applying concepts of administrative leadership, adaptive leadership, and enabling leadership. The assertion, described previously, is that by using this approach, and controlling these systems in the methods prescribed, that the result will be ideas leading to innovation. By controlling the systems in. a complex authorizing environment to assure they remain on the edge of chaos, the "leader" will cause emergence in a way that brings about change. The problem is that Uhl-Bien, Hazy, McKelvey and others never really give us a coherent, concrete path forward. CLT relies solely on metaphor to stake its claim and provides no empirical support for any of its claims. CLT is implied, but never applied, and fails in the following ways (this is not an exhaustive list):

- Leader and follower dynamics are never addressed. Power, and who holds it, is never mentioned in any of the literature.
- Time is never discussed. Policy development is hard in and of itself, and CLT seems to operate in a vacuum where things like legislative deadlines, statutory enactment, funding criteria, operationalization/implementation, and the other realities of practice are completely ignored.
- Complexity "thinking" assumes that adaptation and emergence are *always* connected to a specific influence and always move linear direction guided by a leader with a "keen sense of timing" (Marion & Uhl-Bien, 2009, p. 640).

The Reality: Engaged Complexity

Is CLT really leadership in complex systems, or is it leaders managing complexity? (Tourish, 2019). What can we learn collectively from complexity? (Rosenhead et al, 2019).

I would argue that it is neither. If we *engage* complexity, we can meaningfully apply complexity thinking in theory and practice. To do so, we must acknowledge complexity as a phenomenon, as opposed to a thing that must be controlled to achieve leader-defined outcomes. Viewing a complex system in this way honors and draws out the complexity of a system or systems rather than seeking to tame, solve, or simplify it. Engaged complexity is grounded in the transformational leadership model, relying on appreciative inquiry as a way to acknowledge and honor leader/follower dynamics, and move toward encouraging the best thinking *as it emerges,* rather than controlling outcomes by continuously keeping systems and people on the edge of chaos. In other words, engaged complexity leverages tensions between stakeholder groups, but does not attempt to control, direct, or influence outcomes to force controlled or directed "emergence" or hold those agents at the edge of chaos.

LEADING CHANGE IN THE REGULATED MARIJUANA MARKET

How do we lead change in this challenging market? Are coffee and courage enough? The answer is clearly no. Cannabis is like no other substance, socially, agriculturally, medically or otherwise. Coffee and courage are helpful to lead change because sometimes stamina is not enough, but in this space, cannabis is both a silent and salient partner.

We live in a world burdened by large-scale problems that are difficult to resolve: the refugee crisis and immigration concerns; terrorism; rising sea levels; frequent floods, droughts and wildfires; not to mention persistent inequality and violation of basic human rights across the world. We don't know how to solve these problems because they resist any simple solution. The cause and effect relations in these problems are complex and solutions are unclear. Some are urgent but there is no central authority to solve them. Their magnitude can be difficult to estimate, and those trying to find solutions may actually contribute to causing them (Manning & Reinecke, 2019). While each of these problems, considered to be

'wicked problems' (Grint, 2010), have unique characteristics, their common thread is that each involves a complex system or multiple systems whose interactions have the potential to allow dynamic reorganization and adaptation, sometimes for the greater good, and sometimes to the detriment of society.

In the regulated marijuana market, dynamic reorganization and adaption occur without the use of rebranded theories (like CLT), but through the application of some of the most basic, grassroots leadership tools and approaches, such as transformational leadership. The Full Range Leadership Model (FRLM) developed by Avolio & Bass (2002), described the elements of transformational leadership and how those elements are linked to psychological fulfillment that is part of a process designed to change how people feel about themselves, raising motivation and enabling performance beyond even their expectations. Note that the emphasis is on *their expectations,* as opposed to leader-defined expectations. How does that happen? Schedlitski & Edwards (2014) describe how that happens, framed by the FRLM in the following ways:

- Through attributed influence and idealized influence: leaders become role models whom followers can identify with, removing barriers often attributable to power dynamics;
- Through inspirational motivation: Leaders behave in ways that motivate and inspire those around them by providing meaning and challenge to their follower's work. Leaders involve followers in the demonstration of commitment to goals and shared vision.
- Through intellectual stimulation: Leaders stimulate followers by questioning assumptions, reframing problems, and approaching old situations in new ways. They encourage creativity, and there is no criticism of mistakes. New ideas and creative problem solutions are solicited form followers, who are included in the process of addressing problems and finding solutions. Followers are encouraged to try new approaches, and their ideas are not criticized even if they differ from the leader's ideas.
- Through individualized consideration: Leaders pay attention to each followers needs, through two-way exchange, learning opportunities, and effective listening.

I have put these components and dimensions to the test in my practice through an engagement model I developed called "Listen and Learn" forums that allow meaningful engagement with stakeholders and really, any interested party. I make space for all parties to come together, and discuss issues that concern them, along with ways those issues can be addressed through regulatory development. A critical undercurrent inherent to this process, however, is the fact that marijuana was not long ago classified as an illicit drug, and part of an illicit market. On the federal level, it still is. Individuals who produced, processed and sold it were subject to prosecution, and those efforts disproportionately impacted people of color, LGBTQ populations, medical marijuana patients, and many others. Empowering and encouraging participation in collaborative developmental regulatory efforts begins by meeting all interested parties where they are, reducing communication barriers by building trust, and more importantly, as a regulator, listening and learning from the people who are or will be impacted by the frameworks my agency develops. In other words, facing power dynamics head on, courageously, and in the spirit of collaboration.

The result? All parties feel heard, and in the end, the final product of this work and approach is realized in regulations that can be understood by anyone who reads, uses, or is affected by them. This model helps all involved move from draft to finished product more smoothly because the participants are involved in creating the change that affects them. Additionally, this approach has completely changed the way that my organization interacts with stakeholders and is being implemented agency wide as a method with much broader application.

Engaged Complexity Theory

Hazy (2018) offers that "finding people who are skilled at engaging complexity and putting them in the right roles" (p. 61) is helpful, and that "*Engaging complexity actually means reimagining simplicity*" (p. 62, emphasis original). There is nothing that has been offered in the literature that really supports that claim, nor does it even begin to acknowledge anything that has been discussed here. Cilliers (1998) offers that, "Engaging with complexity entails engaging with a specific, complex *system"* (p. ix). While

engagement with complexity does not necessarily assure a non-reductionist approach, it also does not suggest extraordinary complication and a three-hundred-page manual.

If it does anything, complexity theory brings together many strands of thinking, and similarly, so do complex systems themselves. That does not dilute or reduce the importance or positionality of any of those strands, but rather, adds richness, dimension and texture to our understanding of how those strands interact. Instead of restraining those interactions with leadership and management theories designed to produce specific outcomes or meet specific performance measures, I offer that we provide space for those strands to determine their course. I understand that this is a radical idea coming from a seasoned public policy professional who has been in the throes of controversial policy and regulatory environments for many years. Offering a system or more realistically, a group or groups of stakeholders the opportunity to determine what works best for them is blasphemy of the highest order in my context. Traditional approaches direct us to regulate *everything,* and in doing so, engage stakeholders to the extent that we can check off a box on procedural list. However, my experience offers something different.

When stakeholders are brought together, several things happen. Differences and similarities emerge, conflict can happen, and yet, so can agreement. The role of the regulator in this context could be based on a CLT model, by controlling the outcome of interactions based on reducing the interactions of stakeholders to align with the three elements of CLT. However, the theoretical assertions of CLT do not work in practice. Under the CLT frame, the engagement outcome is predetermined by the regulator and really has nothing to do with emergence and innovation within the system because the regulator is directing stakeholders in the direction in which they prefer movement. The interactions are enabling and transformative to the extent that the regulator has control of the outcome. And typically, the outcome is predetermined.

However, if those stakeholders are truly engaged, meaning that they are able to fully participate in the formation of policy or regulation, and the tension between stakeholder groups that can and does often occur is used as a way to leverage and encourage innovation, then we are truly engaging complexity. Rather than controlling the outcome, the regulator serves as a guide rather than a director or facilitator of planned emergence. In this way, the complexity of groups and their views are viewed as strengths to be expanded upon rather than controlled.

Listen and Learn is the embodiment and realization of engaged complexity theory in action, and as I approach candidacy, I continue to fine tune and develop engaged complexity theory (ECT). Admittedly, there is much more work to be done to develop ECT because it is in its infancy. However, foundationally, it consists of the following elements that I have successfully applied in my context:

- ECT challenges reductionism in all forms: one size fits all, singular approaches are ineffective, even those that are rebranded forms of traditional leadership;
- Complexity-inspired thinking is fundamentally about uncertainty and eventual emergence. The ECT thought stream leverages both of those things without controlling them.
- ECT seeks to engage, inspire, and empower followers *in change that they create.* In simple terms, nothing about us…without us.

CONCLUSION

This paper has explained, offered background and academic context, as well as actual practice outcomes that move the focus of complexity from something to be harnessed and controlled to a phenomenon to be honored. I have testing this idea in practice in the context of leading change in the regulated marijuana market, and have begun to develop engaged complexity theory that leverages and honors the complexity of a system as a dynamic phenomenon rather than using it to hold its agency in a state of controlled chaos to assure leader-follower outcomes.

I assert that there is a "cautiously positive role" (Cairney & Geyer, 2017, p. 1) for complexity to bridge theory and practice. However, that role is not to reframe control or operationalize a "theory" with vague references to metaphor and asserting that as empirical knowledge. Making policy is at best a very rough process, and so is leading change. ECT offers a pathway forward.

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