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Coping with uncertainty: The interaction of psychological safety and authentic leadership in their effects on defensive decision making

Florian M. Artinger [a,b,c,1], Stefanie Marx-Fleck [d,*,1], Nina M. Junker [e], Gerd Gigerenzer [a,b,f], Sabrina Artinger [g], Rolf van Dick [d]

[a] Center for Adaptive Rationality and Cognition, Max Planck Institute for Human Development, Lentzeallee 94, 14195 Berlin, Germany
[b] Simply Rational – The Decision Institute, Eberhard-Roters-Platz 7a, 10965 Berlin, Germany
[c] Berlin International University of Applied Sciences, Salzufer 6, 10587 Berlin, Germany
[d] Department of Social Psychology, Goethe University Frankfurt, Theodor-W.-Adorno-Platz 6, 60323 Frankfurt am Main, Germany
[e] Department of Psychology, University of Oslo, Forskningsveien 3A, 3 Oslo, Norway
[f] Harding Center for Risk Literacy, University of Potsdam, Virchowstr. 2-4, 14482 Potsdam, Germany
[g] German Federal Chancellery, Willy-Brandt-Straße 1, 10557 Berlin, Germany

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ABSTRACT

Defensive decision making occurs when employees do not decide in the best interest of the organization but rather opt for a personally safer alternative. Analyzing defensive decision making through the lens of the behavioral theory of the firm, we hypothesized that psychological safety and authentic leadership mitigate defensive decisions as they reduce the perceived uncertainty should anything go wrong. An experimental scenario study with 315 managers in a large organization provides causal evidence that the combination of low psychological safety and low authentic leadership increases defensive decisions. Whereas a leader's authenticity offset a lack of psychological safety, it did not further reduce defensive decisions if psychological safety was present. We developed a tool that provides a first estimate of the consequences of defensive decision making in terms of forgone opportunities which equate to 10.8% of the annual revenue for the organization studied. Effectively coping with uncertainty is thus highly relevant.

C.Y.A. ("cover your ass") is a common phrase used in many organizations, describing when employees believe that option A is best for the organization yet they prefer a second-best option B, primarily to protect themselves from negative consequences should anything go wrong. In the academic literature, choosing the personally safer option B is referred to as defensive decision making. A prominent example of employees opting for C.Y.A. is the case of the retail bank Wells Fargo. One measurement of success in retail banking is the average number of products a customer holds, which can be boosted by cross-selling, that is, selling multiple products to a single client. Such cross-selling can reduce uncertainty in the short run. To achieve this, management at Wells Fargo exerted intense pressure on employees to meet ambitious sales targets, who found themselves navigating a corporate culture that prioritized personal short-term success over the more uncertain and challenging task of establishing a profitable long-term customer relationship. Fearing negative consequences such as job loss and reprisals from management, many employees opted for C.Y.A.—creating millions of fraudulent savings and checking accounts without clients' consent. The scandal, publicized in 2016, had far-reaching implications, tarnishing Wells Fargo's reputation and resulting in payments of more than 3 billion USD to settle long-running civil and criminal probes (Kelly, 2020).

Uncertainty is ubiquitous in business decisions and is central to the emergence of defensive decisions. Uncertainty implies that the decision maker does not have all the necessary information and cannot precisely anticipate future outcomes and the likelihood that they will occur. Cyert and March (1963) developed the behavioral theory of the firm to specifically address decision making under uncertainty in an organizational context. A common response of decision makers to the presence of uncertainty is to avoid it, which Cyert and March (1963) referred to as uncertainty avoidance, one of four relational concepts at the core of the behavioral theory of the firm. What has not been addressed by research

* Corresponding author at: Department of Social Psychology, Goethe University Frankfurt, Theodor-W.-Adorno Platz 1 60323, Frankfurt am Main, Germany.
E-mail address: s.marx@psych.uni-frankfurt.de (S. Marx-Fleck).
[1] Florian M. Artinger and Stefanie Marx-Fleck contributed equally to the manuscript.

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in the tradition of the behavioral theory of the firm is the conflict that can emerge specifically because of uncertainty: As judged by the decision maker, it is in the best interest of the organization to pursue an uncertain alternative, yet the decision maker can also opt for a personally safer option. People in the organization identify coping mechanisms or rules that provide a solution to such a conflict, which Cyert and March (1963) referred to as a quasi-resolution of conflict, a second relational concept of the behavioral theory of the firm. Given such a conflict and the opportunity to choose a personally safer alternative, avoiding the more uncertain option is equal to defensive decision making. Can organizations create an environment in which people are less likely to exhibit uncertainty avoidance and to resort to defensive decision making as a quasi-resolution of conflict?

This prevalent coping mechanism is not cast in stone but hinges on the organizational context (Argote & Todorova, 2007; Gavetti et al., 2012). Sitkin and Pablo (1992) suggested that key determinants that can shape an organization's context are its culture and leaders. These are the most powerful social sources for forming expectations, influencing decision making under uncertainty, and the coping mechanisms people resort to. In particular, we focus on the interaction of psychological safety and authentic leadership. Psychological safety, which implies the existence of a shared belief that it is safe to take interpersonal risks (Edmondson, 1999) and has been shown to empower individuals to accept uncertainty and tolerate failures (Edmondson & Bransby, 2023; Edmondson & Lei, 2014). Authentic leadership is characterized by an internalized moral perspective guided by internal moral standards and values resistant to pressure from others, balanced processing of information, self-awareness showing an understanding of one's strengths and weaknesses, and relational transparency (Walumbwa et al., 2008). We chose authentic leadership because it fosters organizational commitment and trust in leaders (above other leadership forms, such as transformational leadership), thereby promoting behaviors that contribute to collective interests (see the *meta*-analyses by Banks et al., 2016; Hoch et al., 2016). Authentic leadership is uniquely positioned to not only alleviate decision makers' fear of negative repercussions if outcomes reveal undesired consequences but to also enhance the willingness to decide in the best interest of the organization, and, hence, in the interest of the collective.

Organizational climate (e.g., psychological safety) and leadership (e.g., authentic leadership) do not exist independently but operate interdependently (Sitkin & Pablo, 1992). Indeed, research indicated the joint impact of leaders' behavior and perceptions of the environment on employees' behavior (for a *meta*-analysis, see Karam et al., 2019; for authentic leadership, e.g., Avolio, 2004; Gardner et al., 2005). Yet, prior research on defensive decision making has not taken such interdependence into account. For instance, Artinger et al. (2019) in a qualitative study pointed to several factors including leadership as potentially shaping defensive decisions. Similarly, Marx-Fleck et al. (2021) revealed a negative association between psychological safety and defensive decisions. However, their findings were based on surveys, and therefore do not allow for causal conclusions, e.g., due to the potential presence of unmeasured confounding factors (Spector, 2019), such as the role of leadership. Determining the role of psychological safety and authentic leadership regarding the frequency of defensive decisions in an uncertain environment requires an experimental design that isolates the effect of both factors and their interaction.

At the core of defensive decision making is the choice of an employee to opt for the safer alternative, which, however, is not in the best interest of the organization. This poses the question; how does defensive decision making affect the performance of an organization? Given uncertainty, the behavioral theory of the firm proposes that organizations use an aspiration level to assess past performance (Cyert & March 1963). Indeed there is wide evidence for the use of aspiration levels in organizations (Greve, 1998; for a review, see Audia & Greve, 2021). If, for instance, costs exceed the aspiration level, this can initiate problemistic search, that is, a search for solutions. If such solutions are identified, this leads to organizational learning where new goals and decision rules are established. The case of Wells Fargo suggests that defensive decisions can be costly to the organization. Defensive decision making implies that an employee chooses an option that is inferior for the organization but believes that another option has a higher value for the organization. One way to measure the costs of defensive decision making is to calculate the difference between these two options, which we refer to as forgone opportunities. Measuring it is challenging as it is likely imprecise and subject to social desirability responding and underreporting (John et al., 2012). However, if even such a first rough estimate suggests that the total value of forgone opportunities is substantial and higher than the aspiration level set forth by the organization, it could initiate problemistic search for alternative coping mechanisms and in turn organizational learning, wherein authentic leadership and psychological safety may be used to reduce defensive decision making and uncertainty avoidance.

This paper makes the following contributions. First, we establish causal evidence for countermeasures of defensive decision making. Employing a scenario-based experimental setup we were able to methodologically rigorously explore the role of psychological safety in combination with authentic leadership as a means for shaping defensive decisions in organizations. In doing so, we uncover important nuances in the interaction between psychological safety and authentic leadership, moving beyond a simplistic additive perspective. Specifically, we demonstrate that authentic leadership does not further reduce defensive decision making in environments where psychological safety is already present. However, when a team lacks psychological safety, authentic leadership plays a crucial role in mitigating defensive decisions. This finding highlights the conditional effectiveness of authentic leadership and provides a more complex and insightful understanding of its interplay with psychological safety. Thus, our study reveals a more differentiated relationship where the presence or absence of psychological safety fundamentally alters the role and impact of authentic leadership. Second, we develop a tool that can provide a first rough estimate of the potential consequences of defensive decisions in terms of forgone opportunities and apply it in the organization. The tool can be a means to assess the performance of the organization in comparison to an aspiration level in the framework of the behavioral theory of the firm.

1. Theory and hypothesis development

1.1. Review of the literature on defensive decision making

As operationalized by Ashforth and Lee (1990), defensive behavior is an action primarily determined by the individual's context. It is performed to 'reduce a perceived threat or avoid an unwanted demand of an individual or group' (Ashforth & Lee, 1990; p. 622). Defensive decision making, as proposed by Argyris (1977, 1985, 1990), constitutes a response by individuals facing situations of risk or uncertainty, aimed at avoiding blame for potential negative outcomes. In the medical domain, such decisions have already been extensively studied. Here, a fear of personal consequences, such as malpractice litigation, is a primary driver of defensive decision making. Consequently, physicians often opt for second-best treatments or perform unnecessary testing or surgery to shield themselves from potential lawsuits if complications arise. A study in the U.S. found that 93 % of 824 surgeons, obstetricians, and other specialists admitted to performing unnecessary procedures due to fear of malpractice litigation (Studdert et al., 2005). These practices contribute significantly to healthcare costs, accounting for an estimated 2 %–3% of the total healthcare spending in the U.S., approximately $46 billion annually (García-Granero et al., 2015; Mello et al., 2010).

Research in organizational contexts has revealed that there are systematic differences between organizations in the frequency of defensive decisions ranging between 20 % to 50 % of all decisions made (Artinger et al., 2019; Gigerenzer, 2014). Defensive decisions occur at all levels of hierarchy, emphasizing their potential for widespread negative impact.

These decisions include employees being less inclined to propose new ideas that are in the long-term interest of the organization, such as product innovation that clients would genuinely value (Marx-Fleck et al., 2021). Opportunities are forgone, and the learning process of the organization is hampered (Ashforth & Lee, 1990). Defensive decisions can become "chronic," resulting in organizational routines that are self-reinforced and hard to change (Argyris, 1985).

Individuals in organizations often resort to defensive decisions as a means of avoiding interpersonal conflicts (Artinger et al., 2019). Consistent with Ashforth and Lee's (1990) emphasis on context dependence, initial empirical evidence suggests that most of the observed defensive decisions were influenced by the organizational context with culture being the main driver (Artinger et al., 2019). For instance, a culture of blame where one primarily seeks to identify a scapegoat contributes to defensive decision making (Aschauer et al., 2022). Additionally, individuals who fear rejection for making mistakes or voicing concerns are more prone to defensive decision making (Marx-Fleck et al., 2021). However, although previous findings confirmed the decision maker's environment as a main driver, a recent study by Schäfer et al. (2023) points to the fact that individual differences, specifically the decision maker's risk propensity, also account for the occurrence of defensive decisions. It is crucial to note that defensive decision making is not identical to risk aversion: In the years leading to the financial crisis of 2008, for instance, numerous traders recognized the dangers associated with toxic financial instruments and the potential benefits of divesting them. Nevertheless, they chose to go along with the majority of financial actors to avoid the risk of potential blame associated with the uncertainty of future events in the stock market (Gigerenzer, 2014). Similarly, at Wells Fargo employees probably recognized the danger of creating fraudulent savings and checking accounts without clients' consent.

1.2. Uncertainty and the behavioral theory of the firm

More than a century ago, Keynes (1921) and Knight (1921) differentiated between two distinct decision-making contexts: one characterized by risk and the other by uncertainty. In a risky environment, outcomes, their consequences, and associated probabilities are quantifiable. Conversely, uncertainty eludes such probabilistic description, as Savage (1954) made clear. Uncertainty implies that forecasts of more distant future outcomes are often not possible with sufficient precision, particularly if data are lacking, the environment changes in unpredictable ways, or the decision problem is too complex (Artinger et al., 2020, 2023). All of these are characteristics of an uncertain environment and typical of many business contexts (Artinger et al., 2015). More simply put, under risk, reliable quantification is feasible, while under uncertainty, such quantification is not viable. Defensive decisions can emerge in both contexts. In uncertain environments, decision making relies on establishing rank orders for the best organizational options and the safest personal choice, without requiring precise probabilities or exactly quantifying the consequences.

Uncertainty can be a double-edged sword for organizations. On the one hand, it fosters creativity, innovation, and exploration of new markets or products, leading to competitive advantages (Jalonen, 2012). Effectively navigating uncertainty also serves as a learning opportunity, prompting organizations to reevaluate their strategies and learn from successes and failures (Argote & Miron-Spektor, 2011; Edmondson & Mogelof, 2005). Thus, effective management of uncertainty is crucial for long-term business success (Shapira, 1995; Sitkin & Pablo, 1992).

On the other hand, managing uncertainty poses significant challenges, especially for the individual decision maker (Hogg, 2001). Uncertainty, like risk, inherently involves the potential for failure. Addressing this requires a constructive approach, viewing failure as a learning opportunity and a catalyst for improvement. Yet the focus instead often shifts to assigning blame or finding scapegoats, leading to defensive decision making (Aschauer et al., 2022). A *meta*-analysis by Polman and Wu (2020) revealed that decisions are perceived as more uncertain when they involve social rather than financial repercussions. Thus, employees carefully evaluate whether to make a decision or a suggestion that could later turn out to have led to failure and potentially negative personal consequences.

The behavioral theory of the firm (Cyert & March 1963) was developed to address decision making under uncertainty based on psychological principles focusing on decision processes at the individual and organizational level. It has profoundly influenced behavioral studies in organizations (Argote & Greve, 2007). The theory relies on three cognitive principles (Cyert & March 1963; Gavetti et al., 2012). First, given uncertainty, an individual or organization cannot maximize but *satisfices*, choosing the first alternative that is "satisfactory" or good enough (Simon, 1955a; for a review see Artinger et al., 2022). What is satisfactory depends on aspiration levels influenced, for instance, by own past performance or social comparisons (Greve, 1998; for a review see Audia & Greve, 2021). Second, performance below the aspiration level triggers a *search* for alternatives (Cyert & March, 1963; Greve, 1998; March & Shapira, 1987, 1992). The search for alternatives stops when an alternative meets or exceeds the aspiration level. Third, given uncertainty, individuals resort to automatic *rules* or coping mechanisms. These coping mechanisms are informed by past experiences and are adapted if they result in performance below the aspiration level (Carter, 1971; Gavetti et al., 2012).

Guided by these cognitive principles, Cyert and March (1963) developed four relational concepts that facilitate analyzing defensive decisions (for a review, see Hagen et al., 2023). First, *uncertainty avoidance* refers to the preference for short-term solutions over actions that involve more uncertain future events. Second is *quasi-resolution of conflict*. Cyert and March (1963) conceptualized the organization as an adaptive coalition between different individuals and groups, each having different objectives, which can result in conflict. Quasi-resolution of conflict mirrors a "conflict-reduction process by which decisions are made to accommodate and to resolve disagreement among coalition members at a given time, but without formal or long-term conflict resolution" (Carter, 1971, p. 414). Third, *problemistic search* is a search for an alternative option that is triggered by a failure to meet or exceed the aspiration level. Fourth, *organizational learning* occurs through reinforcement of actions leading to goals and decision rules that the organization believes will generate better performance (Gavetti et al., 2012). This can lead to increased risk taking (Bromiley, 1991), new product introductions (Greve, 2003), increased investments in research and development (W.-R. Chen & Miller, 2007) among others, all of which represent the pursuit of more long-term goals.

If an organization apprehends that its performance is below the aspiration level in terms of defensive decisions and the consequent missed opportunities, this realization can trigger a process of search and organizational learning. The following addresses how defensive decision making, a specific form of uncertainty avoidance when the decision maker faces a conflict, is a function of the level of psychological safety and authentic leadership. Both factors are important in shaping the relationship between employees and their peers and supervisors who in turn influence employees' perceptions and behavior (Cannon & Edmondson, 2001). They affect the decision maker's expectations about personal outcomes, shaping future decision-making rules and what is considered as acceptable in terms of a quasi-resolution of conflict.

1.3. Psychological safety and defensive decision making

Given an alternative that is characterized by uncertainty, a decision maker cannot ensure that a desired outcome will be realized for certain. If the desired outcome is not realized, within the context of an organization the question becomes how people respond to the decision maker. One way is to blame the decision maker for the outcome. If employees experience such personal negative consequences, this creates an incentive for uncertainty avoidance. Indeed, if such a culture of blame is

present, employees are more likely to engage in self-protective behavior, including making suggestions that are primarily for their own benefit. Those behaviors limit innovation and learning opportunities and thus damage an organization's long-term success (Edmondson & Bransby, 2023).

In contrast, psychological safety establishes an environment in which it is safe to take such interpersonal "risks," that is, in which the decision maker does not need to fear blame if the desired outcome is not realized (Edmondson, 1999). A psychologically safe environment enables employees to act without fearing negative consequences to their self-image, status, or career (Kahn, 1990). Employees are confident they will not be held personally accountable or punished if the desired outcome is not realized (Liang et al., 2012). Moreover, psychological safety encourages them to be open about their diverging thoughts and ideas and pursue them even if it is not certain that these will lead to success (Edmondson & Lei, 2014). Psychological safety also manifests itself in a culture of open communication (Baer & Frese, 2003; Walumbwa & Schaubroeck, 2009), where individuals are confident that others will not reject them for holding a different opinion but will instead respectfully consider alternative views, which is important for problemistic search and organizational learning to identify alternative solutions (N. L. Kerr & Kaufman-Gilliland, 1994). Psychological safety is particularly relevant for successful management when uncertainty is high (e.g., Edmondson & Lei, 2014; Edmondson & Mogelof, 2005; Newman et al., 2017; Sarooghi et al., 2015).

The avoidance of uncertainty disregards the benefits that can be achieved by effectively managing it, which is essential for long-term business success (Shapira, 1995; Sitkin & Pablo, 1992). As Cyert and March (1963) pointed out, the presence of divergent goals and the resulting conflict is a fundamental characteristic of any organization. To resolve the situation, defensive decision making serves as a quasi-resolution of conflict that focuses on the short term and disregards the long term. Creating a psychologically safe environment can be a means to foster decisions that are in the collective, long-term interest when dealing with uncertainty, thereby reducing defensive decision making. In line with this reasoning, we postulate:

Hypothesis 1. Psychological safety will be negatively related to defensive decision making.

1.4. Authentic leadership and defensive decision making

Aside from the team culture, leaders are one of the organization's most salient social influences (Sitkin & Pablo, 1992). Their behavior and attitude are decisive factors that influence the prevailing norms in the workplace, providing a key source of information for appropriate behaviors when dealing with uncertainty (Chamberlin et al., 2017; Detert & Burris, 2007; Tu et al., 2019). They set the aspiration level for their teams and the entire organization (Cyert & March 1963; for a review see Güttel, 2023). Supervisors' influence on followers' beliefs and actions lies in their authority to manage and distribute organizational resources and rewards (Detert & Treviño, 2010). The ongoing process of performance evaluations in organizations keeps salient the fear of being judged as incompetent (Edmondson, 2008). Depending on how the incentives are set, such evaluations can increase or decrease uncertainty avoidance, providing clear signals to followers as to what is regarded as the appropriate quasi-resolution of conflict. In line with these arguments, statements by employees suggest that the perceived pressure from leaders is one major cause of defensive decision making in organizations (Artinger et al., 2019), as is evident in the case of Wells Fargo.

Here we argue that authentic leadership is particularly effective in preventing those pressures and thus uncertainty avoidance and defensive decision making. Authentic leadership comprises four dimensions: self-awareness, balanced processing, the internalization of moral perspectives, and relational transparency (Walumbwa et al., 2008). *Self-awareness* pertains to a leader's understanding of their own strengths and weaknesses. *Balanced processing* refers to objectively analyzing all available information and also considering dissenting views before making a decision. The *internalization of moral perspectives* refers to leaders who are guided by their moral values, rather than external pressures. Lastly, *relational transparency* mirrors the leader's willingness to express their thoughts and intentions and to share information and rationales behind decisions.

These characteristics enable authentic leaders to engender perceptions of trust (e.g., Avolio et al., 2004; Gardner et al., 2005) and fairness (Colquitt et al., 2023) among their followers, which are relevant for effective coping with uncertainty (van den Bos & Lind, 2002). Specifically, the moral capacity of authentic leaders and their integrity have a positive influence on followers' perception of justice (Kiersch & Byrne, 2015) thereby encouraging them to accept uncertainty. Similarly, Zhu et al. (2023) confirmed the role of authentic leaders in reducing employees' unease with uncertainty: Balanced processing and transparency foster perceptions of justice among followers, and the leaders' high ethical standards make their behavior more predictable for employees.

Besides, recognizing and appreciating individual differences creates a climate characterized by tolerance and respect for others (Avolio et al., 2004), thereby contributing to sustainable conflict solutions. Likewise, Fotohabadi and Kelly (2018) highlighted the role of authentic leadership in constructive conflict management, as authentic leaders allow their employees to challenge the status quo and speak up (Hsiung, 2012). Therefore, we postulate:

Hypothesis 2. Authentic leadership will be negatively related to defensive decision making.

1.5. The interaction of psychological safety and authentic leadership and its effect on reducing defensive decision making

Already decades ago, Sitkin and Pablo (1992) suggested that organizational culture and leadership behavior do not exist in isolation. Based on their argument, other scholars showed the joint impact of leaders' behavior and perceptions of the environment on employees' behavior (for a *meta*-analysis, see Karam et al., 2019; for authentic leadership, e.g., Avolio, 2004; Gardner et al., 2005). However, the interaction might be complex.

As stated earlier, within the framework of the behavioral theory of the firm, defensive decision making reflects a quasi-resolution of conflict in response to the perception of an organizational environment that blames employees for undesired work outcomes. Numerous studies have highlighted the influential role of leaders' behavior in shaping the overall evaluation of work situations and whether an outcome is judged to be above or below an aspiration level, showing that leaders can either enhance or diminish the subjective appraisal of the work context (Gavetti et al., 2012). Likewise, Piccolo et al. (2008) showed that a high-quality relationship between leader and followers enhanced the positive impact of a just organizational environment on employees' work behavior. But the positive influence of such a beneficial environment on employees' behavior (here organizational citizenship behavior, referred to as voluntary, discretionary behaviors that go beyond their formal job requirements and contribute positively to the overall functioning and success of the organization; Konovsky & Pugh, 1994) and attitudes (i.e., felt obligation) was attenuated when the quality of the relationship between leader and followers was low. Moreover, the authenticity of a leader reinforced employees' perception of organizational corporate social responsibility, thereby amplifying followers' feelings of psychological safety (Kim et al., 2022). Similarly, the advantages of an environment characterized by trust can be further strengthened when leaders actively share information and provide constructive and respectful feedback to their followers (Gao et al., 2011). Providing *meta*-analytical support, Mathieu et al. (2019) demonstrated that positive leader–follower relationships moderate the association between psychological safety and performance.

Leaders also have the capacity to compensate for a detrimental working environment (La Rocco & Jones, 1978; Schreurs et al., 2012). Support from supervisors was found to alleviate stressful work conditions, thereby mitigating negative outcomes associated with those adverse environments (Biron & Bamberger, 2012; Cummins, 1990). Likewise, recent studies revealed the buffering role of leadership on the negative relationship between a climate of organizational politics and organizational citizenship behavior, referring to voluntary actions that go beyond employees' job requirements (De Clercq & Belausteguigoitia, 2017; Khattak et al., 2023). Moreover, servant leaders were able to buffer the adverse impact of job insecurity on individuals' willingness to share their knowledge in a less psychologically safe environment (Jeong et al., 2023). Similarly, in situations where the team climate lacks psychological safety and is characterized by heightened uncertainty regarding adverse outcomes (Edmondson & Lei, 2014), a leader's authenticity can provide a counterbalance by demonstrating transparent and equitable treatment of followers (Kiersch & Byrne, 2015).

However, certain conditions can limit the influence of leaders, referred to as leadership substitutes (Bendersky & Brockner, 2020; Eva et al., 2021; S. Kerr & Jermier, 1978; Lisak et al., 2022, Podsakoff et al., 1996). More specifically, Avolio et al. (2004) argued that the effectiveness of authentic leaders depends on the organizational environment, such as the quality of interpersonal relations or specific organizational characteristics. For instance, Bendersky and Brockner (2020) demonstrated that mistreatment from peers diminishes the benefits of having a fair supervisor, and high formalization and centralization in an organization can also offset the positive effects that leaders may otherwise achieve (Eva et al., 2021). Similarly, Ambrose and Schminke (2003) demonstrated that if the organization itself is perceived as fair, the supervisor's emphasis on procedural fairness was perceived as less meaningful. Additionally, the positive relationship between effective leadership behavior and followers' innovative behavior, which implies effectively dealing with uncertainty, is less pronounced when the organizational environment is perceived as stable rather than dynamic (Jansen et al., 2009). Furthermore, an innovative organizational culture was found to substitute for the influence of a leader in facilitating innovation, whereas a reward system focused on financial incentives was found to neutralize leaders' ability to promote innovative behavior in their subordinates (M. Y. Chen et al., 2012). Lastly, certain leadership behaviors can even harm the establishment of a psychologically safe atmosphere, such as when leaders display self-serving behaviors (Mao et al., 2019).

Taken together, these results suggest that a leader's (authentic) behavior can enhance employees' perception of psychological safety, thereby preventing uncertainty avoidance and promoting long-term solution of conflicts. In contrast, uncertainty avoidance and defensive decision making will be highest when employees are exposed to a leader displaying low authenticity who creates a team environment characterized by low psychological safety. However, we argue that to some extent, either an authentic leader or a psychologically safe team can compensate for a deficit of the other. Thus, we hypothesize:

Hypothesis 3. Psychological safety and authentic leadership jointly interact in determining defensive decision making.

2. Method

To investigate defensive decision making in a real-world setting, we conducted a study among employees of a large organization comprising 120,000 employees. Using an experimental design enabled us to provide causal evidence on the antecedents of defensive decision making in the field. Moreover, we hoped to shed light on the potential financial costs of defensive decision making.

We describe the recruitment of participants, all manipulations, and all measures. No data were excluded. The data from the study are not available because of their proprietary nature. All research material is presented in the text and Appendix. All data were analyzed using SPSS 28 and PROCESS v4.0. The study's design and analyses were not preregistered.

2.1. Participants

We collected data from a large German public administration organization with four consecutive hierarchy levels, each with managerial responsibility. The head of each section was invited to participate in the study via a formal email from the head of the academy that provided continuing education at the public administration organization. The invitation highlighted that the study has the potential to improve decision processes in the organization. Each section head was asked to disseminate the invitation to subordinates at the next level with personnel responsibility who in turn should disseminate the email to their subordinates.

To shed light on this issue, we followed John et al. (2012), who developed a method to investigate different types of fraud among social scientists using a survey (see Design and Procedure). They specifically designed their study to investigate the issue of social desirability responding and underreporting. This method can also be applied to the current context. Nevertheless, attrition, selection effects, and information spillovers mean that the results are likely to be a conservative estimate. Given that there were about 18,000 managers with personnel responsibility, a constant attrition rate when forwarding the invitation of 50 % at each hierarchy level would mean that 5,370 managers received the invitation, and a rate of 90 % that 1,110 managers would receive it.

All managers had significant supervisory responsibilities, including overseeing teams of more than 100 people. Participants came from all four hierarchy levels of the organization and all four major divisions; 45 % were men, and 55 % were women. In terms of age, 2 % of respondents were under 30 years old, 15 % between 31 and 40 years, 30 % between 41 and 50 years, and 53 % older than 50 years. Regarding work experience, 55 % had been employed for up to 5 years, 23 % for 5–10 years, and 22 % for more than 10 years. Fifty percent of the participants stated that they had contact with the political representatives.

2.2. Design and procedure

Causes of defensive decision making. We used a 2 (Psychological Safety: high vs. low) × 2 (Authentic Leadership: high vs. low) between-subjects design. Participants were randomly provided with one of four scripts depicting their environment at work. These scripts were designed to reflect either high or low psychological safety based on the items measuring psychological safety by Edmondson (1999) paired with high or low authentic leadership based on the four dimensions of authentic leadership behavior outlined by Walumbwa et al. (2008).[2] This readily makes it possible to test the interaction effect and to isolate the individual effect of psychological safety and authentic leadership. The scripts were structured as follows, where in the example below the first paragraph addresses psychological safety and the second paragraph authentic leadership. The order of the paragraphs was randomized. The

[2] Because we did not include any manipulation checks to prevent raising suspicion in participants, we conducted a separate study ($N = 147$) using the same experimental procedure and the items developed by Edmondson (1999) and Walumbwa et al. (2008) to test the manipulations. As expected, both analyses of variance revealed two main effects. The psychologically safe team climate was rated as more psychologically safe ($M = 5.95$, $SD = 1.31$) than the psychologically unsafe environment ($M = 3.68$, $SD = 1.06$), $F(1,144) = 130.97$, $p < 0.001$. Likewise, as expected, the authentic leader was rated as more authentic ($M = 4.06$, $SD = 0.70$) than the nonauthentic leader ($M = 2.37$, $SD = 1.06$), $F(1,144) = 133.21$, $p < 0.001$. These analyses thus suggest that both treatments were successful.

comparable key phrases in the low psychological safety or low authentic leadership condition are set in square brackets.

> "The team atmosphere is characterized by the shared belief that it is [is not] safe to take actions that have an uncertain outcome. The strengths and talents of the team members are [are not] utilized and valued. If someone needs support, they can [cannot] ask others for help, as no one ["they" instead of "no one"] would undermine the work of fellow team members. Employees know that mistakes are not [are] held against them. Problems or tough issues can [cannot] be brought up openly because colleagues are accepted [rejected] if they differ.
> The leader regularly [rarely] asks employees for feedback and shows [shows no] interest in improving cooperation with them and others. Before coming to a conclusion, they [do not] solicit different points of view. They are particularly [are not] interested in the opinions of those who question their own position. If mistakes happen, they are [are not] willing to admit them openly. The leader is [is not] aware of their own strengths and weaknesses and can [cannot] express expectations precisely. Their actions in the workplace are [not] consistent with their moral convictions. This is also reflected in the decisions they make."

Directly following the experimental manipulation of psychological safety and authentic leadership, the participants were presented in a randomized order with the five scenarios describing the situation and a decision where they could choose defensively. Developing these scenarios, we follow the recommendations for experimental vignette studies in management research made by Aguinis and Bradley (2014) and Podsakoff and Podsakoff (2019) to identify everyday situations. This was done in close collaboration with the organization to ensure external validity. Specifically, the human resources department asked participants in different internal workshops for a concrete example of when they had personally made a defensive decision. Serving as a guideline for our scenarios, the individual examples of defensive decisions reflected the employees' daily work routine and covered the major issues that were found to be particularly susceptible to defensive decisions. One main reason why people decide defensively is to avoid conflict with others (Artinger et al., 2019). Therefore, three of the five scenarios reflected a potential conflict with a supervisor, team, or peers. The other two scenarios dealt with the fear of negative press and the possibility of errors in process flow (see the Appendix for the text of the scenarios).

The scenarios were designed such that participants could decide defensively by picking the option that was, from the organization's perspective, less effective but with which they could better protect their personal interests. Alternatively, they could pick an option that was clearly in the best interest of the organization but involved increased personal uncertainty. For each scenario, we asked participants to put themselves in the role of the decision maker and to indicate how likely they were to make the given decision on a scale of 1 (*in no case*) to 4 (*in every case*). Notably, the ratings (options) allowed participants' answers to be dichotomized, where Options 1 and 2 were in the best interest of the organization (not defensive), and Options 3 and 4 represented defensive decisions.

Calculating forgone opportunities. To develop a measure of the costs of defensive decision making, one needs to obtain a measure of the frequency of defensive decisions and obtain an estimate of the average costs of such decisions in comparison to the option that the decision maker believes would be in the best interest of the organization. Participants were given an easy-to-understand definition of defensive decision making and then asked the following two question, responding for each question on a scale from 0 to 10:

> "Please consider the 10 most important decisions that you made in the last 12 months.
> 1. In how many of these decisions did you have to choose between an option that you believe is in the best interest of the organization and an option that had a defensive component?
> 2. How often did you decide for the option with the defensive component option?"

The first question provides information on how often there is a conflict of interest between what the decision maker believes would be best for the organization and their own interest in protecting themselves in case something goes wrong. Gigerenzer (2014) and Artinger et al. (2019) posed only the second question, which, however, does not take into consideration that not all decisions in the organization actually represent a conflict of interest and a potential defensive decision. We refer to question 2 subsequently as self-admissions rate.

Those participants who indicated in question 2 that in the last 12 months they had made at least one defensive decision out of their ten most important decisions were then asked to briefly describe the situation. Subsequently, we asked them to provide an estimate of the value of the defensive option.

> "3. Think back to the most important decision you made to protect yourself from possible negative consequences and describe it briefly (approx. 3–5 sentences).
> 4. Assume that the option that you think was in the best interest of the organization had a value of 100 %. In comparison, can you provide a rough estimate of what was the value for the organization of the option that you chose? if the decision was defensive, the value for the organization should be lower than 100 %."

A major drawback is that defensive decisions might be underreported. To investigate this, we followed John et al.'s (2012) approach: Besides indicating their self-admission rate, participants provided estimates of how often their team colleagues chose the option with the defensive component. We refer to this as the stated prevalence estimate.[3] If the average self-admission rate is lower than the average stated prevalence estimate, this indicates underreporting. Participants also estimated how often, on average, their team colleagues faced a conflict of interest concerning the 10 most important decisions in the last 12 months.

Demographics. Finally, participants reported their age, gender, and work experience. Additionally, they provided information on the management level to which they belonged, the number of employees they headed, and whether they had a relationship with representatives from the political sphere. This information allowed us to capture and illustrate the diversity and managerial experience of the participant pool. People at the organization suggested that working directly for the political level may in fact influence the frequency of defensive decisions, but we did not find any evidence of this.

3. Results

To test the effects outlined in Hypotheses 1 and 2, we conducted 2 (Psychological Safety) × 2 (Authentic Leadership) analyses of variance on defensive decision making. When psychological safety was high, on average 12.3 % ($SE = 1.4$) of participants decided defensively, compared with on average 15.1 % ($SE = 1.3$) when psychological safety was low, $F(1,311) = 2.34$; $p = 0.13$. When authentic leadership was high, on average 12.5 % ($SE = 1.3$) of the participants decided defensively, compared with on average 14.9 % ($SE = 1.4$) when authentic leadership was low, $F(1,311) = 1.52$; $p = 0.22$. Although the results point in the

[3] We also asked participants about the number of defensive decisions they estimated that their colleagues would admit to (the admissions estimate), in addition to the number of defensive decisions their colleagues made, as John et al. (2012) did. However, the results suggest that participants did not understand the question, and we therefore refrained from any analysis.

expected direction, they do not provide reliable evidence for isolated effects of psychological safety (Hypothesis 1) and authentic leadership (Hypothesis 2).

Our central hypothesis rests on the notion that leadership behavior interacts with factors in the organizational environment to shape employees' decisions. In line with Hypothesis 3, there was an interaction between psychological safety and authentic leadership, $F(1,311) = 4.83$; $p = 0.03$. To elucidate the nature of this interaction, we conducted post-hoc comparisons. When both psychological safety and authentic leadership were low, participants more frequently decided defensively ($M =$ 18.4 %, $SE = 2.2$) than when psychological safety was low but authentic leadership was high ($M = 11.9$ %, $SE = 1.59$), $t(160) = 2.43$; $p = 0.016$. In contrast, there was no evidence of an effect of authentic leadership when psychological safety was high ($M = 11.4$ %, $SE = 1.7$ for low authentic leadership vs. $M = 13.2$ %, $SE = 2.0$ for high authentic leadership), $t(151) = -0.68$; $p = 0.50$ (see Fig. 1).

Concerning the prevalence of defensive decisions, on average, participants indicated that 2.4 ($SD = 1.8$) or 24 % of their 10 most important decisions in the last 12 months were defensive (the self-admission rate). When providing information on colleagues' defensive decisions, 225 participants responded. The self-admission rate of these participants is similar to that of the overall sample, 2.4 ($SD = 1.9$) or 24 %. Participants believed that, on average, colleagues chose a defensive option in 3.6 of their decisions ($SD = 2.4$) or 36 %, which is the stated prevalence estimate. Given the self-admission rate of 24 %, this estimate indicates underreporting of their own defensive decisions.

When asked to estimate the value of the defensive option in their example, 168 participants provided an answer. The self-admission rate for these participants is similar to that for the overall sample, 2.4 ($SD =$ 1.9). Possible reasons for the lower response rate are that it may be difficult to quantify the value of the defensive option or that participants might have feared being identified through the example they gave.

One can calculate a rough estimate of the costs of defensive decisions on the basis of the following assumptions: (i) Defensive decisions occur not only with regard to the 10 most important decisions but just as likely across all decisions a person faces in the organization that year[4]; (ii) the decisions of the people working for the organization determine jointly, at least in the long run, the value the organization generates, as captured in its annual revenue.

Participants indicated that, on average, the option they chose had an estimated value of 70 % ($SD = 25.6$ %) compared with the option that would have been best for the organization. This implies that opportunities potentially adding up to 30 % of revenue were not pursued even though these would have been in the best interest of the organization as judged by the decision maker themselves. Keep in mind that the stated prevalence estimate, the most reliable indicator, suggests that about 36 % of the decisions are defensive. This estimate implies that the value of the forgone opportunities is worth 10.8 % of revenue (36 % of all decisions are defensive * 30 % of the potential value lost). That is, for each €1 billion of revenue the organization makes, it forgoes opportunities worth €108 million. This is a rough estimate to gain a first impression of the potential costs, which highlights the relevance of finding remedies for defensive decisions. Even a small change in the frequency of defensive decisions can have a significant economic impact on the organization. Because the estimated costs in terms of forgone opportunities are based on self-admissions of the value of the defensive option, they are likely conservative estimates.

[4] The first assumption, that defensive decisions are equally likely to occur across all decisions, essentially simplifies the computation of potentially forgone revenues. A different approach is the following: Taking into consideration the ten most important decisions alone and ranking these in terms of their value, one can assume that each decision does not have the same value. Rather, the most important decision has a higher value than the second most important decision. In turn, the second most important decision has a higher value than the third most important decision, and so on. Such a power-law distribution is commonly observed in many environments (see Simon, 1955b). A typical observation for such distributions is that each consecutive value is about two thirds of the value of the previous one. This implies that 97% of the value generated by a decision maker is affected by the 10 most important decisions, which yields a very similar value in terms of potentially forgone revenues to the one reported in the main text.

4. Discussion

Through the lens of the behavioral theory of the firm (Cyert & March 1963), defensive decision making emerges in response to uncertainty avoidance, where it can represent a quasi-resolution of conflict. In the present study, we adopted this perspective to investigate psychological safety and authentic leadership as organizational factors that may empower individuals to adeptly navigate uncertainty, thereby facilitating a more constructive resolution of conflicts. Our findings support our central hypothesis, which proposed an interaction between psychological safety and authentic leadership. Specifically, the combination of low psychological safety and low authentic leadership increased defensive decisions. If the team lacked psychological safety but an authentic leader was present, such a leader was able to offset the deficit and reduce defensive decision making. However, when psychological safety was present, the occurrence of defensive decisions was unaffected by the authenticity of the leader's behavior, indicating substitution of leadership. Moreover—and in contrast to what we expected—when psychological safety and authentic leadership were considered separately, they did not show any individual influence on defensive decisions.

Concerning the frequency of defensive decisions, participants reported that 24 % of their own decisions were defensive. When asked about the prevalence of defensive decisions among their colleagues, participants stated that they expect 36 % of their colleagues' decisions to be defensive. Given that people decided defensively, these estimates indicate that such a defensive decision constitutes 70 % of the value in comparison to what would have been best for the organization. In consequence, this implies that forgone opportunities have a value of 10.8 % of the company's revenues.

4.1. Theoretical and practical implications

The present paper contributes to the existing literature in the following ways. First, our findings underscore the intricate interplay and complexity of social influences at work in determining employees' behavior under uncertainty. Our study indicates that decision makers working in a psychologically safe environment effectively deal with uncertainty regardless of the leader's authenticity. This extends the behavioral theory of the firm insofar as it provides evidence on what contributes to effectively coping with uncertainty in an organization. Rather than resorting to defensive decision making, psychologically safe teams empower individuals to voice opposing views, thus initiating organizational learning and deterring blame-seeking approaches (Edmondson, 1999). Likewise, Bradley et al. (2012) showed that conflicts can be resolved skillfully in psychologically safe contexts, which thereby improve performance. Thus, if individuals are surrounded by a supportive team environment where differing views are accepted, the need for self-protection diminishes despite the leader's behavior. This creates an opportunity to address disagreements sustainably, rather than concealing conflicts by choosing a suboptimal but more defensible alternative. Besides, those factors positively influence the decision maker's expectations, thereby shaping their future decision making and coping strategies in uncertain contexts.

Second, we found that either authentic leadership or psychological safety needs to be present to reduce defensive decision making, but not both. Prior research by Liu et al. (2015) proposed that psychological safety serves as a mediating factor in the relationship between authentic leadership and whistleblowing. Whistleblowing and defensive decision

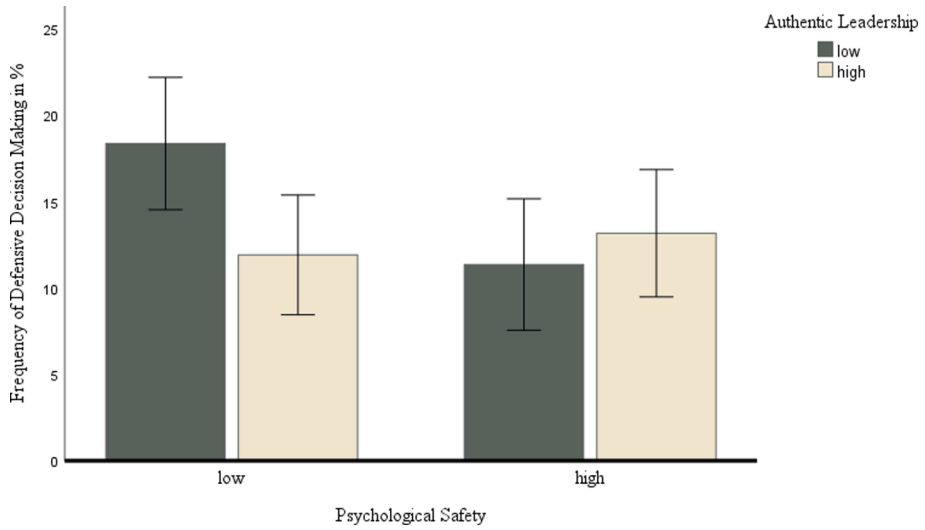

Fig. 1. Effect of interaction between psychological safety and authentic leadership on defensive decision making as observed in the scenarios. Note. Sample means and error bars at 95 % confidence intervals within conditions.

making both involve navigating potential personal or professional repercussions. While defensive decision making prioritizes conformity to avoid blame, whistleblowing often entails a calculated choice to challenge institutional norms despite similar fears of retaliation. In fact, an experimental interaction effect can also be interpreted as an experimental mediator test (mediation-by-design; see Spencer et al., 2005). In the case of experimental mediation, defensive decision making should have been lowest if both authentic leadership and psychological safety were high. Our results do not support psychological safety as an underlying mechanism but instead highlight that if psychological safety is present, the influence of authentic leaders on subordinates' propensity to decide defensively is obstructed. This is in line with the substitutes of leadership concept (S. Kerr & Jermier,1978; for a review, see Podsakoff et al., 1996). Specifically, S. Kerr and Jermier (1978) argued that a "closely-knit, cohesive and interdependent work group" (p. 383), which applies to teams with high psychological safety, might act as a substitute for leadership. Similar results were found by Sheridan et al. (1984), demonstrating that strong social forces within teams can serve as compensation for formal leadership. More recently, Eva et al. (2021) showed that clearly defined processes and rules can offset the task-related role of leadership. Likewise, specific task characteristics curbed the beneficial effect of empowering leadership and team performance (Lisak et al., 2022).

However, although factors exist that might lessen the impact of positive leadership behaviors, team resistance limits the potential harm caused by unfavorable leadership behavior (van der Velde & Gerpott, 2023). Our findings thus corroborate the significance of psychological safety: Even in cases where leaders displayed nonauthentic behavior, the positive effects of psychological safety on reducing defensive decisions persisted.

Moreover, previous research also emphasized that effective leadership could mitigate the negative impact of hostile occupational settings (La Rocco & Jones, 1978; Schreurs et al., 2012). In line with our findings, prior studies showed that effective leadership can weaken the negative relationship between organizational politics and organizational citizenship behavior (De Clercq & Belausteguigoitia, 2017; Khattak et al., 2023), underscoring the value of leadership in fostering positive organizational outcomes even in uncertain environments. Furthermore, cultivating high-quality relationships between leaders and followers has been linked to reducing turnover intentions in diverse teams (Nishii & Mayer, 2009). Most recently, Hong et al. (2023) illuminated how leadership can act as a buffer against the negative effects of a threatened workplace on employees' behavior.

As for the practical implications, our findings demonstrate that organizations should regard defensive decisions with utmost seriousness, given their potential high prevalence and associated costs. The simple tool allows a first rough assessment of the potential costs of defensive decision making in terms of forgone opportunities. The results suggest that such decisions are costly and should be combatted where defensive decisions can lead to organizational performance below the aspiration level. When we presented our findings to the organization, this initiated an extensive review and further research, suggesting a problemistic search taking place. We can also point to potential sources that generate defensive decisions in terms of the interaction between psychological safety and authentic leadership. This interaction can be the starting point for organizational learning how best to reduce defensive decision making.

Our study confirms prior research that has extensively and consistently demonstrated the beneficial impact of psychological safety on numerous organizational outcomes such as voice, learning, and innovation (e.g., Newman et al., 2017) and supports Marx-Fleck et al.'s (2021) conclusion that organizations should make use of the numerous measures to promote psychological safety in order to reduce uncertainty avoidance and quasi-resolution of conflict via defensive decision making. While leaders play a key role in developing psychological safety, we would like to point to the arguments of Kahn (1990) and Frazier et al. (2016), who contended that other factors, such as organizational norms and work design characteristics (such as autonomy and role clarity) are also relevant for creating psychological safety. Thus, to cultivate psychological safety sustainably, organizations need to adopt a broader perspective that goes beyond leader-centric measures. Given the importance of psychological safety in the organizational context, many interventions have been developed and proven useful (O'Donovan & McAuliffe, 2020). Furthermore, fostering a supportive leadership culture is beneficial for organizations in two ways as it contributes both to authentic leadership behavior and a psychologically safe team climate, thereby combating uncertainty avoidance. An essential characteristic of authentic leaders is their appreciation of diverse perspectives, even if these differ from their own opinions. Such perspectives can help identify relevant ways forward as part of a problemistic search and organizational learning. Leaders should not only encourage their team to seek out new knowledge but also actively provide opportunities for exploration and support their team members in their professional growth. After an important decision or project completion, conducting a debriefing session can be helpful to discuss successes, areas for improvement, and lessons learned. Because they demonstrate self-awareness and

transparency, authentic leaders successfully convey to their teams that they themselves fail too and acknowledge that failure is an integral part of the path to success. Thus, they not only enhance their authenticity but simultaneously foster psychological safety within their teams.

In sum, we show that efficient remedies enable organizations to counteract defensive decisions. Identifying such remedies is not merely an academic exercise but is relevant for practitioners, given the frequency and potentially severe financial consequences defensive decisions can have for organizations.

4.2. Limitations and future research

The first limitation of our study concerns the experimental design. Although we made great efforts to develop realistic scenarios, we cannot be sure that these scenarios represented *all* participants' everyday work. Not all participants could have imagined themselves in the situation described, leading to a distorted response. One way to address this issue in future research would be to measure defensive decision making as observable behavior in natural working environments. However, defensive decisions occur in many different contexts, making it challenging to identify representative cases that enable the actual frequency of defensive decisions to be estimated accurately. Furthermore, the cascading process of data collection likely caused some attrition on each hierarchy level. There was also possibly a self-selection bias at work, even though we guaranteed anonymity. That is, those managers who feared that their subordinates would report more defensive decisions might have shied away from sending out the invitation. In addition, there are potential information spillovers, in that participants may have discussed the survey. This can have two effects: On the one hand, participants might respond more homogeneously such that the manipulations are less effective. On the other hand, the data collection process and the topic itself invite social desirability responding and underreporting. Attrition and selection effects also mean that these are conservative estimates.

A second limitation concerns the question of how psychological safety reduces defensive decision making. To date, uncertainty in defensive decision making has been theorized but not empirically tested. We would encourage future research to fill this gap by investigating whether the perception of uncertainty differs in high vs. low psychological safety situations. Whereas literature lacks a coherent conceptualization of uncertainty at work, the different operationalizations share key assumptions made by Duncan (1972) regarding perceptions of unpredictability and ambiguity.

Recent papers (e.g., Artinger et al., 2019; Marx-Fleck et al., 2021) theorized that defensive decision making is intended to avoid personal uncertainty. Psychological safety reduces the fear of failure (Deng et al., 2019) and decreases an individual's concern about their reputation within the team (Edmondson & Lei, 2014). Thus, we suggest that concerns for reputation might be another explanation for the relationship between psychological safety and defensive decision making.

Besides further shedding light on organizational antecedents, it seems valuable to consider the decision maker's personality because it influences their perception of the environment. Proactive individuals, for example, tend to perceive an environment as psychologically safe even if contextual cues suggest otherwise (Chan, 2006). Similarly, emotionally stable people are more likely to sense an atmosphere as psychologically safe due to their calm and relaxed temperament (McCrae & Costa, 1987). Moreover, the stable personal tendency of uncertainty avoidance could also account for variations in responses to uncertain situations (DeWees & Lerner, 2020). These interpersonal differences might explain why employees exposed to the same environment differ in their tendency to decide defensively.

Our tool to estimate the forgone opportunities due to defensive decisions should be understood only as a starting point. We encourage future research to investigate potential costs using objective data derived from, for example, financial statements. These then can be compared with the tool developed here to identify how exactly it relates to the costs and under what conditions it might be viable or not. A simple further improvement of the existing tool is to ask for the value of the forgone opportunity with regards to not only one's own defensive decision but also a colleague's defensive decision. With both measures it is possible to investigate underreporting. At the same time, estimating the value of a forgone opportunity in connection with a colleague's defensive decision might be less precise due to less knowledge about the particular case. Even though the 80/20 heuristic also applies to organizational decision making (Craft & Leake, 2002), indicating that 80 % of the profits are generated by 20 % of the (most important) decisions, exclusively focusing on those decisions bears the risk of underestimating the extent of forgone gains induced by defensive decision making. Therefore, future research should consider all defensive decisions to provide a more fine-grained estimation.

The leadership of the organization showed considerable concern when presented with the frequency and potential costs of defensive decisions that we found. What would have been of great interest is to subsequently engage with the organization in the problemistic search process to see how psychological safety and authentic leadership can be experimented with and evaluated, leading to organizational learning. However, the organization declined to run a scientific project on the process. Future research could address this point. More generally, the behavioral theory of the firm has strong psychological foundations, being based on the three cognitive principles of satisficing, that is, the use of an aspiration level, search, and the use of automatic rules and coping mechanisms. However, there is a dearth of research on how these principles relate to current psychological insights, such as what the influence of psychological safety or authentic leadership is on aspiration-level formation, the search process, or establishing automatic rules. This provides ample opportunities for a future research program.

5. Conclusion

"Cover your ass" is a term used in the managerial world to describe a situation where decision makers opt for the personally safer option that protects themselves rather than pursue a more uncertain option that is in the organization's best interest. We refer to such behavior as defensive decision making and show that it is widespread and that the costs for organizations can be severe. However, by fostering authentic leadership behavior and cultivating psychological safety, organizations can empower employees to resist attempts to avoid it and protect themselves in their decisions and to instead cope with uncertainty more effectively.

CRediT authorship contribution statement

Florian M. Artinger: Writing – original draft, Resources, Methodology, Investigation, Conceptualization. **Stefanie Marx-Fleck:** Writing – original draft, Validation, Methodology, Formal analysis, Data curation, Conceptualization. **Nina M. Junker:** Writing – review & editing, Supervision. **Gerd Gigerenzer:** Writing – review & editing, Supervision. **Sabrina Artinger:** Writing – review & editing. **Rolf van Dick:** Writing – review & editing, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix. Detailed description of the five scenarios

For each scenario, participants rated the decision on a scale of 1 (*in no case*) to 4 (*in every case*), which we refer to in the text as Options 1–4.

Experimental instructions:

The following describes a fictitious organization and a fictitious manager, along with five different situations. Place yourself in the role of the decision maker. Indicate which decision you would choose in the described situation, ranging from 1 = in no case to 4 = in every case. The description of the organization always remains the same, and, as a recap, this instruction is given for each decision.

Scenario 1:

Decision: Your supervisor wants the team to get rid of the four-eyes principle so that more applications can be processed per day. You know that this will negatively impact the quality of the processing. Eliminating the four-eyes principle would have more disadvantages than benefits for the organization. However, if you insist on keeping the four-eyes principle, there is a risk of experiencing conflict with your supervisor. What do you do?

I do what my supervisor wants so I can avoid the risk of experiencing conflict with them.

Scenario 2:

Decision: You currently have an application on your desk that has received a lot of public attention. The relevant laws and policies are unclear about the matter at hand. Approving the application is clearly in the interest of the organization and would bring many benefits. However, if you approve the application, there is a risk that you will be mentioned negatively in the press. What do you do?

I reject the application to avoid the risk of being mentioned negatively in the press.

Scenario 3:

Decision: There is a vacancy in your organization, and you have the choice between an internal and an external applicant. The internal applicant would fit the role just fine. The external applicant would do the same but also brings new skills that would help the organization greatly. It is clearly in the organization's interest to hire the external applicant. However, there is a risk that rejecting the internal applicant would lead to more conflict within the team. What do you do?

I hire the internal applicant to avoid conflicts within the team.

Scenario 4:

Decision: You are part of the leadership team of your organization, and you have decided to switch the most important processes of the organization from analog to digital. A colleague notes that it might be better to hire a consultant to provide an expert assessment of this decision. Doing so would cost 50,000 euros. It is nearly certain that the assessment would provide no further information. If, however, problems occurred during the transformation from analog to digital, then you, as part of the leadership team, could point to this expert assessment, which would exonerate you personally. For the organization, it would clearly be beneficial not to hire the consultants and to save the money for this expert assessment. The leadership team votes on whether the expert assessment should be commissioned or not. What do you do?

I vote in favor of commissioning the external assessment to avoid the risk of being made responsible for this decision.

Scenario 5:

Decision: You are convinced that allowing flexible working conditions—including work mobility, flexible working hours, and flexible workplaces—would greatly boost productivity among employees. However, there are many managers at your level who strongly oppose such flexible working conditions. Now you have the opportunity to decide for your team if you want to allow these flexible working conditions.

To avoid conflict with other managers at my level, I don't allow these flexible working conditions.

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Florian Artinger is co-founder and managing partner of Simply Rational - The Decision Institute, a professor of Data Science & Business at Berlin International University of Applied Sciences, and an associated scientist at the Max Planck Institute for Human Development. He received his PhD from the Max Planck Institute and has been working as a researcher at the University of Warwick, the University of Chicago, and the University of Oxford.

Stefanie Marx-Fleck is a postdoctoral researcher at the social psychology department at Goethe University. She received her PhD from the Goethe University Frankfurt. Her main research focuses on organizational decision-making, leadership, and perceptions of uncertainty in work contexts.

Nina M. Junker is an Associate Professor in Work & Organizational Psychology at the University of Oslo. She earned her Ph.D. in Psychology at Goethe University Frankfurt, where she also did her post-Doc. Her research interests include the social identity approach, the work-family interface, and mental health at work.

Gerd Gigerenzer is Director of the Harding Center for Risk Literacy at the University of Potsdam, Faculty of Health Sciences Brandenburg, and partner of Simply Rational - The Institute for Decisions. He is former Director of the Center for Adaptive Behavior and Cognition (ABC) at the Max Planck Institute for Human Development and at the Max Planck Institute for Psychological Research in Munich, Professor of Psychology at the University of Chicago and John M. Olin Distinguished Visiting Professor, School of Law at the University of Virginia. In addition, he is Member of the Berlin-Brandenburg Academy of Sciences, the German Academy of Sciences and Honorary Member of the American Academy of Arts and Sciences and the American Philosophical Society. He was awarded honorary doctorates from the University of Basel and the Open University of the Netherlands, and is Batten Fellow at the Darden Business School, University of Virginia.

Sabrina Artinger is Head of the Unit for Citizen-Centred-Goverment at the German Federal Chancellery. She holds a PhD in Economics and Management Sciences and has worked at the University of Oxford, Humboldt University, and the Max Plank Institute for Human Development. Her work focuses on how to use scientific methods and insights to improve policy making and decision making in government and society. Sabrina is an advocate for the empowerment of people and evidence-based decision making.

Rolf van Dick is Professor of Social Psychology at Goethe University Frankfurt. He served as editor for the British Journal of Management and the Journal of Personnel Psychology. He was elected Fellow of the International Association of Applied Psychology and works on social identity processes in organizations, leadership, and health.