

Reasonable and Rational Judgment Guidance as an Informal Control

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ABSTRACT

Prior research indicates individuals hold an implicit theory about what constitutes rational and reasonable judgment, and that the decision context can influence which judgment standard they apply. We examine whether providing non-binding guidance to apply a rational or reasonable judgment standard influences employees' decisions consistent with predictions based on the implicit theory. We conduct two experiments modeled after well-known prior research in management accounting. First, in a resource allocation setting where the context is designed to motivate rational misreporting, managers guided to report reasonably misreport less relative to when no guidance is provided. Second, in a performance evaluation setting that motivates reasonable decisions in prior research, managers guided to evaluate employees rationally provide less biased subjective evaluations relative to when no guidance is provided. Our results suggest that employees' implicit understanding of what constitutes rational and reasonable judgment can be used as an informal control in organizations.

Keywords: rationality, reasonableness, misreporting, honesty, subjective performance evaluation

I. INTRODUCTION

Theories of management control traditionally emphasize the importance of incentives and formal structures to guide employee decisions and behavior. Recent research has also examined the effectiveness of informal control mechanisms, including social pressure, social norms, and value statements in guiding employee decisions and behavior (Deore, Gallani and Krishnan 2023; Kachelmeier, Thornock, and Williamson 2016; Newman 2014). We examine judgment standard guidance as an informal control (specifically, providing managers with non-binding guidance to make rational or reasonable decisions) and examine the effectiveness of such guidance in influencing employees to act in accordance with organizational goals.

Prior research in psychology finds that individuals hold an implicit theory of the meaning behind the words “rational” and “reasonable,” and that invoking this implicit understanding leads to consistent and predictable responses (Grossmann, Eibach, Koyama, and Sahi 2020). Implicit

theories are “...ontological assumptions and narrative frameworks” that develop over an individual’s lifetime and help them explain and organize the social environment (Plaks 2017, 261). Importantly, activating an implicit theory creates a motivated bias, causing individuals to weigh information consistent with the theory more heavily when making judgments and decisions (Plaks 2017). According to the implicit theory we consider here, individuals generally associate rationality with logic, analysis, and lack of emotion while reasonableness is generally associated with more socially-oriented, holistic, and communal judgments (Grossmann, Kachhiyapatel, Meyers, Hanxiao, and Eibach 2024).

It is important to note that rationality and reasonableness represent distinct judgment qualities or standards, rather than the endpoints of a single judgment continuum. Which judgment standard is applied by the decision-maker “by default” depends on the context and is learned through socialization and experience (Grossmann et al. 2020). We extend prior research by examining the effects of employee guidance to apply either a rational or reasonable judgment standard as an informal control intervention. To provide a convincing test of our theory, we evaluate the effectiveness of rational or reasonable guidance in settings where, due to contextual cues, the employees would tend to apply the other judgment standard by default.

In our first experiment (hereafter Study 1), we examine a resource allocation setting in which divisional managers can request funds in excess of the actual cost of a future project while keeping the surplus (in the form of budget slack) for themselves. In this setting, first modeled by Evans, Hannan, Krishnan, and Moser (2001), managers have strong economic incentives to pursue their self-interest through rational misreporting. Thus, the default judgment standard in this setting is rationality. We adapt the setting by manipulating whether half of the participants are guided to make “reasonable” budget requests while the other half receive no guidance

(replicating the original study). All participants make reporting decisions under the Evans et al. (2001) “trust contract.” Thus, economic incentives are held constant between conditions.

Given that reasonableness involves a more holistic view (Grossmann et al. 2024) and taking others’ viewpoints into account (Gewirth 1983), we predict that employees guided to apply a reasonableness judgment standard will take the firm’s interests into account to a greater degree than those in the “no guidance” group. Thus, employees guided to apply a reasonableness judgment standard will misreport less compared to when they receive no guidance beyond that provided by the incentive contract (i.e., the formal control system). Since our informal and non-binding guidance to be reasonable is contrary to the signals sent by the formal control system, this is a compelling setting in which to test our hypothesis. Results indicate that those guided to be reasonable report significantly more honestly than those provided no guidance.

In our second experiment (hereafter Study 2), we chose to adapt the experimental setting of Bol and Smith (2011), in which the supervisor’s evaluation of their subordinate is the average of an objective sales score, assigned based on sales dollars, and a subjective score, assigned based on an informal assessment of the subordinate’s administrative performance. When an event beyond the subordinate’s control causes the objective score to be low, Bol and Smith (2011) find that supervisors assign higher than warranted subjective administrative performance scores to compensate for the subordinate’s bad luck. This result reflects a concern for fairness, suggesting reasonableness is the default judgment standard applied in this setting. While benefiting the employee, this judgment is biased since it is contrary to the appropriate application of the firm’s performance review system, which indicates that sales and administrative performance are unrelated and should be evaluated independently. We retain the controllability manipulation used by Bol and Smith (2011), manipulating whether uncontrollable events negatively influence the subordinate’s sales score (present or absent). We then adapt the setting

by providing half of the participants with guidance to be rational when assigning the subjective performance score, while the other half receive no guidance.

When no guidance is provided, results replicate Bol and Smith (2011) in that supervisors assign higher subjective evaluations of administrative performance when sales controllability is low than when it is high (i.e., the default standard of reasonableness appears to have been applied). In contrast, and consistent with our predictions, the controllability of the objective sales score has little effect on the subjective evaluation the supervisor assigns when they are guided to be rational in their decision-making. Thus, supervisors receiving guidance to be rational provide evaluations more consistent with the firm's goals as designed into their performance evaluation system than supervisors provided no specific guidance.

This study contributes to both research and practice. First, prior research in management accounting demonstrates that employees do not always behave rationally, even when the incentive structure motivates them to do so (Brown, Evans and Moser 2009). These so-called “irrational” behaviors are often labeled as externalities and dismissed as unexplained exceptions to the rational choice model (Van de Ven and Lifschitz 2013). By identifying distinctive behaviors associated with alternative judgment standards, we highlight (as suggested by Grossmann et al. 2020, 1) that seemingly irrational behaviors “...may not reflect judgment errors, but rather people’s use of a reasonable standard to guide their choices.”

Second, research in accounting ethics finds that formal controls like incentives can crowd out more socially-oriented ethical judgments and behavior (e.g., Hunt, Curtis and Rixom 2022; Berger, Perreault and Wainberg 2017) because incentives cause employees to frame settings in business rather than ethical terms (Rees, Tenbrunsel, and Diekmann 2022; Tenbrunsel and Messick 1999). The results of our study suggest that relatively benign judgment standard guidance can significantly influence employees’ socially-oriented behavior even in settings

where the formal control system on its own frames the situation in business rather than ethical terms.

Third, prior research in management accounting indicates that employees respond to informal controls (e.g., non-binding communication of firm preferences, social and behavioral norms, etc.) which can be combined with formal controls (e.g., rules, standards, policies, incentives, etc.) to influence employees' decisions and behavior (Hannan 2016). Our study contributes specifically to the informal controls literature by providing evidence that communicating an organization's preference for the use of a rational or reasonable judgment standard impacts employees' judgments and decisions consistent with a common or implicit understanding of rationality and reasonableness.

Finally, given that individuals have a shared implicit understanding of what is meant by acting rationally or reasonably, our results indicate that simple changes to language, that is, guiding or expressing a preference for the application of a rational or reasonable judgment standard, can complement more costly and complex formal controls. Relatively simple language modifications have been found to have significant effects in other areas of accounting research, including investor decision-making (Rennekamp 2012), compliance with accounting standards (Young 2021), and motivation of effort and performance (Loftus and Tanlu 2018). While these prior studies rely on linguistic changes, our study examines how implicitly understood differences between judgment standards can change employees' judgments and decisions. Since each term references an implicit set of behaviors, invoking the words *rational* or *reasonable* may serve as an efficient shorthand to communicate many firm-preferred behaviors. Our study examines settings in which the terms are used to convey a preferred judgment framework on a one-off basis. However, Ferraro, Pfeffer and Sutton (2005) argue that implicit theories can be "self-fulfilling" due to choices firms make around organizational design (e.g. incentives and

reward structures), the social norms that are developed, and the way language is used, since “language affects what people see, how they see it, and the social categories and descriptors they use to interpret their reality” (9). For example, firms seeking to foster more collective or competitive organizational cultures may use control system design, norms, and language, such as the reasonable or rational terms examined here, to enact those cultures in self-fulfilling ways. By communicating underlying firm preferences using rational or reasonable guidance to employees, firms can better align the language used when guiding managers’ behavior to the outcomes the organization seeks.

II. LITERATURE REVIEW AND HYPOTHESES

Implicit Theory of Rationality and Reasonableness

Traditionally, rational choice theory suggests that rational actors make self-interested choices that maximize wealth and minimize effort. More recently, researchers have recognized that in addition to wealth and leisure, individuals also have utility for other factors, including honesty, fairness, and reciprocity (e.g., Bosse and Phillips 2016; Evans et al. 2001). Perhaps not surprisingly, these factors are elements associated with reasonableness, an alternative standard by which good judgment has been evaluated by philosophers, legal scholars and political scientists. According to Gewirth (1983, 225), reasonableness is socially oriented in that it takes “...due account of the interests of other persons, respecting their rights as well as one’s own and maintaining a certain equitableness or mutuality of consideration between oneself and others.” Recent research in psychology has uncovered an implicit theory commonly held by individuals in Western and Eastern cultures consistent with these more normative views of rational and reasonable judgment.

For example, Grossmann et al. (2020) establish that individuals in Western cultures hold implicit or “folk” theories that attribute consistent and distinct meanings to the words “rational”

and “reasonable.” Implicit theories are also referred to as “lay theories,” “folk beliefs,” “naive theories,” and “mindsets” (Plaks 2017, 261). An implicit theory represents a cognitive framework or set of beliefs and attitudes that shape how individuals think, feel, and behave in various situations (Griffith, Hammersley, Kadous and Young 2015). Implicit theories are challenging to uncover because they relate to expectations of context-dependent behavior, rather than explicit expectations of behavior applicable to all settings. However, Grossmann et al. (2020) begin to unpack the meaning ascribed to rational and reasonable judgments and behavior through 12 different studies. As an introduction to the folk theory concepts of rational and reasonable, we highlight three studies here that best capture Grossmann et al.’s (2020) findings.

The first study establishes implicit definitions of rational and reasonable behaviors. Participants spontaneously provide three adjectives describing a rational person and three adjectives describing a reasonable person. Results are presented by the authors as a “word cloud” (shown in Appendix A), with words more commonly mentioned being featured more prominently. Adjectives used to describe rational people include thoughtful, logical, analytical, and unemotional, while adjectives used to describe reasonable people include honest, kind, fair, and cooperative.

The second study asks participants what a rational or reasonable Player A would do in a dictator game. On average, participants predict that a rational Player A would share less of their endowment with Player B than a reasonable Player A. The third study asks participants to predict what a rational or reasonable person would do in a traditional prisoner’s dilemma. Participants predict that rational people will choose to cooperate and defect about equally (197 predicted defect while 190 predicted cooperate) while reasonable people will overwhelmingly choose to cooperate (84 predicted defect while 303 predicted cooperate). These results suggest that

rationality is consistently understood to be more individually focused, while reasonableness is understood to be more socially focused.

Grossmann et al. (2024) conduct five additional, follow-up studies that expand our understanding of the contexts in which rational and reasonable judgment standards are more likely to be spontaneously applied. We highlight three of these studies here. In the first study, participants rate rational traits to be more important when a job requires “algorithmic, rule-like judgment” (for example, jobs such as CEOs, investment bankers, army captains, and math teachers), while the reasonable traits as more important when a job requires “holistic, context-specific interpretation” (for example, parents, school principals, work colleagues, and English teachers). In a second study simulating an HR selection setting, participants choose between two job candidates based on their inferred degree of rationality or reasonableness. In five different scenarios, participants selecting for rationality chose the person who “...showed a step-by-step (top-down) logic, and consistently followed the rules without exceptions to maximize desired preferences/outcomes” significantly more often than the person who “...employed narratives and analogies in their decision-making, showed a flexible approach to rules, and was context-sensitive in their consideration of preferences and norms” (31). The opposite was the case for those asked to select for reasonableness. The third study extends the original cultural context of rational and reasonable implicit theories. The authors explore whether Chinese participants also hold implicit theories that align with the demonstrated behaviors expected in a Western context. Results demonstrate that the two standards of behavior, rational and reasonable, are similarly understood in Chinese culture.

Non-Binding Guidance and Informal Controls

In exploring the implications of the implicit theory of rationality and reasonableness, we propose that firms can use these implicit judgment standards to provide non-binding guidance

that influences employee decision-making. While Grossmann et al. (2024) examine the contexts in which rational and reasonable judgment standards are spontaneously applied, we examine whether firms can shape employees' judgments and decisions in ways that align with the distinct social or individual orientations of these standards. This approach links directly to the broader literature on informal management controls, which affect behavior through social norms and non-binding communication rather than formal policies or incentives.

Management control systems are not limited to formal mechanisms such as policy manuals or performance evaluation structures; they also include informal controls, which can exert a powerful influence on employee behavior by shaping perceptions and expectations. Informal controls often involve social pressure or norms embedded in value statements, mission statements, and other symbolic communications. Research in this area demonstrates that simple, non-binding messages can effectively alter employee focus and decision-making. For instance, Kachelmeier et al. (2016) demonstrate that non-binding value statements influence employees' output quality. Results indicate employees produce less correct output under a piece rate incentive plan in the presence of the non-binding value statement than in its absence, as the value statement changes their focus to monitoring the quality of their inputs rather than maximizing quality output. Similarly, Akinyele, Arnold, and Sutton (2020) find employees working under a fixed wage produce more output in the presence of a value statement emphasizing that employees are essential to the organization's success. Those working under a piece rate incentive produce less output in the presence of the value statement than in its absence. Deore et al. (2023) find that employees misreport less when the firm promotes a norm of integrity via its mission statement than when it fosters a norm of meeting aggressive financial targets, while Thomas (2016) finds that employees change their response to feedback indicating prior success or failure when the firm uses a slogan to focus employees' attention on the importance of good quality

accounting information than when it does not. These findings are consistent with our proposition that informal, non-binding guidance can serve as a control mechanism, shaping decision-making based on how employees interpret the firm's communicated values.

In line with this stream of research, we hypothesize that firms may explicitly leverage the implicit distinction between rational and reasonable judgment standards in their guidance to employees. For example, in contexts requiring strict adherence to rules or appeals to efficiency (i.e., more individual-focused tasks), firms may wish to guide employees toward rational decision-making. In contrast, in contexts that involve collaboration, fairness, or ethical considerations, guidance to follow a reasonable judgment standard may be more desirable. The implicit understanding of these judgment standards can be activated by subtle, non-binding cues in the firm's communication, leading employees to make decisions that are more aligned with the firm's intended outcomes.

Past research on informal controls also highlights the potential for framing effects to influence employee behavior in budgeting contexts. Rankin, Schwartz and Young (2008) and Haesebrouck (2021) find that framing decisions as ethical or business-related influences the degree of budget slack employees create. Newman (2014) finds that managers misreport less when the firm communicates preferences for specific non-binding moderate or loose (but not tight) cost targets to their employees, while Libby, Proell, and Smith (2019) find the effect of cost goals on honesty depends on the manager's level of decision responsibility. These insights suggest that non-binding guidance in terms of rational or reasonable standards could similarly influence how employees approach decision-making, depending on whether they perceive their task as requiring more analytical or social judgment. Thus, we extend the literature on informal controls by examining whether non-binding guidance provided in terms of rationality or reasonableness can influence employee behavior, specifically in contexts where decisions based

on either standard are desirable. In the following section, we develop hypotheses related to this proposition and test them in an experimental setting.

Study 1 Hypothesis Development

In Study 1, we adapt the experiment developed by Evans et al. (2001) that examines managerial misreporting. In decentralized organizations, divisional managers possess valuable information unknown to the head office. The firm benefits when the manager communicates this information honestly since limited resources can be more efficiently allocated across divisions. However, since the information they convey is also likely to be used to set performance targets embedded in their performance-contingent incentive contracts, rational divisional managers will tend to underestimate their division's prospects (misreport more).

Inspired by research suggesting individuals have a disutility for lying (Baiman and Lewis 1989), Evans et al. (2001) implement a “trust contract” setting in which the manager’s cost of misreporting is minimal. Misreporting hurts firm profits, although the firm is nebulous, and thus, harm to the firm is difficult to specify. In this setting, economically rational managers are expected to misreport to the maximum degree possible. However, the authors observe significantly less misreporting than predicted and argue that individuals must, therefore, also derive some utility from reporting honestly. Further work based on Evans et al. (2001) indicates that preferences for fairness and reciprocity also limit misreporting in this setting (e.g., Guo, Libby and Liu 2017; Douthit and Stevens 2015). Despite evidence that, on average, managers do not fully exploit the opportunity to misreport in this setting, Evans et al. (2001) still find significant evidence of managerial misreporting consistent with the application of a rational judgment standard.

We adapt the research setting of Evans et al. (2001) to our test of non-binding firm guidance by comparing settings with and without guidance. The formal incentive structure in the Evans et al.'s (2001) setting suggests self-interested, rational behavior is the default judgment standard that employees will adopt in this setting. Thus, we compare behavior between individuals adopting a rational standard influenced by the formal control system and those informally guided to adopt a reasonableness standard. According to the implicit theories described earlier, individuals making rational judgments are inclined to be logical, analytical, unemotional, and self-focused. In contrast, individuals making reasonable judgments are concerned with honesty, fairness, cooperation, and the impact of their judgments and decisions on others. Therefore, we predict that individuals guided to be reasonable will misreport less than those provided no additional guidance beyond that inherent to the setting and incentive structure. There is some tension to this hypothesis in our setting, however, given that the economic incentives for misreporting are strong. Our hypothesis is as follows:

H1: When employees are incentivized to misreport, those guided to report reasonably will misreport less than those provided no judgment standard guidance.

Study 2 Hypothesis Development

Performance evaluation systems in organizations often include objective and subjective performance measures. Objective measures are relatively easy to quantify and verify (e.g., dollars of sales). In contrast, subjective measures are based on opinion or judgment (e.g., how well a manager supervises their subordinates) (Prendergast 1999). Subjective measures are useful because they allow evaluators to consider important but non-contractible information in their performance evaluations (Bol 2008). Thus, performance evaluation systems can be improved when evaluators can evaluate some dimensions of performance objectively and other dimensions subjectively.

Even so, prior research indicates that subjective performance evaluation can be intentionally or unintentionally biased. For example, Bol and Smith (2011) rely on prior research in psychology, suggesting that objective information can unduly influence subjective evaluations (Nisbett, Zukier and Lemley 1981). In their setting, this effect depends on controllability. Specifically, supervisors provide higher than warranted subjective evaluations of their subordinates when factors outside the subordinate's control cause a low objective performance score.

We adapt the research setting of Bol and Smith (2011) to our test of non-binding firm guidance by comparing settings with and without guidance. Bol and Smith's (2010) results suggest fairness or reasonable behavior is the default or spontaneous judgment standard that individuals tend to apply in this setting. Thus, we expect to replicate the findings of Bol and Smith (2010) when no guidance is provided. When rational guidance is provided, we predict that supervisors' subjective evaluations of their subordinates' administrative performance will be less affected by the controllability of the objective performance score relative to the subjective evidence provided to support their evaluations. Our formal prediction is as follows:

H2: The effect of controllability on supervisors' subjective performance scores is smaller when the supervisor receives guidance to be rational relative to when no guidance is provided.

III. STUDY 1

Participants

In Study 1, we recruit 201 participants via Prolific, an online resource for research participants. We limit our sample to participants located in the U.S. with more than 100 completed tasks and an approval rating of 95 percent or higher.¹ The sample is 53 percent male.

¹ All experiments reported here were approved by the Institutional Review Board at the university where data collection took place.

The median participant is 25-34 years old and has a college degree or diploma. Participants spend an average of 12 minutes completing the task and are compensated \$4 on average.

Experimental Design and Procedures

We adapt the setting of Evans et al. (2001) to a 1×2 (*Reasonable Guidance*: present/absent) between-subjects design. The study takes place online using oTree software (Chen et al. 2016), and participants assume the role of a manager of a manufacturing division. Participants learn that their division will produce 100 units of product each period to be sold at a fixed price of 6.00 Lira per unit (our experimental currency). The actual production costs are determined by random draw from the following set of equally likely costs $\{4.00, 4.10, 4.20, \dots, 6.00\}$.

In each production round, the managers must request resources from the firm to cover the cost of production. Managers learn the next period's actual production cost with certainty, while the firm only knows the range within which the actual cost will fall. Managers are paid under a “trust contract,” including a 250 Lira fixed wage plus the difference between their reported and actual cost each round. The firm does not know, nor will it ever discover, the true actual cost of production in this setting, and each round's decisions are independent of all other rounds. Thus, the firm transfers funds to the manager in whatever amount is requested if the request falls within the range of possible product costs.² The more the manager misreports (i.e., the more slack is created), the more funds they retain and the less the firm profits from divisional production. Rational managers will always request more funds than they need to cover the cost of production. Participants complete one practice round and ten production rounds, and all

² Participants must pass attention check questions to this effect before making cost reports. If they initially select the wrong answer, an explanation is provided, and they are asked to answer again, at which point 100 percent of participants answered correctly.

participants receive the same actual cost information for each round.³ After completing all production rounds, participants answer several post-experimental questions.

Guidance Manipulation

Before making their cost reports, half of the participants read, “For this session, you are encouraged to be reasonable when making your budget requests.” In contrast, the other half receive no specific guidance. This guidance is provided only two times at the beginning of the study, once during the instructions and again before starting the actual production rounds. As in Evans et al. (2001), we provide participants with an earnings spreadsheet detailing the effect their reporting choices have on their personal earnings for every possible combination of actual and reported costs within the range of possible costs (sample provided in Appendix B). They practice using the spreadsheet, and then they are reminded of the critical aspects of the setting.

After learning the actual cost, participants input their cost report into a table that automatically calculates firm profits and earnings for that round. The dependent variable, *%Honesty*, is calculated as in Evans et al. (2001) where:

$$\begin{aligned} \%Honesty &= 1 - (\text{slack claimed} / \text{slack available}) \\ &= 1 - [(\text{reported cost} - \text{actual cost}) / (6 - \text{actual cost})] \end{aligned}$$

Results

Manipulation Check

To test the effectiveness of our guidance manipulation, we examine whether and how our participants’ perceptions of accuracy, honesty, and fairness in reporting differed by condition. Each response was indicated on a scale of 1 (strongly disagree) through 7 (strongly agree) with

³ Randomly drawn actual costs in Lira are 5.7, 5.1, 4.1, 5.4, 5.2, 5.5, 4.4, 4.7, 4.2, and 5.0. We follow the Evans et al. (2001) “trust contract” design closely except that we use the same randomly drawn actual production cost sequence above for all participants while Evans et al. (2001) assign different random actual production cost sequences to each participant.

higher scores indicating a greater focus on the elements underlying the reasonableness judgment standard. Results are reported in Table 1. Participants guided to be reasonable rate the importance of accuracy, honesty, and fairness in budget reporting significantly higher than participants receiving no guidance (all $p < 0.05$ one-tailed). In addition, participants guided to be reasonable agree more strongly that they considered the consequences of their budget reports on the firm's financial health than in the no guidance condition ($t [199] = 1.54$, $p < 0.10$ one-tailed).

Tests of H1

We receive 2,010 independent cost reports (ten reports from each of 201 participants). Of these, 151 cost reports (7.5 percent) result in negative slack (that is, the cost report was lower than the actual cost).⁴ Following Evans et al. (2001), we replace negative values with zero (implying the participant reported a cost equal to the actual cost), so we do not inflate our analysis with cost reports less than the actual cost.⁵ Means for *%Honesty* are reported in Table 2 Panel A. Mean *%Honesty* by round is presented in Figure 1.

We note that mean *%Honesty* is 0.60 overall in this sample. In addition, we find that total *%Honesty* is higher when participants are guided to be reasonable (mean = 0.65, std dev = 0.35) than when no guidance is provided (mean = 0.56, std dev = 0.38). Results of a t-test comparing mean *%Honesty* in each experimental condition indicate that *%Honesty* is significantly higher when reasonable guidance is provided compared to when no guidance is provided, $t [1992] = 5.83$, $p < 0.01$ (df adjusted for unequal variances).⁶ These results support H1. Furthermore,

⁴ In Evans et al. (2001), 6.4 percent of cost reports resulted in negative slack in their sample of 28 MBA students who submitted 280 cost reports.

⁵ Inferences are similar if we remove all observations with negative values instead.

⁶ We conducted a second experiment in which 210 MTurk participants (via Cloud Research) generated cost reports over five periods (1,050 independent cost reports in total). Half received guidance to report reasonably, while the other half received guidance to report rationally. We find results consistent with the theory developed for Study 1 - participants guided to report reasonably misreported significantly less than those guided to report rationally, $t [1048] = 2.60$, $p < 0.01$. While shedding some light on our research question, we argue that results reported in the body of

$\%Honesty$ is higher in the reasonable guidance condition than in the no guidance condition across all ten rounds (see Figure 1). Note, the guidance manipulation was given before any actual production rounds, and never after the first production round began. This suggests the non-binding reasonable guidance is persistent over time.

In Table 2, we also identify the proportion of completely honest reports (i.e., when cost reports equal to actual cost and $\%Honesty = 1$) and completely economic reports (i.e., cost reports equal to 6 lira, the maximum possible cost and $\%Honesty = 0$) in total and by condition. We find the proportion of purely honest reports (27 percent) to be higher than that of purely economic reports (18 percent) overall. This appears to be driven by a significantly lower proportion of purely economic reports in the reasonable guidance (14 percent) as compared to the no guidance (21 percent) condition, $z = 3.98$, $p < 0.05$. In addition, we find that the proportion of purely honest reports is significantly higher in the reasonable condition (29 percent) than in the no guidance condition (25 percent), $z = 2.15$, $p < 0.05$. Thus, it appears that reasonable guidance encouraged more purely honest and less purely economic reporting than providing no guidance at all.

IV. STUDY 2

Overview and Participants

Our experimental design for Study 2 is adapted from Bol and Smith (2011). Participants take on the role of a regional director of a hypothetical company who must provide an evaluation of one of the district managers in their region. District managers are evaluated objectively on sales dollars generated in the period and subjectively on office administration performance. The experimental task is to provide a subjective evaluation of the district manager's office

the paper are a more robust test of the ability of reasonable guidance to overcome rational behavior motivated by the incentives in place in the Evans et al. (2001) setting.

administration performance after his performance on the objective sales measure is known. In all cases, the district manager's objective sales score is low (scored as 2 out of 10).

We utilize a 2 (*Controllability*: high/low) x 2 (*Rational guidance*: present/absent) between-subjects design.⁷ We recruit Prolific participants in the role of regional directors who make subjective evaluation decisions. We limit our sample to participants located in the U.S. with more than 100 completed tasks on Prolific and an approval rating of 95 percent or higher. Our final sample of 197 participants is 52 percent male with a median age of 41 years and 20.30 years (std. dev. = 26.24) of work experience. Participants spend an average of 12 minutes completing the task and are compensated \$4 on average.

Experimental Procedures

Participants complete the study online via a Qualtrics link. The survey software randomly assigns participants to one of our four conditions. Participants assume the role of a regional director in a manufacturing company responsible for evaluating their district managers' performance. The performance evaluation system has two parts: (1) an objective ranking based on sales dollars and (2) a subjective evaluation based on office administration performance. Although each performance aspect is rated on a scale of 0 – 10, participants learn these should be separate and independent evaluations since performance in one sphere does not influence performance in the other. The scores are equally weighted in the final average evaluation assigned to the district manager. Participants are told "Your task in this case is to conduct the performance evaluation for David Sutton, one of the district managers in your region." Next,

⁷ Bol and Smith (2011) manipulate both controllability and the sales score (high versus low). We replicate the controllability manipulation within the low sales score condition. Otherwise, our design is identical to that used by Bol and Smith (2011).

they receive guidance to be rational when making decisions or are provided with no guidance at all (consistent with Bol and Smith 2011).

Participants then learn more about relative sales dollars by district from the past 6-month period indicating that David Sutton ranks 2 out of 10 (where 10 is the highest performance) for the period. Next, participants are exposed to the controllability manipulation, indicating David's ability to control the objective sales score to be high or low. This manipulation is operationalized identically to Bol and Smith (2011). Next, participants are provided with personal notes and interview commentary concerning David Sutton's office administration performance during the period. All participants receive the same office administrative information designed to reflect a moderate level of performance on this aspect of David's job. Next, participants enter a score representing their subjective evaluation of David's office administration performance, which is our dependent variable, measured on a scale of 0 to 10. Once they enter their score, the software automatically generates the overall score and offers them a chance to revise it or to click next to proceed. Finally, they answer several post-experimental and demographic questions.

Controllability Manipulation

As in Bol and Smith (2011), participants learn the district manager's objective performance score, based on sales dollars during the period, is a rank of 2 out of 10. The controllability manipulation describes how the district manager could have avoided the low objective score. In the low controllability condition, participants learn that two major customers in the manager's district closed unexpectedly during the period. In the high controllability condition, participants learned that market conditions were stable and that no unforeseen or uncontrollable events occurred during the period.

Guidance Manipulations

Similar to Study 1, we provide guidance to be rational only two times during the study.

First, we introduce the guidance early in the case scenario by telling participants: “You are encouraged to be rational when evaluating David Sutton.” Second, we reinforce this idea when describing the performance evaluation scoring system later in the case scenario by reminding them that they are encouraged to be rational when evaluating David’s performance. In contrast, in the no guidance condition participants do not receive any guidance to use a certain judgment standard when making their evaluation.

Results

Manipulation checks

First, we test the efficacy of our manipulation of controllability. Participants indicate, on a scale of 1 (no effect at all) through 7 (extreme effect), the degree to which they believe “uncontrollable events (positive or negative events that were outside of his control) affected David’s individual sales score” The mean of 4.81 (std. dev. = 1.36) in the low controllability condition is significantly higher than the mean of 2.23 (std. dev. = 1.34) in the high controllability condition ($t [194.87] = 13.39, p < 0.001$).⁸ In addition, we ask respondents to indicate their degree of agreement on a scale of 1 (strongly disagree) to 7 (strongly agree), with the following statement: “The objective sales score accurately reflects how hard David worked to generate sales in his district over the past six months.” In the low controllability condition, the mean score of 4.04 (std. dev. = 1.60) is significantly lower than the mean score of 5.36 (std. dev.

⁸ Levene’s test indicates that equal variances cannot be assumed thus the degrees of freedom are adjusted to account for this issue.

= 1.42) in the high controllability condition ($t [195] = 6.15, p < 0.001$). Overall, these results indicate the controllability manipulation was effective.

To test the effectiveness of our guidance manipulation, we asked participants to rate their agreement (1 = strongly disagree through 7 = strongly agree) with a statement that making unemotional, analytical and honest decisions was important when evaluating David's performance. Higher scores indicate a greater focus on the elements underlying the rational judgment standard. Results presented in Table 3 indicate that those guided to be rational rated the importance of these decision-making qualities significantly higher (all p values < 0.05) than those who were provided no guidance. It may seem surprising that honesty, a quality associated more with the reasonable judgment standard in Study 1, was rated as more important by those provided rational guidance than by those provided no guidance in Study 2. As noted by Grossmann et al. (2020), context is critical to understanding how implicit theories are applied. In the context of Study 2, a more honest evaluation is one more consistent with the evidence of David's administrative performance. Therefore, a more honest subjective evaluation is less biased and therefore represents a more rational judgment. Thus, we argue that these results support the effectiveness of the guidance manipulation.

Tests of H2

Means for the subjective evaluation of David's office administration performance by experimental condition are provided in Table 4 panel A and presented graphically in Figure 2. In H2, we predict an interaction between controllability and guidance such that when guided to be rational, controllability over objectively measured performance will have no impact on the supervisor's subjective performance score. However, when no guidance is provided, supervisors' subjective evaluations will be higher when the subordinate's control over objectively measured performance is low than when it is high, consistent with Bol and Smith (2011). Results of an

ANOVA on subjective evaluation indicate a marginally significant interaction between *Controllability* and *Guidance*, $F(1, 193) = 3.20, p = 0.08$. In panel C, we present simple effects. We find the difference in administrative performance score depending on *Controllability* when rational *Guidance* is present is not significant, $t(96) = 0.49, p = 0.62$. However, when *Guidance* is absent, supervisors assign significantly higher administrative performance scores to their subordinates when *Controllability* is low than when it is high, $t(95) = 2.00, p = 0.05$.

Since our hypothesis development suggests an ordinal interaction between *Controllability* and *Guidance*, we also use contrast coding to test H2 (Buckles and Ravenscroft 1990; Guggenmos, Piercy, and Agoglia 2018). Results are presented in Table 4 panel D. Visual fit is confirmed with the plot of cell means in Figure 2. We apply contrast weights of +3 for the Low Control/No Guidance condition and -1 for the other three conditions. Table 4 Panel C presents results from the planned contrast, which are statistically significant, $F(1, 193) = 11.17, p = 0.04$. In addition, a semi-omnibus test confirms that residual between-cells variance is insignificant after accounting for the planned contrast ($F[2, 193] = 0.36, p = 0.70$), and only 14.2 percent of the between-cells variance is not explained by the contrast. Again, these results support H2.⁹

V. CONCLUSION

This study examines the impact of guidance that encourages employees to behave rationally or reasonably on employees' judgments in two different organizational settings. Inspiration for this study comes from both the economics and psychology literature. Economics literature frequently uses standard rational behavior as a benchmark of comparison. Only

⁹ We conducted a second experiment matching the setting described in Study 2 with 98 Amazon MTurk participants (via Cloud Research). Half received guidance to be reasonable when assigning the subjective performance score while the other half received guidance to be rational. Results were consistent with theory developed for Study 2. However, since the default response of the average participant in Bol and Smith (2011) is consistent with a reasonableness standard, it is difficult to disentangle whether results are driven by the nature of the setting or the informal guidance to be reasonable, or both.

recently has this literature stream begun exploring ways to expand the definition of rational behavior to incorporate human behavior observed in the real world and laboratory experiments. Alternatively, in the psychology literature, Grossmann et al. (2020) and Grossmann et al. (2024) find that individuals in Western and Eastern cultures have an implicit understanding of what rational and reasonable mean, where each standard applies in different contexts, and individuals consistently apply these standards when predicting how others will behave. We extend their work in two experimental studies modeled after well-known prior research in management accounting. Individuals respond to guidance to behave rationally or reasonably, primarily consistent with this implicit understanding.

In Study 1, modeled after Evans et al. (2001), we find participants guided to report reasonably misreport less than those provided no additional guidance. The Evans et al. (2001) setting is noteworthy because misreporting allows employees to claim more funds for themselves, directly reducing firm profit with no threat of repercussions. In combination with the “trust contract,” this setting is designed to induce rational (self-regarding) behavior as a “default.”

In Study 2, modeled after Bol and Smith (2011), we find that participants guided to behave rationally assign similar subjective performance evaluations to a subordinate regardless of the controllability of a separate objective performance measure. As in the Evans et al. (2001) setting, Bol and Smith’s (2011) setting sets up a “default” behavior. Bol and Smith (2011) find that supervisors behave consistently with a reasonable standard, believing it is fairer to compensate subordinates for bad luck in the objective sales score. Taken together, the results provided by both versions of our two replication-style experiments show that the behaviors of individuals receiving guidance to use the rational or reasonable standard differ significantly and

in primarily predictable ways, consistent with the self-regarding perspective associated with rationality and the other-regarding perspective related to reasonableness.

This paper provides an initial step in understanding how the implicit theory of rationality and reasonableness held by individuals in Western and Eastern cultures can be incorporated into management control systems through non-binding guidance to behave rationally or reasonably. We contribute to the research on informal controls in two primary ways. First, we introduce to the management accounting literature the idea that reasonableness can be a valuable and intuitive standard for judgments and behavior in numerous managerial settings. Reasonableness implies the decision maker should weigh social concerns such as fairness and honesty more heavily than preference-maximizing concerns associated with rationality.

Prior research in management accounting has focused on expanding our understanding of employees' utility functions to consider both self-interested and social concerns (e.g., Luft 2016, Evans et al. 2001). According to the implicit theory uncovered by Grossmann et al. (2020) and Grossmann et al. (2024), different standards of judgment are naturally applied in different contexts. In some settings, the firm benefits from employees who weigh decision-making factors related to rationality highly (e.g., self-interest, rule-following, logic), while in other settings, the firm benefits from employees who weigh decision-making factors related to reasonableness highly (e.g., social concerns, fairness, reciprocity). Thus, management control system designers can use this implicit theory to predict how employees will naturally behave and adjust the informal guidance their control systems provide accordingly. Second, while prior research finds that individuals apply different standards in different settings and use those standards to predict the behavior of others, we extend the results reported in psychology research to show that employees behave predictably in response to judgment standard guidance in two different organizational settings.

These results also have several important implications for practice. First, firms spend significant time, effort, and money designing control systems, often incentive-driven, to guide employees toward behavior that is consistent with organizational goals. Our results indicate that some simple changes to non-binding guidance for the employee to behave rationally or reasonably can complement more costly and complex formal incentive systems and management controls. Second, some organizations choose to foster a collective organizational culture and design management controls that promote teamwork and norms emphasizing the good of the organization over the good of the individual, while others choose to foster more competitive and individualistic cultures (Abernethy, Bouwens, Hofmann and van Lent 2023; Henri 2006). Our results suggest that guidance to behave reasonably would be more consistently and successfully employed in organizations seeking to foster collective rather than competitive social norms and organizational cultures and vice versa.

By understanding the underlying goals of the organization as reflected in its organizational design, social norms, and use of language (Ferraro et al. 2005), firms can better align the language used when guiding managers' behavior to the outcomes the organization seeks. While employees may have trait-based tendencies to behave in collectivist or individualistic ways, our conceptualization of judgment standards is more situational or context-dependent. Thus, firms might consider using rational versus reasonable language when implementing social controls such as mission, vision, and value statements and careful employee selection and socialization designed so employees "...internalize the values and beliefs of the organization and act in accordance with these" (Gerdin 2020, 8). If language effects are inconsistent with an organization's vision and values (i.e., rationality is emphasized in a firm that develops a more collective organizational culture, or vice versa), confusion and ineffective controls may result.

Finally, our study has implications for research examining the impact of informal control systems on employees' decision-making frames. For example, prior research indicates employees tend to approach decisions within "business" or "ethical" decision-making frame depending on the context (Rees et al. 2022). We extend the research on ethical decision frames by examining rational and reasonable language as a way to stimulate an implicit theory or mindset that affects the decision-making standard managers apply. Sometimes the context dictates that rational decision-making, focusing on self-interest, is the norm while in other cases reasonable decision-making, with a more social focus, is the norm. While firms may assume rational or reasonable decisions will be made spontaneously based on contextual cues, the results of the current study suggest employees can effectively be guided away from spontaneous norms if they lead to decisions that are not consistent with firm goals.

Limitations to this study provide valuable opportunities for future research. First, to establish that different guidance leads to different results, we designed close replications of prior work in management accounting. The benefit is that we can compare how simple guidance indicating that the firm would prefer employees to behave rationally or reasonably in a particular situation changes employees' judgments and decisions compared to results from well-established prior work. While this allows us to compare our results to those of prior studies without guidance, many more exciting questions could be examined. For example, in Study 1, reasonable guidance affects the employee's personal payoff in the short run. In contrast, in Study 2, rational guidance has no direct effect on the employee's personal payoff, except perhaps in the longer term (and outside the scope of the experimental setting). Future research is needed to better understand whether the effects of guidance on judgment and behavior are consistent in different settings with similar incentive structures.

Second, Grossmann et al. (2020) speculate that individuals spontaneously apply a rational or reasonable standard in different settings since such a standard allows them to justify their preference-maximizing or socially conscious choices to others. Our study introduces the rational or reasonable standard as a non-binding, informal control. Thus, we cannot examine the conditions under which a rational or reasonable standard would be spontaneously applied. Future research could first examine the conditions under which the rational or reasonableness standards are spontaneously applied by employees in organizational settings and then examine how the judgment standard applied might moderate the effect of other organizational design choices, for example, tone at the top, public or private recognition or economic incentives promoting rationality on judgment quality. If organizations can reliably predict which of the two standards employees might spontaneously apply depending on the setting, control systems could be designed to take advantage of this understanding.

This study contributes to management accounting literature that examines the effects of informal controls, for example, organizational culture, tone at the top or organizational value statements, developed as part of a firm's management control system. Our results indicate that a control system emphasizing reasonableness as the main standard for sound judgment and behavior could mimic, at least to some degree, the effect of more complicated interventions on employee behavior. Even so, more research is needed to understand whether and how a control system that promotes reasonableness leads to behavior consistent with organizational goals.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this work, the authors used ChatGPT in order to improve the readability and smoothness of the writing. This tool was used on only a handful of sentences. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the manuscript.

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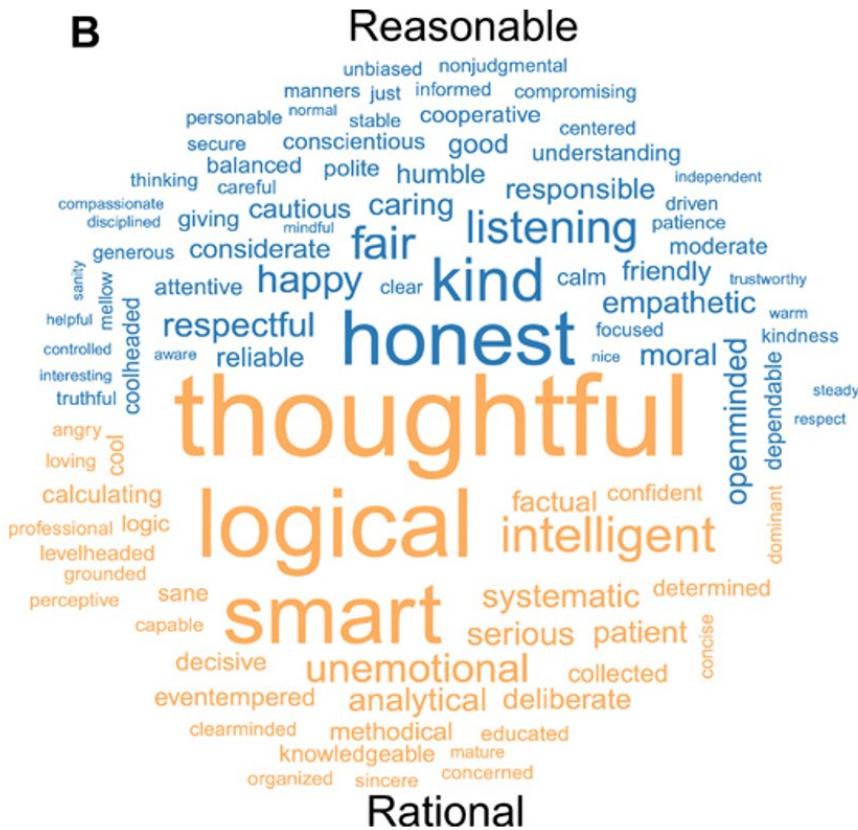
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APPENDIX A

Themes Differentiating Reasonable from Rational Individuals



Notes:

Adapted from Figure 1b in Grossmann et al. (2020). Word size indicates frequency with which word was used to describe rational or reasonable individuals.

APPENDIX B
Earnings Spreadsheet
Budgeted Cost reported to the manager

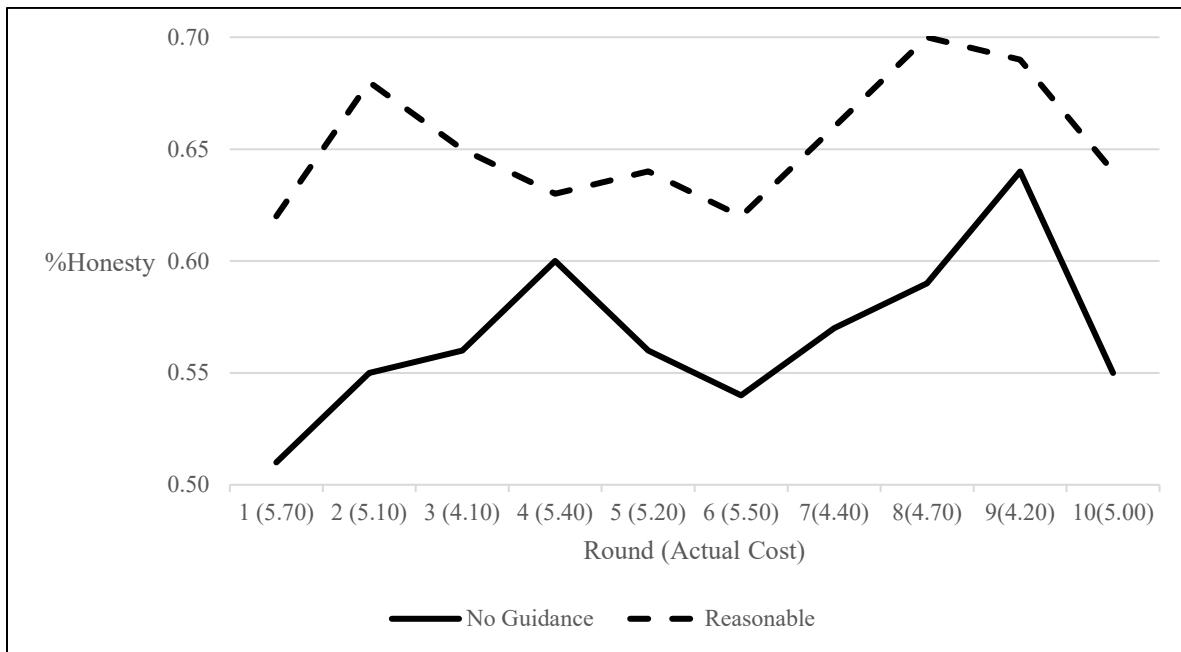
<i>Actual Cost of production</i>	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	...
4.00	250	350	450	550	650	750	850	950	1,050	1,150	...
4.10	150	250	350	450	550	650	750	850	950	1,050	...
4.20	50	150	250	350	450	550	650	750	850	950	...
4.30	(50)	50	150	250	350	450	550	650	750	850	...
4.40	(150)	(50)	50	150	250	350	450	550	650	750	...
4.50	(250)	(150)	(50)	50	150	250	350	450	550	650	...
4.60	(350)	(250)	(150)	(50)	50	150	250	350	450	550	...
4.70	(450)	(350)	(250)	(150)	(50)	50	150	250	350	450	...
4.80	(550)	(450)	(350)	(250)	(150)	(50)	50	150	250	350	...
4.90	(650)	(550)	(450)	(350)	(250)	(150)	(50)	50	150	250	...
5.00	(750)	(650)	(550)	(450)	(350)	(250)	(150)	(50)	50	150	...
5.10	(850)	(750)	(650)	(550)	(450)	(350)	(250)	(150)	(50)	50	...
5.20	(950)	(850)	(750)	(650)	(550)	(450)	(350)	(250)	(150)	(50)	...
5.30	(1,050)	(950)	(850)	(750)	(650)	(550)	(450)	(350)	(250)	(150)	...
5.40	(1,150)	(1,050)	(950)	(850)	(750)	(650)	(550)	(450)	(350)	(250)	...
5.50	(1,250)	(1,150)	(1,050)	(950)	(850)	(750)	(650)	(550)	(450)	(350)	...
5.60	(1,350)	(1,250)	(1,150)	(1,050)	(950)	(850)	(750)	(650)	(550)	(450)	...
5.70	(1,450)	(1,350)	(1,250)	(1,150)	(1,050)	(950)	(850)	(750)	(650)	(550)	...
5.80	(1,550)	(1,450)	(1,350)	(1,250)	(1,150)	(1,050)	(950)	(850)	(750)	(650)	...
5.90	(1,650)	(1,550)	(1,450)	(1,350)	(1,250)	(1,150)	(1,050)	(950)	(850)	(750)	...
6.00	(1,750)	(1,650)	(1,550)	(1,450)	(1,350)	(1,250)	(1,150)	(1,050)	(950)	(850)	...

Appendix B
Earnings Spreadsheet (continued)

Budgeted Cost reported to the manager

<i>Actual Cost of production</i>	Budgeted Cost reported to the manager											
	...	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
4.00	...	1,250	1,350	1,450	1,550	1,650	1,750	1,850	1,950	2,050	2,150	2,250
4.10	...	1,150	1,250	1,350	1,450	1,550	1,650	1,750	1,850	1,950	2,050	2,150
4.20	...	1,050	1,150	1,250	1,350	1,450	1,550	1,650	1,750	1,850	1,950	2,050
4.30	...	950	1,050	1,150	1,250	1,350	1,450	1,550	1,650	1,750	1,850	1,950
4.40	...	850	950	1,050	1,150	1,250	1,350	1,450	1,550	1,650	1,750	1,850
4.50	...	750	850	950	1,050	1,150	1,250	1,350	1,450	1,550	1,650	1,750
4.60	...	650	750	850	950	1,050	1,150	1,250	1,350	1,450	1,550	1,650
4.70	...	550	650	750	850	950	1,050	1,150	1,250	1,350	1,450	1,550
4.80	...	450	550	650	750	850	950	1,050	1,150	1,250	1,350	1,450
4.90	...	350	450	550	650	750	850	950	1,050	1,150	1,250	1,350
5.00	...	250	350	450	550	650	750	850	950	1,050	1,150	1,250
5.10	...	150	250	350	450	550	650	750	850	950	1,050	1,150
5.20	...	50	150	250	350	450	550	650	750	850	950	1,050
5.30	...	(50)	50	150	250	350	450	550	650	750	850	950
5.40	...	(150)	(50)	50	150	250	350	450	550	650	750	850
5.50	...	(250)	(150)	(50)	50	150	250	350	450	550	650	750
5.60	...	(350)	(250)	(150)	(50)	50	150	250	350	450	550	650
5.70	...	(450)	(350)	(250)	(150)	(50)	50	150	250	350	450	550
5.80	...	(550)	(450)	(350)	(250)	(150)	(50)	50	150	250	350	450
5.90	...	(650)	(550)	(450)	(350)	(250)	(150)	(50)	50	150	250	350
6.00	...	(750)	(650)	(550)	(450)	(350)	(250)	(150)	(50)	50	150	250

Figure 1
Study 1- Mean %Honesty by Round and Condition (n = 2,010)



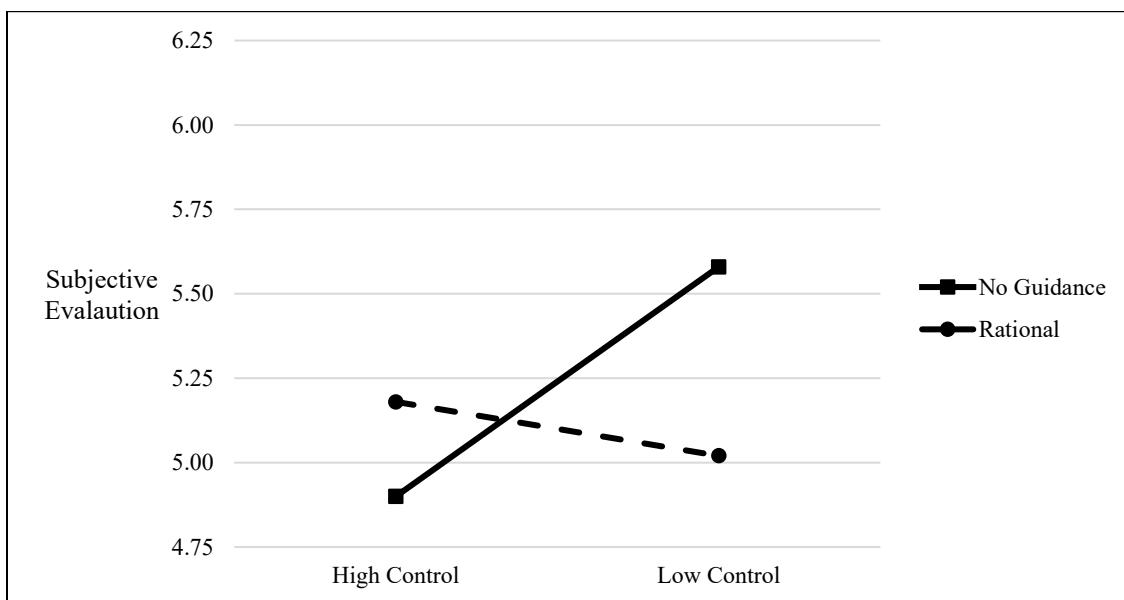
Notes:

%Honesty is mean of [1 - (slack claimed/slack available)].

Guidance indicates whether participants were guided to be reasonable or received no guidance when choosing their budget requests.

Round is independent production round.

Figure 2
Study 2 - Mean Subjective Evaluation (n = 197)



Notes:

Subjective Evaluation is the score assigned for office administration performance, ranging from 0-10.

Control is the degree of control over sales.

Guidance is whether the participant is guided to be rational or provided no guidance when choosing the subjective evaluation score.

Table 1
Study 1 – Manipulation Check on Guidance

When choosing a cost to report to headquarters:	No Guidance Mean (Std. Dev.)	Reasonable Mean (Std. Dev.)	t-value (df = 199)
... it was important to me to report accurately.	3.44 (2.10)	3.92 (1.99)	1.68**
... it was important to me to report honestly.	3.41 (2.12)	3.95 (2.04)	1.86 **
... it was important to me to treat headquarters fairly.	3.93 (2.06)	4.61 (1.71)	2.55**
... I considered the consequences of my reports on the firm's longer-term financial health.	4.07 (1.97)	4.46 (1.62)	1.54*

Notes:

** p < 0.05, * p < 0.10 (all one-tailed)

Scale values range from 1 = strongly disagree through 7 = strongly agree.

Reasonable/No Guidance is whether the participant is guided to be reasonable or provided no guidance when making budget requests.

Table 2
Study 1 – Mean %Honesty by Condition

	No Guidance <i>n</i> = 1,010	Reasonable <i>n</i> = 1,000	Total <i>n</i> = 2,010	Difference
%Honesty (π)	0.56	0.65	0.60	0.06*
Std. Dev.	(0.38)	(0.35)	(0.37)	
Report Types				
Economic ($\pi = 0$)	21%	14%	18%	6%†
Honest ($\pi = 100\%$)	25%	29%	27%	4%+
Other ($0 < \pi < 100\%$)	54%	57%	55%	3%

Notes:

Honesty is mean of [1- (slack claimed/slack available)].

Round is independent production round.

Reasonable/No Guidance is whether the participant is guided to be rational or provided no guidance when making budget requests.

Each of 201 participants makes ten reporting decisions.

*t [1992] = 5.83, p < 0.01 (df adjusted for unequal variances)

† z = 3.98, p < 0.05

+ z = 2.15, p < 0.05

Table 3
Study 2 – Manipulation Check on Rational Guidance

When evaluating David's performance:	No Guidance Mean (Std. Dev.)	Rational Guidance Mean (Std. Dev.)	t-value (df = 195)
... it was important to be unemotional.	5.93 (1.33)	6.24 (1.08)	-1.83 **
... it was important to be analytical	6.18 (0.91)	6.43 (0.77)	-2.05**
... it was important to be honest.	6.33 (1.00)	6.57 (0.76)	-1.88**

Notes:

** p < 0.05 (one-tailed)

Scale values range from 1 = strongly disagree through 7 = strongly agree.

No Guidance/Rational Guidance is whether the participant is provided no guidance or is guided to be rational when making budget requests.

Table 4
Study 2 – Results

Panel A: Mean (Std. Dev.) *Subjective Evaluation* by Experimental Condition

	Rational Guidance	No Guidance	Total
High Controllability	5.18 (1.70) n = 50 (A)	4.90 (1.60) n = 49 (B)	5.04 (1.65) n = 99
	5.02 (1.48) n = 48 (C)	5.58 (1.80) n = 50 (D)	5.31 (1.67) n = 98
Total	5.10 (1.59) n = 98	5.24 (1.73) n = 99	5.17 (1.66) n = 197

Panel B: ANOVA for *Subjective Evaluation*

Source	df	MS	F	p-value
<i>Controllability</i>	1	3.37	1.24	0.28
<i>Guidance</i>	1	0.95	0.35	0.56
<i>Controllability x Guidance</i>	1	8.71	3.20	0.08
Error	193	2.93		
Total	197			

Panel C: Simple Effects (n = 197)

Source	df	t	p-value
<i>Controllability given Rational Guidance (A vs C)</i>	96	0.49	0.62
<i>Controllability given No Guidance (B vs D)</i>	95	2.00	0.05

Panel D: Custom Contrast for *Subjective Evaluation*

Source	SS	df	MS	F	p-value
Contrast (-1, -1, -1, +3 for A, B, C, D)	11.16	1	11.17	4.10	0.04
Residual between cell variance	1.94	2	0.97	0.36	0.70
Total between cells variance	13.10	3	4.37	1.61	0.19
Error	525.03	193	2.72		
Total	290.24	196			
Contrast variance residual, q2	14.8%				

Notes:

Subjective Evaluation is the score assigned on Office Administration performance and ranges from 0-10.

Controllability is the degree to which the evaluated manager can control their objective evaluation on sales.

Guidance is whether guidance to be rational when choosing the subjective evaluation score is present or absent.