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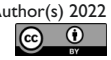

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Sensing: The elephant in the room of management learning

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Abstract

This conceptual paper examines reasons why analytically educated learners may be reluctant to engage in sensory-based learning. Sensing is indispensable for constructing knowledge and should be employed on par with the intellect, particularly in today's complex and uncertain context. Yet, we have observed learners' reluctance to engage with sensing and attempted to understand the reasons for it. Our theoretical contribution illuminates the underlying causes of this phenomenon, thus furthering the study of sensing in the fields of individual learning and management learning. Our practical contribution prompts researchers, learners, educators, and managers to think more systematically about ways to overcome this reluctance and openly bring sensing into management learning practice on par with intellectual processing. With the help of *phenomenal theorizing*, the presented exploratory study identifies the following common barriers to sensory-based learning for analytically educated learners: corporate social norms against sensory-based evidence, discomfort of learning outside of one's comfort zone, inadequate vocabulary for sensory experiences, lack of sensory awareness, preference for sequential reasoning, mistrust in sensory-based evidence, dismissive attitude, and denying (or not admitting to) the use of sensing.

Keywords

Management learning, sensible knowledge, sensing, sensory-based learning

Introduction

> Sensations fill the space between cognition and emotions, and energize learning. (Antonacopoulou and Gabriel, 2001)

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There is a growing need for increased flexibility and adaptability which enables managers to deal with novel, unexpected situations that do not allow for a comprehensive analysis (McDonald and Tang, 2014; Schlitz et al., 2011). In order to operate effectively amid the uncertainty of complex modern-day economic landscapes, global crises, and changes coming from unforeseen directions (World Economic Forum, 2016), managers often have to learn much faster, figuring things out "*as* they go" rather than "*before* they go" (Chia, 2017; Ingold, 2000: 230; World Economic Forum, 2016). As a result, moving through today's volatile, uncertain, complex, and ambiguous environment (Stiehm and Townsend, 2002) requires not only intellectual engagement but also sensory knowing (Antonacopoulou, 2019; Maslen, 2016; Rosenblum, 2011). Yet, sensing remains the proverbial elephant in the room of management learning: it has become emphasized more in research; it is present in the classroom but seldom acknowledged, as there is reluctance to engage when sensing is brought to the forefront (Springborg and Sutherland, 2014: 47).

The purpose of this conceptual paper is twofold: (1) to offer a theoretical contribution by better understanding the reluctance of analytically educated learners to engage in sensory-based learning, thus furthering the study of sensing in the fields of individual learning and management learning, and (2) to make a practical contribution by encouraging researchers, learners, educators, and managers to think more systematically about ways to overcome this reluctance and openly bring sensing into management learning practices so that it becomes an integral part of educational design on par with intellectual processing.

The initial exploration was sparked by the experience of the first two authors, who encountered reluctance among learners in their classrooms when asked to participate in sensory-based exercises. Commonly observed reactions included intellectualizing the sensory task, stalling by posing off-topic questions, hesitating to get started, and complaining that sensory-based exercises lack rigor compared with intellectual tasks. Exploring this phenomenon individually, then comparing notes, and finally searching the literature for underlying reasons were the impetus for phenomenal theorizing within an interpretivist frame, informed by the literature. The aim was to bring the discussion about sensing into the mainstream of the management learning scholarship, rather than relegating it to a niche, similar to the way the topic has taken center stage in the creative industries and athletic training (cf. Taylor, 2002). This resulted in an exploratory conceptual paper, methodologically aligned with Pyrko et al.'s (2019), Furnari's (2014), and Spanellis et al.'s (2021) approach. Like these authors, we took as the starting point something observed in the environment, that is, empirical data that were not systematically and purposefully collected; these observations led to *phenomenal theorizing* (Ployhart and Bartunek, 2019) with the aim to better understand and problematize the observed phenomenon. This approach is consistent with the suggestion by Shelley Brickson (AMR AE) to theorize from phenomena, as she outlined during the panel discussion titled "Toward the Humanistic Manager and Transformative Management & Organizing" at the AoM 2021 virtual conference.

Our timing is opportune, as *Management Learning* has recently pioneered a conversation about the role of sensing, evidenced by the 2017 virtual special issue on Sensory Knowledge in *Management Learning* (https://journals.sagepub.com/page/mlq/collections/virtual-special-issues/sensory_knowledge) and the upcoming special issue titled "The Senses in Management Research and Education" (https://journals.sagepub.com/pb-assets/cmscontent/MLQ/CfPTheSenses.pdf). Each publication examines different aspects of the phenomenon. The former special issue explores, among other themes, the presence of the sensory aspect in academic writing (Essén and Värlander, 2013), recent turns to both practice and affect (Gherardi, 2017), and the development of sensory knowledge in situated learning through a master–apprentice relationship (Dörfler and Eden, 2017; Stierand, 2015). The latter seeks to understand how learning in organizational context can be achieved through the senses (Willems, 2018). Our article adds another layer to this investigation:

it illuminates reluctance to sensory-based learning, identifying barriers commonly encountered by analytically educated learners whose thinking has been shaped by traditional Western education. It points out the "elephant in the room" by asking an overarching question: how do we openly bring sensing into both scholarship and practice of management learning and make it an integral part of educational design, on par with intellectual aspects of learning?

The rest of the article is organized in four sections. In "Conceptual framing" section, we outline varied approaches to sensing and position our research within them. We shed light on the interplay between the sensory and the intellectual aspects of learning, highlighting the role of Western education in reluctance to engage with sensory-based learning, and review how sensing has been studied in the management learning scholarship. In "Methodological considerations" section, we describe our research approach and process. Then, we investigate the barriers to sensory-based learning, found through observations and explored with the help of literature. Finally, in "Concluding remarks" section, we propose future research directions for understanding sensory-based learning in the context of management learning practice.

Conceptual framing

Sensing has been studied by researchers from such varied disciplines as cultural studies, management and organization studies, and neuroscience. Each study is rooted in a particular philosophical approach; the most commonly used appears to be a mild positivist, some version of critical realist, or an interpretivist perspective. Methodological approaches are similarly diverse and frequently include ethnography, autoethnography, narrative inquiry, and practice-based theorizing. Although all of the studies investigate the phenomenon of sensing, they tend to differ in focus, shaped by the researchers' interests, be it aesthetics, education, leadership, or cognition. To name just a few examples, Pink (2011) explores sensing as a part of embodied knowing, emphasizing the materiality of a performing and sensing body; she even uses the concept of sensing to explicate the nature of observation in autoethnography (Pink, 2015: 7). Antonacopoulou (2019), however, inspects sensing as it shapes *core intelligence*, a concept she coined to incorporate the sensory wisdom of the body beyond the emotional and mental intelligence (EQ and intelligence quotient (IQ)). Maslen (2015) takes yet another focus when he examines sensing as an aspect of practices and the role of sensing in constructing knowledge. We "stumbled upon" the phenomenon of reluctance to engage with sensing as we focused on individual learning of analytically educated learners. As a result of such a variety in approach and focus, understandably, there are inconsistencies in vocabulary.

Without going into a full treatise on terminology, which would require a paper on its own, we chose to softly adhere to Bays' description of sensory-based learning as "the ability of our perceptual systems to exhibit change and improvement in response to sensory input" (Bays, 2016: xii). Within the scope of this article, we refer to *sensory* as perception based on the five primary senses, as well as sensations of visceral nature, such as hunger; of affective nature, such as love; and of mental nature, such as pride (Burton, 2009: 37). Other researchers may use different terms to describe the same or closely related phenomena, as is customary in the tradition of their discipline (sensory aspects of learning, sensible knowledge, sensory knowing, sensuous learning, sentient learning, embodied learning, physical perception, somatic perception, body-based learning, the "carnal" nature of the experience of learning, etc.). For us, it is sufficient that all the literature we have considered explores sensing. We would not want to downplay the difference in terminology as mere semantics, but we believe that the variation in details does not make a significant difference for our exploratory study. We adhere to our chosen term, *sensory-based learning*, unless direct citations are used, and make sure that the cited works are consistent with our conceptual understanding, even if the language is not necessarily the same.

Sensory-based learning is often considered a component of experiential learning, which employs practice-based methods, but it can also be a component of intellectual learning, where we intellectually sense an idea, tapping into our tacit knowledge that we cannot articulate (Polányi, 1966b). Engagement of sensory-based learning involves one's whole being, integrating a person's physical perception, affect, and thinking (Kolb and Kolb, 2005; Symonds et al., 2017) and entails multisensory integration that blends information perceived through different senses (Bays, 2016: 2, 4–7; Friedlander et al., 2011). Therefore, it is important to understand the dynamic between the sensory and intellectual knowing.

Interplay between the sensory and the intellectual

Recent management research suggests that we come to know what we know through the body and its senses (Antonacopoulou, 2019; de Rond et al., 2019; Panayiotou, 2017; Strati, 2007). This frames learning as a sensory-based process that results in knowledge which incorporates sensory inputs as sources of information. To encapsulate this thinking, Strati introduced the notion of *sensible knowledge* to describe a form of knowing that is perceived, judged, produced, and reproduced through the senses (Panayiotou, 2017; Strati, 2007). It is through the perceptive-sensory means that we interpret behavior of others and connect with them. Quite possibly, all of our perceptions arise through physical and affective experiences that allow us to make sense of the world (Merleau-Ponty, 1962). This suggests that "sensuous and affective states are not accompanying phenomena" but rather construct our experience (Essén and Värlander, 2013: 400). Sensing becomes the proverbial "elephant in the room" when it may be uncomfortable for learners or educators to mention it; hence, it may go unacknowledged.

Such shift in understanding how knowledge is construed has a profound effect on the way learning is facilitated. So far, the practice of management learning has focused mostly on intellectual activities (Strati, 2007: 65), without explicitly paying attention to sensing, although tapping into both sensory and intellectual aspects of learning could be beneficial for managers and organizations (Weick, 2007). Strati (2007) makes the case that learning in organizations is rooted in knowledge acquired through the perceptive-sensory experience and aesthetic judgment. Sensory-based learning is widely employed in medical apprenticeships (Maslen, 2015, 2017), in arts education (Thomson, 2015), hospitality industry (Stierand and Dörfler, 2016; Stierand and Zizka, 2015), and other disciplines where the domain expertise is built explicitly on sensing. Yet, it seems to be underemployed in mainstream management learning practice, with rare exceptions (Springborg and Ladkin, 2018; Springborg and Sutherland, 2014; Taylor, 2002; Taylor and Ladkin, 2009). In view of a recent neuroscience finding suggesting that "newly acquired sensory information can have profound effects on performance" (Nagel et al., 2005: R25), ignoring sensory perceptions presents a missed opportunity to deepen knowledge and thus improve performance. Knowledge obtained through the senses, contrary to knowledge produced by intellectual engagement, is rarely considered as evidence in the academic community (Panayiotou, 2017) or in the corporate world (Taylor, 2002: 827). We argue that both sensory-based learning and intellectual learning serve an important purpose and, while intertwined, can be used in a complementary fashion but differentially, depending on the demands of the context (Weick, 2007; Woiceshyn, 2009).

The sensory-based and intellectual learning are interrelated much like tacit and explicit knowledge, according to Polányi (1966a: 7):

> Now we see tacit knowledge opposed to explicit knowledge; but these two are not sharply divided. While tacit knowledge can be possessed by itself, explicit knowledge must rely on being tacitly understood and applied. Hence all knowledge is either tacit or rooted in tacit knowledge. A wholly explicit knowledge is unthinkable.

While sensory-based and intellectual learning can be viewed as separate aspects of learning, there is research pointing to the idea that "abstract concepts are represented through somatic states to which they are metaphorically linked" (Springborg, 2018: 85), which makes separation of the sensory-based and intellectual seem contrived. For example, one can physically experience lightness when a problematic situation is resolved, like feeling "the weight fall off the shoulders." Perhaps, we can look at sensory-based and intellectual learning in a similar fashion as physics Nobel Laureate Frank Wilczek (2021) describes seeing colors: ". . . in a really deep sense, they [different colors] are the same thing. But in a complementary sense, if you don't move, they're all different." It is useful for daily practical purposes to distinguish individual colors, just like it may be useful to discuss separately sensory-based and intellectual learning.

Sensing is not a free-standing entity in itself; it refers to something that is perceived by *some* faculty of the body. A question whether there *could* be sensing that is *not* embodied draws on Decartes' proposed duality of body and mind, which may be "Decartes' greatest error" (cf. Damasio, 1994). In Polányi's (1966b: 29) words, "Because our body is involved in the perception of objects, it participates thereby in our knowing of all other things outside." Similarly, Bergson (1911: 162) regards intellect as the extension of senses, which has implications for sensory-based learning. Spiller, a leadership scholar who brings the wisdom of Polynesian explorers into management learning, also described the body as an instrument for perceiving "seemingly imperceptible signs of nature" (Spiller et al., 2015: 7). We argue that all sensory-based learning is embodied. Sensing happens through the body in various ways: via exteroception, such as seeing and hearing outside stimuli; interoception, such as feeling our heart racing (Porges, 1993: 13); sensory evocations , such as feelings triggered by an external stimulus; or sensory representations (Burton, 2009: 37), such as "hearing" an inner voice.

Polányi (1966b: 15) describes the body as "the ultimate instrument of all our external knowledge, be it intellectual or practical," as we sense and learn about the world. He explains that even when we "attend from" something, we may still acquire knowledge, only that it is the "knowledge that we may not be able to tell" (Polányi, 1966b: 10). The person may not register intellectually that learning is taking place as a result of simply being *in* a situation; however, the learning is still taking place, as the body is constantly perceiving numerous inputs. Yet, in the Western world, learners are often unaccustomed to taking notice of sensory input.

Impact of Western education on sensory-based learning

In this article, we refer to "analytically educated learners" to reflect the emphasis of Western education on analytical thinking, along the following lines:

> Conducts causes and effect analysis on commercial, business, scientific, technological and other information in a systematic, step-by-step manner. Includes identifying key issues, testing hypothesis, diagnosing problems and opportunities, making sound inferences from available information and drawing logical conclusions. It includes applying deductive reasoning skills to problems often in a linear fashion (i.e., the process by which an individual makes conclusions based on previously known facts). (Government of Canada, 2019)

As it is evident from the description above, taken from the Behavioral Competency of Management on the Canadian Government website, knowing through sensing does not factor into analytical ability and neither it is listed as a separate competency. There is a long-standing tradition in the Western education system to focus on thinking and intellectualizing while systematically repressing sensing (Hogarth, 2001: 135; Khan, 2012: 80; McDermott, 2013: 93; Robinson, 2010).

Exceptions are in areas where the domain expertise is built explicitly on tacit knowledge and skills developed through sensing, such as cooking, design, perfumery, art, and athletics. Otherwise, in the standardized formal education in the Western world, sensing can be perceived as unfavorable, unprofessional, and less valued than rationality-based models (Simon, 1983). This is probably the reason why managers are often reluctant to admit reliance on sensing, even if they are aware of their sensory perceptions, as organizations generally do not encourage it (Sadler-Smith and Shefy, 2004).

During the industrial age, the Western education system set sights on mass-producing obedient, uniform, skilled-enough workers who were able to mechanically operate plant machinery and solve practical technical problems in a systematic analytical manner (Dawson, 2010). As the system expanded to educate leaders and managers, the approach has not changed dramatically. It continued to focus on the technical skills, requiring analytical thinking that managers may need to function effectively in organizations (Drucker, 2002). We argue that sensory-based learning needs to be addressed more explicitly and thoroughly.

So far, the potential of human physicality as a source of knowledge, while attended to in research, has been largely ignored by management (Brewis and Williams, 2019; Moore, 2017). As a result, those analytically educated learners who are unaware of their sensory perceptions may miss out on important aspects of knowledge or may not notice how their conscious or unconscious sensations affect their decisions and actions, which, again, brings us to the proverbial elephant in the room of management learning.

A wide acceptance of such expanded understanding of knowledge, however, requires a concerted effort. Even if organizations begin encouraging managers to take sensory-based learning seriously, it is presumptuous to expect that managers will easily do so. Intentionally paying attention to sensations may not come naturally to those who are more accustomed to admitting only intellectual assessment. Drawing on senses for enhanced learning and performance involves physical, non-verbal, and pre-verbal experiencing, allowing for learning through direct physical, sensory, and affective experience (McKeen et al., 2018). Overcoming "mentalization" (Strati, 2007) of management learning will require openness to the centrality of the body and senses in work and learning processes.

When we were teaching intuition to expert knowledge workers (Surawski, 2019), it became apparent to us that a simple encouragement may not be enough to help analytically educated learners feel comfortable with sensing. Intuition often contains a sensory component that has been long recognized by practitioners but did not catch attention of management researchers until recently (Bas et al., 2019; Dörfler and Bas, 2020a). What we noticed in our classes was a varying level and form of reluctance to engage in sensory-based elements of learning for a number of reasons that we discuss in detail later. We realized that this reluctance is not specific to intuition, but rather it is general reluctance to use sensing consciously, which prompted us to explore this phenomenon. Reluctance is not always easily observed, but it can be communicated through behaviors, including hesitancy to engage with the task or unwillingness to apply effort to accomplish the task (Ucar, 2017). It has been seeping into the classroom for some time as educators started using art, metaphors, literature/poetry, and theater to facilitate management learning (Beirne and Knight, 2007; Springborg, 2014; Taylor and Ladkin, 2009). This suggests that other educators in the management learning domain are likely encountering similar reluctance from the learners as we did, and for which we have found some basis in the literature (Springborg and Sutherland, 2014). What this article offers is a deeper understanding of possible barriers to sensing that seem to be common among analytically educated learners. We want to welcome the "elephant" of sensing into the management classroom, give it the due attention, and, where useful, educate learners about the role of sensing in management.

Sensing in management learning

Most of the skills required for managers these days are well beyond the scope of explicitly articulated job-specific technical competencies (Panayiotou, 2017). Elena Antonacopoulou (2019) suggests that new insights are born when sensations, as much as ideas and emotions, drive action. This action shapes one's practice that involves a skillful navigation of complex environments, aided by "sensory embodied ways of knowing" (Pink, 2011: 345). Although it is the body that enables both intellectual reasoning and sensory-based knowledge, it appears that the important role of the body has not been widely acknowledged in both the practice and study of management learning (Strati, 2007). In fact, the literature demonstrates the opposite: reluctance and embarrassment of admitting the use of approaches other than linear reasoning (Agor, 1984, 1989: 247), and offering misleading alternative accounts for arriving at a solution (Dörfler and Eden, 2019).

Overlooking sensing may leave managers paralyzed in cases of unknowable uncertainty, where additional analysis does not yield additional actionable information (Dörfler and Bas, 2020b). As Polányi (1966b: 44) put it, "Nothing that *ought* to be, can be determined by knowing what *is*." Sensory-based physical and affective reactions facilitate the creation of a "from-the-body" narrative (de Rond et al., 2019: 1962) that enables individuals to move forward amid uncertainty (Cunliffe and Coupland, 2012; de Rond et al., 2019; Huang, 2018). This ability may only be acquired by tapping directly into sensory-based knowledge (Polányi, 1966b: 49).

Experts in their respective fields report that it is essential to attend to physical and affective sensations at the highest level of mastery (Amin and Roberts, 2008; Polányi, 1966b: 49; Stierand, 2015). As a result, practicing sensory-based management learning facilitates deeper, more meaningful embodied knowledge transfer (Dörfler and Stierand, 2021) through such modes of learning as master–apprentice relationships (Dörfler and Eden, 2019), cross-disciplinary learning through projects (Boud and Tennant, 2006), cognitive apprenticeships (Austin, 2009), and communities of practice (Wenger-Trayner and Wenger-Trayner, 2014). Becoming attuned to sensory perceptions is often beyond the traditional job-specific competencies that can be explicitly articulated (Bergen, 2012; Panayiotou, 2017). And yet, a manager's ability to create psychological safety in a team, get buy-in for projects that are difficult for others to envision, or sense and resolve tensions in a team is often beyond analytical skills; it requires sensing (Lund Dean et al., 2019; Spiller et al., 2015). Also, much of managerial know-how that cannot be transferred explicitly and directly can only be transmitted through sensory means, through observing, practicing, and getting feedback (Stierand, 2015). Such transfer of knowledge engages one's senses, as has been established in early childhood education (e.g. Blomert and Froyen, 2010; Worthen, 2010), but sadly, it appears to be overshadowed by emphasis on the intellectual in higher education. Strati (2007) suggests that sensory impressions not only produce affective and aesthetic response to something but also contribute to our understanding of it. Hence, in order to understand something more completely, inclusion of sensing may be necessary for managers, as "the body is the medium of all perception" (Essén and Värlander, 2013: 400, citing Merleau-Ponty, 1962: 146). There is a "greater potential to create deeper emotional connections and understanding when learning was felt in physical, visceral ways" (Thomson, 2015: 5).

Sensory-based learning, as we outlined earlier, involves one's whole being, integrating a person's somatic perception, affect, and thinking (Kolb and Kolb, 2005). The first prerequisite for acknowledging (and possibly acting upon) sensory input is to be aware of one's own sensations and feelings, which tends to be problematic for some analytically educated learners. The management learning literature suggests that art and non-verbal expression can be particularly useful in experiencing, expressing, and understanding sensory-based components of managerial concepts, particularly since "managers' vocabulary for describing sensory (aesthetic) experience is often limited" (Springborg and Ladkin, 2018: 536; Taylor, 2002).

We advocate for a holistic and integrated approach to management learning, in scholarship and practice, incorporating *both* intellectual and sensory-based aspects that include tacit knowledge (Polányi, 1966b). This knowledge may be transferred through sensory-based approaches, using the whole body as an instrument. When language fails to adequately describe a phenomenon, the use of physical expressions and physical artifacts (Gherardi and Perrotta, 2014) can facilitate relaying the intended meaning. For example, when managers in learning situations are asked to represent a specific problem in a form of a drawing (or other physical expressions such as artifacts or various art forms), upon reflection on this drawing, they may get new insights into the nature of the problem, extending beyond the initial ideas. This process utilizes their sensory awareness and can require emotional engagement (Gherardi, 2019; Gherardi and Perrotta, 2014; Panayiotou, 2017; Springborg and Ladkin, 2018; Strati, 2007). Incorporating sensory-based activities may enable analytically educated learners to tap more extensively into their knowledge. As they make sense of what is happening inside and outside their bodies, learners in management can acquire valuable knowledge through sensory-based methods and learn to rely on sensing as an additional source of knowing. While study of sensing in management learning significantly advanced in the past decade, the practice of management learning has still not *openly* and *actively* embraced sensing, with rare exceptions.

Methodological considerations

From a methodological perspective, our approach is based on casual empirical observations that prompted theorizing, informed and supported by the literature. We have employed phenomenal theorizing driven by an observed phenomenon rather than a theoretical lens, as advocated by Ployhart and Bartunek (2019). This approach lent itself to preserving as much of the richness of the phenomenon as possible, approaching it from various angles, trying to capture the phenomenal essence by bridging the phenomenal and the theoretical realms (Langley, 2021). One advantage of adopting such phenomenon-focused approach, instead of committing to a particular theoretical lens, is that it allows exploring the phenomenon in a less restricted way, and perhaps gains insights that could fall in the blind spot of a particular lens. It is also aligned with Gioia's (2021) argument that we should get rid of our assumptions of how things *should be* and look instead at how things *are*.

Within this philosophical framing, we followed the approach to theorizing introduced by Furnari (2014) in AMR and subsequently showcased by Pyrko et al. (2019) and Spanellis et al. (2021) in Management Learning. Furnari (2014) outlines the phenomenon prior to constructing a model, rooted in the practical experience of the phenomenon and developed through theorizing, with insights illustrated by a vignette. Pyrko et al. (2019) also start from a phenomenon observed as well as described in the model of landscapes of practice (Wenger, 1998; Wenger-Trayner and Wenger-Trayner, 2014); they theorize the characteristics of the landscapes and use their thin empirical data as vignettes for showcasing their insights. Similarly, Spanellis et al. (2021) start with a phenomenon described in the blog posts of a consulting company; this prompted theorizing, leading to a model, aspects of which were encapsulated in the vignettes. Like these three papers, our study starts from data that are not systematically and purposefully collected; this thin empirical material triggers phenomenal theorizing that leads to insights presented in the form of captions and descriptions. Where we depart from the noted papers is that, instead of arriving at a model and/or a set of propositions, we problematize the observed reluctance as barriers, thus creating an initial conceptual framework that lays groundwork for future empirical exploration of the topic.

Although conceptual in nature, our article starts from empirical observations. These initial observations were unsystematic, ad hoc; they occurred as part of our regular teaching work and not purposefully collected for a designed research project. Over the past 10 years, we have taught more

than 50 classes about managerial competencies in the United States, United Kingdom, Asia, and Australia, as well as in corporate settings in the United States, to thousands of learners. Our observations indicated that learners often struggled to express themselves when discussing what they sensed; they frequently had difficulty noticing and delineating physical sensations as well as changes in affect; they asked for academic references and outright dismissed their content before reviewing them fully; learners at times broke into forced, uncomfortable laughter when it appeared to them that they were not doing a sensing-based exercise "correctly."

Thus, the first step of our exploration occurred when we observed an interesting phenomenon in the real world: the reluctance of analytically educated learners to pay attention to sensing. As the observation awakened our curiosity, the next step was to review the literature to determine whether others noticed and conceptualized something similar. We found that other scholars noticed similar demeanor or attitudes but the findings did not present a cohesive picture. Often, the reluctance was only briefly mentioned, but not explored. The mentions were scattered across many papers, from a variety of contexts, spanning many years, ranging from Epstein et al. (1996) to Springborg and Ladkin (2018). In the third step, drawing on our own experience from the classroom corroborated by the literature, we engaged in phenomenal theorizing, identifying common barriers to sensory-based learning.

In order to maintain rigor throughout the research process, we have practiced bracketing through transpersonal reflexivity (Dörfler and Stierand, 2021), that is, reflexivity that happens when two or more researchers think together, holding a metaphorical mirror to each other's thinking, and prompting greater awareness of their pre-understandings, assumptions, and judgments, in order to account for their impact and use them as source of insight rather than something that distorts the findings. The first two authors validated these emerging behavioral patterns through casual conversations with participants. Then, they exchanged their observations and reflections with each other and with the third author, questioning, explaining, contesting, justifying in cycles. This approach to transpersonal reflexivity builds upon the relationally reflexive practice (Hibbert et al., 2014) and is aligned with the generic principles of reflexive research (Alvesson and Sköldberg, 2017).

We believe that this type of exploratory study, that starts from observations as they occur in their natural contexts, can be useful at an early stage of studying a phenomenon. Prior to conducting robust empirical studies, we feel it is important to establish a conceptual framework, outline practice-based observations, and problematize them as barriers, through theorizing grounded in the phenomena (Ployhart and Bartunek, 2019), with the aim to "make phenomena understandable" (Langley, 2021). Equally important is to delineate the identified barriers to sensory-based learning and explore them in a systematic manner that would inform research design of future empirical studies.

What hinders openness to sensory-based learning?

In the classrooms, we observed some level of discomfort with tapping into sensory-based learning. Although the classes on which we based our observations were invitational rather than mandatory in the United States, frequently students initially displayed closed body language such as folded arms, leaning back, and some rolling of the eyes. We also observed learners checking their electronic devices when asked to participate in activities related to physical self-awareness and the questions were asked in a form that attempted to intellectualize the sensory aspects of the exercises. In order for us to facilitate sensory-based learning effectively, we first needed to understand the reasons for learners' reluctance to engage in it. Thus, following the process outlined in the "Methodological considerations" section, we identified the most common barriers. We had already concluded through previous literature search that barriers to sensing in analytically educated

learners are often mentioned as an afterthought or speculation, rather than a thoroughly researched phenomenon.

We begin the discussion with corporate social norms against sensory-based evidence; it appears that these norms stem from the influence of the Western education system, which prescribes reliance on the measurable and intellectual over the sensory. Next, we describe a cluster of seemingly individual barriers: discomfort of learning outside the comfort zone, lack of adequate vocabulary, lack of sensory awareness, preference for sequential reasoning style, mistrust in sensory-based evidence, trusting-but-dismissing sensory-based information, and denying (or not admitting to) use of sensing. Although this list may not be comprehensive, it highlights barriers for which we found sufficient evidence both in our observations and in the literature; these are not presented to highlight a particular order, although one might speculate that some of the individual barriers could have been shaped by the prevalent social norms. Consistent with our methodological approach, we first illustrate each barrier with our observations and then summarize the explanation we found for it in the literature, although sometimes these two steps cannot be fully separated. We conclude with a brief mention of the way we attempted to address the encountered learner's reluctance in the classroom, with the aim to gain a deeper understanding of the particular barrier, rather than prescribe a solution.

Corporate social norms against sensory-based evidence

> Our managers expect hard data when we propose a course of action; "I have a feeling" is not considered to be viable evidence.

It has been our experience that organizations can be slow to openly embrace the usefulness of sensory-based evidence. New ideas may be polarizing, even when they are well researched and well presented. We observed an interesting example of this during a workshop on intuition and creativity, with a large sensory-based component. Nearly half of program participants discounted sensory-based tools as bogus and were shocked to see them placed alongside more traditional academic methods. The other half was genuinely interested and stayed after class to elaborate on the presented material and discuss their own experiences, which they did not dare to share during class.

During these after-class conversations, it became obvious that some hesitated to rely openly on sensing as a source of knowing because of their perception that colleagues in the organization may not accept it. Several participants in our corporate workshops described their reluctance to bring insights based on "having a sense for a situation" to their teammates and managers, concerned about not being taken seriously. We have observed an interesting example of this in our intuition workshop conducted for a business school that wanted to bring cutting-edge content to students. While nearly half of the participants discounted sensory-based tools as bogus and were shocked to see intuition placed alongside more traditional decision-making tools, the other half was genuinely interested and stayed after class to ask more questions. These students were excited to share their own experiences with intuition—something they did not dare to do during class. As they suggested, sensing alone is "just not good enough" in the corporate culture of quantitative approach.

The belief about what is acceptable may lead to a counter-productive trusting-not-trusting dance (Lewin, 1935: 164), not relying openly on sensing as a source of knowing. It appears that despite the growing movement in academic research to demonstrate the value of sensing in practice-based learning (Brewis and Williams, 2019; Valtonen et al., 2017; Willems, 2018), organizations may need time to process this new information or wait for the early adopters to convert novelty into mainstream, before the emergence of social norms accepting of the new idea (Goldstein et al., 2008). It has been known from research that people's behavior is often more influenced by social

norms than their own beliefs (Tankard and Paluck, 2017), which seems to be affected, at least to some extent, by their fear of being ridiculed (Saarelainen et al., 2006).

This led us to the conclusion that it may be more effective to reshape social norms regarding sensory-based learning, rather than change managers' individual beliefs about it, with an expectation that the new corporate social norms will influence their behavior (Goldstein et al., 2008). Furthermore, we have been evaluating emerging research on sensory-based learning. In the classrooms, we point out the pervasive use of sensory information and transparently discuss relying on our own senses. This creates pockets of microclimate conducive to the acceptance of sensory-based learning.

Discomfort of learning outside of the comfort zone

> I am probably doing this all wrong. Go easy on me.

From our observations, when analytically educated learners choose to participate in sensory-based exercises, they frequently use qualifiers and self-depreciating comments, such as "I'm not good at this," "I'm probably doing it all wrong," or try to intellectualize the exercise by talking about its effects rather than participate in the activity. Mastering sensory-based learning can be compared with learning a new topic into which most of the knowledge from other known disciplines does not easily transfer. We had an impression that high achievers filling our classrooms may have been even more reluctant than others to risk their reputation in order to experiment. They either refrained from the exercises altogether or pre-emptied their effort with a disclaimer or a self-depreciating comment. Also, when sensory-based exercises came too easily to them, participants at times expressed doubt about the quality of their work, implying that quality is positively correlated with effort.

Uncertainty about one's own ability to deliver high-quality performance can prevent experimentation (Brown, 2008). When analytically educated learners go outside the comfort zone of their current knowledge, dismissing new ideas is an easily accessible defense mechanism, which may force them either not to register the sensory signals or to suppress them as socially unacceptable, random, or irrelevant (Lindeman et al., 2012). While people generally experience discomfort associated with learning outside of their comfort zone (Brown, 2008), analytically educated learners, especially high achievers, thrown into sensory-based learning may experience this discomfort particularly sharply. For them, sensory-based learning entails a high probability of initial failure, a risk of being ridiculed by peers, and possibly harsh self-judgment that may undermine one's self-esteem (Springborg and Sutherland, 2014: 47). Learners who excelled in their studies and have established themselves at the highest levels of excellence seem more uncomfortable with failure and associate it with losing face (Ardichvili et al., 2003). Hence, it is inevitable for learners to practice sensory-based skills as novices at first and expect to make many mistakes, knowing that it is not a reflection on their general abilities or talents (Sinclair and Bas, 2017).

To ease the discomfort of learning outside of the comfort zone, we discussed areas in which we are experienced versus new and how natural it is to feel uncomfortable when our body, affect, and intellect are stretched in new ways, normalizing the experience. After trial and error, we have found that a discussion about what it means to be a novice can serve as an effective encouragement. Reminding learners what it is like to start learning something new and emphasizing that it is normal to be a novice in one area and an expert in another have put them at ease and allowed them to keep an open mind about sensory-based learning. For example, we asked participants in our workshops to recall the time when they started to play their first sport or musical instrument, how it felt being a novice, and how they developed a comfort level with the new activity.

Inadequate vocabulary

> When you say "embody," all I see is Whoopi Goldberg from the movie *Ghost*, performing mediumship for Patrick Swayze.

A careful choice of acceptable and understandable words may help analytically educated learners make sense of the presented material, as they develop their sensory awareness. In our experience, many learners expect research-based evidence and data outlined in terms that are reason-based rather than feeling-based—a precondition for their willingness to take new ideas seriously. It became apparent to us that in order to enable learners to create an alignment between what they *experience* and what they *understand*, directions for sensory-based learning need to be phrased in terms which can be initially processed analytically. Throughout our classes, we have been cautiously using terms from other reputable scientific disciplines, ranging from neuroscience (such as "mirror neurons") to physics (such as "quantum entanglement"), but these terms are not self-explanatory for professionals who have not studied the field. In one case, a learner asked with dismay whether we are just trying to use "quasi-scientific terms" to legitimize a psychic phenomenon. This suggests that unfamiliar terms may contribute to the confusion or misunderstanding, thus becoming counter-productive.

Between the unfamiliar vocabulary and scientific jargon, it can be a struggle for educators to make the language for sensing in management both clear and intelligent. For instance, "reading the energy of the room" may sound like a new age ritual unsubstantiated by science and it takes a longer conversation to elaborate. We would have to say,

> Experience with all of your senses what is happening in the room by noticing your own level of ease or anxiety, perceive tension or ease between other participants in the room, and get a sense for how comfortable or fitting the space is.

The issue is that the elaborated version contains only *some* of the things that learners may experience, but "reading the energy of the room" may evoke the wrong associations. Even scientific terms may present a challenge; when one of the educators mentioned "quantum entanglement" in a classroom of highly educated learners, a participant suggested in the evaluation form to stay away from quantum physics because it should not be used to explain sensory-based learning. So, there is a great deal of confusion stemming from the lack of vocabulary for discussing sensing without using loaded words from other areas.

Lack of vocabulary for describing sensory awareness presents a significant barrier (Petitmengin-Peugeot, 1999). Developing a sufficient and acceptable lexicon that enables a clear discussion of sensory-based knowing is still a work in progress (Springborg and Ladkin, 2018; Taylor, 2002). Using metaphors may be one of the possible effective solutions (Dörfler, 2010; Epstein, 1994), as metaphors have the power to create compelling relatable images that communicate the concept without resorting to analysis and verbal rationalization (Cairns-Lee, 2020; Tantia, 2011). The need to have clear, consistent language to discuss sensing in management learning is still pressing and unaddressed. In our classrooms, we made it a point to explain every term that we were using and demonstrated non-verbally and through various metaphors what we aimed to accomplish in each exercise. We also connected the ideas of sensory-based learning to everyday experiences which were not objectionable, such as experiencing the comfort level of sitting in a chair.

Lack of sensory awareness

> What do you mean by "where does happiness feel in my body?"?! It's in my head! Everything is in my head.

In our classrooms, learners occasionally reported being puzzled when we discussed sensations in their bodies in response to thoughts or events. For example, when we asked what happiness *feels* like to them, they would often intellectualize the response rather than describe physical sensations: "I feel excited. I feel joy." So, we reframed the question, asking how they would know that they are happy if they lost their capacity for language, both in thought and in their ability to speak. After a pause, the learners' responses shifted toward sensory awareness: "I am smiling. I feel like jumping. My chest feels light." This suggests that to some analytically educated learners sensory awareness does not come easily and they may benefit from being guided by questions to which they can relate.

Analytically educated learners may struggle not just with making meaning of the sensory input they receive, but on a more basic level, with *recognizing the fact* that they received sensory input (Krycka, 2014; Leijssen, 2007). It may be useful to help them first develop and cultivate sensory awareness, or felt sense (Gendlin, 1962). Sensing one's own body, as well as identifying occurrence of affect or feelings, might sound like a foreign concept to someone who is not used to paying attention to changes in physical sensations (Cornell, 2013). This is problematic because sensory-based learning cannot be fully conveyed intellectually, but rather, it has to be experienced through the senses (Stierand, 2015). Clearly, outside of the classroom, analytically educated learners do master skills that require sensing, such as keeping balance on a bicycle, or parallel-parking, and swimming (Yakhlef, 2010). To help learners understand how they already utilize sensory awareness, we drew on their own experiences. We encouraged them to consider their senses like vision, taste, smell, touch, and hearing (Yakhlef, 2010)—senses they have learned to notice and trust over the years in everyday situations, with the idea that greater sensory awareness for other sensations like sense of ease, balance, harmony, and such can be achieved through practice.

Preference for sequential reasoning style

> When I have an issue with my team lead, I need to think about it step by step, not sense it.

During multiple workshops we conducted for groups of self-identified analytical thinkers (i.e. an invitational workshop titled "Sensing for Analytical Thinkers"), some of the learners attempted to grasp sensory awareness by insisting on linear, highly structured, detailed, verbal directions, and then tried to apply them literally. For example, learners were asked to notice what it feels like physically to inhabit their bodies, in this space and time, to notice what comes in through their senses at the moment and write down a few notes on their experience. The idea behind this exercise is to help learners intentionally focus on their senses—the senses that are often taken for granted and therefore ignored (Robinson et al., 2017). Participants would often respond in a defensive manner, displaying frustration: "What do you *mean*?! What exactly am I supposed to sense?" As a result, some learners expressed mild frustration with the material, asking for specific *things to do* rather than noticing *ways to be*. While learners may intellectually understand the value of a sensory-based exercise, they often defaulted to thinking about the presented ideas rather than mindfully embodying them. It is possible that some were not willing to attend to their senses in front of the group, while others may have found the process to be too uncomfortable.

The most apparent challenge analytically educated learners appear to have with sensory-based learning is the disparity between the way they *prefer* to process information (Allinson and Hayes, 1996; Bakken et al., 2016) and the way sensory awareness emerges. The lack of understanding does not appear to stem from their incomprehension of the directions. Rather, it seems to be their attempt to comprehend *a way of being* through sequential information processing rather than experiencing it. This hinders making sense of sensory-based information, especially if learners are not

used to consciously register sensory signals (Booth-Butterfield and Booth-Butterfield, 1990; Epstein et al., 1996; Gendlin, 1984). If analytically educated learners have no or little previous exposure to sensory-based learning, they may struggle with it (Caton et al., 2013). In our classrooms, we supplemented sensory-based exercises with a sequential line of supporting evidence that can be processed and intellectualized by thinking through it. This seemed to resonate for some participants who opened up to experimenting with sensory-based learning and then, in addition, attempted to make sense of their experience intellectually.

Mistrust in sensory-based evidence

> I can't trust what I can't explain. What if this is just my fear? What if I'm completely wrong?

When learners in our programs were asked to participate in sensory-based activities (i.e. to get a sense for something rather than systematically analyze it), they often attempted to explain their experience intellectually, without relying on senses. Their main concern was, "What if I am making it up?" We eased them into conversations about familiar situations in which the *only* way to know something is through sensing and then discussed how frequently they are already engaging in these situations successfully. For example, everyday decisions like figuring out whether a meal tastes good enough to eat, whether a pillow is comfortable enough to buy, or whether to ask a new acquaintance out for a date require reliance on sensing and we get better at it with experience. Learners seemed to open up to the idea of trusting their whole-body senses more after we discussed how we come to rely on our vision, for instance, despite the fact that eyes deceive us all the time. For instance, one may need glasses and not even know it.

If analytically educated learners cannot verify sensory information or track the logical progression from sensory-based perceptions to knowledge, they may mistrust sensory-based evidence (Dane, 2019). Sensory-based knowledge also may appear vague and less definitive than a spreadsheet with numbers. Yet, people extract meaning from non-verbal acts like art, dance, and music as much as they do from numbers and words (Adler and Delbecq, 2018; Merritt, 2010; Springborg, 2010); all these inputs can equally inform mood and behavior. While "objective interpretation of data" is not possible (Cunliffe, 2003), it is our ability or inability to adequately explain *how* we have extracted the meaning that can be troubling (Dane, 2019). When we receive a signal through the senses, it is not always apparent what triggered it or how to interpret it; we only notice that something has changed inside of us. Sensory perceptions do not always lend themselves well to explicit, verbal description (Crossan et al., 1999; Taylor and Statler, 2014) and cannot always produce measurable outcomes, the way some mathematical formulas can. Hence, depending on one's life experience, trusting one's senses may not be a natural or easy process (Gendlin, 1982: 106). We suggested to analytically educated learners to experiment with their senses, to document what knowing comes out of sensing situations, to supplement this knowing with an intellectual assessment if it is more comfortable for them, and, over time, to see how the situation plays out.

Dismissive attitude

> I know that my feeling about this project is right, but without hard data that tells me the same, this feeling means nothing.

We noticed that learners seemed to be struggling during exercises and Q&A sessions. On one hand, they were willing to ask questions as a sign of openness, and on the other hand, they seemed ready to dismiss the response outright before hearing it, even if the response was well substantiated and

well explained. Dismissive attitude presented an obstacle not only for analytically educated learners but also for educators. Even when information for the learning sessions came from sources that are traditionally considered credible in academic and corporate circles, learners in our classes tended to question the credibility of the presented research. It seemed that the new information caused a discomfort by juxtaposing educational and corporate norms with value of sensory-based evidence. For example, learners asked probing questions such as whether the articles were based on large-scale studies, whether the journals were mainstream or on the periphery, and whether we have interpreted the findings correctly. After this questioning, they occasionally asked for the citation in order to go back to the source and establish its legitimacy for themselves.

Our observation of a dismissive attitude toward a phenomenon that is not widely culturally accepted is consistent with approach-avoidance behavior (Lewin, 1935: 164), much like a child wanting to get into the ocean, finding it to be too cold, and repeatedly trying the water. This is an example of a cognitive dissonance (Festinger, 1962) in which, on one hand, learners experience sensing as a source of knowing, and on the other hand, they subscribe to the corporate social norms against sensory-based evidence. In addition, when analytically educated learners register sensory information, they may dismiss it due to possible inability to translate it into evidence (Sadler-Smith and Shefy, 2004). Furthermore, in some organizations, discourse about sensing is not considered legitimate, which leads to such experiences being ignored and excluded from organizational memory (Taylor, 2002: 827). To help analytically educated learners embrace sensory-based learning, we made a conscious effort to interpret learners' seemingly confrontational questions as a sign of a struggle to understand rather than a sign of being disrespectful or belligerent. Responding to challenging questions without being defensive contributed to creating psychological safety and greater openness in the classroom. We suggested that learners notice and document their sensory impressions and see how they align with intellectual assessments before dismissing sensory-based information.

Denying (or not admitting to) use of sensing

> I would never tell the Board that I sensed the solution—I'll be laughed out of the room. I would put together a spreadsheet, making it look like the solution came from the numbers.

In conversations during the learning sessions, it came out that while some learners did rely on their senses to get a better grasp of work-related situations, they were not only unwilling to admit this to their managers but may have flat out denied it when presenting solutions to higher ups. This behavior is consistent with corporate social norms against sensory-based evidence, where the expectation is that a solution must be supported by data in order to be considered objective, justly or not. We were privy to a few insightful discussions among managers, all of whom, on one hand admitted to use sensing at work and, on the other hand, expressed reluctance to accept solutions based on sensing from their subordinates, especially when these solutions would eventually need to be presented to senior leadership. Managers expressed that they felt more secure and confident presenting quantitative, observable, and so-called "objective" evidence rather than sensory-based personal knowledge.

The role of sensing in management is just beginning to see the light of day (Antonacopoulou, 2019; Springborg and Ladkin, 2018; Zundel, 2013). Not admitting to it as an essential dimension of management learning practice can lead to missing out on solutions and discoveries for the lack of a "reasonable" justification, which may be more widely acceptable in work situations (Dörfler and Eden, 2019). Denying sensing as a source of information can also result in inaccurate accounts of pathways to solutions, as managers may be required to provide an explanation of the way a

solution was obtained (Saarelainen et al., 2006). As a result of the standardized formal education in the Western world, and the accepted cultural canons in the corporate world, sensing might be perceived as unprofessional and unscientific, making it difficult for managers to admit reliance on it (Sadler-Smith and Shefy, 2004). If they choose to openly tap into sensing at work, without fear of being embarrassed, bringing into alignment social desirability of creative insights and acceptance of sensing, this can lead to increased creativity (Feuls et al., 2021). In working with analytically educated learners, we have brought up various examples from management literature illustrating the value of incorporating sensory-based learning into managerial decision-making, especially under the conditions of uncertainty. We have also encouraged managers to demonstrate leadership in their own teams and create a climate of greater openness and acceptance of sensing, thus reducing the need for denial, as well as counteracting the prevalent corporate cultural norms.

Concluding remarks

In this article, we have explored the reluctance of analytically educated learners to sensory-based learning, identifying some of its causes. As we zoom in on this phenomenon that has been widely observed, it is surprising that it has still not been addressed systematically in the scholarly literature on management learning. This highlights the importance of our insights not only for practice but also scholarship of the field. As we believe that in this case, the significance of the scholarship can only be fully seen in the light of its practical usefulness, we consider it first.

The practical contribution of our study provides bases for addressing more systematically the observed reluctance and boldly bringing sensing into management learning practice. As literature demonstrates, sensory-based learning can help address the growing need for managerial flexibility and adaptability at the workplace, supplementing the use of intellect by utilizing the whole body as a source of knowledge. If sensory-based learning becomes a more accepted topic of conversation in management learning practice, then in principle, managers will legitimately be able to use sensing as a valuable supplement to rigorous analysis, logical argument, and deep thinking, with the understanding that sensing and ratiocination (a reasoned train of thought) complement each other. The sensory and the intellectual work together seamlessly, in various configurations, depending on the situation and context. Sensing may also bring to the surface tacit knowledge that can support managers moving forward amid uncertainty.

There is a great degree of variation in the extent to which managers are encouraged to reflect on their sensory experiences and affective capacities. For instance, when organizations support master–apprentice relationships, there is a better chance of passing on the tacit and sensory-based components of mentors' experience. The best musicians, chefs, athletes, and scientists are esteemed precisely for their "sense of the game" in their respective fields, even when formally they are recognized for more quantifiable achievements. Studying expert performance tells us that sensing and readiness for sensing are worth developing.

However, even if organizations get fully on board with openly incorporating and supporting sensory-based learning for managers, some practitioners may have difficulty overcoming the conditioning of schooling and corporate social norms against sensory-based evidence as a valid way of knowing. Willingness and ability to engage with sensing may require breaking through social as well as individual barriers which include discomfort of learning outside of the comfort zone, inadequate vocabulary, lack of sensory awareness, preference for sequential reasoning style, mistrust in sensory-based evidence, dismissive attitude, and denying (or not admitting to) use of sensing.

Noticing, understanding, and appropriately incorporating sensory-based knowing in conjunction with intellectual assessment into managing practice are worth the effort, as it attunes managers to the changes in the landscapes and environments of their work. It will make them more flexible

and innovative in their response. This should be particularly noticeable when data-driven navigation from point A to point B is impossible due to unknowable uncertainty and the only feasible way to move forward is by sensing, using the whole body as a compass, "knowing as we go."

To address the outlined concerns for practice, a robust theoretical grounding is needed. In this respect, our main contribution lies in offering a deeper, more systematic understanding of the underlying reasons for the reluctance of analytically educated learners to engage in sensory-based learning, thus furthering the study of sensing in the fields of individual learning and management learning. We have used our observations as a starting point to explore the literature and synthesize relevant ideas from various disciplines. By problematizing the observed reluctance to engage in sensory-based learning, we created an initial conceptual framework that lays groundwork for future empirical exploration of the identified barriers. What is needed now is a comprehensive, transparent conversation about sensing in both scholarship and practice of management learning. We invite researchers and practitioners to address the root causes of our unwillingness to face the proverbial elephant instead of tiptoeing around it.

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References

Adler NJ and Delbecq AL (2018) Twenty-first century leadership: A return to beauty. *Journal of Management Inquiry* 27(2): 119–137.

Agor WH (1984) Using intuition to manage organizations in the future. *Business Horizons* 27(4): 49–54.

Agor WH (1989) *Intuition in Organizations: Leading and Managing Productively*. Newbury Park, CA: SAGE.

Allinson CW and Hayes J (1996) The Cognitive Style Index: A measure of intuition-analysis for organizational research. *Journal of Management Studies* 33(1): 119–135.

Alvesson M and Sköldberg K (2017) *Reflexive Methodology: New Vistas for Qualitative Research*. Thousand Oaks, CA: SAGE.

Amin A and Roberts J (2008) Knowing in action: Beyond communities of practice. *Research Policy* 37(2): 353–369.

Antonacopoulou EP (2019) Sensuous learning: What it is and why it matters in addressing the ineptitude in professional practice. In: Antonacopoulou EP and Taylor SS (eds) *Sensuous Learning for Practical Judgment in Professional Practice*. Cham: Springer, 13–43.

Antonacopoulou EP and Gabriel Y (2001) Emotion, learning and organizational change. *Journal of Organizational Change Management* 14(5): 435–451.

Ardichvili A, Page V and Wentling T (2003) Motivation and barriers to participation in virtual knowledge-sharing communities of practice. *Journal of Knowledge Management* 7(1): 64–77.

Austin AE (2009) Cognitive apprenticeship theory and its implications for doctoral education: A case example from a doctoral program in higher and adult education. *International Journal for Academic Development* 14(3): 173–183.

Bakken BT, Hansson M and Haerem T (2016) Interaction effects of intuitive and analytic cognitive styles on decision making performance. *Academy of Management Annual Meeting* 2016: 14419.

Bas A, Dörfler V and Sinclair M (2019) Intuiting process as sensing plus sensemaking. In: *AoM 2019: 79th annual meeting of the Academy of Management*, Boston, MA, 9–13 August.

Bays BC (2016) *Mechanisms of sensory learning processes*. PhD Thesis, University of California Riverside.
Beirne M and Knight S (2007) From community theatre to critical management studies: A dramatic contribution to reflective learning? *Management Learning* 38(5): 591–611.
Bergen BK (2012) *Louder Than Words: The New Science of How the Mind Makes Meaning*. New York: Basic Books.
Bergson H (1911) *Creative Evolution*. New York: Henry Holt and Company.
Blomert L and Froyen D (2010) Multi-sensory learning and learning to read. *International Journal of Psychophysiology* 77(3): 195–204.
Booth-Butterfield M and Booth-Butterfield S (1990) The mediating role of cognition in the experience of state anxiety. *Southern Journal of Communication* 56(1): 35–48.
Boud D and Tennant M (2006) Putting doctoral education to work: Challenges to academic practice. *Higher Education Research & Development* 25(3): 293–306.
Brewis DN and Williams E (2019) Writing as skin: Negotiating the body in (to) learning about the managed self. *Management Learning* 50(1): 87–99.
Brown M (2008) Comfort zone: Model or metaphor? *Journal of Outdoor and Environmental Education* 12(1): 3.
Burton RA (2009) *On Being Certain: Believing You Are Right Even When You're Not*. New York: St. Martin's Press.
Cairns-Lee H (2020) Researching intuition through metaphor. In: Sinclair M (ed.) *Handbook of Intuition Research as Practice*. Cheltenham: Edward Elgar Publishing, 284–294.
Caton SJ, Ahern SM, Remy E, et al. (2013) Repetition counts: Repeated exposure increases intake of a novel vegetable in UK pre-school children compared to flavour–flavour and flavour–nutrient learning. *British Journal of Nutrition* 109(11): 2089–2097.
Chia RCH (2017) A process-philosophical understanding of organizational learning as "wayfinding." Process, practices and sensitivity to environmental affordances. *The Learning Organization* 24(2): 107–118.
Cornell AW (2013) *Focusing in Clinical Practice: The Essence of Change*. New York: W.W. Norton & Company.
Crossan MM, Lane HW and White RE (1999) An organizational learning framework: From intuition to institution. *Academy of Management Review* 24(3): 522–537.
Cunliffe AL (2003) Reflexive inquiry in organizational research: Questions and possibilities. *Human Relations* 56(8): 983–1003.
Cunliffe AL and Coupland C (2012) From hero to villain to hero: Making experience sensible through embodied narrative sensemaking. *Human Relations* 65(1): 63–88.
Damasio AR (1994) *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Penguin Books.
Dane E (2019) Suddenly everything became clear: How people make sense of epiphanies surrounding their work and careers. *Academy of Management Discoveries* 6(1): 39–60.
Dawson C (2010) *The Crisis of Western Education*. Washington, DC: CUA Press.
de Rond M, Holeman I and Howard-Grenville J (2019) Sensemaking from the body: An enactive ethnography of rowing the Amazon. *Academy of Management Journal* 62(6): 1961–1988.
Dörfler V (2010) Learning capability: The effect of existing knowledge on learning. *Knowledge Management Research & Practice* 8(4): 369–379.
Dörfler V and Bas A (2020a) Intuition: Scientific, non-scientific or unscientific? In: Sinclair M (ed.) *Handbook of Intuition Research as Practice*. Cheltenham: Edward Elgar Publishing, 295–307.
Dörfler V and Bas A (2020b) Tools for exploring the unknowable: Intuition vs. artificial intelligence. In: *AoM 2020: 80th annual meeting of the Academy of Management*, Online, 7–11 August.
Dörfler V and Eden C (2017) Becoming a Nobel Laureate: Patterns of a journey to the highest level of expertise. In: *AoM 2017: 77th annual meeting of the Academy of Management*, Atlanta, GA, 4–8 August.
Dörfler V and Eden C (2019) Understanding "expert" scientists: Implications for management and organization research. *Management Learning* 50(5): 534–555.
Dörfler V and Stierand M (2021) Bracketing: A phenomenological theory applied through transpersonal reflexivity. *Journal of Organizational Change Management* 34(4): 778–793.
Drucker PF (2002) *Management Challenges for the 21st Century*. Burlington, MA: Butterworth-Heinemann.

Epstein S (1994) Integration of the cognitive and the psychodynamic unconscious. *American Psychologist* 49(8): 709–724.

Epstein S, Pacini R, Denes-Raj V, et al. (1996) Individual differences in intuitive-experiential and analytical-rational thinking styles. *Journal of Personality and Social Psychology* 71(2): 390–405.

Essén A and Värlander SW (2013) The mutual constitution of sensuous and discursive understanding in scientific practice: An autoethnographic lens on academic writing. *Management Learning* 44(4): 395–423.

Festinger L (1962) *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.

Feuls M, Stierand M, Dörfler V, et al. (2021) Practices of creative leadership: A qualitative meta-analysis in haute cuisine. *Creativity and Innovation Management* 30(4): 783–797. DOI: 10.1111/caim.12471.

Friedlander MJ, Andrews L, Armstrong EG, et al. (2011) What can medical education learn from the neurobiology of learning? *Academic Medicine* 86(4): 415–420.

Furnari S (2014) Interstitial spaces: Microinteraction settings and the genesis of new practices between institutional fields. *Academy of Management Review* 39(4): 439–462.

Gendlin ET (1962) *Experiencing and the Creation of Meaning: A Philosophical and Psychological Approach to the Subjective*. Evanston, IL: Northwestern University Press.

Gendlin ET (1982) *Focusing*. New York: Bantam Dell.

Gendlin ET (1984) The client's client: The edge of awareness. In: Levant RL and Shlien JM (eds) *Client-Centered Therapy and the Person-Centered Approach: New Directions in Theory, Research and Practice*. New York: Praeger, 76–107.

Gherardi S (2017) One turn . . . and now another one: Do the turn to practice and the turn to affect have something in common? *Management Learning* 48(3): 345–358.

Gherardi S (2019) Theorizing affective ethnography for organization studies. *Organization* 26(6): 741–760.

Gherardi S and Perrotta M (2014) Between the hand and the head. *Qualitative Research in Organizations and Management: An International Journal* 6(2): 134–150.

Gioia DA (2021) On the road to hell: Why academia is viewed as irrelevant to practicing managers. *Academy of Management Discoveries*. Epub ahead of print 19 October. DOI: 10.5465/amd.2021.0200.

Goldstein NJ, Cialdini RB and Griskevicius V (2008) A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research* 35(3): 472–482.

Government of Canada (2019) Behavioral competencies for management: Analytical thinking. Available at: https://nrc.canada.ca/en/corporate/careers/behavioural-competencies/behavioural-competencies-management-analytical-thinking

Hibbert P, Sillince J, Diefenbach T, et al. (2014) Relationally reflexive practice: A generative approach to theory development in qualitative research. *Organizational Research Methods* 17(3): 278–298.

Hogarth RM (2001) *Educating Intuition*. Chicago, IL: University of Chicago Press.

Huang L (2018) The role of investor gut feel in managing complexity and extreme risk. *Academy of Management Journal* 61(5): 1821–1847.

Ingold T (2000) *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. London: Routledge.

Khan S (2012) *The One World Schoolhouse: Education Reimagined*. New York: Twelve.

Kolb AY and Kolb DA (2005) Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education* 4(2): 193–212.

Krycka KC (2014) Thinking and practicing FOT in the twenty-first century. In: Madison G (ed.) *Theory and Practice of Focusing-Oriented Psychotherapy: Beyond the Talking Cure*. London: Jessica Kingsley Publishers, 52–66.

Langley A (2021) What is "this" a case of? Generative theorizing for disruptive times. *Journal of Management Inquiry* 30(3): 251–258.

Leijssen M (2007) Making space for the inner guide. *American Journal of Psychotherapy* 61(3): 255–270.

Lewin K (1935) *A Dynamic Theory of Personality*. New York: McGraw-Hill.

Lindeman M, Svedholm AM, Riekki T, et al. (2012) Is it just a brick wall or a sign from the universe? An fMRI study of supernatural believers and skeptics. *Social Cognitive and Affective Neuroscience* 8(8): 943–949.

Lund Dean K, Wright SL and Forray JM (2019) Experiential pedagogy and the moral duty of business schools. *Academy of Management Learning & Education* 19(4): 569–583.
McDermott M (2013) The corporate model of schooling: How high-stakes testing dehumanizes education. *Counterpoints* 451(1): 78–95.
McDonald P and Tang Y-Y (2014) Neuroscientific insights into management development: Theoretical propositions and practical implications. *Group & Organization Management* 39(5): 475–503.
McKeen S, Laufer K and Jester M (2018) Assurance of learning standards and scaling strategies to enable expansion of experiential learning courses in management education. *Texas Education Review* 7(1): 154–174.
Maslen S (2015) Researching the senses as knowledge: A case study of learning to hear medically. *The Senses and Society* 10(1): 52–70.
Maslen S (2016) Sensory work of diagnosis: A crisis of legitimacy. *The Senses and Society* 11(2): 158–176.
Maslen S (2017) Layers of sense: The sensory work of diagnostic sensemaking in digital health. *Digital Health* 3: 2055207617709101.
Merleau-Ponty M (1962) *Phenomenology of Perception*. New York: Routledge.
Merritt S (2010) What does beauty have to do with business? *Journal of Business Strategy* 31(4): 70–76.
Moore PV (2017) *The Quantified Self in Precarity: Work, Technology and What Counts*. New York: Routledge.
Nagel SK, Carl C, Kringe T, et al. (2005) Beyond sensory substitution—Learning the sixth sense. *Journal of Neural Engineering* 2(4): R13.
Panayiotou A (2017) Introduction to the virtual special issue on sensory knowledge. *Management Learning*. Available at: https://journals.sagepub.com/pb-assets/cmscontent/MLQ/Sensory%20Knowledge%20-%20Virtual%20Special%20Issue-1509025138420.pdf
Petitmengin-Peugeot C (1999) The intuitive experience. *Journal of Consciousness Studies* 6(2–3): 43–77.
Pink S (2011) From embodiment to emplacement: Re-thinking competing bodies, senses and spatialities. *Sport, Education and Society* 16(3): 343–355.
Pink S (2015) *Doing Sensory Ethnography*. London: SAGE.
Ployhart RE and Bartunek JM (2019) Editors' comments: There is nothing so theoretical as good practice—A call for phenomenal theory. *Academy of Management Review* 44(3): 493–497.
Polányi M (1966a) The logic of tacit inference. *Philosophy* 41(155): 1–18.
Polányi M (1966b/2009) *The Tacit Dimension*. Chicago, IL: University of Chicago Press. (Original work published 1966)
Porges SW (1993) The infant's sixth sense: Awareness and regulation of bodily processes. *Zero to Three* 14(2): 12–16.
Pyrko I, Dörfler V and Eden C (2019) Communities of practice in landscapes of practice. *Management Learning* 50(4): 482–499.
Robinson J, Sinclair M, Tobias J, et al. (2017) More dynamic than you think: Hidden aspects of decision-making. *Administrative Sciences* 7(3): 23.
Robinson K (2010) Changing education paradigms. Based on a speech given in June 2008 at the Royal Academy of Arts: cfpscourseweb.com, 3.
Rosenblum LD (2011) *See What I'm Saying: The Extraordinary Powers of Our Five Senses*. New York: W.W. Norton & Company.
Saarelainen M-M, Ahonen JJ, Lintinen H, et al. (2006) Software modernization and replacement decision making in industry: A qualitative study. In: *10th international conference on evaluation and assessment in software engineering*, Swindon,UK, 10–11 April.
Sadler-Smith E and Shefy E (2004) The intuitive executive: Understanding and applying "gut feel" in decision-making. *Academy of Management Executive* 18(4): 76–91.
Schlitz MM, Vieten C, Miller E, et al. (2011) The worldview literacy project: Exploring new capacities for the 21st century student. *New Horizons for Learning* 9(1): 126–147.
Simon HA (1983) *Reason in Human Affairs*. Stanford, CA: Stanford University Press.
Sinclair M and Bas A (2017) Introducing intuition to analytical thinkers In: *AoM 2017: 77th annual meeting of the Academy of Management*, Atlanta, GA, 4–8 August.

Spanellis A, Pyrko I and Dörfler V (2021) Gamifying situated learning in organisations. *Management Learning*. Epub ahead of print 2 September. DOI: 10.1177/13505076211038812.

Spiller C, Barclay-Kerr H and Panoho J (2015) *Wayfinding Leadership: Ground-breaking Wisdom for Developing Leaders*. Wellington, New Zealand: Huia Publishers.

Springborg C (2010) Leadership as art-leaders coming to their senses. *Leadership* 6(3): 243–258.

Springborg C (2014) *Art-based methods in management education*. PhD Thesis, Cranfield University, Bedford.

Springborg C (2018) *Sensory Templates and Manager Cognition: Art, Cognitive Science and Spiritual Practices in Management Education*. Cham: Springer.

Springborg C and Ladkin D (2018) Realizing the potential of art-based methods in managerial learning: Embodied cognition as an explanatory theory. *Journal of Business Research* 85(1): 532–539.

Springborg C and Sutherland I (2014) Flying blind? Teaching aesthetic agency in an Executive MBA course. In: Ladkin D and Taylor S (eds) *The Physicality of Leadership: Gesture, Entanglement, Taboo, Possibilities*. Bingley: Emerald Group Publishing, 37–58.

Stiehm JH and Townsend NW (2002) *The US Army War College: Military Education in a Democracy*. Philadelphia, PA: Temple University Press.

Stierand M (2015) Developing creativity in practice: Explorations with world-renowned chefs. *Management Learning* 46(5): 598–617.

Stierand M and Dörfler V (2016) The role of intuition in the creative process of expert chefs. *Journal of Creative Behavior* 50(3): 178–185.

Stierand M and Zizka L (2015) Reflecting on hospitality management education through a practice lens. *Quality Assurance in Education: An International Perspective* 23(4): 353–363.

Strati A (2007) Sensible knowledge and practice-based learning. *Management Learning* 38(1): 61–77.

Surawski B (2019) Who is a "knowledge worker"–clarifying the meaning of the term through comparison with synonymous and associated terms. *Management* 23(1): 105–133.

Symonds P, Brown DH and Lo Iacono V (2017) Exploring an absent presence: Wayfinding as an embodied sociocultural experience. *Sociological Research Online* 22(1): 1–20.

Tankard ME and Paluck EL (2017) The effect of a Supreme Court decision regarding gay marriage on social norms and personal attitudes. *Psychological Science* 28(9): 1334–1344.

Tantia JF (2011) Viva las vagus! The innervation of embodied clinical intuition. *The USA Body Psychotherapy Journal Editorial* 10(1): 29–37.

Taylor SS (2002) Overcoming aesthetic muteness: Researching organizational members' aesthetic experience. *Human Relations* 55(7): 821–840.

Taylor SS and Ladkin D (2009) Understanding arts-based methods in managerial development. *Academy of Management Learning & Education* 8(1): 55–69.

Taylor SS and Statler M (2014) Material matters: Increasing emotional engagement in learning. *Journal of Management Education* 38(4): 586–607.

Thomson T (2015) *Sensory-based arts education and engagement in the junior classroom: Exploring multiple ways of knowing and meaning*. Master's Thesis, The University of Western Ontario, London, ON, Canada.

Ucar S (2017) Reluctance and resistance: Challenges to change in psychotherapy. *Journal of Psychology & Clinical Psychiatry* 7(6): 00464.

Valtonen A, Meriläinen S, Laine P-M, et al. (2017) The knowing body as a floating body. *Management Learning* 48(5): 520–534.

Weick KE (2007) Drop your tools: On reconfiguring management education. *Journal of Management Education* 31(1): 5–16.

Wenger EC (1998) *Communities of Practice: Learning, Meaning, and Identity*. New York, NY: Cambridge University Press.

Wenger-Trayner E and Wenger-Trayner B (2014) Learning in landscapes of practice: A framework. In: Wenger-Trayner E, Fenton-O'Creevy M, Hutchinson S, et al. (eds) *Learning in Landscapes of Practice: Boundaries, Identity, and Knowledgeability in Practice-based Learning*. Abingdon: Routledge, 13–31.

Wilczek F (2021) Frank Wilczek: Beauty as a compass for truth. In: Tippett K (ed.) *On Being*. Available at: https://onbeing.org/programs/frank-wilczek-beauty-as-a-compass-for-truth/#transcript

Willems T (2018) Seeing and sensing the railways: A phenomenological view on practice-based learning. *Management Learning* 49(1): 23–39.

Woiceshyn J (2009) Lessons from "good minds": How CEOs use intuition, analysis and guiding principles to make strategic decisions. *Long Range Planning* 42(3): 298–319.

World Economic Forum (2016) *The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*. Geneva: World Economic Forum.

Worthen E (2010) Sensory-based interventions in the general education classroom: A critical appraisal of the topic. *Journal of Occupational Therapy, Schools, & Early Intervention* 3(1): 76–94.

Yakhlef A (2010) The corporeality of practice-based learning. *Organization Studies* 31(4): 409–430.

Zundel M (2013) Walking to learn: Rethinking reflection for management learning. *Management Learning* 44(2): 109–126.