Social complexity theory for sense seeking

Unearthing leadership mindsets for unknowable and uncertain times

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Abstract

This exposition considers perspectives underpinning contemporary leadership studies given we are located in what Hawking describes as the 'century of complexity', also understood as a Knowledge Era. Social complexity as context allows consideration of the turbulence our times without looking for guaranteed, certain, or 'right' answers and allows us to work with these conditions, rather than succumb to threat rigidity, pretend they do not exist, or think they are someone else's problem. To make sense of these conditions requires ontological and cognitive shifts of mindset that more closely match the 'requisite variety' of the complexities of our times. The paper draws upon a PhD interpretive inquiry which identified cogent leadership literacies for the 21st century and explored them within Australian university settings. Various cognitive frames feature in this paper and serve to illuminate possibilities for scholars and practitioners seeking fresh approaches for leadership studies for a Knowledge Era. Whilst there are many contemporary scholars already doing so it is also clear that the ontological shifts are not easy and that archaic mindsets are difficult to dislodge even in light of wicked problems like the Global Financial Crisis of 2008 or environmental disasters.

Introduction

This exposition considers current perspectives underpinning contemporary leadership studies given we are located in what Hawking describes as the 'century of complexity'[17] (p. 29). Indeed Berman & Korsten[8] find complexity to be the 'greatest challenge' facing leaders in the short to medium term:

> *The world's private and public sector leaders believe that a rapid escalation of 'complexity' is the biggest challenge confronting them. They expect it to continue, indeed, to accelerate in the coming years. They are equally clear that their enterprises today are not equipped to cope effectively with this complexity in the global environment (p. 3).*

The paper begins with a preamble providing contextual factors for the work of leadership in the early part of the 21st century. In particular these contexts focus on the mindsets and hegemony of the Industrial and Knowledge Eras to tease out assumptions underpinning leadership studies and practice today. Next, the context of trying to seek sense of the work of leadership as sites of social complexity is explored with particular emphasis on the work of Paul Cilliers as a pathway for turning social complexity theory towards leadership studies. This is followed by considering leadership approaches that have been illuminated by social complexity theories. These are more fully explained through the introduction of a speculative typology, constructed as a sense seeking frame to encourage 'working with' such contexts rather than trying to tame and order them, named as Worldly, Sustaining, Leadingful, Relational and Learningful Leadership Literacies.

The paper draws upon a PhD study that began just prior to the Global Financial Crisis in 2008. This interpretive inquiry identified cogent leadership literacies for the 21st century and explored them within Australian university settings. I was initially drawn to my research, as a practice-led researcher, by "a sense of a problem, of something going on, some disquiet, and of something there that could be explicated"[92] (p. 9) about the detrimental effects on practice and people in light of yet another restructure.

The concept of knowledge intensive work, workers and the place where this occurs is encapsulated in the term 'knowledge intensive enterprise'. The provenance for these can be traced to Peter Drucker[25]. More recently Knowledge Intensive Firms (KIFs) have been characterized as places:

> *where symbolic work—using ideas and concepts—is crucial…Theory-guided cognitive activity is important—or at least makes a difference—in more situations and for more people in a KIF than in other organizations[2] (p. 18).*

The disquiet that brought me to the study led me to focus on contestations of mindsets the consequences of these clashes playing out in my workplace. My interest centres on what lies beneath the surface in terms of epistemology, ontology, axiology, power relations and cognition within periods known as the Industrial Era, Information Age and Knowledge Era.

Preamble: Different eras, mindsets and hegemony

The Industrial Era mindset was grounded in scientist standpoints and mechanist metaphors that privileged rationality and certainty—and for good reason—such understandings were congruent with conditions of their time. However, today's knowledge intensive enterprises do not relate to mechanistic metaphors for work or leadership.

This is because today's conditions are more likely to be described as volatile, uncertain, complex and uncertain (VUCA)[60] than certain, stable and linear. In relation to leadership studies many have already questioned rationalist models underpinning scientist based research methodologies [61,64,105] theories of leadership and management based on scientific management[72,3, 42,33,95] and, power relations behind of economic neo-liberal ideologies underpinning globalization and governance[27,29]. A conflation of these concerns is expressed in Uhl-Bien's critique of scientific management, where she reasons:

> … science came into the field of management to help legitimize the field. But what has happened is that the sciences in the field of management are actually outdated. While we think we are doing science we are very outdated relative to where the real state of science actually is [105] (9min:35sec).

It is timely therefore to pause and reflect upon contested mindsets and make space to "unlearn certain ingrained habits of representation in order to enact theory differently"[28] (p. 525). The purpose of five Knowledge Era Leadership Literacies to follow is to capture the essence of shifts towards Knowledge Era mindsets and how these might be different or similar to leadership literacies that served in the past. The idea of leadership literacies is a highly contestable term given the strong connections between language and power and that any language rarely comes into common use without struggle. Given its support in the literature [84,79,52] and my own experience with expanded notions of literacies, I made these connections visible in my on research to explicate the relationship between language and literacies, and how metaphorical and literal meanings of words and actions may be comprehended differently through lenses of Industrial or Knowledge Era mindsets. Such fluency also surfaces the need for some degree of translation, where for example, displays of humanity such as vulnerability or concern for others may be viewed as signs of weakness or strength, depending on our underlying worldview[23].

In the next section, sense seeking frames that heed calls to 'do leadership differently'[10] are discussed.

Making sense of the work of leadership as sites of social complexity

Grint's [48] notion of 'leadership as social construction' recognizes the impact of social complexity as context. Upon this argument Grint theorizes a more expansive standpoint for leadership:

> … put another way, we might begin to consider not what is the situation, but how it is situated … [to argue that leadership] depends upon a persuasive rendition of the context and a persuasive display of the appropriate authority style…rooted in persuading followers that the problematic situation is either one of a Critical, Tame or Wicked nature (p. 1477).

Grint's work, especially when combined with the Kets de Vries[63] idea that "leaders are in the business of energy management" (p. 111) opens up possibilities to think afresh about the nature of leadership studies at this time. Emerging themes illuminated by Grint, Kets de Vries, social complexity theories and the five Knowledge Era leadership literacies, for example, invite discussion about what 'doing leadership differently' might look like. I argue that such conversations may elicit more humane leadership practices than those afforded in the 19th and 20th centuries. This shift is cognisant of more expansive notions of the field, a more 'worldly' standpoint which integrates responsibilities for human and ecological sustainability which run counter to adversarial power relations. These perspectives privilege notions of 'soft power'[73], reciprocity and co-operation.

Social complexity and human relations theories are deeply entwined and can be traced back to at least the beginning of the 20th century. Indeed, many of the ideas emerging today within leadership studies have their roots in the work of Mary Parker Follett and the Human Relations Movement [70,37,38,4] which emerged to counter the excesses of Scientific Management[100]. While largely unprivileged for most of the 20th century, their contribution is being reimagined today for leadership studies. Indeed social complexity theories, notions of 'leadership as energy management' (which has also been traced back to Follett) and relational leadership approaches all serve to make these human and social systems visible.

These approaches offer ways to not only 'see' possibilities for leadership studies and practice but also for leadership methodology. This suggests that both the leadership-as-subject as well as ways to research leadership are all amenable to complexity theories as sense seeking frames. The work of Ralph Stacey [98,97,46,47] is congruent with these aims, particularly

his understandings of how knowledge production emanates from complex responsive processes, that:

> *aims to move on from systems thinking about learning and knowledge creation in organizations to argue that knowledge arises in complex responsive processes of relating between human bodies, that knowledge itself is continuously reproduced and potentially transformed. Knowledge is not a 'thing' or a system, but an ephemeral active process of relating* [98] *(p. 3).*

Tim Harle [54] explores the scope of complexity theories well beyond social complexity to make links with relational aspects of leadership. In an extensive review he argued that complexity generally provides insights for leadership because of connections to living systems, self-organization and emergence. Harle highlighted Mandelbrot's[69] fractals theory of 'repeating patterns in nature observed at different levels' as relevant to leadership studies:

> *... with our focus on living systems, it is naturally occurring patterns that provide a vivid window into the world of leadership. In particular, the idea of repeating patterns at different levels provides a helpful conceptual framework for study global and local—or worldly—leadership* [54] *(p. 37-38).*

The intent of this paper is to connect leadership studies and social complexity theories that are already emerging in the literature. For example these explorations already include Complexity Leadership Theory[108,106,107] evaluation of new paradigms of leadership development [62], Dynamic Complexity Theory, [15] Complex Adaptive Leadership, [74] and Chia and Holt's [16] reconceptualizations of strategy.

Social complexity as context allows consideration of the turbulence our times without expecting guaranteed, certain, or 'right' answers. It is possible to work with these conditions, rather than succumb to threat rigidity [depicted as a "failure to alter responses in face of environmental change" [99](p. 501)], pretend they do not exist, or think they are someone else's problem. To make sense of these understandings requires ontological and cognitive shifts of mindset that more closely match the requisite variety of conditions of our times and that strive to be "efficaciously adaptive"[9].

One approach that takes up calls to do leadership differently, in terms of both methodology and theory is Fullan and Scott's notion of 'ready, fire, aim' within the domain of leadership studies in higher education where they argue that:

> *... shifting the focus to strategic thinking requires a considerable change in culture. To survive and thrive in uncertain context of the 21st century, universities have to shift from a propensity to engage in ready, ready, ready (have a subcommittee, conduct a review, etc.) to ready, fire, aim—a process in which ready is a need to act, fire is to try out a potentially viable response under controlled conditions, and aim is to articulate what works best and scale this up once it has been tested and refined* [43] *(p. 29).*

This is one example of many perspectives amenable to working with contemporary leadership challenges that become visible through lenses of social complexity. This 'ready, fire, aim' approach sums up the research position I took up in my own research. In so doing the construction of speculative typography named as the five leadership literacies, to be discussed in this paper, represent the 'ready' position of their argument, that is the 'potentially viable response under controlled conditions' that were then 'fired' to explore for meaning and congruence as theorized and practiced in Australian tertiary education management.

Therefore I position social complexity theories as viable frames with which to view contemporary leadership. However, great care is needed to ensure that these are not read as a panacea to fix, tame or otherwise apply certainty to current volatile, complex and ambiguous conditions. Rather social complexity theories provide "an alternative way of legitimizing the current interest in boundary critique, creativity, and pluralism"[81](p. 17).

Cilliers's legacy: Modest claims for knowledge

One particular way of addressing this interest is to explore Paul Cilliers work, in particular his call for modest claims for the reach of knowledge, one of many contributions he made to the before his untimely death in 2011. Indeed, his elegant distillation is drawn from many decades working at the interface of complexity theory, critical theory and ethics saw him argue that we can only ever make modest claims for the ostensibly unknowable conditions; that scholars need to be careful about the reach of our claims; and, need to be mindful of the constraints that make these claims possible[18]. This is a salient legacy with which to ground leadership studies for knowledge-intensive enterprises upon. Further, this approach is an eloquent critique of the continuing dependence upon rationalist ontology when current realities are more likely to framed by uncertainty, unpredictability and complexity than certainty or order.

Knowledge claims, framed this way, are understood to be declaratively modest in the face of ostensibly unknowable conditions and we are asked to take care to "describe reflective positions that are careful about the reach of their claims being made and of

the constraints that make these claims possible"[19] (p. 256). Here the term modest signifies a position of strength when viewed through a social complexity lens and illustrates the power of language to surface underlying mindsets. Such nuanced arguments for the relevance of mindfully modest claims are a welcome counter to certainty claims of for heroic leadership posturing. By calling into question veneers of certainty that underpin the Industrial Era mindset, Cilliers quietly yet powerfully destabilizes foundations of rationalist thought. He does so with no illusion that it will be easy, instead making the point that such 'modest' claims are hard work:

> *What we need, therefore, are ways of dealing with that which we cannot calculate, of coping with our ignorance. There is a name for this. It is called 'ethics' and no amount of complexity theory will allow us to escape it* [18] (p. 83).

Cilliers's argument that modest claims for the reach of our knowledge are inherently values and ethics laden is a timely reminder that leadership is hard work, full of contestation and leaps of faith. The melding of social complexity theories with contemporary leadership studies gives voice and support for efforts to work towards the unknown. Support for this position is found in the work of Thrift [101] who makes the point that "it is not entirely clear what a politics of what happens might look like" (p. 2). Educational theorists, such as Bauman [7] argue that the "ethical being embraces uncertainty, lets go of rational intention, and engages the micro-interactions" (p. 247). Meanwhile Fenwick [31] considers notions of responsibility, complexity science and education to conclude that "while the 'ought' of education cannot be spoken through complexity science, its framework is useful in helping to articulate questions and dilemmas of education responsibility" (p. 31). Fenwick further claims that complexity science "appears to offer more generative alternatives for imagining educational responsibilities with its emphasis on participatory epistemology, mindful engagement and disruption of certainty" (p. 104).

I argue that social complexity theories are just as generative in the service of leadership responsibilities which are as values and ethics laden sites of inquiry as education. Indeed, leadership studies are rich sites for what Edwards[28] refers to as "ethico-onto-epistem-ological [inquiry, where] questions of knowing are entangled in questions of becoming and questions of valuing"[28] (p. 525). Cilliers's significant contribution to leadership studies therefore is this strong theoretical basis from which to make sense of, and with, the socially complex nature of leadership studies. Put another way, such enactment "is not only about which theories we mobilize, but also about which approach to theory mobilizes us"[28] (p. 525).

Turning Social Complexity Theory Towards Leadership Studies

Mindfully modest understandings of knowledge claims are welcome frames to work effectively with emerging contexts for 21st century leadership, given the likely lags, overlaps and contestations in leadership practice and scholarship for the foreseeable future. These contestations are largely due to a disjunct between 19th century thinking from the Industrial Era as depicted by heroic leadership and command and control practices, colliding with cognitive frames and practices more suitable for the 21st century. Indeed, Houghlum reminds us that "some of the most distinct voices calling for a reframing and different conception of leadership are emerging from the complexity sciences"[57] (p. 28). A social complexity domain is clearly evident in Snowden and Stanbridge's [93] 'landscapes of management model' where it is described as a space accommodating high tolerances for both disorder and ambiguity (already described in this paper as VUCA). These calls show that social complexity perspectives work with inherent uncertainties and ambiguities present in human acts of knowing as well as make visible and privilege entanglements between agents within holistic systems.

I argue that such entanglements are at the heart of leadership concerns. These more intentional, liminal[56] and proximal [21] lenses rest on mindsets that understand that social processes are at the heart of this work. In this way they not only provide spaces 'in between' contexts, events and conditions of turbulence, but also spaces 'before' theory for welcome pause and reflection. Furthermore, these intentional pauses and sense seeking activities quietly trouble the status quo. Indeed, such thinking spaces illuminate what Harding refers to as places where "new kinds of questions can be asked and new kinds of possible futures can be articulated and debated"[53] (p. 17).

Upon this grounding my research conceptualized leadership studies as socially complex and context dependent phenomena where leaders "are in the business of energy management"[63] (p. 111). This claim was central to my research claims for the following reasons: to identify complexity as one of the key contexts for leadership in the 21st century; as a way to bring together and make sense of several otherwise disparate literatures; to recognize that complexity theory is itself a relevant basis for the theorization of leadership; and, as a bridge to work with the necessary emergent interpretive methodology of the inquiry designed to work with all of these uncertainties. Indeed, due to a frame of social complexity I was able to wrangle the many competing tensions associated with researching phenomena such as leadership as it was unfolding and frame the inquiry as the "the continual application of a particularly coherent and systematic and reflexive way of questioning"[11] (p. 8).

Considering a Leadership Approach Illuminated by Social Complexity Theories

In detailing the sense seeking exploration underpinning my research, which heeded calls to 'do leadership differently'[10] and was buoyed by the legacy of Cilliers and lenses of social complexity, I position and discuss five particular Knowledge Era

Leadership Literacies, enacted as a 'speculative typology'[101] as constructed from contexts considered congruent with 21st century leadership, learning and life.

This speculative typology is named as Worldly, Sustaining, Leadingful, Relational and Learningful Leadership Literacies. These five Knowledge Era Leadership Literacies open up spaces to consider doing leadership research and leadership practice differently. The underpinning assumption of this inquiry was that the phenomena under investigation and the research design in pursuit of it were well matched constructions of what Law terms 'social theories in practice' which are declaratively "shaped by the social world in which they are located and in turn help shape that social world"[67] (p. 6). This idea captures the challenges and uncertainties for research of leadership in the early part of the 21st century given it is located with socially complex and context dependent phenomena. Upon this conceptualization I grounded the inquiry in an American Pragmatist philosophy,[59,24,71,32] a Critical Management Studies theoretical framework[42,61] featuring Pragmatist Feminist guiding principles[85,78,111] and an interpretive inquiry methodology guided by van Manen's action sensitive pedagogy[110].

Knowledge era leadership literacies

I argue this speculative typology encapsulates significant shifts in leadership mindsets that have arisen in the Knowledge Era. Whilst social complexity has played a significant part in their construction, I regard complexity itself as context to be engaged with rather than a 'leadership literacy' itself.

The five leadership literacies were constructed after a deep and critical engagement of seemingly disparate literatures. I do not claim that these particular leadership literacies, or their underlying foundations, are the only possible means to do this work. I do however argue that whilst 'speculative' these leadership literacies capture enough of these significant changes found to be of concern in the Knowledge Era to begin this work. In this way they echo the *"ready* (the process in which ready is a need to act), *fire* (to try out a potentially viable response under controlled conditions), *aim* (then to articulate what works best and scale this up once it has been tested and refined)" approach advocated by Fullan and Scott[43].

It is worthwhile to pause and consider these new leadership literacies against the backdrop of the 20th century Industrial Era ways of knowing. Depending upon underlying mindsets words such as modest, quiet, feminine, service, relationships or sustaining may be construed as signs of strength or weakness depending on whether one is literate in Knowledge Era or Industrial Era leadership understandings of the world. As Fairhurst observes "language does not mirror reality, but constitutes it"[30] (p. 1608). Key to this line of inquiry and the subsequent naming of these elements as 'literacies' is the recognition of the power of language and its role as a signifier of underlying mindsets and cognitive frames that influence leadership.

These leadership literacies contribute to a lexicon intent on troubling Industrial Era leadership hegemony, thus adding to repertoires that encourage dialogue about the significant shifts caused by discontinuous change affecting leadership, learning and life in the early part of this century. Fairhurst considers such repertoires as "tool bags of terminology, tropes, themes, habitual forms of argument…that in effect, contextualize by supplying leadership actors with a set of linguistic resources"[30] (p. 1617).

The **Worldly Leadership Literacy** acknowledges that leaders understand themselves and their place in the many interrelated inner and outer worlds they occupy. These are grounded in Worldly Leadership approaches[102,103] that incorporate governance responsibilities for social, environmental and financial concerns. For deeper empirical analysis the Worldly Leadership Literacy was explored in using Sendjaya's Servant Leadership Behavioral Scale[86] drawn from Servant Leadership theory[45].

The **Sustaining Leadership Literacy** signifies cognitive shifts and possible zeitgeist[22] acknowledging the significance of the place for human and ecological sustainability within leadership studies. In the turbulence that besets our times, and even though there are no certain, easy or right answers to guarantee success, we cannot ignore super wicked problems[6,68] such as those represented by ecological dilemmas. The alternative is far from leaderly responses like denial and threat rigidity. Leaders literate in sustainable leadership will likely 'see' and make sense of super wicked problems by adopting more holistic and interrelated approaches that match these complexities with the necessary 'requisite variety'[9] for the situation.

The **Leadingful Leadership Literacy**[113] signifies two major shifts in 21st century leadership discourse. The first is a shift to a post-heroic standpoint for leadership studies which turns away from leadership interest focussing only on 'the leader', to acknowledge the distributed nature, processes and practices of leadership for all. Indeed such leadingful responsibilities apply to everyone in knowledge intensive enterprises, not the least as leaders of the self. This Leadingful approach can be found in leadership theories and discourses that privilege the social complexities of leadership in real time. Interestingly, much of the grounding for this interest since the turn of this century is attributable to the seminal work by Mary Parker Follett in the early part of the last century[34,35,36,38,39,40,41,26,44].

These leadingful notions are not necessarily new then, rather they are being refreshed by a new generation of scholars. This redux is encapsulated in Fletcher's[33] Post-Heroic Leadership typology of 'Leadership as practice: shared and distributed; leadership as social process: interactions; and leadership as learning: outcomes'. Theories concerned with the work of leadership by all rather than those focusing on just the leader, such as Leadership-as-Practice[12,76] also resonate with this

approach, as do maturing understandings of distributed leadership[49,50].

The **Relational Leadership Literacy** is closely aligned with the Leadingful Leadership Literacy and provides the means to enact Leadingful approaches by privileging relationships. These include relationships with self, with others, and with our place and purpose in the world. Uhl-Bien's[104] Relational Leadership Theory provides a solid foundation for this Literacy. For empirical analyses I accepted Spillane's[96] challenge to consider refreshing the unit of analysis for leadership studies as "the interaction of leaders, followers and their situation" (p. 10). Post-industrial understandings of leadership, followership and purpose are also useful for bringing relational leadership approaches into analytic conversation with the data. The idea of this leader, follower, purpose trinity can again be traced through the literature back to Follett,[38,39] with more recent examples in the work of Chaleff[13] , Ladkin[65] and Jackson and Parry[58].

The **Learningful Leadership Literacy** acknowledges significant challenges and opportunities likely to feature in the coming decades and the work required to prepare for such challenges. In times marked by complexity, turbulence and epochal shifts, alternative sense seeking models and languages that encourage rapprochement of economic, environmental and human sustainability are necessary. In this regard learning, unlearning and relearning become key components for this intentional work. This cognitive reframing can be advanced through consideration of social complexity theories as shown in Complex Adaptive Systems (CAS) theory[55], with Johansen's[60] uptake of the VUCA already discussed or the Cynefin sensemaking frame that underpins much of the work of Snowden[94]. These framing perspectives open up possibilities for a speedier learning metabolism in organizations[109,51,82]. The notion of learning metabolism places learning at the centre of the enterprise and a key responsibility for the 21st century leaders. Whilst this idea is not new, neither is it routinely connected with leadership responsibilities or identified within a leader's key performance indicators, even in knowledge-intensive institutions like universities. Hames[51] explains this concept as "the imperative to maintain a speed of learning that matches, or is greater than, the rate of change in the environment" (p. 267) and indeed considers learning metabolism as a matter for organizational survival.

Yet Fletcher's[33] post heroic typology is still one of the few contemporary leadership perspectives to explicitly feature learning as part of the leadership remit. However, the invitation for learning to be included inside the tent of leadership responsibilities is supported by the much earlier work of the Human Relations Movement, particularly Barnard[4,5] through Action Learning principles;[80,75] as well as Systems Thinking[14,1,77] and Learning Organization[87,88] concepts. These perspectives rely upon the relational nature of learning in knowledge-intensive enterprises. Moreover, Conklin[20] supports this point by arguing that "social complexity requires new understandings, processes, and tools that are attuned to the fundamentally *social* and *conversational* nature of work" (p. 6).

Conclusion

The various cognitive frames featured in this paper include the Cilliers Legacy, social complexity theories and the speculative typology called Knowledge Era Leadership Literacies serve to illuminate possibilities for scholars and practitioners to seek fresh approaches for leadership studies. Whilst there are many contemporary scholars already doing so[33,112,91,90,43,10] these ontological shifts may be incomprehensible to those holding Industrial Era mindsets that frame the world as rational, linear, certain and able to be bent to one's will. Since the beginning of my research in 2008 there have been constant reminders that old ideas are difficult to dislodge even in light of wicked problems like the Global Financial Crisis of 2008[89,66] or environmental disasters. Bob Parker, Mayor of Christchurch New Zealand, in the aftermath of Christchurch's earthquakes, acknowledged this as a "gross overconfidence we have as a species in our ability to control this planet and the world around us"[83] (p. 26).

Not only are Industrial Era mindsets difficult to dislodge, if past experiences of cultural shifts are any indication, alternative frames expect something more onerous and seemingly difficult to grasp. That is, they expect more from all of us, as leaders and followers, in asking that we all take responsibility for our place in the interrelated worlds in which we live. Underlying the simplicity of these expectations are many layers of culture, power and identity. Any changes to macro, meso and micro norms are very difficult to make and frankly easier to resist that act upon for most people. Therefore approaches from leaders and leadership scholars need to be vigilant, vocal and intentional about the purpose for seeking such commitments.

This paper drew together current perspectives underpinning contemporary leadership in the 21st century, a time considered volatile, uncertain, complex and ambiguous (VUCA)[60]. It calls upon the Cilliers's Legacy to invite pause and sense seeking in our consideration of leadership studies today. Cilliers entreated us, as ethical scholars, to be mindful and modest in our claims for the unknowable and uncertain contexts that frame our work, to be mindful about the reach of these claims and be aware of the constraints that make these claims possible. Given these restraints, we nevertheless have choices. We can succumb to threat rigidity and 'business as usual' in the face of these messy and unknowable conditions, or take up Fullan and Scott's[43] call to enact a 'ready, fire and aim' for the different kinds of leadership we wish to see and for the leaders we wish to be. We do have agency and we do have choices to co-create this important work of leadership at every level of the knowledge-intensive enterprise and beyond.

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