

# **Phronesis, intuition and deliberation in decision-making: Results of a global survey.**

## **Abstract**

There are a number of well-established concepts explaining decision-making. The sociology of wise practice suggests that thinking preferences like the use of intuition form a cornerstone of administrators' virtuous practice and phronesis is a likely candidate to explain this behaviour. This contribution uses conceptual and theoretical resources from the behavioural sciences, administration as well as philosophy to account for individual level differences of employees regarding thinking preferences in administrative professions. The analysis empirically investigates the behavioural dimension preference for intuition/preference for deliberation to cast empirical evidence on three different intuitive markers present among individuals who also prefer to use deliberation. We explore possible explanations for the differences and similarities of our global sample of 2227 workplace respondents who conceptually represent phronetic practitioners. The results show that many phronetic practitioners prefer the intuitive marker of unconscious thought, besides using deliberation.

**Keywords:** intuition; deliberation; decision style; virtue; wisdom; phronesis; Aristotle; emotion

## **Introduction: the conceptual landscape of wise decision-making**

Members of any organization, at any level, employ some degree of discretion in their work; this use of discretion is not only unavoidable but crucial (Freiling, 2004; Freiling et al., 2008; Vickers, 1984; Wangrow et al., 2015). Judgments and wise decisions are by now taken to be one of the most crucial aspects of leaders' responsibilities (Nonaka et al., 2014; Wright, 2022). The term *phronesis*, or practical wisdom integrates the thinking processes of intuition and deliberation (blinded for review). Hence the focus of this article is on how judgment and practical wisdom can be pinpointed in decision-making characteristics at the workplace during the year 2020 of the global pandemic. More specifically, we want to find out, which intuitive markers surface among practitioners with a preference for deliberation.

The findings can pave the way for a better understanding of the contextual integrative potential of *phronesis* (blinded for review). While previous studies rely primarily on direct observations and a small n research design (Goodsir, 2018; Massingham, 2019; Oktaviani et al., 2016; Rooney, 2013; Shotter & Tsoukas, 2014), primarily using qualitative methods, we use a large n survey design using quantitative methods.

For Aristotle, practical knowledge and moral virtues go together: it is impossible to be practically wise without being morally good (Van de Ven & Johnson, 2006). Eikeland (2008, p. 53) remarks that *phronesis*, commonly translated as 'practical wisdom', is 'both an intellectual virtue and an ethical virtue'; *phronesis* includes being wise, aware of the situation, and open to dialogue and to the other (Contu, 2023). Moberg (2007, p. 536) sums up the idea like this: "I define practical wisdom as a *disposition toward cleverness in crafting morally excellent responses to, or in anticipation of challenging particularities.*"

This gives many the idea to associate practical wisdom, *phronesis*, with ethical decision-making and apply this also to the management context. Some limitations, however, have to be kept in mind. In particular, the subject of practical wisdom is how to live well; this is why *phronesis* is often translated as ‘prudence’ in English (Provis, 2010, p. 9). There is no overt ethical (moral) dimension, as one might notice. This is because living well and doing the right thing are the same thing for Aristotle: the (personal) good and the (morally) right are congruent with each other. It is important to note, specifically in the business context, that this need not be accepted: one can discuss ethical decision-making without holding that a wise decision must also be the morally right one and *vice versa*. In other words, a business decision can be prudent but not ethical, it can be ethical but not prudent and it can be both at the same time.<sup>1</sup> That is, unless one agrees with Aristotle, practical wisdom can bifurcate into a prudential and moral segment along more or less how we tend to think about these matters in modern times: that morality can conflict with self-interest and vice versa. In this paper we are interested in practical wisdom as ethical wisdom leaving its possible conflict with prudence out of the picture.<sup>2</sup>

Our starting point then, is the concept of practical wisdom and we firstly query what, on the conceptual level, wise decisions consist of. Secondly, we query the empirical support for such an account of wise decision-making. For once we manage to break down practical wisdom into operationalizable elements – further constitutive concepts – we can

---

<sup>1</sup> Further limitations are also little discussed in the management literature. For example, the concept of wisdom, its nature, and its extension (what it includes) are much discussed issues in philosophy. See Ryan, S. (2023). Wisdom. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford Encyclopedia of Philosophy* (Fall 2023 Edition ed.). <https://plato.stanford.edu/archives/fall2023/entries/wisdom/> for a good overview.

<sup>2</sup> This connects back to the previous footnote and again raises the question how much business ethics wants to endorse the full package of standard virtue ethics. To mention one further matter that would then have to be sorted out, practical wisdom is a so-called organizing virtue in standard virtue ethics: it rules over other virtues. How exactly this happens is little discussed in the management literature (cf. Moberg 2007, p. 544 on the ‘unity of virtues’ thesis). Again, we intend to sidestep these controversial and complex matters in the article.

also study wise decision-making empirically. Where to begin? Judged from the extant business management literature (e.g., Sadler-Smith, 2012), we get roughly the following picture. On the conscious, inferential, non-emotional side there are the *deliberative* cognitive processes of analysis and reflection in structures provided by principles and frameworks; on the unconscious, non-inferential, affective side there are the *intuitive* cognitive processes of holistic pattern recognition in complex situations (Provis, 2017, p. 11; Shotter & Tsoukas, 2014, p. 387). (There is here, of course, a clear connection to the dual process (cognition) theory of decision-making. We shall say more about this in the next section.)

The next question is on which side does wisdom lie: the deliberative or the intuitive? Historically, the deliberative side was influential (corresponding to so-called rationalist approaches in philosophy), but recently the intuitive side seems to have become more prominent (philosophically this can be taken to correspond to both the rationalist and the sentimentalist approaches depending on how one understands intuition. Within the field of business ethics and beyond, several scholars now associate practical wisdom closely with affective and emotional thinking processes (Massingham, 2019). This intuitive *fast* thinking style is then taken to wrestle with an analytic or deliberative *slow* thinking style (Kahneman, 2011).

Researchers reconstructing the cognitive processes that foster *practical* wisdom take recourse to intuition, when they aim to describe what virtuous practice or practical wisdom means from a practitioners' point of view (Bachmann et al., 2018). The business administration literature that looks at wise practice often shines a light on skilful actors that use their intuition. For example, Shotter and Tsoukas (2014) describe *phronesis* thus: "Phronetic practitioners, therefore, are those people who have developed a refined capacity to intuitively grasp the most salient features of an ambiguous situation and to

craft a particular path of response, in their search for a way out of their difficulties, while driven by the pursuit of what is good for their practice.”<sup>3</sup> There is a “‘subjective’ quality of what it means to be wise” (Nonaka et al., 2014, p. 370).

At the same time, there are also critics of affective and emotional thinking processes (McMahon & Good, 2016), associating fast intuitive thinking with a reduced probability of ethical behaviour (Street et al., 2001). In fact, Warner and colleagues (2022) reviewed the literature highlighting that there are roughly as many articles associating ethicality with intuition, as there are articles associating ethicality with deliberation (Julmi, 2023). A possible explanation for this indeterminateness is that people have different conceptions of what it means to use intuition (and, relatedly, what in fact an intuition is). In fact, in philosophy it is rarely questioned that intuitions would provide us with ethical knowledge. When this is questioned it is done so on ontological (what kinds of things exist) grounds: on the ground, typically, that intuitions are no different from ordinary cognitions (such as belief), so there is no need to specifically study them.<sup>4</sup> Such ontological disputes are, however, not suitable for discussion in this paper. Similarly, it is not obvious why one must decide between deliberation and intuition in constituting practical wisdom; why this is an either/or question. It seems to us (and to others, cf. Provis (2010); Sadler-Smith (2012)) that deliberation and intuiting can go hand in hand, they can complement each other’s functions. Our contribution can further the sociology of wisdom, which also surfaces in management practice.

---

<sup>3</sup> It has to be said though that in philosophy at least, there is no established orthodoxy regarding a connection between virtuous practice (cognition) and intuition, although there appear to be parallels between the two on certain accounts of intuition and virtue, respectively. See Little (1997) and Zagzebski (2003) for an illuminating analysis of virtuous cognition. See Roeser (2011) and Kauppinen (2013) for a relevant account of intuitions.

<sup>4</sup> There are philosophically important nuances here that are, however, not relevant for this paper. Namely, exactly what role intuitions play in providing ethical knowledge is a matter of dispute. For details, see Bedke (2008); Chudnoff (2014); Huemer (2015); Koksvik (2011); van Roojen (2014).

To sum up, we accept that practical wisdom or phronesis is closely tied up with the concepts of intuition and deliberation. Of the two, our particular interest in this paper lies with the former. We also think that most scepticism and occasional misuse of intuition have to do with a mistaken understanding (conceptualization) of them. We intend to correct this, to the extent that we need to for the purposes of this paper. The studies cited above unearth a research program favouring additional attention to intuition. However, their work is only loosely connected to extant work in multidisciplinary research on intuition. Such work explains phronesis from within practice (e.g., van Steden, 2020). The most prominent concepts in management psychology of decisions, namely intuition and deliberation feature only indirectly in several studies on phronesis. Authors such as Shotter and Tsoukas (2014) implicitly link phronesis to discretion and attach great importance to taking time to make a good decision. There is a lack of depth in the concept of time as it relates to management discretion. It is mostly conceived as an inert idea, but something that varies over time as people gain more experience (Wangrow et al., 2015). To address these gaps, we highlight conscious intuitive markers (those of which decision-makers are aware) in an effort to better understand the temporal dimension under wise decision-making.

In the next section the well-established approaches that supplement intuition and deliberation are briefly laid out, before the paper continues to introduce the methodological approach.

### **Intuitions, their main features, and the dual-process theory**

Many people have tried to explain what intuition is. For an overview regarding the business management literature, see Sadler-Smith and Burke-Smalley (2015). Well-known literature that has been cited over 2000 times defines intuitions as “affectively

charged judgments that arise through rapid, non-conscious and holistic associations” (Dane & Pratt, 2007, p. 33). In philosophy, the study of intuitions has a long history and focuses on many issues. One can ask the question what it is exactly that we intuit (things in the world or propositions that represent them?); what intuitions are (what kind of ‘things’ are they?); and how are they best characterized (what are their most important features?). To establish a connection, it seems that the business management literature, as seen from a philosophical point of view, takes intuitions to be a form of non-sensory perception (‘pattern recognition’, e.g., Provis 2010) that is affectively charged (i.e., bound up with emotions), often quick (immediate), spontaneous, non-inferential and unconscious. To this, philosophers would add that intuitions have a certain kind of phenomenology (they feel in a particular way), that they are stable (not flicker but endure over time), and that they intrinsically (by themselves) motivate. Not nearly every philosopher would accept this account of intuitions, but at least some would accept many or most of these characteristics (blinded for review).<sup>5</sup> It should be noted though that for the purposes of this article only some of these features or markers will be important, as we shall explain below. (Ideally, a more comprehensive method – perhaps a form of triangulation – could be used to properly identify intuitions but such a complex endeavour goes beyond the scope of this paper, which is only intended to constitute the first step on the road.)

Another way to approach the question is to relate the concept of intuition to theories in the experimental psychology and neuroscience literature. Overall, most

---

<sup>5</sup> The work of Bealer (1998), Chudnoff (2011), Huemer (2005), Jenkins (2014), Kauppinen (2013, 2015), Koksvik (2011), Mikhail (2011) could be cited here (among others). Some of the markers listed are less controversial than others (including the ones our paper will focus on later). For example, lack of inference, immediacy and stability are accepted by most. One of us has written about these issues elsewhere (*blinded for review*).

scholars from different disciplines have endorsed intuition from a dual process perspective as a recent review in the business ethics literature shows (Warner et al., 2022). Is it possible to isolate phronesis amidst established measures of intuition and deliberation? We argue that it is and that we can explain aspects of decision-making behaviour that hitherto have not been isolated in a satisfactory way.

The so-called dual-process theory (e.g. Epstein, 1994; Kahneman, 2011; Sloman, 1996; Stanovich & West, 2000) holds that there are two types of cognitive processes underlying people's judgments, decisions, and problem solving. Accordingly, both processes compete for guiding decision makers (Hodgkinson & Sadler-Smith, 2018). Still, while people use both thinking processes, they are assumed to display a preference for one (of the two) thinking styles (Betsch, 2004). Like Sadler-Smith and Burke-Smalley (2015), who bring up "cognitive versatility" to describe the capability of using both processes, we consider it a conceptual merit to account for people displaying both high intuition and high deliberation, as this would allow a peek at decision-makers who are able to skilfully use both thinking processes through meta-cognition, or phronesis. Nevertheless, our focus will be on the intuitive side. For simplicity's sake and for easy future reference, let us call these Marker 1 ('emotional marker'), Marker 2 ('temporality marker'), and Marker 3 ('consciousness marker') respectively. We propose to account for these markers based on prior works on the emotional (Betsch, 2004), fast (Gigerenzer & Todd, 1999) and unconscious (Dijksterhuis & Nordgren, 2006) aspects of intuitions. The sheer complexity of tasks can induce individuals to think quickly or slowly. Marker 1 can also be understood as affective thinking (Betsch, 2004) in the dual-process theory. Unconscious thinking (Dijksterhuis, 2004; Dijksterhuis et al., 2006; Dijksterhuis & Nordgren, 2006) our Marker 3, which is even "slower" than conventional deliberation, and quick heuristics (Gigerenzer, 2015, 2021; Gigerenzer & Selten, 2002; Gigerenzer &



Todd, 1999; Gigerenzer et al., 2011) our Marker 2 above, account for thinking fast and slow (see Figure 1).

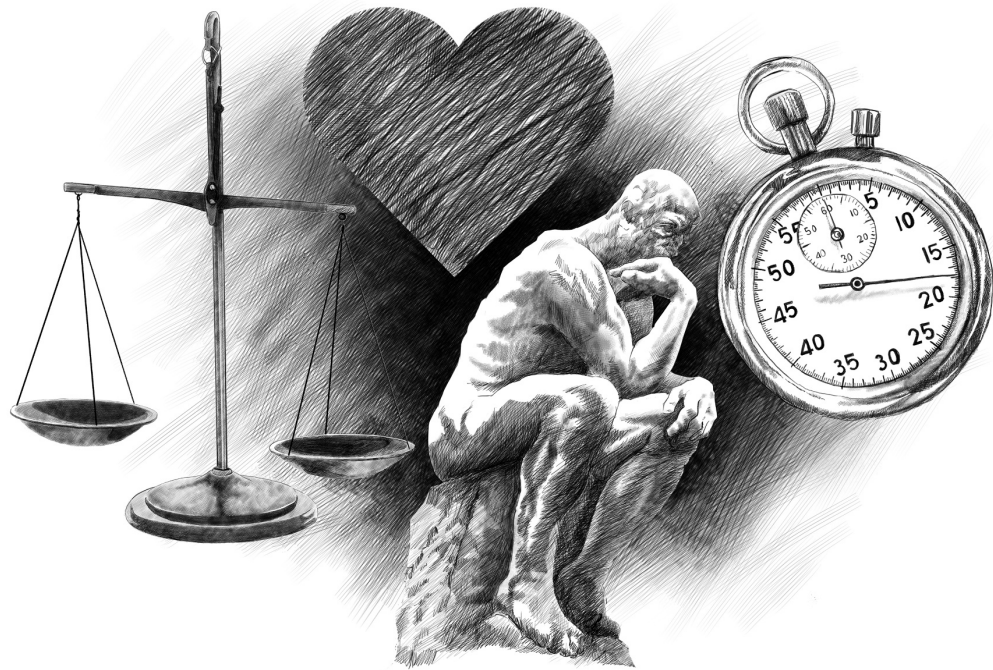


Figure 1: Phronesis, Intuitive Marker 1, Intuitive Marker 3, as well as Deliberation and Intuitive Marker 2

Our aim is to bridge what is referred to as "intuitive practice" outside of academia with theoretical investigations into the nature of intuition. For example, take people who like to wait until the last minute to make a choice. This also includes people who think intuitively but do other things (distraction) before they need to decide (Dijksterhuis and Nordgren, 2006). Even if a person has the right knowledge and skills and knows when to use them, that's not enough if they don't want to use them (Bensley, 2020, pp. 75-76).

Gigerenzer and Todd (1999) suggest that the person making the decision chooses heuristics, which are simplified "rules of thumb" that people use when they don't know what to do, e.g., due to cognition-related information overload. This marker is also called quick intuition or fast and frugal heuristics (blinded for peer review). This is done while adapting to the environment and the situation. This choice, for example from a specific domain of work, shows that people make decisions by recognizing patterns. In different parts of daily life, people who study intuition have seen that a lot of deliberate analysis doesn't always lead to a better decision and there is evidence that the intuitive choice is better than the deliberative choice when the choice is more complicated (Dijksterhuis et al., 2006). Sometimes, these observations of everyday life don't hold up to the scrutiny of the scientific method, though. Therefore, intuition research is always struggling with claims of knowledge from both highly regarded studies and studies that haven't been proven scientifically (Dörfler & Bas, 2020). More recent research updates the theory of Ap Dijksterhuis (Dijksterhuis & Strick, 2016) suggesting that conscious thought and unconscious thought appear to alternate, as do the conscious and unconscious components of real-life during extended mental processes. Unconscious information processing is linked to taking time before deciding, such as to sleep on it or to distract oneself to avoid from consciously thinking about it.

As we noted, we focus on the intuitive side of reasoning. In the dual-process paradigm, this makes our work on the three markers largely focus on so-called System 1 processes. These processes are automatic, fast, unconscious, and are referred to as heuristic and intuitive. Whereas System 2 processes are slower, conscious, and are referred to as rational, analytical, and deliberative. Default-interventionist explanations of dual processes imply that System 1 processing makes snap decisions most of the time, with occasional overrides from System 2 (Kruglanski, 2013). The unconscious markers of intuitions (Dijksterhuis & Nordgren, 2006) that surface under distracted attention add a further layer to System 1 processes. Markers 1-3 are thus generally associated with System 1 processes in psychology. We do not have a problem with this, but two important points need to be kept in mind.

First, as many emphasize both in philosophy (Kauppinen 2013, 372; 2015) and in business ethics (Provis 2017), intuitions often only arise *after* intensive inquiry, reflection, and scrutiny. In other words, System 2 processes are often necessary for the emergence and use of intuitions in System 1 processes.<sup>6</sup> Given the circumstances of business decisions, often heavily reliant on past experience, reflection, and analysis, this might even be more so in business administration. Second, on a more general note, some of the leading advocates of dual-process approaches to moral psychology do not (any longer) think that the simple System 1 vs. System 2 distinction reflects what is actually happening in the moral mind-brain (Cushman 2013; Huebner 2015). In fact, prominent dual-process researchers have long admitted the heterogeneity within each “system” and

---

<sup>6</sup> From the philosophy side this is because what is crucial about intuitions is not so much fastness and immediacy of their occurrence but that they are not the results of inferential justificatory chains among (the propositional content of) one’s beliefs and cognitions more generally. Consequently, an intuition can emerge also at the end of a long reflective inquiry – inferential structures do not coincide with length and depth of our thinking processes.

the failure to map all the proposed attributes of particular mental processes (including our proposed markers of intuitions) on to the two systems (Evans, 2011). While the dual-process approach offers a useful distinction for the start of a scientific inquiry into morality, it may be holding up our understanding and theoretical explanation of our moral psychology.

In short, we can accept that our investigation focuses on System 1 processes if the above are kept in mind.

After decades of study in various branches of psychology, the general consensus seems to be that unconscious processes have a significant impact on behaviour (Pratt & Crosina, 2016) and that effects on organizations cannot be ignored (Vince, 2019). To contribute to the empirical discussion on phronesis, this article investigates a global sample of professionals, we call ‘deliberators’. We agree with Ackerman and Morsanyi (2023) that it is important to control for individual differences among practitioners. The research design is taking the preference for deliberation in our sample of respondents for granted, in order to probe which intuitive markers appeal most to them. In other words, we take it for granted that these people are fond of analysing, focusing attention on consciously using rational or critical thinking. Then this article further investigates which of the mentioned intuitive markers appear in these people’s decisional preferences. This procedure offers to explicate the cognition of practical wisdom at the workplace. In this way, the article can shine a light on the decision-making style present among managers with a preference for deliberation to determine which intuitive marker appeals most to them, when they intuit. (Note the emphasis on process, not outcome! See also Shotton and Tsoukas (2014).) Phronetic practitioners are those that use both deliberation and intuition (investigated via Markers 1-3) when weighing their options. Through this, we contribute a depiction of practitioners’ phronesis (respondents preferring both deliberation as well

as intuition) as it is conceived of in everyday organizational settings. Reviews of the literature show that intuition comes in several guises (blinded for review). Through testing how far the decision-making style of managers with a thinking preference for deliberation also displays markers of intuitive decision-making, the article addresses an important lacuna. The paper therewith adds a missing quantitative sample in work on wisdom in organizational settings.

## **Methods**

### ***Assumptions***

One of the cornerstones of practical wisdom is the use of intuition (blinded for review), but also the use of deliberation (Frémeaux & Voegtlin, 2022). This contribution draws on theoretical and conceptual materials from the behavioural sciences to map thinking preferences and bridges them to the Aristotelean notion of phronesis. It is assumed that a sizable group of managers with a preference for deliberation also prefers intuition. When we find out which marker of intuition this group of deliberators prefers, we can explain how phronesis materializes in the minds of managers. We have a match for phronetic practitioners when respondents score high on deliberation *and* high on intuition. We may then consider these people to possess phronesis.

### ***Sample and data collection***

The data was gathered beginning in March of 2020 and ending in August of that year via an online survey (blinded for review). After being invited, participants completed the survey online. A participant recruitment agency sent out invitations in two countries (the United States of America and Slovakia). The first and fourth author, along with their respective professional and personal networks, used social media to spread invitations for

a snowball sample in other countries. We can't say what the overall response rate was because we don't know how many people could have answered the questionnaire (i.e. how many people had been reached by the two recruitment methods employed when combined). Among all the people who started the survey, about half sent in a fully filled-out survey. These data were analysed using SPSS V26. The final sample for this study consisted of 2227 individuals working in different industries from more than 30 countries. Prior research suggests that different cultures share certain common ideas about what constitutes wisdom, while also privileging some aspects of wisdom over others (Dewangan & Ghosh, 2022). Our survey was translated into different languages and checked for accuracy by native speakers from the respective countries. Gender distributed as male (57%), female (34%), and non-binary (8%). Age ranged as 18 years old or younger (1%), 19-28 years old (14%), 29-38 years old (19%), 39-48 years old (37%), 49-58 years old (28%), and 59 years old or older (2%).

### ***Instruments***

To measure the preference for deliberation and intuition (PID) in decision-making the PID-inventory by Betsch (2004, 2008) was used. 13 self-disclosure items were inspired by the original inventory and translated into the respective national language. The PID is a valid and reliable test of decision-making preference consisting of two scales: one measuring the preference for deliberative decision-making (5 items, e.g. "I tend to be a rational thinker."; Cronbach's Alpha .90) and a second scale measuring the preference for intuitive thinking (6 items, e.g. "I am an intuitive individual."; Cronbach's Alpha .85). Items were assessed on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), such that higher scores indicate higher agreement to the decision-making style.

To measure the intuitive markers of heuristics (Intuitive Marker 2) and unconscious thinking (Intuitive Marker 3), scales were developed based on the works of Gigerenzer and Dijksterhuis. Pre-test data from June through November 2019 were used to calculate internal consistency. Tests were conducted in China, Japan, South Korea, Paraguay, Russia, Brazil, Thailand, the United States, and the United Kingdom (blinded for review). A pilot study was developed that tested the new dimensions based on the works of Gigerenzer and Dijksterhuis. The intuitive markers fast heuristic, slow unconscious thoughts, and emotional intuition were proven to be valid, reliable, and independent variables (blinded for review). We have made sure that the newly developed scales have satisfactory empirical fit.

## **Results**

### *Descriptive statistics*

#### **Comparative results of the analysis**

ANOVA was conducted for determining the significant differences between groups of respondents reporting a higher level (mean is above 3.67 or higher, 75<sup>th</sup> percentage) and respondents reporting a lower level (mean is above 2.33 or lower, 25<sup>th</sup> percentage) preference for deliberative (rational or critical) thinking.

#### *Emotional intuition (Marker 1)*

Generally lower-level deliberative, sometimes also referred to as “rational” or critical thinkers prefer more emotional intuition than higher level ones in all experience and age levels, Figure 2. Particularly, there are *statistically significant differences* regarding work experience for respondents reporting the value 3 (4-10 years) and 4 (11-20 years) in the rational groups, and in the age groups for respondents reporting the value 3 (29-38 years

old), 4 (39-48 years old), and 5 (49-58 years old). Lower-level deliberators prefer significantly more emotional intuition than those respondents reporting higher scores in the preference for deliberation, when they have between 4-10 years and 11-20 years of work experience (just for level 3 and 4 experience groups), and when the ages are between 29 to 58 years old.

Findings on emotional intuition seem to confirm that more work experience (value 4) and elder corresponds to a more pronounced use of intuition. Since those respondents reporting higher scores in the preference for deliberation (preferring “rational” thinking) only display preference for emotional intuition with less work experience (but not for level 3 and 4 experience groups) and younger, we may document that the more work experience respondents have and elder, the more they use emotional intuition, our Intuitive Marker 1.

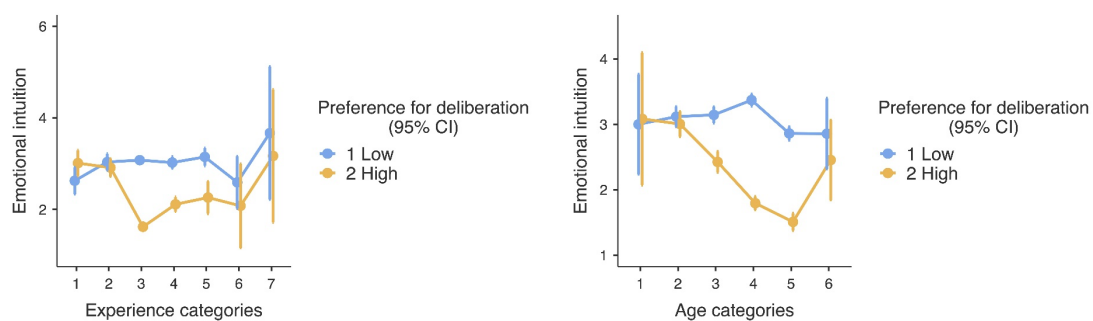


Figure 2: Preference for emotional intuition of respondents with low (1) and high (2) preference for deliberation



### *Quick intuition (Marker 2)*

Generally, there are moderate differences between higher-level deliberators and lower-level ones in almost all work experience and age levels, see Figure 3. Particularly, there is a *statistically significant difference* in experience just for respondents reporting the value 3 (4-10 years of work experience) in the rational groups and age for reporting the values 2 (19-28 years old), 3 (29-38 years old), and 5 (49-58 years old). Lower-level deliberators prefer significantly more Quick intuition than higher ones (just for respondents reporting the value 3 for work experience and 5 for the age groups). Higher-level deliberators prefer significantly more Quick intuition (our Intuitive Marker 2) than lower ones (just for respondents reporting the value 2 and 3 for the age groups).

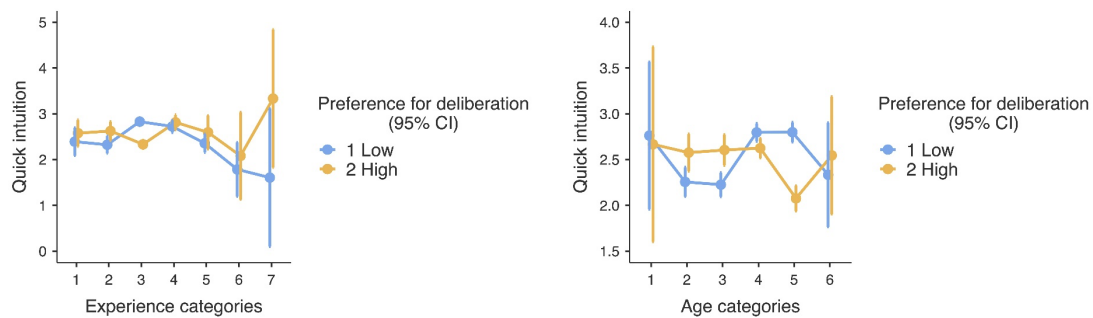


Figure 3: Preference for quick intuition of respondents with low (1) and high (2) preference for deliberation

### *Unconscious intuition (Marker 3)*

Generally higher-level deliberators prefer more unconscious intuition than those with a lower-level in almost all experience and age levels, see Figure 4. Particularly, there are *statistically significant differences* for respondents reporting the value 3 (4-10 years of work experience), 4 (11-20 years of work experience) and 5 (21-30 years of work experience) and age groups for 2 (19-28 years old), 3 (29-38 years old), 4 (39-48 years old), and 5 (49-58 years old) in the rational groups. Higher level deliberators prefer

significantly more unconscious intuition (our Intuitive Marker 3) than lower ones (just for level 3, 4 and 5 work experience groups and for level 2, 3, 4 and 5 age groups).

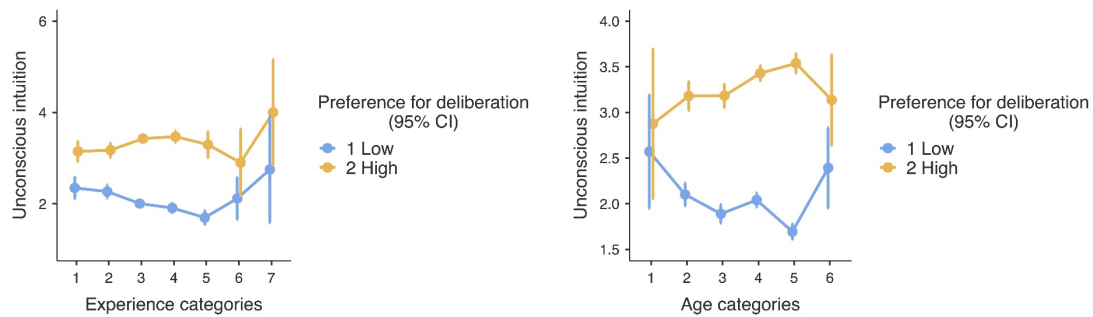


Figure 4: Preference for unconscious intuition of respondents with low (1) and high (2) preference for deliberation

## Discussion

People may not even be aware whether they are making conscious decisions, or not. The human brain is capable of unconscious thinking (Dijksterhuis, Bos, Nordgren, & van Baaren, 2006; Dijksterhuis & Nordgren, 2006; Zhong, Dijksterhuis, & Galinsky, 2008) and there exists a substantial body of research indicating that solutions occasionally manifest abruptly in the cognitive processes of decision-makers. (Billett, 2004).

Our assumption that managers with a preference for deliberation can successfully accommodate intuitive techniques is consistent with the dual-process understanding of information processing that dominates cognitive psychology (Epstein, 1994; Evans, 2011; Sloman, 1996). Nevertheless, whereas in this tradition intuition is subordinate to reason and only serves as an input for deliberative decision-making processes, our take on phronesis, building among others on Sadler-Smith (2012) offers a different, more balanced integrative solution where both mechanisms contribute equally to wise decision processes, therewith also supporting earlier contributions in organization studies (Calabretta et al., 2017). Our results contribute to focusing on the temporal dimension

that is associated with wise decision-making (Shotter & Tsoukas, 2014). In our alternate account of tracing the cognitive processes behind phronesis, we have had the opportunity to preliminarily rule out that intuitive markers are only ‘biasing’ heuristics. Our findings resonate with De Neys (2022), who also conceptualized that system 1 thinking generates different types of intuitions (see also, blinded for review), which we referred to as intuitive markers. We were able to discern a more complete account of intuition and deliberation for the sake of phronesis that people in the real world live by.

A descriptive claim is advanced, about which (multiple) thinking preferences people prefer. Like Haidt (2001, p. 815) wrote, it has to be stressed that this is “not a normative or prescriptive claim, about how moral judgments ought to be made” (Haidt, 2001, p. 815). The thinking preferences that *becoming* virtuous practitioners display are pointed out in this article: wise decision-making involves extra time.

Organizations need to grapple with how they want to enable their managers to use intuition in order to exercise wise practice. When practitioners of administration intend to follow virtue ethics, provisions must be installed making sure, that people are aware of consciously using their intuition in the first place.

### ***Theoretical implications***

In a review on factors influencing ethical decision-making Luca Casali and Perano (2021) noted that more research on cognitive moral development is needed. The ability of a reasoner to switch between intuitive and conscious processing has been the subject of heated discussion (De Neys, 2022). The goal of this article has been attained through showing the intuitive marker most often used by phronetic practitioners. Our findings suggest that taking extra time to rely on unconscious thought is a viable way for many

critical deliberate thinkers to make decisions.

Aristotle's virtue ethics remains an inspiration for many scholars of administration. Building on virtue ethics approaches in management, support for the use of intuition and deliberation is observable. Rather than conceptualizing only the use of intuition and only the use of deliberation as a path towards wise practice, the interplay of these two processes promises virtue to bring about phronesis. The theoretical contributions on virtue ethics take this duality into account (Rooney & McKenna, 2008; van Steden, 2020), but there has been little empirical work highlighting this until now.

By testing the assumptions of earlier works in business ethics, the results suggest that there is no one best solution through decision-making, but that it is much more about the interaction of the two processes, and that temporality matters, for phronesis to emerge. This supports conceptions that see these dual processes of cognition as competing for a path of action (see, Hodgkinson & Sadler-Smith, 2018; Sadler-Smith, 2012). The article theoretically contributes to the sociology of wisdom (Rooney et al., 2021) through highlighting how temporality impinges managers' thinking preferences. The findings also imply that wisdom research must care for raising awareness about how decisions are enmeshed with everyday administrative practice.

### ***Managerial implications***

The research object *intuition* is intangible, for the practitioner using intuition appears to be hard to access. Raising awareness about their freedom of choice when it comes to decision-making can be a first step towards improving administrators' use of intuition to encourage wise practice proactively for building integrity. Since the intuitive marker of temporality was used especially often by the respondents in our sample, we recommend

practitioners to allow for time, when decisions that are likely to require phronesis need to be made.

The results of hasty decisions made by overconfident leaders can be disastrous, collective well-being can be attained through slow, deliberate acts and phronesis-based decisions (Contu, 2023). Training and education programs could be improved with a better understanding of phronesis and the factors that lead to its development (Goodsir, 2018).

### ***Limits and implications***

The authors know that there are scales that measure how well someone makes ethical decisions. Scales like these have been criticized in the social sciences because they always lead survey respondents to give answers that are socially desirable (Krumpal, 2013). Work done in the past shows that some of these dangers can be avoided with an instrument that looks at decision-making in general rather than ethical decision-making. It's also important to note that the scales are all based on what professionals say about themselves. This means that the way professionals make decisions in real life has not been measured. The sample is not necessarily representative.

### ***Future research***

When and how are decisions made consciously, rather than just knowing (from within) what to do in each situation?

It is a first cautious approach to the subject of research, which is otherwise researched using mainly qualitative methods. To use intuition more actively to foster

phronesis, is to perceive freedom to act more consciously, becoming more conscious of the discretion to act. This line of research could then be connected to work on managerial characteristics featuring as antecedents to managerial discretion (Wangrow et al., 2015).

## **Conclusion**

When the use of discretion is connected to exercising phronesis pressing issues in administrators' every day work can be solved in a more satisfactory manner. Common dual-process accounts of decision-making rarely account for qualitative differences among intuitive responses, which are part of phronesis. Phronesis may account for instances, in which decision-makers skilfully combine intuition and deliberation. This study finds that people with a preference for deliberation also use different intuitive markers tied to emotion, temporality, and consciousness. Overall, based on our results we can assume that intuitive markers facilitate the exercise of phronesis. An alignment between deliberation and intuition is essential for attaining complex virtues (Epstein & Pacini, 1999). In order to strike the ideal equilibrium and engage in wise decision-making, one must engage in acts of self-awareness and judgement that draw on both explicit and tacit kinds of knowing, reflexive self-knowledge, and the use of both deliberation and intuition (Hodgkinson & Sadler-Smith, 2018). Our article found empirical support for the cognitive complexity of practical wisdom at the workplace. Managers with a preference for deliberation tend to be most inclined towards the intuitive marker of unconscious thinking when they rely on their intuition (see figure 2). The results emphasize the cognitive process, not the outcome of making wiser decisions, and build on prior research in experimental settings (Nordgren et al., 2011) as well as in leadership conceptions of

mindfulness (Rooney et al., 2021). Through this, we contribute a depiction of phronesis as it is conceived of in the everyday of decision-makers.

## References

- Ackerman, R., & Morsanyi, K. (2023). We know what stops you from thinking forever: A metacognitive perspective. *Behavioral and Brain Sciences*, 46, e112, Article e112. <https://doi.org/10.1017/S0140525X22003065>
- Bachmann, C., Habisch, A., & Dierksmeier, C. (2018). Practical wisdom: Management's no longer forgotten virtue. *Journal of Business Ethics*, 153, 147-165.
- Bealer, G. (1998), 'Intuitions and the Autonomy of Philosophy', in. *Rethinking Intuition: The Psychology of Intuition and Its Role in Philosophical Inquiry*, eds. M. DePaul and W. Ramsey, pp. 201–39, Lanham, MD: Rowman & Littlefield.
- Bedke, M. (2008), 'Ethical Intuitions: What They Are, What They Are Not, and How They Justify', *American Philosophical Quarterly* 45 (3): 253-269 <https://www.jstor.org/stable/20464416>
- Bensley, D. A. (2020). Critical thinking and the rejection of unsubstantiated claims. *Critical thinking in psychology*, 2, 68-102.
- Betsch, C. (2004). Präferenz für Intuition und Deliberation (PID) [Preference for Intuition and Deliberation (PID): An Inventory for Assessing Affect- and Cognition-Based Decision-Making]. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 25(4), 179-197. <https://doi.org/10.1024/0170-1789.25.4.179>
- Betsch, C. (2008). Chronic preferences for intuition and deliberation in decision making: Lessons learned about intuition from an individual differences approach. In H. Plessner, C. Betsch, & T. Betsch (Eds.), *Intuition in judgment and decision making* (pp. 231-248). Lawrence Erlbaum Associates Publishers.
- Calabretta, G., Gemser, G., & Wijnberg, N. M. (2017). The Interplay between Intuition and Rationality in Strategic Decision Making: A Paradox Perspective. *Organization Studies*, 38(3-4), 365-401. <https://doi.org/10.1177/0170840616655483>
- Chappell, S. G. ed. (2015), *Intuition, Theory, and Anti-Theory in Ethics*, Oxford: Oxford University Press.
- Chudnoff, E. (2011), 'What Intuitions Are Like', *Philosophy and Phenomenological Research*, 82 (3): 625-654. DOI: 10.1111/j.1933-1592.2010.00463.x
- Contu, A. (2023). Antigone: On Phronesis and How to Make Good and Timely Leadership Decisions. *Academy of Management Review*, 48(1), 149-164. <https://doi.org/10.5465/amr.2021.0022>
- Dane, E., & Pratt, M. G. (2007). Exploring Intuition and its Role in Managerial Decision Making. *Academy of Management Review*, 32(1), 33-54. <https://doi.org/10.5465/amr.2007.23463682>
- De Neys, W. (2022). Advancing theorizing about fast-and-slow thinking. *Behavioral and Brain Sciences*, 1-68.
- Dewangan, R. L., & Ghosh, R. (2022). Wisdom: Cultural and Cross-Cultural Understanding with a Systematic Review of Empirical Studies. In C. Maheshkar (Ed.), *Handbook of Research on Cultural and Cross-cultural Psychology*. Vernon Press. Vernon Press.
- Dijksterhuis, A. (2004). Think different: the merits of unconscious thought in preference development and decision making. *Journal of Personality and Social Psychology*, 87(5), 586.



- Dijksterhuis, A., Bos, M. W., Nordgren, L. F., & Baaren, R. B. v. (2006). On Making the Right Choice: The Deliberation-Without-Attention Effect. *Science*, 311(5763), 1005-1007. <https://doi.org/doi:10.1126/science.1121629>
- Dijksterhuis, A., & Nordgren, L. F. (2006). A Theory of Unconscious Thought. *Perspectives on Psychological Science*, 1(2), 95-109. <https://doi.org/10.1111/j.1745-6916.2006.00007.x>
- Dijksterhuis, A., & Strick, M. (2016). A case for thinking without consciousness. *Perspectives on Psychological Science*, 11(1), 117-132.
- Dörfler, V., & Bas, A. (2020). Tools for exploring the unknowable: intuition vs. Artificial intelligence. Academy of Management Annual Conference 2020,
- Eikeland, O. (2008). *The ways of Aristotle: Aristotelian phronesis, Aristotelian philosophy of dialogue, and action research* (Vol. 5). Peter Lang.
- Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American psychologist*, 49(8), 709. <https://doi.org/https://doi.org/10.1037/0003-066X.49.8.709>
- Epstein, S., & Pacini, R. (1999). Some basic issues regarding dual-process theories from the perspective of cognitive-experiential self-theory. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 462-482). Guilford Press.
- Evans, J. S. B. T. (2011). Dual-process theories of reasoning: Contemporary issues and developmental applications. *Developmental Review*, 31(2), 86-102. <https://doi.org/10.1016/j.dr.2011.07.007>
- Freiling, J. (2004). A Competence-based Theory of the Firm. *management revue*, 27-52.
- Freiling, J., Gersch, M., & Goeke, C. (2008). On the Path towards a Competence-based Theory of the Firm. *Organization Studies*, 29(8-9), 1143-1164. <https://doi.org/10.1177/0170840608094774>
- Frémeaux, S., & Voegtlin, C. (2022). Strengthening Deliberation in Business: Learning From Aristotle's Ethics of Deliberation. *Business & Society*, 00076503221113816.
- Gigerenzer, G. (2015). *Simply rational: Decision making in the real world*. Oxford University Press.
- Gigerenzer, G. (2021). Embodied heuristics. *Frontiers in Psychology*, 12, 711289.
- Gigerenzer, G., & Selten, R. (2002). *Bounded rationality: The adaptive toolbox*. MIT press.
- Gigerenzer, G., & Todd, P. M. (1999). Fast and frugal heuristics: The adaptive toolbox. In *Simple heuristics that make us smart* (pp. 3-34). Oxford University Press.
- Gigerenzer, G. E., Hertwig, R. E., & Pachur, T. E. (2011). *Heuristics: The foundations of adaptive behavior*. Oxford University Press.
- Goodsir, W. (2018). *Phronēsis: Putting Wisdom Into Action. An Aristotelian Perspective of Management Wisdom in the Hotel Industry* Auckland University of Technology].
- Haidt, J. (2001). The emotional dog and its rational tail: a social intuitionist approach to moral judgment. *Psychological Review*, 108(4), 814. <https://doi.org/10.1037/0033-295X.108.4.814>
- Hodgkinson, G. P., & Sadler-Smith, E. (2018). The Dynamics of Intuition and Analysis in Managerial and Organizational Decision Making. *Academy of Management Perspectives*, 32(4), 473-492. <https://doi.org/10.5465/amp.2016.0140>
- Huebner, B. (2015), 'Do Emotions Play a Constitutive Role in Moral Cognition?', *Topoi*, 34(2): 427-440. DOI: 10.1007/s11245-013-9223-6
- Huemer, M. (2005), *Ethical Intuitionism*, New York: Palgrave MacMillan.

- Jenkins, C. S. I. (2014), “‘Intuition’, Concepts and the A Priori’, in. Booth, A. R. & Rowbottom, D. P. eds., *Intuitions*, Oxford: Oxford University Press pp. 91-119.
- Julmi, C. (2023). Analysis and Intuition Effectiveness in Moral Problems. *Journal of Business Ethics*, 1-15.
- Kahneman, D. (2011). *Thinking, fast and slow*. Macmillan.
- Kauppinen, A. (2013), ‘A Humean Theory of Moral Intuition’, *Canadian Journal of Philosophy* 43 (3): 360-381. DOI: 10.1080/00455091.2013.857136
- Kauppinen, A. (2015), ‘Moral Intuition in Philosophy and Psychology’, in. *The Springer Handbook of Neuroethics*, eds. N. Levy, J. Clausen, Springer, pp. 169-183.
- Koksvik, O., (2011), *Intuition*, PhD Dissertation, Australian National University.
- Kruglanski, A. W. (2013). Only one? The default interventionist perspective as a unimodel—Commentary on Evans & Stanovich (2013). *Perspectives on Psychological Science*, 8(3), 242-247.  
<https://doi.org/10.1177/1745691613483477>
- Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & Quantity*, 47(4), 2025-2047.  
<https://doi.org/10.1007/s11135-011-9640-9>
- Little, M. O. (1997), ‘Virtue as Knowledge: Objections from the Philosophy of Mind’, *Noûs*, 31(1), 57–79. DOI: 10.1111/0029-4624.00035
- Luca Casali, G., & Perano, M. (2021). Forty years of research on factors influencing ethical decision making: Establishing a future research agenda. *Journal of Business Research*, 132, 614-630.  
<https://doi.org/https://doi.org/10.1016/j.jbusres.2020.07.006>
- Massingham, P. (2019). An Aristotelian interpretation of practical wisdom: the case of retirees. *Palgrave Communications*, 5(1), 1-13. <https://doi.org/10.1057/s41599-019-0331-9>
- McMahon, J. M., & Good, D. J. (2016). The moral metacognition scale: Development and validation. *Ethics & Behavior*, 26(5), 357-394.  
<http://dx.doi.org/10.1080/10508422.2015.1028548>
- Mikhail, J. (2011), *Elements of Moral Cognition: Rawls' Linguistic Analogy and the Cognitive Science of Moral and Legal Judgment*, Cambridge: Cambridge University Press.
- Moberg, D. J. (2007). Practical wisdom and business ethics: Presidential address to the Society for Business Ethics Atlanta, August 2006. *Business Ethics Quarterly*, 17(3), 535-561. <https://doi.org/10.5840/beq200717336>
- Nonaka, I., Chia, R., Holt, R., & Peltokorpi, V. (2014). Wisdom, management and organization. *Management Learning*, 45(4), 365-376.
- Nordgren, L. F., Bos, M. W., & Dijksterhuis, A. (2011). The best of both worlds: Integrating conscious and unconscious thought best solves complex decisions. *Journal of Experimental Social Psychology*, 47(2), 509-511.
- Oktaviani, F., Rooney, D., McKenna, B., & Zacher, H. (2016). Family, feudalism and selfishness: Looking at Indonesian leadership through a wisdom lens. *Leadership*, 12(5), 538-563. <https://doi.org/10.1177/1742715015574319>
- Pratt, M. G., & Crosina, E. (2016). The nonconscious at work. *Annual Review of Organizational Psychology and Organizational Behavior*, 3, 321-347.
- Provis, C. (2010). Virtuous decision making for business ethics. *Journal of Business Ethics*, 91, 3-16.
- Provis, C. (2017). Intuition, Analysis and Reflection in Business Ethics. *Journal of Business Ethics*, 140(1), 5-15. <https://doi.org/10.1007/s10551-015-2688-z>

- Railton, P. (2014), 'The Affective Dog and Its Rational Tail: Intuition and Attunement', *Ethics* 124 (4): 813-859. DOI: 10.1086/675876
- Roeser, S. (2011), *Moral Emotions and Intuitions*, Basingstoke, UK: Palgrave Macmillan
- Rooney, D. (2013). Empirical Wisdom Research: A Community Approach. In M. J. Thompson & D. Bevan (Eds.), *Wise Management in Organisational Complexity* (pp. 34-52). Palgrave Macmillan UK. [https://doi.org/10.1057/9781137002655\\_3](https://doi.org/10.1057/9781137002655_3)
- Rooney, D., Küpers, W., Pauleen, D., & Zhuravleva, E. (2021). A developmental model for educating wise leaders: The role of mindfulness and habitus in creating time for embodying wisdom. *Journal of Business Ethics*, 170, 181-194.
- Rooney, D., & McKenna, B. (2008). Wisdom in public administration: Looking for a sociology of wise practice. *Public Administration Review*, 68(4), 709-721.
- Ryan, S. (2023). Wisdom. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford Encyclopedia of Philosophy* (Fall 2023 Edition ed.). <https://plato.stanford.edu/archives/fall2023/entries/wisdom/>
- Sadler-Smith, E. (2012). Before virtue: Biology, brain, behavior, and the "moral sense". *Business Ethics Quarterly*, 22(2), 351-376.
- Sadler-Smith, E., & Burke-Smalley, L. A. (2015). What do we really understand about how managers make important decisions. *Organizational dynamics*, 44(1), 9-16.
- Shotter, J., & Tsoukas, H. (2014). Performing phronesis: On the way to engaged judgment. *Management Learning*, 45(4), 377-396.
- Sloman, S. A. (1996). The empirical case for two systems of reasoning. *Psychological Bulletin*, 119(1), 3. <https://doi.org/10.1037/0033-2909.119.1.3>
- Street, M. D., Douglas, S. C., Geiger, S. W., & Martinko, M. J. (2001). The Impact of Cognitive Expenditure on the Ethical Decision-Making Process: The Cognitive Elaboration Model. *Organizational Behavior and Human Decision Processes*, 86(2), 256-277. <https://doi.org/https://doi.org/10.1006/obhd.2001.2957>
- Van de Ven, A. H., & Johnson, P. E. (2006). Knowledge for theory and practice. *Academy of Management Review*, 31(4), 802-821. <https://doi.org/10.5465/amr.2006.22527385>
- van Roojen, M. (2014), 'Moral Intuitionism, Experiments, and Skeptical Arguments', in Booth, A. R. & Rowbottom, D. P. eds., *Intuitions*, Oxford: Oxford University Press pp. 148-165.
- van Steden, R. (2020). Blind spots in public ethics and integrity research: What public administration scholars can learn from Aristotle. *Public Integrity*, 22(3), 236-244. <https://doi.org/10.1080/10999922.2020.1714412>
- Vickers, G. (1984). Judgment. In G. V. a. T. O. S. Group (Ed.), *The Vickers Papers* (pp. 230-245). HarperCollins.
- Vince, R. (2019). Institutional illogics: The unconscious and institutional analysis. *Organization Studies*, 40(7), 953-973.
- Wangrow, D. B., Schepker, D. J., & Barker III, V. L. (2015). Managerial discretion: An empirical review and focus on future research directions. *Journal of Management*, 41(1), 99-135.
- Warner, C. H., Fortin, M., & Melkonian, T. (2022). When Are We More Ethical? A Review and Categorization of the Factors Influencing Dual-Process Ethical Decision-Making. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-022-05281-0>
- Wright, A. (2022). Judging: Management and Hannah Arendt's Consideration of Judgment. *Academy of Management Proceedings*,
- Zagzebski, L. (2003), 'Emotion and Moral Judgment', *Philosophy and Phenomenological Research*, 66(1): 104-124 10.1111/j.1933-

1592.2003.tb00245.x