# Fine Horses Are Easy to See, but Bole Is Hard to Find: The Mechanisms and Boundary Conditions of Decision-Makers' Mental Models Influencing Creative Idea Recognition

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## Abstract

A major misconception in current research and practice on organizational creativity and innovation is the emphasis on employees' idea generation while neglecting decision-makers' idea recognition. Decision-makers exert greater influence on organizational innovation; investigating the influencing factors and mechanisms of decision-makers'idea recognition represents a new direction for research in this domain. Decision-makers'mental models—the knowledge and belief structures that individuals employ to describe, explain, and predict phenomena and to guide judgment and decision-making—are critical factors affecting the accuracy of idea recognition. However, their importance has not been adequately recognized. This project adopts a systems view of creativity as its theoretical framework, integrates experimental and field research methods, and through four sub-studies reveals the mediating mechanisms through which fixed and growth mental models of decision-makers influence idea recognition, while also examining the synergistic effects of three subsystems—decision-makers, creators, and environment—on decision-makers'idea recognition. This project explores the process and outcomes of idea recognition from the decision-maker' s perspective, theoretically introducing new perspectives and topics to organizational creativity and innovation research, and is expected to provide practical guidance for decision-makers on how to avoid pitfalls in innovation decision-making.

## Full Text

# Pearls Are Everywhere, But Not the Eyes: The Mechanisms and Boundary Conditions of How Decision Makers' Mental Models Influence Idea Recognition

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### Abstract

A major limitation in organizational creativity and innovation research and practice is the emphasis on employee idea generation at the expense of decision makers' idea recognition. Decision makers exert greater influence on organizational innovation, making the examination of factors affecting their idea recognition and underlying mechanisms a critical new direction for the field. Decision makers' mental models—the knowledge and belief structures individuals use to describe, interpret, and predict phenomena while guiding judgment and decision-making—represent a key factor influencing idea recognition accuracy. However, their importance remains underappreciated.

Using Csikszentmihalyi' s systems view of creativity as a theoretical framework, this project integrates experimental and field research methods across four substudies to reveal the mediating mechanisms through which decision makers' fixed versus growth mindsets influence idea recognition, and to examine the synergistic effects of three subsystems—decision makers, creators, and the organizational environment—on idea recognition. By shifting focus from creators to decision makers, this project introduces new perspectives and research questions to organizational creativity and innovation research, while offering practical guidance for decision makers seeking to avoid pitfalls in innovation decision-making.

**Keywords:** organizational creativity & innovation; decision makers; idea recognition; mental models; fixed/growth mindsets

> "Horses that can run a thousand li are common, but those who can recognize them are rare···Someone says: 'There are no good horses under heaven!' Alas! Is it truly that there are no good horses? Or is it truly that they do not know how to recognize good horses?"
> —Han Yu, "On Horses"

## 1. Problem Statement

Creativity and innovation constitute the most important drivers for individuals and organizations to gain competitive advantage and achieve long-term development. To foster innovation, numerous organizations have invested substantial resources to incentivize employees to generate novel and valuable ideas, products, services, or processes (Amabile, 1996; Liu, Gong, Zhou, & Huang, 2017; Zhou & Hoever, 2014). However, as the opening quotation suggests, the bottleneck in organizational innovation often lies not in employees' lack of ideas, but in decision makers' inability to identify truly promising ones. Decision makers simultaneously complain about creative scarcity while failing to recognize potential—a phenomenon with countless examples in business history. Nokia, for instance, pioneered touchscreen smartphones yet missed the revolutionary market opportunity by remaining focused on conventional mobile phones, ultimately leading to its acquisition by Microsoft. Similarly, China Mobile developed Feixin, a leading instant messaging tool, as early as 2007, yet lost the personal instant messaging market to WeChat, struggling in the mobile internet era. This illustrates how focusing on idea generation while neglecting how decision makers effectively conduct idea recognition represents a critical error in organizational innovation practice. For organizational innovation, enhancing decision makers'accuracy in idea recognition to select truly valuable ideas for cultivation, refinement, and implementation proves far more crucial. Shifting focus from employee idea generation to decision maker idea recognition addresses both practical needs and introduces new perspectives to organizational creativity research, potentially generating a paradigm shift (Mueller, Melwani, & Goncalo, 2012).

Given abundant ideas but scarce valuable ones and limited organizational resources, decision makers must effectively identify promising concepts. Yet they frequently fail to recognize the most valuable ideas, making erroneous judgments (Mueller et al., 2012; Mueller, Melwani, Loewenstein, & Deal, 2018), sometimes performing even worse than ordinary individuals (Berg, 2016). Idea recognition outcomes determine the direction of organizational innovation, making the identification of factors affecting recognition accuracy a priority. Limited research has noted that decision makers' mental models critically influence how they recognize ideas (Elsbach & Kramer, 2003; Mueller et al., 2018). Mental models represent structured knowledge systems about how key elements interconnect within a domain—internal psychological mechanisms that individuals rely on to understand situations and make judgments (Johnson-Laird, 2010; Rouse & Morris, 1986). During idea recognition, decision makers depend on their constructed mental models (Elsbach & Kramer, 2003), which subsequently affect judgment accuracy (Mueller et al., 2018). Examining how decision makers' mental models influence idea recognition represents a new research agenda, though their importance remains underexplored and mechanisms require further investigation.

This project adopts Csikszentmihalyi' s (1988, 1999) systems view of creativity as an overarching theoretical framework, examining how decision makers'

growth versus fixed mindsets affect idea recognition outcomes and exploring the synergistic interactions among decision makers, creators, and the organizational environment. Theoretically, this project shifts perspective from creators to decision makers, introducing new viewpoints and topics to organizational creativity research. Practically, findings may guide decision makers in avoiding innovation decision traps by optimizing their mental models and enhancing idea recognition capabilities.

## 2. Literature Review

We first review the status of organizational creativity research, identify existing misconceptions, and propose a general approach to idea recognition research guided by the systems view of creativity. We then summarize biases in decision makers' idea recognition and preliminary analyses of their primary causes, concluding with an examination of how decision makers' mental models may influence idea recognition.

### 2.1 The Importance of Idea Recognition in Organizational Innovation

Organizational creativity research primarily examines how employees generate novel and valuable ideas, products, services, or processes within specific organizational contexts (Shalley, Zhou, & Oldham, 2004; Woodman, Sawyer, & Griffin, 1993). Extensive research has identified individual characteristics, leadership behaviors, team features, organizational climate, and their interactions as significant factors influencing employee creativity (Anderson, Potocnik, & Zhou, 2014; West & Sacramento, 2012; Zhou & Hoever, 2014). However, scholars argue that focusing solely on idea generation is insufficient—idea implementation proves more critical for organizations (West, 2002). Only when novel ideas realize their potential value and generate substantive impact can true organizational innovation occur. Thus, after generating ideas, employees must actively promote them (Janssen, 2001; Scott & Bruce, 1994), securing support from key stakeholders (Baer, 2012; Lingo & O' Mahony, 2010; Perry-Smith & Mannucci, 2017) to enable implementation.

For organizational innovation, idea quality matters more than quantity. Chandy, Hopstaken, Narasimhan, and Prabhu (2006) found that pharmaceutical companies with high R&D volume showed poor product conversion rates, while the most successful converters were those with moderate R&D volume that focused on their expertise and selected high-quality projects. Identifying the few truly valuable ideas for refinement and implementation constitutes the critical link determining innovation effectiveness (Berg, 2016). Major errors in idea recognition—such as selecting poor projects—waste resources and opportunities (Kornish & Ulrich, 2014). A more insidious error involves rejecting highly promising ideas, causing organizations to miss successful innovations. Since valuable ideas remain scarce despite abundant proposals, decision makers must invest substantial resources in evaluation and selection (Stevens & Burley, 1997).

Idea recognition connects idea generation and implementation, representing the critical stage where organizations launch innovation (Berg, 2016; Zhou, Wang, Song, & Wu, 2017). Yet organizational creativity research has focused on stimulating idea generation or facilitating implementation while neglecting how decision makers conduct idea recognition (Mueller et al., 2012). Overcoming this limitation requires shifting focus from idea-generating creators to decision makers responsible for recognition, examining factors affecting their accuracy, mechanisms, and boundary conditions.

Csikszentmihalyi' s (1988, 1999) systems view of creativity provides a theoretical framework for this perspective shift [Figure 1: see original paper]. Drawing on evolutionary theory, it posits that creative achievements emerge from interactions among three subsystems: the individual, the field, and the domain. Specifically, creative production involves three stages: (1) domain rules and practices identify valuable content, transmitting this information to individuals as creative guidelines; (2) individuals as creators generate variations from existing domain practices; and (3) the field selects whether these variations become significant achievements. The field acts as gatekeeper, judging and selecting based on domain rules, determining whether individual ideas enter the domain and become known to others. Selected ideas become recognized creative achievements, transmitted as part of the domain and influencing subsequent creation; otherwise, they fade into obscurity like most novel thoughts. Gatekeepers typically include key decision makers such as teachers, managers, foundation officials, journal editors, reviewers, and investors. The three subsystems interact dynamically: domains provide information and guidelines for creators and decision makers; creators generate ideas for decision maker evaluation; and creator-decision maker interactions ultimately provide new information to the domain.

This systems view also explains organizational innovation processes and outcomes. Idea generation constitutes variation (Mainemelis, 2010), but whether employee ideas hold value and can launch organizational initiatives depends on gatekeepers' (i.e., decision makers' ) recognition and evaluation (Kickul & Gundry, 2001). Organizational division of labor assigns employees as creators responsible for idea generation, while decision makers participate in innovation by endorsing, supporting, or vetoing ideas (Mueller, 2017: p.100). Decision makers often exert greater influence on organizational innovation than creators responsible for product development and implementation (Mollick, 2012). Organizations simultaneously provide resources and constrain innovation through formal rules and informal norms. Thus, organizational innovation' s three key elements—creators, decision makers, and organizational environment—correspond to individual, field, and domain subsystems, jointly influencing innovation.

Current organizational creativity research predominantly focuses on the creator subsystem, examining variation processes while neglecting decision makers' critical role. We argue that shifting from creators to decision makers to examine idea recognition processes, outcomes, influencing factors, and mechanisms represents

a new direction for the field.

### 2.2 Preliminary Research on Decision Maker Idea Recognition

Recent studies offer valuable insights (Berg, 2016; Mueller et al., 2018; Zhou et al., 2017), but research on idea recognition remains nascent, requiring greater quantity, depth, and diversity. Most studies still address whether biases exist, with insufficient discussion of factors affecting accuracy. Decision makers' primary responsibilities include assessing idea quality, selecting appropriate concepts, allocating budgets, monitoring progress, and driving successful implementation (Mueller et al., 2018). Decision makers exist at all levels, from top management to project leaders and frontline managers, with responsibility and influence increasing at higher levels. Idea recognition typically evaluates novelty, potential value, and implementation maturity through a multi-round, iterative process (Stevens & Burley, 1997). Novelty assessment constitutes the first step —if an idea lacks sufficient novelty, recognition terminates (Diedrich, Benedek, Jauk, & Neubauer, 2015; Ford & Sullivan, 2004). As evaluation progresses, decision makers consider value and later implementation maturity, including resource requirements (Dailey & Mumford, 2006).

Decision maker errors are widespread. In academic contexts (e.g., grant reviews, Boudreau, Guinan, Lakhani, & Riedl, 2016; journal reviews, Siler, Lee, & Bero, 2015) and business settings (Criscuolo, Dahlander, Grohsjean, & Salter, 2017), decision makers frequently fail to identify high-quality ideas, instead stifling them. Even novelty judgments show substantial disagreement (Mueller et al., 2012; Mueller et al., 2018; Zhou et al., 2017), and implementation predictions inevitably contain errors (Berg, 2016).

Biases also manifest as penalizing high-novelty ideas. Criscuolo et al. (2017) found an inverted U-shaped relationship between R&D project novelty and funding approval rates, with moderately novel projects receiving highest approval and highly novel projects lowest. Boudreau et al. (2016) similarly found that each unit increase in proposal novelty decreased peer review ranking by 4.5 percentiles.

Why do decision makers err? Domain knowledge expertise is considered essential for evaluation (Kaufman, Baer, Cropley, Reiter-Palmon, & Sinnett, 2013), yet surprisingly, extensive domain knowledge does little to reduce recognition errors. Siler et al. (2015) analyzed rejections from three top medical journals, finding that 14 of the most impactful papers in the field were rejected by all three journals—12 via desk rejection, indicating editors deemed them unworthy of review. Thus, even top journal editors with rich expertise make serious errors.

Berg (2016) attributes errors to decision makers' failure to integrate divergent and convergent thinking. Comparing circus managers and creators in predicting show popularity, managers performed significantly worse than creators, their judgment even less accurate than laypeople. Berg speculated that role differences lead to different thinking skills—creators integrate divergent and conver-

gent thinking for accurate recognition, while managers rely solely on convergent thinking and conventional experience, lacking openness and sensitivity to creative processes and thus losing insight. However, this remains speculation without direct testing of thinking skills.

Decision maker idea recognition also results from individual-environment interactions (Zhou et al., 2017). Promotion-focused individuals rate highly novel ideas higher than prevention-focused individuals; organizational innovation encouragement increases employee ratings of novel ideas; and when environments emphasize risk avoidance, prevention-focused individuals become more conservative in novelty assessments.

Given idea recognition' s critical impact on organizational innovation efficiency, comprehensive analysis of error causes is essential. Research in this area remains preliminary, with insufficient depth and systematic understanding of influencing factors.

### 2.3 The Influence of Decision Maker Mental Models on Idea Recognition

Mueller et al. (2018) sparked new interest in how decision maker mental models affect recognition outcomes. Recent findings show that assuming a decision maker role significantly reduces recognition and evaluation efficiency for highly novel ideas because decision makers more frequently adopt economic mindsets —prioritizing rationality, efficiency, accuracy, and self-interest in judgment and action (Molinsky, Grant, & Margolis, 2012). Mueller et al. (2018) presented participants with a highly novel product design for creativity evaluation. Laboratory and field experiments consistently showed no difference between decision makers and non-decision makers when the product had high audience approval, but decision makers rated it as less novel when approval was uncertain. Mediation analysis confirmed that stronger economic mindsets among decision makers led to more conservative creativity estimates.

Mental models constitute internal psychological mechanisms for observing, describing, explaining, and predicting the external world (Rouse & Morris, 1986). Essentially, they are actively constructed knowledge structures—internal mental representations of how key elements interconnect in specific domains. Through these structures, individuals answer "what is the world?" and "how does the world work?"to guide reasoning, judgment, and decision-making (Johnson-Laird, 2010).

People develop implicit theories about creativity to explain its nature, characteristics of highly creative individuals, and its sources (Baas, Koch, Nijstad, & De Dreu, 2015; Loewenstein & Mueller, 2016). These theories represent the mental models underlying creative description, explanation, judgment, and activity. Given decision makers' heavy responsibilities and time pressures, they particularly rely on mental models as judgment templates. Elsbach and Kramer (2003) provide evidence: Hollywood studio executives hold seven screenwriter

prototypes, only two suggesting creative potential. When deciding within minutes whether to sign unknown writers, managers rely on prototype matching to assess creativity. Gralewski and Karwowski (2018) categorized teachers' implicit theories of student creativity as adaptive/incremental versus innovative/radical. Both prototypes view creative students as original, independent, opinionated problem-solvers, but differ in viewing them as disciplined versus impulsive. These prototypes significantly influence teacher evaluations. Teachers with adaptive prototypes rate artistically skilled, learning-oriented girls higher but negatively evaluate scientifically active girls; boys' behaviors don' t affect their ratings. Teachers with innovative prototypes view non-compliant boys as more creative, while girls' compliance doesn' t affect ratings. Since mental models operate quickly and automatically, often beyond awareness (Mueller et al., 2012), biased models inevitably produce biased recognition that' s difficult to correct. Thus, understanding how mental models influence idea recognition holds significant theoretical and practical importance.

Dweck' s implicit theory deserves particular attention (Dweck, 2006; Dweck, Chiu, & Hong, 1995). This theory posits that people develop naive theories about fundamental human attributes (intelligence, character, personality), primarily concerning whether these attributes are fixed or malleable. This yields two mental models: fixed mindset versus growth mindset, contrasting in assumptions about human attributes, cognitive processing patterns, motivation, and goal orientation (Levy, Plaks, & Dweck, 1999). Core differences lie in attitudes toward uncertainty—fixed mindsets exhibit lower tolerance, while growth mindsets embrace it more positively .

**Table 1: Differences Between Fixed and Growth Mindsets**

| Dimension | Fixed Mindset | Growth Mindset |
|---|---|---|
| **Basic Assumptions** | Human traits are fixed and unchangeable | Human traits are malleable and developable |
| **Trait-Behavior Relationship** | Behavior fully determined by traits; stable reflection of internal traits enables accurate judgment through observation | Behavior influenced by multiple internal/external factors that vary by situation; requires sustained observation across contexts for accurate judgment |
| **Cognitive Processing** | Rapid processing to achieve quick certainty | Dynamic processing for thorough understanding |
| **Need for Cognitive Closure** | High; seeks definitive, closed understanding; avoids ambiguity | Low; tolerates uncertainty and open-endedness |

| Dimension | Fixed Mindset | Growth Mindset |
|---|---|---|
| **Attitude Toward Failure** | Low; avoids uncertainty; maintains familiar knowledge; performance-oriented; helpless response to failure attributing it to unchangeable ability | High; explores novelty; embraces uncertainty; learning-oriented; persists, analyzes causes, and seeks new strategies |

Growth and fixed mindsets affect individual creativity. Growth mindset individuals perform better on creativity tests (e.g., alternative uses, divergent thinking), show stronger creative self-efficacy (Puente-Diaz & Cavazos-Arroyo, 2017), and rate their own creativity higher (Karwowski, 2014; O' Connor, Nemeth, & Akutsu, 2013). However, research linking mindsets and creativity remains limited, mostly examining idea generation. For instance, Mumford and colleagues found positive correlations between students' mental model quality and creative generation performance (Barrett et al., 2013; Hester et al., 2012; Mumford et al., 2012). Steele, Johnson, and Medeiros (2018) measured fixed mindset to test discriminant validity of a creative evaluation self-efficacy scale, finding no significant correlation. Beyond this study, no research has directly examined how growth/fixed mindsets affect idea recognition outcomes.

### 2.4 Review of Existing Research

Organizational creativity and innovation research exhibits several limitations. First, research and practice overemphasize employee idea generation while neglecting decision makers' critical role in idea recognition. Second, idea recognition research is nascent, lacking deep investigation of key factors affecting accuracy. Third, existing studies are fragmented, requiring a clear theoretical framework.

In summary, research on mental models and creativity remains preliminary, with many unanswered questions. Existing studies only examine how mental models affect individual idea generation. However, as research shows, decision makers rely on constructed mental models for idea recognition and decision-making (Elsbach & Kramer, 2003; Mueller et al., 2018). We argue that examining how decision maker mental models influence idea recognition represents a new research topic. Comparing differences between fixed and growth mindset decision makers during idea recognition holds substantial value.

## 3. Research Framework

Based on the systems view of creativity (Csikszentmihalyi, 1988, 1999), decision makers, creators, and their organizations are innovation stakeholders playing distinct roles. Decision makers serve as core gatekeepers; creators participate by

submitting ideas, with their work manifested in core idea characteristics; organizational innovation patterns and features provide guidelines and constraints for both.

This overarching framework adopts a decision maker perspective, incorporating all three subsystems. Through combined field and experimental research, we compare fixed versus growth mindset decision makers in idea recognition, reveal internal mechanisms, and examine synergistic effects with creator and organizational environment subsystems. Four studies are proposed: Study 1 examines mediating mechanisms of decision maker mental models; Studies 2 and 3 explore two-way interactions with creator and environment subsystems respectively; Study 4 investigates joint effects across all three subsystems. The overall framework appears in [Figure 2: see original paper].

**Figure 2: Overall Research Framework Based on the Systems View of Creativity**

### 3.1 Study 1: Influence of Decision Maker Subsystem Characteristics and Internal Mechanisms

Study 1 forms the project foundation [Figure 3: see original paper]. Its core task is revealing how decision makers' mental models affect idea recognition outcomes as organizational innovation gatekeepers. It also addresses two key issues: (1) whether decision makers' mental models exert stronger effects than non-decision makers' , and (2) how to measure and manipulate decision maker mental models in research.

Innovation activities are inherently uncertain, with even novelty judgments showing substantial disagreement (Siler et al., 2015; Zhou et al., 2017). Predictions of potential value or implementation effects inevitably contain errors (Berg, 2016). Moreover, even high-quality ideas have initial flaws requiring multiple refinement rounds. Decision makers uncomfortable with this uncertainty tend toward conservative estimates, undervaluing ideas (Mueller, Wakslak, & Krishnan, 2014). Only high uncertainty tolerance enables comprehensive evaluation and improved recognition accuracy (Mueller et al., 2012). Thus, uncertainty tolerance positively correlates with recognition accuracy.

Uncertainty tolerance refers to cognitive, emotional, or behavioral response tendencies in uncertain situations. High-tolerance individuals accept uncertainty and respond proactively; low-tolerance individuals experience distress and strong avoidance motivation. Fixed and growth mindset individuals hold opposite attitudes toward uncertainty—the former avoid ambiguous situations while the latter accept them (Levy et al., 1999). Fixed mindsets rely on heuristic processing for quick conclusions; growth mindsets show stronger cognitive motivation (Wu & Bai, 2012), engaging in systematic processing for comprehensive understanding (Cui, Wang, & Tan, 2016). We expect growth mindset decision makers to show higher uncertainty tolerance and thus greater recognition accuracy.

Because decision makers bear more responsibility than non-decision makers, they experience greater uncertainty. This situation proves more challenging for fixed mindset decision makers, who are more likely to conservatively estimate idea quality to eliminate uncertainty (Mueller et al., 2018). Therefore, Study 1 hypothesizes that fixed mindset decision makers, compared to growth mindset decision makers, exhibit lower uncertainty tolerance and consequently lower recognition accuracy.

**H1:** The interaction between evaluator mindset and role significantly affects idea evaluation. Specifically, fixed mindset decision makers provide significantly lower creativity ratings than non-decision makers; no significant difference emerges for growth mindset individuals.

**H2:** The interaction between evaluator mindset and role significantly affects uncertainty tolerance. Specifically, fixed mindset decision makers show significantly lower uncertainty tolerance than non-decision makers; no significant difference emerges for growth mindset individuals.

**H3:** Uncertainty tolerance mediates the interactive effect of mindset and role on idea recognition.

Study 1 comprises three sub-studies: Study 1a (laboratory experiment), Study 1b (causal chain test of mediation), and Study 1c (field study for cross-validation).

### Study 1a: Laboratory Experiment on Decision Maker Mental Models and Idea Recognition

Study 1a employs a 2$×$2 between-subjects design examining how mindset (growth/fixed) and role (decision maker/non-decision maker) jointly affect idea recognition and uncertainty tolerance mediation.

*Method:* Mindset manipulation follows established methods (Chiu, Hong, & Dweck, 1997; Hong et al., 1999; O'Connor et al., 2013), using materials implicitly containing growth or fixed mindset messages. Role manipulation follows Mueller et al. (2018): decision makers have final authority, while non-decision makers serve as experts whose ratings are averaged with others, lacking decisive power. A pretest selects a highly creative idea (scoring near 5 on a 5-point scale) as experimental material, examining differences in novelty, potential value, and implementation maturity ratings across conditions.

*Expected Results:* The mindset × role interaction significantly affects idea evaluation [Figure 4: see original paper]. Growth mindset individuals show no role differences; fixed mindset decision makers rate significantly lower than non-decision makers; fixed mindset decision makers produce the lowest ratings across all conditions. A similar interaction pattern emerges for uncertainty tolerance [Figure 5: see original paper], with fixed mindset decision makers showing the lowest tolerance. The project expects a mediated moderation model (Edwards & Lambert, 2007) where the mindset × role interaction affects evaluation through uncertainty tolerance.

### Study 1b: Causal Chain Test of Uncertainty Tolerance Mediation

Study 1a uses statistical analysis to test mediation. Scholars increasingly recommend experimental causal-chain designs when mediators can be both manipulated and measured, as this provides more rigorous tests (Pirlott & MacKinnon, 2016; Spencer, Zanna, & Fong, 2005). This approach requires two steps: (1) manipulate the independent variable, measure the mediator, and test expected changes; (2) conduct a separate experiment manipulating the mediator directly and measuring outcome changes. If both experiments support predictions, mediation is established.

Here, uncertainty tolerance can be both manipulated and measured, enabling causal-chain testing. Study 1a completes step one; Study 1b implements step two by manipulating uncertainty tolerance (high/low) and examining its interaction with role.

*Method:* Study 1b uses a 2$×$2 design manipulating uncertainty tolerance (high/low) and role (decision maker/non-decision maker). Following Mueller et al. (2012), autobiographical writing tasks manipulate uncertainty attitudes. High-tolerance participants write supporting "multiple correct solutions exist for any problem" ; low-tolerance participants argue "only one correct solution exists." Role manipulation and tasks replicate Study 1a.

*Expected Results:* The uncertainty tolerance × role interaction significantly affects idea recognition, with a pattern similar to [Figure 6: see original paper]: high tolerance shows no role differences; low tolerance produces significant differences, with low-tolerance decision makers rating lowest.

### Study 1c: Field Study on Decision Maker Mental Models and Idea Recognition

Study 1c uses survey methodology to cross-validate Study 1a results, with two differences: (1) measuring mindset via validated scales (Karwowski, 2014), and (2) sampling working populations with diverse positions to ensure adequate decision maker and non-decision maker samples.

## 3.2 Study 2: Synergistic Effects Between Decision Maker and Creator Subsystems

If Study 1 confirms that decision makers' mindsets exert stronger effects than non-decision makers' , Studies 2-4 focus exclusively on decision makers. Study 2 examines whether recognition accuracy varies by idea characteristics. The core logic parallels Study 1: because fixed mindset decision makers seek to reduce uncertainty (Levy et al., 1999), ideas inherently containing greater uncertainty face higher underestimation; growth mindset decision makers, with neutral-to-positive uncertainty attitudes, are less affected.

Idea characteristics matter because different idea types contain varying uncertainty levels, affecting perceived uncertainty—the sense of being unable to deter-

mine how something will evolve (Rafferty & Griffin, 2006). High-novelty ideas increase perceived uncertainty because evaluators struggle to categorize them within existing knowledge structures, making judgment more difficult. Research shows highly novel ideas often receive poor evaluations (Boudreau et al., 2016; Criscuolo et al., 2017), likely due to this uncertainty.

Idea-organization fit represents another uncertainty source. Dailey and Mumford (2006) identified three evaluation dimensions: (1) acceptance (organizational support and opposition), (2) disruption to existing processes, and (3) resource requirements. We define idea-organization fit as alignment with existing organizational processes. Low-fit ideas introduce new uncertainty, increasing decision makers' perceived uncertainty.

Thus, both novelty and fit influence idea recognition through perceived uncertainty. High-novelty/low-fit ideas increase perceived uncertainty, which fixed mindset decision makers—already low in uncertainty tolerance—address by downgrading evaluations to escape uncertainty (Mueller et al., 2012). Consequently, such ideas face higher rejection or underestimation probabilities from fixed mindset decision makers. Conversely, growth mindset decision makers embrace uncertainty, view high-novelty/low-fit ideas as learning opportunities, and may actually prefer them. We therefore expect interactions between idea characteristics and decision maker mindsets, with uncertainty tolerance and perceived uncertainty as respective mediators.

**H4:** Mindset and idea characteristics jointly influence idea recognition. When novelty is low (H4a) or fit is high (H4b), no significant differences emerge between mindsets; when novelty is high (H4a) or fit is low (H4b), fixed mindset decision makers rate significantly lower than growth mindset decision makers.

**H5:** Decision maker uncertainty tolerance and perceived uncertainty mediate the effects of mindset and idea characteristics on recognition. The mindset $\times$ characteristic interaction affects recognition through the uncertainty tolerance $\times$ perceived uncertainty interaction.

Study 2 comprises two independent sub-studies [Figure 7: see original paper], manipulating novelty and fit separately.

**Study 2a: Novelty Moderates Mindset Effects on Idea Recognition**

Novelty assessment constitutes the first recognition task, making its moderating effect primary.

*Method:* Mindset manipulation replicates Study 1. Pretests select ideas with sufficient novelty differences.

*Expected Results:* The mindset $\times$ novelty interaction significantly affects evaluation: both mindsets rate low-novelty ideas similarly low; the interaction emerges for high-novelty ideas, where fixed mindset decision makers rate significantly lower. This mediated moderation model (Hayes, 2013) shows the uncertainty

tolerance × perceived uncertainty product term as significant while the mindset × novelty term becomes non-significant or substantially reduced.

**Study 2b: Fit Moderates Mindset Effects on Idea Recognition**

Study 2b examines fit' s moderating effect.

*Method:* Mindset manipulation replicates previous studies. Pretests ensure adequate fit variation.

*Expected Results:* The mindset × fit interaction significantly affects evaluation: growth mindset decision makers' ratings remain unaffected by fit; fixed mindset decision makers rate low-fit ideas significantly lower than high-fit ideas. Hypothesis 5 is tested using the same mediated moderation approach.

### 3.3 Study 3: Synergistic Effects Between Decision Maker and Environment Subsystems

Study 3 examines how decision maker mindsets interact with organizational innovation environment characteristics. From the systems view, organizational innovation accumulation and ongoing activities inform and constrain members' innovation (Csikszentmihalyi, 1988, 1999). As organizational members, decision makers' idea recognition is influenced by environmental features.

Organizational innovation divides into exploitative innovation (improving existing products for current markets) and exploratory innovation (developing new products for new markets) (Benner & Tushman, 2002; He & Wong, 2004). Organizations choose strategies based on development stage and resources (Yang, Li, Liang, & Li, 2011). Some pursue ambidexterity, balancing both types (Benner & Tushman, 2003); others follow punctuated equilibrium, focusing on one type before shifting based on environmental and resource changes (Gupta, Smith, & Shalley, 2006).

Exploitative innovation operates in stable environments with established guidelines, generating lower uncertainty. Exploratory innovation faces higher risks and uncertainty. We propose that organizational innovation strategy moderates mindset effects: under exploitative innovation, low uncertainty yields no mindset differences; exploratory innovation heightens perceived uncertainty, prompting fixed mindset decision makers to adopt conservative attitudes and rate identical ideas lower than growth mindset decision makers.

**H6:** Mindset and organizational innovation activity jointly influence idea recognition. Under exploitative innovation, no significant differences emerge; under exploratory innovation, fixed mindset decision makers rate significantly lower.

Study 3 conducts field research using questionnaires to capture organizational innovation mode and enhance ecological validity. Sampling managers responsible for innovation decisions across multiple organizations increases innovation mode variation. Following Zhou et al. (2017), all participants evaluate a standardized idea set to control quality while examining mindset and organizational

innovation mode effects. A pretest-developed idea collection provides suitable materials.

### 3.4 Study 4: Joint Effects of All Three Subsystems

Building on Studies 2 and 3' s two-way interactions, Study 4 examines three-way interactions across all subsystems.

Following Studies 2 and 3' s logic, both idea characteristics (novelty/fit) and organizational environment (exploitative/exploratory) affect recognition through perceived uncertainty. Low novelty (or high fit) and exploitative innovation generate minimal uncertainty, making mindset irrelevant and producing no differences between fixed and growth mindset decision makers.

Mindset effects emerge when evaluating high-novelty (or low-fit) ideas in exploratory innovation contexts. For fixed mindset decision makers, these conditions create maximal uncertainty, which they reduce by downgrading evaluations (Mueller et al., 2012). Growth mindset decision makers embrace uncertainty, remain open to high-novelty/low-fit ideas, and are more likely to recognize their value. Therefore, in exploratory innovation, fixed mindset decision makers rate high-novelty/low-fit ideas significantly lower than growth mindset decision makers. Under exploitative innovation or with conventional/high-fit ideas, minimal uncertainty prevents fixed mindset decision makers from conservatism, enabling accurate assessment similar to growth mindset decision makers.

**H7:** Mindset, idea characteristics, and organizational innovation activity exhibit three-way interactions affecting idea recognition. Specifically, under exploratory innovation, fixed mindset decision makers rate high-novelty (H7a) or low-fit (H7b) ideas significantly lower than growth mindset decision makers; under other conditions, no significant differences emerge.

[Figure 8: see original paper] illustrates the three-way interaction pattern for novelty (we expect similar patterns for fit, thus not illustrated separately).

Study 4 uses a quasi-experimental design with managers, manipulating idea characteristics (novelty or fit) while measuring mindset and organizational innovation mode. Following Mueller et al. (2018), participants are randomly assigned to read descriptions of the same idea framed as either high-novelty/low-fit or low-novelty/high-fit based on "expert consensus." Ideas are selected from Study 3' s collection.

Given the complexity of three-way interactions, examining interactions between novelty and fit would produce a four-way interaction—statistically demanding and difficult to interpret. Therefore, we examine three-way interactions separately for each characteristic, enabling cross-validation.

## 4. Theoretical Contribution and Innovation

Current organizational creativity research and practice focus primarily on idea generation or implementation. This project shifts perspective to decision makers, using the systems view (Csikszentmihalyi, 1988, 1999) to examine how gatekeepers recognize ideas in complex contexts. Specifically, we focus on decision maker mental models, comparing fixed versus growth mindset differences, revealing internal mechanisms, and examining interactions with creator and environmental subsystems.

This project addresses three key scientific questions. First, are mental models primary factors affecting recognition efficiency? Do fixed and growth mindset decision makers differ in recognition, and does fixed mindset constitute the psychological foundation for recognition bias? Second, does uncertainty tolerance mediate mindset effects? Do growth mindset decision makers' superior recognition stem from higher uncertainty tolerance? Third, how do the three subsystems synergize? How do idea and environmental characteristics moderate mindset effects? When are fixed mindset biases most pronounced?

Innovations include: (1) Providing a new perspective by shifting from creators to decision makers. Organizational innovation failures often stem not from employees' inability to generate novel ideas, but from decision makers' errors in vetoing quality ideas. Given decision makers' disproportionate impact (Mollick, 2012), this shift represents a new direction with significant research and practical implications.

(2) Introducing mental model theory to deepen the field. While research documents decision maker errors (Mueller et al., 2012; Mueller et al., 2018; Siler et al., 2015), this project identifies mental models as the key psychological mechanism determining who becomes a "Bole." Systematically comparing fixed versus growth mindset decision makers and revealing mediating mechanisms and boundary conditions will deepen understanding of how internal representations influence recognition.

(3) Applying the systems view as an overarching framework. As Zhou et al. (2017) note, decision makers don't operate in isolation but interact with environmental factors. Unlike creators, decision makers serve as gatekeepers, influencing innovation through recognition, support, or veto (Mueller, 2017). This project uniquely focuses on the gatekeeper role while examining three-subsystem synergies, providing new directions for organizational creativity research.

(4) Providing empirical evidence to refine the systems view. While the theory identifies decision makers as gatekeepers, it doesn' t specify how they can fulfill this role effectively. This project' s examination of mental model mechanisms contributes theoretical refinement.

Practical implications include: First, shifting organizational innovation focus from encouraging employee generation to enhancing managerial recognition.

While employee creativity matters, decision makers exert greater influence on innovation performance. Optimizing recognition efficiency offers a new innovation strategy. Second, recognizing and valuing managers' decision-making functions in innovation. While leaders' roles as facilitators and creators are acknowledged (Mainemelis, Kark, & Epitropaki, 2015), their critical idea recognition function remains underappreciated. Third, findings can help managers avoid decision traps by raising awareness of how their mental models—implicit theories about creativity and innovation—subtly shape organizational innovation direction. Fixed mindset decision makers particularly need self-awareness and reflection.

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*Note: Figure translations are in progress. See original paper for figures.*