LEADERSHIP AND THE LENS OF A PROFESSION

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In the Call for Book Chapters for this volume, the editor specifies that this book "is not the place for chapters on dominant social-psychology approaches to leadership….We very much respect those approaches, but we are looking for things that are radically different." In a more generic sense, such a statement implies that we appreciate that a scientific approach to leadership has merit, but we also appreciate that non-scientific approaches (e.g., literature, humanities, history) have merit as well.

Is there a vantage point from which to integrate scientific and non-scientific approaches to seeing the domain of leadership? In the phrasing of Vladimir Nabokov (2000), "Does there not exist a high ridge where the mountainside of 'scientific knowledge' joins the opposite slope of 'artistic imagination'?" The purpose of this essay is to suggest that one potential vantage point is to view leadership is through the lens of a "profession." Many professionals draw upon both codified science and tacit knowledge in their work. For example, medical doctors draw upon sciences such as anatomy and pharmacology while also drawing upon more abstract, subjective knowledge. Can we consider "leaders" as professionals in order to join conceptually these two sides of the "ridge"?

The two sides of the ridge

At a conceptual level, many writers accept that leadership has components that encompass both science and art. A sampling of some of their observations includes the following.

> Some of leadership must reside inside the manager. The fact that those inside beliefs and values are hard to observe or measure shouldn't trap even dedicated empiricists into denying their functional relevance. (Leavitt 1989, 45)

> Leadership might better be considered as an art rather than a science, or, more specifically, as an ensemble of arts….Four particular arts mirror four of the central features of leadership….Science may help the leader and the organization achieve these but fundamentally they are all subjective issues and are better considered as various arts. (Grint 2000, 27)

In essence, leadership seems to be a domain that could be better understood by triangulating from both science and the humanities. Historically, these two domains are not as integrated as might be beneficial. They seem to be two camps that do not always embrace the other, as the leadership literature relies almost exclusively on empirical and theoretical papers. This rift between science and humanities was the topic addressed by C.P. Snow (1959/1965), in his Rede Lecture, *The Two Cultures*, delivered at Cambridge University in 1959. Likewise, Erwin Schrödinger, in his Shearman Lecture (1948/1954, 9), *Nature and the Greeks*, delivered at University College London in 1948, said, about these two camps, that they:

> Ignore each other, little short of contempt. In a treatise on physics or biology…to digress to the metaphysical aspect of the subject is considered impertinent, and if a scientist dare, he is liable to have his fingers rapped and left to guess whether it is for offending science or the particular brand of metaphysics to which the critic is devoted.

Wilhelm von Humboldt (c. 1809), in his vision for the newly established University of Berlin, saw an idealistic intellectual community in which scholars with overlapping interests would come together and build interdisciplinary synergy from interaction with colleagues. As sciences splintered into specialties (e.g., sub-specialties of physics or chemistry) that developed their own jargon and methods, as well as separate conferences and academic communities, this element of Humboldt's vision never took root. Snow (1959/1965, 19) observed that "All the lessons of our educational history suggest that we are only capable of increasing specialisation, not decreasing it." And once a scholar has invested years or decades into a particular specialty, the cost, both in terms of time and mental energy, of integrating one's research with a foreign field or subfield, can be very high.

Many scholars generally agree that the domain of leadership might benefit from a perspective that is capable of crossing from one side of the "ridge" to the other. However, vehicles that might be useful to accomplish that task remain elusive. We propose that seeing leadership as a profession is one such vehicle.

What is a profession?

There is not a uniformly accepted definition of what constitutes a profession or what separates it from other occupational groups (Abbott 1988; Augier and March 2011). For a common starting point, we will consider Abbott's (1988, 8) admittedly "loose definition": "Professions are exclusive occupational groups applying somewhat abstract knowledge to particular cases." There are three elements in this characterization. First, professions assert jurisdiction over their particular domain. For example, dentists claim jurisdiction over a defined domain of knowledge and the application of that knowledge.

Second, a portion of the body of knowledge that the profession applies is abstract (Friedson 2001; Hughes 1963; Jackson 1970). As characterized by Hughes (655-656):

> A profession delivers esoteric services—advice or action or both—to individuals, organizations, or government; to whole classes or groups of people or to the public at large…The nature of the knowledge…on which advice and action are based is not always clear; it is often a mixture of several kinds of practical and theoretical knowledge.

In addition to their abstract knowledge, most professions are also rooted in more objective underlying knowledge bases in which the profession is well-trained. Some professions are rooted in a synthesis of multiple disciplines of study. For example, the medical profession is rooted in a study of anatomy, physiology, pathology, organic chemistry, and pharmacology. The engineering profession is rooted in mathematics, physics, and chemistry.

Although these bases provide the codified objective knowledge, professions also include an element of tacit knowledge (Torstendahl 1993), which Polanyi (1958) described as knowledge that is difficult to express, stemming from the fact that individuals can know more than they can tell. These additional bases of tacit knowledge are what constitute our second element of what separates a profession from other occupations. As described by Jackson (1970, 7):

> [Professions] encompass specialized areas of knowledge which affect all individuals but where only a few can become expert. By virtue of their character, these areas of knowledge…take on a mystique which distinguishes them from more mundane matters. The professional becomes necessarily the high priest of that area of knowledge in which [s/he] is acknowledged to be competent.

Third, professions provide their blend of objective and abstract knowledge to particular cases. In medicine, a "particular case" will usually involve applications at the individual person level. For example, a medical doctor needs to advise a specific, individual patient regarding whether back surgery on a herniated disc will resolve a certain problem for that specific patient. An engineer may be called upon to apply engineering knowledge to assess whether a specific aging bridge is unsafe.

In summary, then, a profession (1) has jurisdiction over an identifiable domain, (2) applies abstract knowledge to which only members of the profession are privy—in addition to more objective knowledge (e.g., pharmacology), and (3) provides its combination of objective and abstract knowledge to specific cases.[1]

What does a professional do?

Based in these characteristics, Abbott (1988, 40-52) describes three elements of professional work. First is *diagnosis*. This involves gathering relevant information about the specific case, excluding irrelevant information, and organizing that information into the professional's "picture" of the specific case. Then the professional takes that picture and compares it to his/her "internal dictionary" of situations that the professional is able to address. For example, a dentist will listen to the patient's description of symptoms while realizing that a lay person's description may contain irrelevant information or incorrect conclusions. The dentist will gather his/her own firsthand information by means such as direct observation and X-rays. Then the dentist takes this "picture," considers it against his/her "internal dictionary" and diagnoses the problem.

The second element is *treatment*. While diagnosis organizes the information of a given case and takes it into the system of the professional knowledge base, treatment returns instructions from that knowledge base to apply to the specific case. The third element is *inference*. This element brings the abstract professional knowledge to bear in mediating the transition between diagnosis and treatment. That mediation may take place in one or both directions. First, it may shape the precise information the professional seeks when assembling a diagnosis. Second, it may influence the way the professional interprets and applies the potential treatments coming from the professional knowledge system. For example, in a routine examination, a dentist may discover a cracked tooth of which the patient is unaware. Dentists will vary, to some degree, in their opinion of when a cracked tooth is sufficiently cracked to engage in treatment versus continued monitoring and whether the patient should be made aware of the discovery.

In professions that are rooted in objective science (e.g., engineering, medicine), why is there a need for the professional to utilize abstract judgment in the form of inference? One might argue that the sole responsibility of a professional is to draw on empirical evidence, not inference. For example, "evidence-based medicine" is strongly emphasized as the "gold standard" in medicine (cf. Djulbegovic and Guyatt 2017). In this context, the "evidence" is that which comes from randomized control trials. Why should medical doctors have the "right" to go against the evidence of such trials? The answer to this question requires a review of inductive inference.

Inductive inference

The quandary of inductive inference has been described at least as far back as philosopher David Hume (1739). Briefly, the concern is that inductive inference involves extrapolating from a finite set of observations to contexts beyond those observations. For Hume this means that just because an individual has a set of experiences (i.e. the taste of an apple, or for our discussion the link between a medical symptom and an underlying cause) it does not follow that you can be certain that future events will act in a way that is similar to previous events. However, we have a challenge from Hume: How do we justify inductive inference? How is it defensible that we can extrapolate from one set of observations to contexts where we have not made observations? As phrased by Hume (1739, cited in Vickers 2017), what is the defensible basis for believing that "instances of which we have had no experience resemble those of which we have had experience?" For example, in medicine, is it justifiable to immunize children with a treatment that was developed using only adults in the randomized control trials?

Another way of illustrating this puzzle is to talk in terms of generalizability. How generalizable are the findings of science? Complexity theory (e.g., Bak 1996; Holland 2014; Kauffman 2008; Mitchell 2009) is informative here. Complexity theory views sciences in a hierarchy, with sciences that deal with closed mechanical systems (e.g., particle physics) at the bottom of the hierarchy and those that deal with open complex systems (e.g., social science) at the top of the hierarchy. By the nature of closed mechanical systems, generalizability is so high that the professional applying expertise to individual cases has no problem—in the extreme, all cases are identical. For example, we ask the physicist (physical sciences) whether gravity will operate next Tuesday on Sunnyside Road in Coatbridge, Scotland. The physicist who knows absolutely nothing about Tuesdays on Sunnyside Road will answer with a resounding "Yes, absolutely!" However, when we ask the dentist (life sciences) whether the pain from today's root canal procedure will subside enough to return to work tomorrow, the dentist answers "probably." When we ask the

economist (social scientist) whether the stock market will go up or down tomorrow, s/he laughs at the idea that we think we can get a trustworthy answer.

These examples illustrate two key dimensions to generalizability at work. First is generalizability across contexts. Because it involves a mechanical system, the physicist is certain that gravity operates by the same principles anywhere on Earth because the phenomena is has universal attributes. It will operate identically in Scotland, Wales, Gibraltar, and beyond: "If I am anywhere on Earth, gravity will operate according to identical principles." Second, in many mechanical systems, the future is identical to the past and thus the systems are generalizable across time. Astronomers know all the causal elements that lead to a solar eclipse; when those elements converge in the future the same way they have converged in the past, a solar eclipse will occur. Future solar eclipses—even those more than a century from now—can be predicted with pinpoint accuracy in both location and time. Because of the nature of closed mechanical systems, if all causal factors can be identified, the future is often identical to the past and can be predicted.

In sum, physicists and astronomers can often generalize confidently because all cases are identical across time and context. Medical doctors and dentists have less ability to generalize because there is some variation across cases, but they can still make informed projections. Dealing with open, complex systems with a high level of noise in datasets, social scientists have the least ability to generalize because there is the greatest variation across cases. This variation occurs with regard to both time and context.

Additionally, in open, complex systems, we are often unlikely to have identified all causal factors. For example, while we believe we know all causal factors of solar eclipses, we have less confidence that we have identified all possible factors that can influence an employee's organizational commitment. An empirical test that can explain just 5% of the variance in organizational commitment can be published in a top-tier journal; however, the cause of the other 95% of the variance in organizational commitment is often not captured or addressed in that study. Therefore, being able to generalize from one context to another is less reliable. This happens because we do not know which of the yet-to-be-identified causal factors may or may not exist with regard to other cases, varying either across context or across time.

Now, we return to of question of why medical doctors should have the "right" to go against the evidence from randomized control trials. Variability across time and context suggests that evidence-based medicine will not always offer an objective, definitive treatment that can be generalized to all cases. Worsham and Jena (2019) recommend that

> Skilled and informed physicians applying the art of evidence-based medicine may "deviate" from the evidence base because they find there are patients for whom evidence-defining studies are not generalizable….And these deviations may be clinically optimal….The optimal application of evidence is as important as awareness of that evidence, and physicians must be artists, using their best judgment to determine which evidence applies best and which treatments will be most likely to benefit individual patients.

In effect, Worsham and Jena are saying that, in the professional work element of inference, medical doctors have the right, by virtue of their training and experience, to decide what broad evidence is generalizable to specific patients—to be the arbiter of when inductive inference is and is not justified. By virtue of the fact that there are positive correlations between a symptom and a diagnosis (i.e. acute chest pain and heart attack), but that these connections are not 100 percent (i.e. the chest pain could stem from many other causes), a medical doctor must often draw on inference to provide a patient with a diagnosis. In contrast, in the natural sciences, broad evidence from past contexts is quite reliable to predict future phenomena. For example, when was the last time astronomers predicted a solar eclipse and no eclipse occurred? On the contrary, broad evidence is less reliable in life sciences because individual cases have some variation. In social sciences, there is the greatest variation among cases, and the reliability of evidence from past contexts to predict future contexts is less than ideal.

In short, inductive inference is a quandary that—for life sciences and social sciences—cannot be justified through purely logical means (Lewens 2016). Using abstract knowledge, the professional traverses that void by deciding when generalizability is justified and when it is not. Furthermore, the professional is trusted as the judge of what treatment to apply to cases when generalizability is in question.

Considerations for the domain of leadership

Dealing squarely in the arena of social science, leadership necessarily deals with issues where 100 percent of causality has not been identified. It deals with phenomena that cannot be assumed to be constant across contexts; that is a basic premise of the contingency theories of leadership. Likewise, we cannot be assured that the phenomena are constant across time. Approaches that worked for Churchill during the 1940s may not have the same degree of success if applied today even in a wartime scenario. Therefore, leadership is a domain where we cannot assume that the future

will operate in a pattern identical to the past. In fact, recent trends towards more complex and innovative patterns of work in the knowledge economy place greater emphasis on the adaptability of leaders and their ability to manage the often conflicting demands of bureaucratic environments and emergent system dynamics simultaneously (Uhl-Bien Marion and McKelvey 2007).

The need for the advocacy of inductive inference in the leadership domain is made more clear by considering the implications of a study by Derue, Nahrgang, Wellman, and Humphrey (2011). The authors draw from 13 meta-analyses and 46 independent studies to find that leader traits/characteristics and leader behaviors explain 31 percent of variation in leader effectiveness. This implies that 69 percent of the outcomes of leader effectiveness is explained by something beyond leader traits/characteristics and behaviors. And for a given leader, the traits/characteristics component (demographics, personality, etc.) is largely settled before emerging as a leader as a matter of birth or characteristics developed before adulthood. Presumably, for many leaders, the question that is on the forefront of one's mind is "what can I do to change the future for the better under the current conditions of my organization?" Given the limits described in the current paper of using leadership as a prescribed method (i.e. if you are X type of a person faced with Y diagnosis then you should proceed with treatment Z), an effective leader must develop the capacity to adapt to new situations and strategically alter his/her behavior and activities in accordance with tacit knowledge or inductive inference. Even with the full, accumulated studies about leader emergence and leader effectiveness, this need does not dissipate. It remains present because 100 percent of the causal antecedents of leader effectiveness are not identified and documented.

These characteristics indicate that, because inductive inference cannot simply be assumed (e.g., as in predicting solar eclipses), leaders should be justified in applying their abstract knowledge. Phrased another way, because the future cannot be assumed to replicate the past identically, leaders must be the arbiter of when inductive inference is justified and when it is not justified. Where it is not justified, leaders are expected to make decisions based on their "mysterious abstract knowledge."

To this point, we have given examples of professionals who are medical doctors, dentists, or engineers. However, maybe the best analogy for leadership is the profession of architecture. Some leadership writers (e.g., Grint 2000) suggest that the artistic side of leadership may be the more critical side, and that element has similarity to the profession of architecture. Vitruvius (translated by Rowland Howe and Dewar 1999), the Roman architect of the first century BC, observed that a building must have three qualities—stability, utility, and beauty. Whereas journeymen

architects may excel in the first two of these, one mark of the true master is the ability to combine them with the third—the artistic element of architecture. For example, Antoni Gaudí, the Spanish architect of Barcelona's Sagrada Família, had such an inspiring vision combining scale with Gothic and Art Nouveau forms, that the cathedral, still unfinished after 133 years, has over three million visitors a year (Berlin 2019). The energy and excitement of the experience for these visitors is both palpable and unique. This may be the appropriate analogy for the leader as professional. Whereas journeyman leaders may well capture the dimensions that parallel architecture's elements of stability and utility, the artistic side is also incorporated by the true masters. Vitruvius asserted that architects need to have mastery of geometry, drawing, lighting, philosophy, history, theatre, music, medicine, and law—indicative of a breadth that covers science, arts, and humanities. Similar assertions of breadth perhaps should be in order for master leaders as well.

The concept of master leaders who successfully apply objective and subjective knowledge to complex situations can help to explain one of the apparent oddities of leadership scholarship and teaching. Leadership is a domain where—despite the traditional dominance of empirical research and prescriptive models in the academic literature—there remains widespread interest in the unique experiences of individual leaders in specific circumstances. For example, best-selling leadership books include those by experienced CEOs like Richard Branson and Jack Welch, as well as inspiring accounts about famous leaders in other contexts (e.g. Ernest Shackleton's polar explorations, Nelson Mandela's role in liberating South Africa from apartheid). People are similarly fascinated by documentaries about great leaders and opportunities to hear from current leaders in person or via mechanisms such as TED Talks. From a traditional perspective, there is little to be gained from anecdotal lessons that offer a complete lack of generalizability; the consumers of these materials are highly unlikely either to encounter similar challenges or to face similar decisions. And yet, if we begin to take into account the artistic aspects of leadership, we can appreciate the mastery of these individuals and see them in the same professional light as Gaudí. Using Grint's (2000) approach, we can laud master leaders and learn from their artistic use of identity, strategic vision, persuasive communication, and organizational tactics even if we will never replicate their unique works of art.

We recognize that this view of seeing leadership as a profession—conferring the right to use tacit knowledge and to be the arbiter of when inductive inference is warranted—might not go over well with the various institutions that teach the science of leadership based on the empirical and theoretical literature. Nonetheless, we believe that scholars should move beyond this traditional approach to incorporate the humanities in the research and teaching of

leadership. As we have argued in this paper, leadership is better suited to be viewed as a profession, for it relies on the abstract and codified knowledge that comes through experience. Or as Mark Twain (1892) quipped in *The American Claimant*, experience is "the only logic sure to convince a diseased imagination and restore it to rugged health."

End Note

[1] Some writers (e.g., Barker 2010; Flexner 1915) see the question of whether a given domain is a profession as a dichotomous declaration. Abbott (1988) tends to view meeting the criteria as being continuous. For example, he notes that some domains generally accepted as professions (e.g., nurses) do not unequivocally meet all the criteria while other domains generally not viewed as professions (e.g., automobile mechanics) meet some of them. Perhaps the weakest link in seeing leadership as a profession is the lack of exclusive jurisdiction. In this regard it is not unlike nursing. (i.e., Nursing shares much of its domain with the profession of medical doctors.) In this essay, we follow Abbott's contention that the defining criteria can be viewed continuously.

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