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Abstract

Leadership is a management tool to direct effective achievement of goals. Historical investigation can provide a valuable lens for the study of leadership styles. To that end, this study examines the disparate approaches of Roald Amundsen and Robert Scott as they raced to be the first explorer to reach the South Pole. The objective of this study is to analyze the leadership techniques used in these expeditions, and to determine how they shaped the outcome of each. The process of tacit knowledge and experience coalesces and fosters both leadership and action that are not only communication-oriented and value-driven, but also rooted in growth mindset and reflexivity. Both concepts proved to be imperative to the success of both Amundsen and Scott's expeditions. Ultimately, the experiences, choices, and eventual fate of polar explorers Roald Amundsen and Robert Scott provide a unique view of the human endeavor that holds valuable lessons for leaders in a variety of professional settings.

Introduction

Driven by national pride and personal ambition, early polar explorers such as Roald Amundsen and Robert Falcon Scott have captured and held western society's imagination for over a century. Much has been written about these men and their exploits. Differences in the explorers' personalities, their approaches to polar travel, and their respective relationships to science have been well documented (Elzinga, 2012). Little attention, however, has been paid to the emergent lessons for leadership that can be gleaned from the disparate knowledge systems and experiences employed by these explorers.

Critical to the expeditions of these polar sojourners was the curation of highly-specialized knowledge systems. What made the curation of these knowledge systems challenging for both explorers, however, was the absence of first-hand experiences. In the words of Savitt (2004), "knowing what to know was a constant challenge" (p. 153), and Amundsen and Scott followed disparate paths in knowledge acquisition. While Amundsen had not journeyed in Antarctica, he demonstrated knowledge of polar areas prior to his expedition to the Antarctic pole, and this holistic understanding of geographical polar climates, along with technological and

leadership skills aided in the success of Amundsen's exploration. Comparatively, though Scott had direct experience in the South Pole, he and his team conducted their expedition not fully understanding the survival stakes required to be able to survive in such an extreme climate. Much of the difference here is one of activating various funds of knowledge and experience to achieve success.

Much can be learned from how these leaders achieved personal knowing of how polar exploration was done (Savitt, 2004). All of this culminated in complex ways of harnessing knowledge and experience, having implications for success and efficacious leadership. The two leaders presented vastly different personalities, strategies for success, technical competence, and decision-making capabilities. These are surely tied to each man's unique background and experience, but is further compounded by differing views concerning valid forms of knowledge, and what constitutes a leader of expeditions at the extremes of the earth.

The objective of this study is to analyze Amundsen's and Scott's expeditions and reveal how their unique approaches to leadership hold valuable lessons for leaders in a variety of professional settings today. We conceive this as a process in which knowledge and experience coalesce to foster leadership in action. An initial question we began this project with is how can an examination of historical events translate into practice for leaders in various contemporary settings? We begin with a brief overview of the application of leadership theory. Next, we provide an explanation of microhistorical methodology before further exploring the historical case studies of Amundsen's and Scott's expeditions. From these cases, we argue that there are distinct and important elements of historic leadership that have relevance in the professional context in which today's leaders operate.

Application of Leadership Theory: The Psychology of Successful Leadership

According to Stanford University psychologist, Carol S. Dweck, mindset — or method of thinking — reveals much about how successful leaders cultivate success. In *Growth Mindset: The New Psychology of Success* (2016), Dweck studies the difference between a fixed mindset and a growth mindset. In a fixed mindset, the pressure to have answers is predominant, but in a growth mindset, the pressure to learn through experience is paramount (Dweck, 2014). Dweck advocates for this kind of mindset to encourage growth and fulfill one's personal potential. Growth mindset, when taken in the context of polar exploring, provides the backbone for the qualities leaders in extreme environments should foster. An overarching characteristic of growth mindset is that leaders believe in mutual teamwork in which intensive work equates to more skills learned.

"Leaders also need to keep growing in order to keep leading. They cannot expect their followers to grow and improve if they aren't doing so" (Maxwell, 2021, p. 18). This notion of continual growth and learning is also at the heart of a growth mindset. Another notable aspect of growth mindset in leadership is the idea that "leaders with a clear moral identity learn from their mistakes, but are not defined by their past" (Caldwell & Anderson, 2021). This is at the heart of growth mindset, and when a leader can "under their nature of self-improvement," "know oneself, [and] be open to others' feedback," continuous improvement is imminent (Caldwell, 2021). When paired with the concepts in Maxwell's (2021) book, *Leading in Tough Times*, the idea that "the only way to adapt to changes is to grow" (p. 18) becomes the foundation for not only continuous improvement in leadership, but in mission as well.

The ability for a leader to foster adaptability to dynamic environments [such as Antarctica] is the building block to navigating through challenges. Maxwell's (1998) book, *The 21 Irrefutable Laws of Leadership*, mentions that "just as you need a growth plan to improve, so do those who work for you" (p. 1). In other words, while leaders are developing their own potential for success, they must simultaneously support those they lead, setting others onto a course for success. A successful leader can apply a growth mindset to everyday life through adaptive response garnered through application and experience. The next section further explores how leadership theory finds its way into practice.

Leadership Theory in Practice

In Christiane Prange's 2016 article, *Engaging with Complex Environments: Why Agility Involves More than Running Hard*, leadership is broken into three hemispheres: Authentic, Relational, and Adaptive. Whilst these three leadership classifications are of equal importance, in the context of applying leadership theory to the expeditions of Amundsen and Scott, the Adaptive leadership style plays a significant role in shaping leadership strategies in the extreme environment of the Antarctic pole. This idea goes hand-and-hand with growth mindset — in order to be adaptable, one must also be able to be future-oriented and open to growing with the changing environments. "Authentic, ethical, transformational leadership provides an enthusiasm and support for that which is good and moral and fosters trust and enthusiasm" (Hester, 2021). This sensibility is applicable to not only leading Antarctic Expeditions, but also to leading teams in modern day business settings.

"Leadership is in part the task of building harmonious, collaborative teams as well as the task of leading them" (Fairholm, 1994, p. 9). In Adaptive leadership, "leaders recognize the bigger picture. They are able to propose a broad spectrum of leadership options to their teams and initiate and drive organizational changes" (DeRue, 2009, p. 125). Essentially, leadership is a relationship between those who aspire to lead and those who choose to follow, and to lead effectively is to understand the dynamic of the leader-constituent relationship (Kouzes & Posner, 2017, p.30).

Knowledge development plays a significant role in understanding adaptive leadership, which begins with the underlying thoughts, ideas, and theories that contribute to our understanding of what makes a successful leader. Most theories define leadership according to either traits (Bass, 1990) or styles (Tannebaum & Schmidt, 1973). Superimposed on this theory of leadership are the dimensions of charismatic leadership (House, 1977), situational dependence (Spiller, 1929), and contingency (Fiedler, 1967). These categories (trait, style, charismatic, situational, and contingency) classify the five broad categories of early leadership theory, and are the fundamental bases for characterizing a leader.

Most people look for and admire a leader whose direction they would willingly follow, and for the majority of people to follow a leader willingly, they often look for traits such as "honesty, competency, ability to inspire, forward-looking" (Kouzes & Posner, 2017, p. 35). In terms of leadership theory, leaders are typically described as people who are "opportunity-oriented, intuitive, resourceful, feed-back oriented, and superior team builders" (Fairholm, 1994, p.63). A leader typically exhibits several (possibly all) of these traits, but one of the most important factors of what constitutes a "good leader" is not only their personality traits, but also their ability to build the "constituent's willingness to believe" in them (Fairholm, 1994, p. 37). Being genuine in leadership is an arching strength for leaders to gain their constituents' trust. In

being both action-oriented and open to feedback, leaders are better able to gain the trust of their team, since it puts a value on the team members' voices and ideas.

The Importance of Values, Integrity, and Trust in Leadership

Economist John Kenneth Galbraith suggested that “all of the great leaders have had one characteristic in common: it was the willingness to confront unequivocally the major anxiety of their people in their time” (as cited in Maxwell, 2021, p. 7). Successful leaders can “rally the troops” during times of great anxiety by facing the people's fears head on. They address these fears and meet them with forward-thinking strategies that combat the trepidation by developing a shared vision people can support. The common and overarching factor that contributes to people's willingness to follow a leader is attributed to commonality between the follower and the leader's values (Fairholm, 1994, p. 10). Values, in this case, can be defined as “goals which behavior strives to realize. Any activity which is oriented toward the accomplishment of some end is value-oriented activity” (Lazlo, 1972, p. 104). Therefore, successful leaders should strive to create an environment where their actions and behaviors inspire their followers to view the reasoning behind their values.

If a leader can suitably express to their follower-base what their values are, and then subsequently behave in a way that genuinely displays these values, this builds a culture of trust. Through a trust-based culture, leadership has the opportunity to develop and flourish (Lazlo, 1972, p. 10). When a leader develops a culture of trust that is premised upon shared visions and concerns, unity is created in the team (Lazlo, 1972, p. 11). Essentially, the main goal that a leader should first work on in their team is “inspiring a shared vision - which requires finding common ground among those people who have to implement the vision” (Kouzes & Posner, 2017, p.108). By establishing the common ground, effective leadership provides people a reminder “of why they are doing what they do, and of the benefits that await them as a reward for their hard work” (Maxwell, 2021, p. 9). When a leader has a shared vision, they are able to focus upon themselves and their teams' goals; the vision then becomes successful when the leader reflects it in “every choice and action of their team” (Fairholm, 1994, p.177).

In the context of the Antarctic expeditions, a trust-based culture was essential to developing teamwork. When challenges and subsequently the requirement of teamwork intensify without trust established between leaders, their constituents and teammates, a plan to achieve a shared vision cannot be attained (Maxwell, 2003, p. 40). An *Adaptive Leader* must therefore look at a scenario as a bigger picture and assume the responsibility to promote a trust culture that promotes teamwork. “By knowing their constituents, listening to them, and taking their advice” leaders are able to give their constituents a voice and earn their trust as they lead their followers to achieve their shared vision (Kouzes & Posner, 2017, p.109).

When a leader demonstrates the behaviors and values they advocate, then it is more than likely that their followers will see them as trustworthy. The behavior of the leader is crucial to their success in leadership – the standards of behavior to which they hold themselves should ultimately inspire followers to replicate accordingly. This idea is parallel to showing personal integrity. Covey (2004) defines integrity as “conforming reality to our words,” or “keeping promises and fulfilling expectations;” if a leader maintains personal integrity and engages in conduct that their followers admire, then their followers will want to exhibit similar behaviors as well (pp. 195-196). Building off this idea, an essential foundation of leadership is

“credibility,” and credible leaders are characterized by “doing what they say they will” (Covey, 2004, pp. 37-39).

Another important factor which affected Amundsen and Scott’s expeditions is the concept of the “reflective practitioner.” This term was coined by Donald Schon (1983), who originally focused on an amalgamation of tacit knowledge, skills, and continual learning. In this regard, his work emphasized the personal dimension that facilitates the acquisition of skills and technical knowledge. Elzinga (2012) noted that the “reflective practitioner” concept has been broadly applied to describe the knowledge mobilization across many fields including engineering, product development, terrestrial navigation, forestry, and cattle breeding. A noteworthy addition to this list is the role of the teacher as a reflective practitioner (Copeland, Birmingham, de la Cruz, & Lewin, 1993). In addition to focusing on Amundsen’s and Scott’s growth mindset, leadership, and knowledge systems which impacted their expeditions, the concept of reflexivity also shapes the outcome of their time spent in Antarctica. By including the concept of reflexivity, we can analyze how both expeditions used knowledge mobilization across several different fields, and how this affected the outcome of each explorer’s expedition.

Beginnings

Microhistory

By digging into the past experiences of Amundsen’s and Scott’s expeditions to the South Pole, our goal was to translate what has occurred historically into the current discourse on leadership in action. Much can be gained through this form of inquiry, for the interlude of time affords us the privilege of perspective across time and space to apply a lens of critique and the ability to synthesize a more holistic account of what has happened in the not-too-distant past. Our strategy is to do this by examining microhistories rather than essentializing master narratives. Looking at very specific events — at times dislodged from these overwhelming meta-narratives, but still mindful of the narratives’ strengths — gives us the chance to explore very discreet events and choices individually before cobbling them together again.

We use a microhistorical approach to examine the knowledge systems employed by particular early polar explorers. By contrasting two competing expeditions, our aim is not to reconstruct historical events (many others have done so), but to represent the events, decision-making, and outcomes in a way that is applicable to leadership. We wanted to understand not only the eventual choices each leader made, but also the epistemological assumptions that lay behind those choices. A great deal has been written about these two expeditions, their differences are heralded as exceptional in their divergence, yet, little application has been made regarding lessons for leadership in practice.

With microhistory as a form of inquiry, we are primarily concerned with very specific and smaller units of analysis — in this case, two individual polar expeditions — rather than unpacking the entire range of European exploration. Yet, in these discreet stories we can investigate much larger ideas and concepts. In this way, we are following the lead of Charles Joyner (1999), who defined microhistory as asking “large questions in small places” (p. 1). So, these specific microhistories form the empirical base for our larger questions of how effective leaders learn and experience things and how they weave these perspectives into the craft of effective leadership.

The examination of the expeditions and the choices made by expedition leaders allowed us to first explore patterns of thought and leadership and second, to focus upon emergent themes arising out of the historical data. This, then, is a historical tale, but one that has important resonance within the larger discourse of leadership studies and the environments in which leaders engage.

Two Men, Two Expeditions, One Pole

Amundsen

Roald Amundsen, born in 1872 near Oslo, Norway, is arguably one of the most successful polar explorers of the Heroic Age (American Society of Polar Philatelists [ASPP], 2015). Raised in the comfortable home of a Norwegian shipping family, his parents pushed him to study medicine. Amundsen, however, was not attracted to the profession (Hamilton, 2010). Enchanted by the works of John Franklin, a Briton who died while searching for the Northwest Passage, Amundsen developed a “fervid fascination” with cold-weather exploration (Amundsen, 1927, p. 2). While still a boy, Amundsen began to prepare himself for his chosen career. To this end, Amundsen wrote:

At every opportunity of freedom from school, I went out in the open, exploring the hills and mountains which rise in every direction around Oslo, increasing my skill in traversing ice and snow and hardening my muscles for the coming great adventure (Amundsen, 1927, p. 3).

His preparations, however, were not confined to matters of physique. Despite reproach from his parents, Amundsen always kept his double bedroom windows wide open, even during the dead of winter. In so doing, he sought not only to harden himself against cold, but also to “live *with* cold” — learning to thrive in its embrace (italics added for emphasis, Bowman, 1958, p. 47), an intimacy with the harshness bred through direct experience.

After the death of both his parents, Amundsen abandoned his medical studies and turned to address a critical gap in his training for polar work: seamanship (Bowman, 1958). In 1897, he became the second mate on the ship *Belgica*, a research vessel commissioned for a landmark expedition to Antarctica (Hamilton, 2010). The *Belgica* expedition was the first to spend an entire winter in the Antarctic region after the ship became locked in ice in the Bellingshausen Sea and drifted without human control for over a year. Captivated by the unguided drifting, this experience strengthened Amundsen’s belief in embracing the elements, rather than fighting them (Bowman, 1958). This is an important characteristic Amundsen displays here in terms of growth mindset — by keeping an open mind in the face of hardship rather than maintaining rigidity against the elements, Amundsen was able to lead his team to adapt to the climate rather than to fight it. The *Belgica* expedition also gave Amundsen first-hand experience with potential medical perils of polar work, such as scurvy and dementia (Hamilton, 2010), which provided Amundsen with the background knowledge to be able to succeed in the Antarctic and adapt to the harsh, ever-changing climate.

In 1903, Amundsen turned his attention northward, determined to complete the work of his childhood hero, John Franklin, and become the first person to traverse the Northwest Passage in a single trip. Over the course of this expedition, Amundsen interacted extensively with the Inuit peoples of the Arctic region known as the Netsilik. In his contact with the Netsilik, Amundsen learned how to make clothes from animal skins, build snow houses, and treat severe frostbite (Hamilton, 2010). Amundsen viewed personal experience as the most

important “equipment” a leader could possess (Bowman, 1958, p. 48), and in this regard, his time with the Netsilk greatly fortified his capabilities.

Shortly after his success in the North, Amundsen was again preparing for another polar expedition. Using the knowledge derived from the Netsilk, he designed his own goggles, skis, dog harnesses, and pemmican (lean ground dried meat mixed with melted fat; Huntford, 1999). Amundsen procured Fridtjof Nansen’s polar vessel, the Fram, for the voyage. Utterly unique, the Fram was designed like a saucer so that it would be lifted above the ice floes rather than be crushed by them (ASPP, 2015).

The purpose of this expedition was to be the first person to reach the North Pole, yet, after Amundsen learned that he was forestalled by Americans Frederick Cook and Robert Peary, he set his sights – in secret – on the opposite pole (Hamilton, 2010). Amundsen felt that another expedition to the North Pole would be anticlimactic, but choose to withhold his change of plan for fear of losing funding (ASPP, 2015). This change of objective set the stage for a dramatic race with Captain Robert Scott who was leading a concurrent British expedition for the South Pole. It was, however, only after Amundsen had left port that he notified Scott, and his crew, of his intention to sail Southward (ASPP, 2015). Amundsen’s crew readily acclimated to new venture (Bowman, 1958).

When asked later why he failed to inform Scott of his intentions sooner, Amundsen commented that Scott’s plan and equipment were based upon scientific research and that by informing him one way or the other would not have caused him to alter his program in any way (Amundsen, 1913, p. 44). Unlike Scott’s loyalty to science, however, Amundsen felt that “exploring in Polar regions was more than a career: it was almost a faith” (Bowman, 1958, p. 47). Amundsen’s devout focus led him to invest all his energy and efforts on being the first to reach the Pole (McKay & McKay, 2012). In Amundsen’s words, “Our plan is one, one and again one alone – to reach the pole. For that goal, I have decided to throw everything else aside” (Amundsen’s diary dated 18 April, 1911; as cited in Huntford, 1980, p. 380).

After seven months at sea, Amundsen landed at the Bay of Whales on January 9, 1911. The expedition camped for the remainder of the winter as they waited for weather to allow for inland travel. In addition to a pre-fabricated hut, Amundsen and his men burrowed into the snow to expand their living space (Bowman, 1958). The winter was spent testing, modifying, and refining their gear. These adjustments included shaving off two-thirds of their sledges’ weight, welding the lids of their paraffin fuel containers, and crafting custom tents, skis, and boots (McKay & McKay, 2012). Their clothes, modeled after the Inuit, consisted of loosely-fitting reindeer furs with inner and outer anorak hanging loosely outside the trousers to allow for air flow (Wylie, 2002).

As was the practice in polar exploration, Amundsen conducted several depot-laying missions prior to the polar march. Amundsen included in a journal entry a note about this depot laying process, which he stated was initiated “on February 10, 1911, [before] we started for the South to establish depots, and continued our journey until April 11” (Amundsen, 1912). The objective was to lay depots along the planned route so that the explorers would not have to carry all of their supplies as they ventured to the pole (ASPP, 2015). Each depot was marked with several long bamboo poles topped with a black flag (Bowman, 1958). Amundsen placed a line of 10 black flags on either side of the depots so his team would be able to find the supplies even if they strayed off course (McKay & McKay, 2012). In just 8 months, Amundsen

and his men laid more than a ton and a half of supplies along the planned polar route (ASPP, 2015).

On October 19, 1911, Amundsen and his party, consisting of four other men, four sleds, and 52 dogs, began their trek to the South Pole (Hamilton, 2010). The men traveled on foot or with skis and the dogs pulled the sledges (Bowman, 1958). Amundsen's time with the Netslik had taught him the value of using dogs for overland travel in cold-weather regions (Hamilton, 2010). Interestingly, the dogs were trained without lashing. Amundsen knew that no beaten, spiritless animal would work as hard and as long as one with a healthy heart and body (Bowman, 1958).

Given that Amundsen had first-hand experience with scurvy while on the Belgica expedition, he made certain that his party received adequate nutrition. In addition to pemmican of Amundsen's own formula learned from the Netsilk, the Norwegians brought stores of berry preserves, whole-wheat flour, chocolate, milk powder, and biscuits (ASPP, 2015; Katz & Kirby, 1991). Amundsen further supplemented the explorers' diet with indigenous food harvested from the polar environment, like fresh seal and penguin meat (Katz & Kirby, 1991). Once underway to the Pole, a final source of nourishment involved the distasteful necessity of slaying the hard-working sledge dogs in order to provide enough food for the men and their remaining animals (Bowman, 1958).

A striking feature of the expedition was that Amundsen's route had never been taken. Though his starting point was 60 miles closer to the pole than Scott's base camp (McKay & McKay, 2012), the Norwegians had no idea what sort of terrain they would encounter. Although they were confronted by a challenging landscape whipped by winds in excess of 35 miles per hour, the party endured. After 56 days, on December 14, 1911, Amundsen and his men succeeded in reaching the geographic South Pole (Hamilton, 2010). As one, all five men raised the Norwegian flag. The team camped at the pole for four days and then, having left a letter to notify Scott of Norway's priority upon the point, Amundsen and his comrades turned for home. They arrived back at base camp on January 25, 1912, "all fit, dogs and men, and in the highest spirits" (Bowman, 1958, p. 56). In fact, Amundsen and his men gained weight as they traveled towards the coast, likening the return journey to a long and somewhat boring ski tour (McKay & McKay, 2012). Overall, Amundsen's single-minded determination to reach the pole, his application of suitable knowledge and experience, the application of time-tested technologies, and his leadership, all contributed to their overwhelming success.

Scott

An English naval officer and polar explorer, Captain Robert Falcon Scott led what turned out to be the second expedition to reach the South Pole, attaining the pole a month and three days after the Norwegians (Hamilton, 2010). Scott was born in 1868 near Devonport, England. He was the middle child of five in a highly respected and well-to-do English family (ASPP, 2015). Early in life, Scott had no ambition to become a polar explorer. As a boy, he was frail in physique and hopelessly indolent (Murray, 2006). He stagnated for many years longing for a cause worthy of his dedication. Having both sides of his family providing the Royal Navy with officers for a number of generations (Bowman, 1958), Scott felt compelled to join the British Royal Navy at age 13 and quickly found his mark as a seaman (Hamilton, 2010).

The possibility of becoming a polar explorer did not come to Scott until he was 30, and even then, it was by chance. The topic of a planned naval expedition to Antarctica arose most

fortuitously out of an impromptu conversation with family friend and geographer, Sir Clements Markham. Taken by the idea, and emboldened by his friend, Scott decided to apply for command of the expedition. His naval record proved impressive and he was selected to lead the expedition (Bowman, 1958).

In August, 1901, Scott and his team set out for Antarctica, carried South by their ship, the *Discovery* (Hamilton, 2010). Admittedly uncomfortable with the unpredictability of natural forces in such a journey, Scott insisted on “complete command” of what he could control: his ship and his crew (Crane, 2005, p. 91). This was a demonstration of how Scott maintained a fixed mindset in his expedition; by maintaining rigidity in his plan with little room for adaptive plans, Scott was not flexible in his response to the extreme climate. After landing in McMurdo Sound, Scott launched several dismal attempts at inland exploration using dogs (Scott, 1905). It was a foot march, however, that delivered Scott, along with Ernest Shackleton and Edward Wilson, to the latitude of 82 degrees 17 minutes. Just 500 miles from the South Pole, this was the furthest south that any humans had ventured to date (Hamilton, 2010). Upon returning from the grueling overland march, Scott found himself again in opposition with nature; this time his adversary was the sea. For five weeks, Scott and his men tried tirelessly to break the *Discovery* free from the pack ice (Bowman, 1958). On week six, the “awful unseen agency” relented (Scott & Turley, 1915, p. 187), and the *Discovery* was free to sail back to England.

Although many saw the voyage of the *Discovery* as great success, Scott felt unfulfilled in conceding his march just shy of the South Pole. In addition to this disappointment, he felt that reaching the pole would have provided important scientific information about the Antarctic continent. Ultimately, Scott held “scientific investigation as the most practical reason for an Antarctica venture” (Bowman, 1958, p. 28). Therefore, when given the opportunity to lead a second expedition to Antarctica – concurrent with Amundsen – Scott struggled internally to prioritize his two ambitions for accepting the command: get to the Pole first and gather scientific information about the Antarctic. Unlike Amundsen, whose sole focus was on reaching the Pole, Scott’s goals sometimes left him in a state of internal conflict. Even on the day of their departure, Scott beefed “I don’t care much for this sort of thing. All I want is to finish the work we began in the *Discovery*. Then I’ll get back to my job in the navy” (Huxley, 1977, p. 192).

Once underway, Scott revived his zeal for the challenge. For this expedition, Scott procured a large, wooden whaling ship called the *Terra Nova*. Despite the vessel’s sturdy construction, Scott chose to install oak beams from bow to stern to fortify the hull against the crushing pack ice (Scott & Turley, 1915). Again, Scott’s perception was one of opposition with nature. “As she bumped the floes with mighty shocks, crushing and grinding her way through some, twisting and turning to avoid others, she seemed like a living thing fighting a great fight” (Scott, 1913, p. 58). This conflict-driven approach marked a stark contrast with Amundsen’s *Fram*, which was designed to drift as one with the ice floes.

Despite an unceasing battle with the ice, the *Terra Nova* successfully delivered Scott and his men to McMurdo Sound on January 4, 1911, five days before Amundsen would arrive in the Bay of Whales (approximately 440 miles east of where Scott had made landfall; ASPP, 2015). In an almost fanatical interpretation of the British code of sportsmanship, Scott attempted to make no contact with Amundsen’s party. While Amundsen’s base camp location, and further his polar route, were unexplored, Scott’s program was largely patterned after his previous

expedition with Shackleton. Showing minimal adaptability, Scott obsessively tracked his team's progress against Shackleton's log, which was always ready at his side (Bowman, 1958).

In another testament to rigidity, Scott did not spend the winter modifying his gear as Amundsen did. Rather, Scott and his men spent a good deal of the winter writing letters home and trying to keep their prefabricated shelter free of snow and ice (McKay & McKay, 2012; Wylie, 2002). Scott believed that "Man could manage nature" ("Doomed Expedition," 1999, p. 1). Amundsen, by comparison, became one with the environment, allowing the snow and ice to become part of the shelter (Bowman, 1958). Similarly, while Amundsen's group's clothing was modeled after that of indigenous peoples and allowed for free airflow across the body, Scott and his men wore modern wool jumpers and windproof tunics, which although warm, offered limited breathability and failed to dry when wet (Katz & Kirby, 1991). The British embraced modernistic solutions to the challenges they faced in Antarctica. Indeed, adopting tools and techniques of native peoples did not fit the master narrative of European hegemony and of conquering nature (Katz & Kirby, p. 261).

"Scott began depot laying on January 24, 1911," nearly three weeks before Amundsen's exploration team began laying their first depots (ASPP, 2015; Amundsen, 2012). Scott economized in marking his supply depots, opting for only a single flag to indicate the location of each cache (McKay & McKay, 2012). While this made the marking processes faster, it also increased the precision, effort, or even luck, that Scott and his men would need when they set out to find them again. The first depot they laid, consisting of a ton of stores and fodder, was to be located at 80 degrees South along the polar route. Unfortunately, inclement weather resulted in the One-Ton Depot being placed 36 miles short of the intended position — a deviation that may have meant the difference between life and death on Scott's tragic return journey (Bowman, 1958). Even though the placement of the One-Ton Depot was admittedly poor, Scott's own writings continued to suggest a resistance to adaptability: "The proper as well as the wiser course for us is to proceed as though this had not happened. To go forward and do our best for the honour of our country without fear or panic" (Scott & Turley, 1915, p. 259). As asserted, Scott continued his depot laying for the next 9 months despite relentlessly impassive weather (Hamilton, 2010).

It was October 24, 1911 before the weather improved sufficiently for Scott and his men to begin their fateful trek to the South Pole (Hamilton, 2010). The initial party consisted of 16 men, 23 dogs, 10 ponies, and 3 motorized sledges. Scott's first goal was to cross the Ross Ice Shelf. Thereafter, the party was split into three smaller groups. Only one of these groups — consisting of Scott and four others — would carry on to the pole. The supporting groups were sent back to specified latitudes to replenish depots (Preston, 1999).

The bitter environment had eroded Scott's ranks in various ways leaving the final party of five men to attempt the pole on foot alone. The motor sledges had not been previously tested in Antarctic conditions and broke down repeatedly. Relying upon untested and perceived-to-be-civilized technologies resonated with a general Eurocentric distaste for traditional strategies. The ponies also proved to be a mistake as they were ill-suited to the climate and the terrain. With heavy torsos and slender legs, they sunk deep into the snow with every step (McKay & McKay, 2012). Furthermore, the superfine blizzard snow easily penetrated their coats, bringing down their body temperature to dangerously low levels (Bowman, 1958). As for the dogs, an overarching frustration cultivated on the Discovery expedition left Scott with a

general distrust of them (Bowman, 1958). This left man to haul. “For the British, man-hauling was a source of pride, a test of manhood – they liked the purity of it, the struggle between man and nature” (McKay & McKay, 2012, p. 10). In Scott’s words:

No journey ever made with dogs can approach the height of that fine conception which is realised when a party of men go forth to face hardships, dangers, and difficulties with their own unaided efforts...Surely in this case the conquest is more nobly and splendidly won (Scott, 1913, p. 468).

This idea of undergoing noble suffering in a conquest against nature seemed to permeate Scott’s conception of his efforts in Antarctica.

In terms of meals, Scott’s records describe a sort of “Blyton-esque high tea” (Wylie, 2002, p. 257), “with dishes of burnt almonds, crystallized fruits, chocolates and such toothsome kickshaws” (Scott, 1913, p. 325). His provisions also included canned meats and white bread. It was a diet almost entirely lacking in Vitamin C (Katz & Kirby, 1991). Amundsen, who had first-hand experience with scurvy, did not make this same mistake. For the most part, Scott’s crew did not supplement their processed foods with local and nutritionally dense meat, as did Amundsen, who learned nutritional lessons through direct experience and Inuit knowledge systems. By the time Scott’s team left for the pole, they were already dealing with the effects of malnutrition (Katz & Kirby, 1991).

Bad weather hampered Scott’s party from the start of their polar march. At times the team endured a frigid windchill with temperatures dipping to minus 40 degrees Fahrenheit (ASPP, 2015). Relying upon man-hauling took its toll for long hours of physical exertion in the frigid environment and gave way to dehydration. Yet, despite all this, Scott and his men soldiered on. On January 17, 1912, Scott and his four companions reached the South Pole, only to be greeted by the Norwegian flag. Amundsen and his men had reached the pole 34 days earlier (Hamilton, 2010). The heart-rending entry in Scott’s diary, albeit bleak, only hints at the immense disappointment he and his men must have felt: “The Pole. Yes, but under different circumstances from those expected. We have had a horrible day. ...Good God! This is an awful place and terrible enough for us to have laboured to it without the reward of priority” (Sott & Jones, 2005, p. 376).

On the return trip, the five spirit-broken men faced challenges too great to overcome. Blizzard conditions continued to push the men off course and made it difficult for them to find their already poorly-marked supply depots (Hamilton, 2010). When reached, the depots granted only minimal sustenance. Scott and his men did not solder shut the paraffin fuel canisters in their depots as Amundsen had done. Unmodified, the leaky seal allowed much of the fuel to evaporate, forcing them to eat frozen food (McKay & McKay, 2012). Without proper nourishment, accidents become more common and ultimately all five men lost their lives. Scott and the final two surviving members of his party made it within 11 miles of the One-Ton Depot before perishing in their tent (Bowman, 1958).

Scott was to become a modern “hero of tranquil times” (Bowman, 1958, p. 15). Despite his failure, his tale reveals a unique projection of a modernist mentality that one can control nature through technology (Katz & Kirby, 1991). Scott’s team regularly suspended their progress to take photos, nearly 2,000 in all, while Amundsen took only 10 (McKay & McKay, 2012). Scott spent most of his pre-expedition preparations studying the latest in navigation techniques, largely at the cost of not devoting his efforts to understanding other elements of

living on ice (Savitt, 2004). Scott employed a command-and-control system based on naval discipline and structured hierarchies. Indeed, many elements played an important role in what happened, but ultimately, to Scott, death was not failure. His final journal entry, dated March 29, 1912, read, “I do not regret this journey, we have shown that Englishmen can endure hardship, help one another, and meet death with as great a fortitude as ever in the past” (Scott, 1913, p. 422).

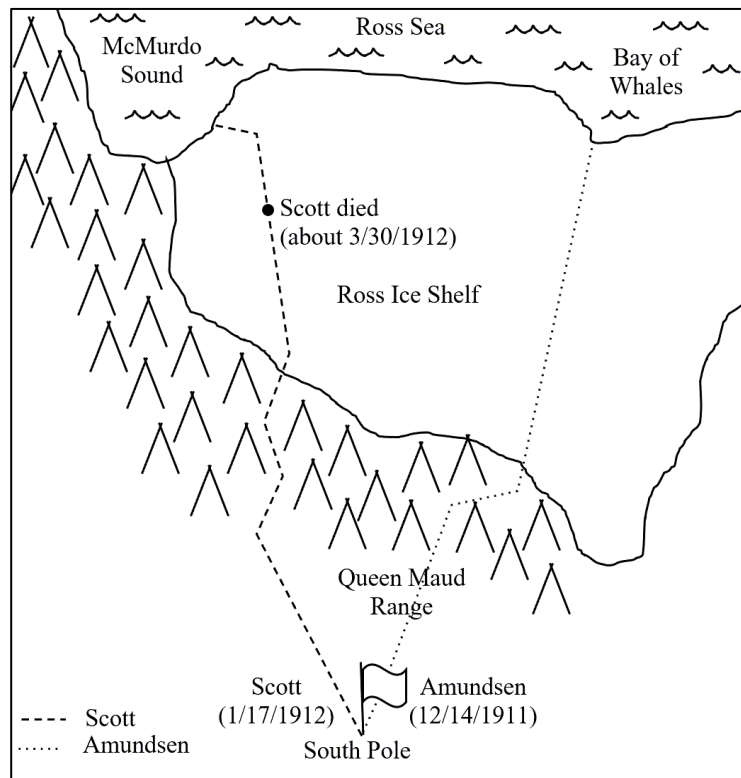
History in Small Places

We have returned from the pole with hard lessons learned. Lessons which speak not only to pragmatically dwelling upon the ice but also how to be effective leaders. The experiences, choices, and eventual fate of Amundsen and Scott provide a unique view of human endeavor that evokes a particular epistemological outlook and specific strategies for leadership. Taken together the two expeditions are manifestations, albeit two sides of a coin, of a master narrative that sent European explorers to far flung points on the globe.

Beyond the Master Narrative: The Source of Knowledge

For Amundsen and his team, the expedition to the South Pole was an extension of their normal lives in the outdoors, made clear by the description of the return to the sea being a long, boring ski tour. The knowledge they employed was embedded in how they experienced the outdoors, as Katz and Kirby (1991) asserted, “for Amundsen and his colleagues, such dimensions of nature were a part of their everyday life” (p. 261). The same could not be said of Scott. Comparatively, the two expeditions provide stark contrasts in temperament, strategies, and

Figure 1: Scott’s and Amundsen’s Routes to the South Pole



styles of traversing the ice. While both expeditions were rooted in the master narrative of European exploration, the two leaders take tremendously different paths across the landscape, geographic yes, but also epistemological (see *Figure 1*). And, it is these experiences and choices that made all the difference. Dissimilar approaches to leadership are ingrained in how these two teams dealt with Antarctica. Subsequently, the perceptions of Amundsen, in particular, align with various noteworthy elements of effective leadership. We envision these elements as an integrated whole, each one supplemented by the others, even when explored individually. Framing these elements of leadership within microhistorical events affords us

knowledge that resonates within the field of leadership.

It would seem that Scott was seduced by the promises of Western science and technology and thus placed his faith in technologies and strategies that ultimately failed; ponies and motor sledges top the list. Scott's margin of error was slimmer than Amundsen's for his adaptive tool kit was more limited, reliant on untested technologies and distrustful of time-honored and tested Native knowledge. Scott's conviction was part of a deeper faith in a particular worldview, one in which European exceptionalism and civilization were considered pinnacles of human achievement. The effect of this was a jaundiced view of traditional knowledge systems, experiences, and adaptations.

Amundsen, on the other hand, harnessed years of direct observation and experiential learning with northern Inuit people when he approached the southern pole. This proved instrumental in the success of his team, not only in reaching the pole, but also, of returning unscathed. Adapting these knowledge systems and his own experiences to a land he had not before stepped foot upon, Amundsen developed an adaptive awareness and leadership responsive to localized conditions. Amundsen brought along companions who were good with their hands; cobblers, sailmakers, carpenters, ironmongers, all who applied a "nomad science" (Wylie, 2002, p. 257) in forging strategies for embracing rather than merely observing the land of ice and wind.

Amundsen also ensured his crew were all accomplished skiers, a sport pioneered by Norway, and he recruited Norwegian ski champion, Olav Bjaaland, based on his athletic prowess. Mobility upon ice and snow necessitated intimate knowledge of this skill, requiring the ski and pole becoming one with their person (Amundsen, 1913). Huntford (2008) stresses that when Amundsen reached the South Pole, "he was careful to record that 'the skiing has been partly good, partly bad.' It took precedence over the fact that he and his four companions had just become the first men to reach 90 degrees south latitude. They saw themselves not as explorers but as skiers. Nor did they feel particularly heroic. They had simply sped over 740 miles and won the longest ski race in the world" (p. 1). Amundsen saw the pole as a complex and holistic system, not reduced to variables, but a relentless and integrated whole requiring a tacit form of knowledge derived from deep experience and awareness of natural processes.

Discussion

What are we to make of these two expeditions? What do their successes and failures portend for successful leaders? What can all of this wandering around the frigid places of the earth afford us? In examining the experiences of Amundsen and Scott with keen attention given to epistemological assumptions and methods of exploring certain characteristics of leadership emerge that we conceive as a sensibility. This sensibility arises out of particular areas of leadership, such as trustworthiness, value, and integrity, and how these elements are responsive to changing environments. We intend to explore the concepts of leadership, mindset, and reflexivity further in depth, applying these facets into a discussion of Amundsen's and Scott's expeditions and the differences between each leader's approach to the Antarctic pole. The following concepts act as the essential grounding for a sensibility efficaciousness in leadership.

Communicating

Leading others often involves a certain degree of knowledge transfer. From this perspective, the followers become the leader's students, learning directly from his or her actions within the group. It often does not matter, however, how deliberate the leader is with his or her action;

learning remains largely demand driven (Megahed, Yakout, Darwish, & Wahba, 2021). When people cannot see the need for what is being taught, they ignore the information or fail to internalize it (Sowder & Harel, n.d.). However, when people have a corresponding need, they tend to learn effectively and quickly. Resources for learning lie not solely in textual facts, but also directly through practice (Brown & Duguid, 2000). To this end, Geisler (1999) stressed that “mentoring has a vital role in conserving and transferring knowledge based on experience” (p. 25). These practices allow people to observe those who already know how to use the information, make sense of the information, and ultimately use the information themselves (Brown & Duguid, 2000). Knowledge derived from direct and intimate experience and mentored by experts with deep experience remains pivotal for effective leadership. We need look no further than Amundsen’s success to witness the results of privileging these forms of knowledge and how they foster synthesis and holism.

The Power of Mindset

Amundsen exhibits not only knowledge of dwelling upon the ice, but a responsiveness for dealing with complex systems. Learning at the heels of indigenous people coupled with his own experiences, his sensibility was honed over the course of years and multiple encounters with the unforgiving polar world (i.e., applying a growth mindset). Amundsen was able to garner from these experiences a sensibility that helped ensure his success. The sensibility was embedded in a holistic awareness of polar environments and holistic preparation for the endeavor. The world view and practical tendencies of Amundsen ran counter to prevailing norms in ethnocentric Europe and North America of that time period in that he validated traditional knowledge systems, technologies and growth mindset as essential components of dwelling and traveling upon the ice.

Connecting this back to Carol Dweck’s lectures and writings about growth mindset, the fundamental point of growth mindset is that in order to demonstrate and facilitate growth, leaders must foster an environment based on mutual teamwork and infuse the idea that intensive work equates to more knowledge learned. Amundsen displayed a holistic knowledge of polar environments and how to adapt and survive in them through learning from indigenous peoples. Over the long dark winter, in which both expeditions overwintered near the sea, Amundsen’s team holistically re-evaluated and adapted their gear to suit the new environment. Rather than reduce both the environment and the team’s preparations to discrete variables, Amundsen viewed Antarctica as a complex whole, requiring complex adaptive strategies favoring holism and synthesis. By attaining prior knowledge to polar environments, Amundsen was better able to lead his expedition because he was prepared for not only the climate, but for the strength he knew it would take to boost the morale of his men in such a harsh environment. By being able to bring his team together to adapt to the circumstances, Amundsen demonstrated characteristics of growth mindset.

The expedition leaders had the onus of becoming familiar with the key processes of polar exploration. To this end, “past knowledge is continually tested through practice, falsifying what does not work and sustaining what does. The environment is assumed to be in constant flux, and success requires understanding the nature of such changes and adapting to them” (Savitt, 2004, p. 158). According to Hazy (2022), one can never ensure predictability as a change in environment is given; therefore, adaptability forces problem-solving skills and ultimately results in knowledge by experience. The key ingredient here is in applying knowledge in effective ways to adapt to the circumstances being encountered.

In general, the adaptation to local environments harnesses particular knowledge systems and makes this knowledge applicable to what is being encountered. Amundsen excels on this point, whereas Scott flounders. “It’s not that Scott didn’t prepare. He did. But he based his preparations on the conditions he had experienced on his previous Discovery expedition and on those reported during Shackleton’s Nimrod expedition. He didn’t count on Antarctica being unpredictable” (McKay & McKay, 2012, p. 10) and he failed to adapt. In short, fixation on one way of doing things has the dangerous effect of limiting the imagination and the ability to respond. This “fixed mindset” put pressure on Scott to predominantly use the knowledge he learned prior to the expedition, essentially avoiding gaining new knowledge in order to help him and his crew adapt to the challenges faced in the polar climate. In matters of life or death, having a fixed mindset demonstrates that survival (in extreme situations nonetheless) is predicated around one’s ability to adapt and shift the paradigm of what they have been doing into something new that will help them survive.

This is a reminder of the importance of activating experiences and tacit knowledge through experimentation and adaptation. Comparing select attributes of Amundsen’s and Scott’s expeditions reveals a great divide between the explorers in terms of adaptability (see *Table 1*). Amundsen applied knowledge and experience from the opposite side of the world to a place he had never fully encountered. He employed strategies that stood the test of time amongst Native peoples of the far North, regardless of ethnocentrism. Scott, meanwhile, endeavored to use knowledge and technologies untested in the harshness of Antarctica – those perceived as advanced and befitting of civilized societies. Wylie (2002) concludes that Amundsen “has forged a mobile synthesis: the assimilation of an indigenous art of dwelling, its translation into a hybrid art of voyaging, and its redeployment within this specifically European adventure of exploration and discovery – this race to the Pole” (p. 258). In this regard, Amundsen’s and Scott’s competition is an exemplar of divergent approaches to knowledge adaptability.

Table 1: Comparison of Select Attributes of Amundsen’s and Scott’s Expeditions to the South Pole

Attribute	Scott	Amundsen
Age of becoming interested in polar exploration	30 – after a chance meeting in London with family friend and geographer Sir Clements Markham	15 – after reading the works of John Franklin, a Briton, who died while searching for the Northwest Passage
Name of ship	Terra Nova (Latin for “New Found Land”)	Fram (Norwegian for “Forward”)
Mission of the Pole expedition	get to the Pole first and gather scientific information about the Antarctic. Scotts team took nearly 2,000 photographs, while Amundsen took only 10.	Earn a “first” in polar exploration for his Country. Originally Amundsen was going to sail to the North Pole, but upon learning it was reached, set his sights south.
Base camp	McMurdo Sound – The base camp previously used by Scott and Shackleton on the Discovery Voyage	Bay of Whales – previously unexplored, but geographically closer to the Pole
Shelter tending	A pre-fabricated hut that they tirelessly attempted to remove from the snow.	A pre-fabricated hut they let become incased in snow so as to burrowed out additional living quarters.
Clothing	Wool jumpers and windproof tunics	Loosely fitting reindeer fur clothes with inner and outer anorak hanging loosely outside the trousers to allow for air flow.
Ground transportation	23 Dogs, 10 ponies, 3 moto sledges, and man-hauling	116 dogs, men on skis (Bowman, 1958)

Depot markers	A single black flag	A set of long bamboo poles topped with a black flag spaced .5 miles apart on either side of the depot
Food	Canned meats, white bread, biscuits, burnt almonds, crystallized fruits, chocolates	Fresh seal and penguin meat, pemmican of Amundsen's own formula, berry preserves, whole-wheat flour, chocolate, milk powder, and biscuits
Pole party	Started with 16 men, but the final assault was made with 5	5 men

An Application of Leadership Theory

Arguably, Amundsen and Scott possessed uncommon attributes that galvanized their followers, even in the most extreme conditions. These unique qualities are thought to originate from the leader's background, education, and upbringing (Martin, Cashel, Wagstaff, & Breunig, 2006). Through this idea, credibility in leadership is built out via Amundsen's and Scott's societal status and their educational background. Style theories, on the other hand, assume that particular kinds of behaviors underlie a person's ability to lead. Equals in courage and endurance, the leadership styles of Amundsen and Scott varied on other parameters. Amundsen was a tactician (McKay & McKay, 2012), a man of single-minded concentration (Bowman, 1958). Scott was mostly introspective in his reasoning (Bowman, 1958). Individual behaviors and interpersonal relationships, combined with time, place, and circumstance created the foundation of the situational and contingency theories.

According to these perspectives, each individual and each situation must be considered as its own case. The analysis presented below upholds this approach, honoring the complexity of experience and circumstance embedded in Amundsen's and Scott's expeditions to the Antarctic Pole. The microhistories presented in this study provide an excellent vehicle by which to further unpack the phenomenon of leadership in action. When juxtaposing the expeditions of Amundsen and Scott, the mere survival of Amundsen and his men makes a strong case for the superiority of their efforts, let alone the striking success and ease of their passage to and from the pole. Leadership is a complex phenomenon, however, and such conclusions – without reflection – contribute little to the field.

Reflexivity

As mentioned previously, reflexivity is the amalgamation of tacit knowledge, skills, and continual learning, and emphasizes the personal dimension that facilitates the acquisition of skills and technical knowledge. A "reflective practitioner" conceptually can compile knowledge from several different fields in order to adapt to a circumstance. To tie this back into our analysis of Amundsen's and Scott's expeditions, we can also bring in the concept that a reflective practitioner can also apply these knowledge skills to teaching.

Although Amundsen was not a teacher by profession, Elzinga's (2012) portrayal of him as a "reflective practitioner" represents an important nuance within the polar exploration canon. To this end, Elzinga highlighted the technical knowledge that Amundsen gained from various life experiences, emphasizing how the explorer mobilized his knowledge stores for effective transport and survival within the polar regions.

Likewise, while Scott brought skis on the voyage of Discovery, a dearth of experience rendered them nothing more than a form of entertainment (Scott, 1905). It can be concluded that Scott's expeditions were based on an ideological conception of exploration, and ultimately,

this conception proved highly resistant to change (Savitt, 2004). The fact of the matter is that Antarctica demanded reflexivity and responsiveness. Without these forms of awareness Scott floundered.

Regarding reflexivity and knowledge mobilization, the difference between Amundsen and Scott appears to be in how each harnessed previous experience as moments of learning in the continued pursuit of the pole. Reflexivity, however, only tells us so much. What is needed is a lens by which to understand how reflexivity leads to action. And, in this regard we turn to David Kolb's Experiential Learning Model (ELM) published in 1984, which helps explain the flexible application of abstract concepts in diverse contexts.

Kolb explained that "learning is the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38); as close an approximation of Amundsen's process as can be imagined. ELM is best represented as a four-stage learning process or cycle comprised of (1) having a concrete experience, which leads to a (2) moment of reflection of the experience followed by, the learner (3) forming abstract conceptualizations or abductions which are then (4) used for active experimentation applied to the real world, which in turn leads to new experiences. And the cycle continues. While Kolb stressed that a learner could enter the cycle at any stage, following through the subsequent sequence, the model is effective only when a learner engages all four stages. Any one stage on its own is not a solid learning strategy. Amundsen's synthesis of experience, knowledge, reflection, and action culminate in the actualization of Kolb's model. Scott, on the other hand, fell short in this regard.

Through the lens of Leadership, Growth Mindset, and Reflexivity, we have explored how Amundsen's and Scott's expeditions were not only influenced by each leader's ability to lead their men successfully, but demonstrated the ability to learn/apply knowledge in order to adapt to extreme environments. Whereas both explorers differ greatly in their methodology, the contrast between Amundsen's and Scott's expeditions provide us with an applied insight to leadership not commonly seen in everyday life. However, even in the extreme circumstances these leaders endured, we can still see many fundamental leadership, mindset, and reflexivity concepts that are also used in everyday business settings. Therefore, whether these facets are being used in extreme environments, or the office setting, successful leadership holds a commonality: being able to create value and trust in teams through an adaptable and continuously improving mindset.

Conclusion

Successful leadership is dependent in part on an integration of experiences and learning through direct engagement with one's followers. In the field of leadership, we are dependent upon integrating various forms of knowledge and awareness. Amundsen typifies this as his team reflected on their own experiences of outdoor life and applied this to their time in Antarctica. This included the attention to altering gear, use of dogs, diet, and use of skis – all central to success. In this way, there was an integration of nature and culture, neither reductionism nor abstraction of specific variables, but a pragmatic, holistic adaptation to local environments. Katz and Kirby (1991) use the word "inchoate" in describing this process, yet this does not suggest something undeveloped, but rather something emergent, something tacit, knowledge that functions as an extension of experience. This is central to understanding the difference between the two expeditions and the eventual outcomes (Katz & Kirby, 1991).

Importantly, any attempt to cultivate tacit knowledge from explicit knowledge depends on whether those attempting the conversion have substantial experience to interpret it (Savitt, 2004). As a case in point, Amundsen (1927) wrote that “second hand experience out of a book is often as good as first hand, if the reader has had enough experience in the same field to understand and apply what he needs” (p. 239). Success in the cultivation of tacit knowledge, therefore, demands the user understands core elements of practice. To this end, carefully recorded experimentation is of great value in determining what works and what does not. In this way, the process comes full circle: tacit knowledge generated from experimentation can be more easily captured and transformed into explicit knowledge that can be used by others (Savitt, 2004). This sense of how to generate and apply tacit knowledge is made manifest in Amundsen’s intimate relating to Antarctica. As we explore the historical legacies of these events, we become witness to the synthesis of various funds of knowledge and direct application of these to the art of dwelling upon and with the ice. We further become privy to a sensibility and set of knowledge that can be applied to a wider audience and set of circumstances across fields of leadership.

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