



UvA-DARE (Digital Academic Repository)

Promote Internally or Hire Externally? The Role of Gift Exchange and Performance Measurement Precision

Chan, E.W.; Lill, J.B.; Maas, V.S.

DOI

[10.1111/1475-679X.12475](https://doi.org/10.1111/1475-679X.12475)

Publication date

2023

Document Version

Final published version

Published in

Journal of Accounting Research

License

Article 25fa Dutch Copyright Act (<https://www.openaccess.nl/en/in-the-netherlands/you-share-we-take-care>)

[Link to publication](#)

Citation for published version (APA):

Chan, E. W., Lill, J. B., & Maas, V. S. (2023). Promote Internally or Hire Externally? The Role of Gift Exchange and Performance Measurement Precision. *Journal of Accounting Research*, 61(2), 493-530. <https://doi.org/10.1111/1475-679X.12475>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (<https://dare.uva.nl>)

Promote Internally or Hire Externally? The Role of Gift Exchange and Performance Measurement Precision

ERIC W. CHAN ,* JEREMY B. LILL,[†] AND VICTOR S. MAAS[‡]

Received 22 September 2021; accepted 24 January 2023

ABSTRACT

Managers often face the choice between promoting an internal employee and hiring an external candidate. Using an interactive experiment, we examine the drivers of managers' promote/hire decisions and internal employees' behavior before and after those decisions. Consistent with gift exchange theory, we find that employees exert costly effort to increase the chance of being promoted, and they raise their effort level as the promote/hire decision becomes imminent. Managers respond by promoting those who exert high effort, despite employees' inferior ability compared to external candidates.

*McCombs School of Business, The University of Texas at Austin;; [†]School of Business, University of Kansas;; [‡]Amsterdam Business School, University of Amsterdam.

Accepted by Haresh Sapra. We acknowledge helpful comments from two anonymous reviewers, Markus Arnold, Dirk Black, Lynn Hannan, Razvan Ghita, Steve Kachelmeier, Lisa Koonce, Michael Majerczyk, Matthias Mahlendorf, Donald Moser, Gans Narayanamoorthy, Dan Rinkus, Steve Salterio, Bei Shi, Timothy Shields, Ivo Tafkov, Brian White, James Wilhelm, Michael Williamson, Xinyu Zhang, and workshop participants at Bilkent University, NHH Norwegian School of Economics, University of Amsterdam, Chapman University, University of Nebraska-Lincoln, The University of Texas at Austin, Tulane University, Wilfrid Laurier University, the 2021 Accounting, Behavior and Organizations Research Conference, the 2022 Management Accounting Section Midyear Meeting, and online seminars organized by the European Network for Experimental Accounting Research and the Journal of Management Accounting Research. We thank Kenzie Kingsley for her research assistance. An online appendix to this paper can be downloaded at <https://www.chicagobooth.edu/jar-online-supplements>.

Results suggest that managers view employees' past effort as both a gift to reciprocate and a signal of their future effort. Moreover, we find that managers are more likely to promote internally rather than hire externally under a less precise performance measurement system, and this result is driven by managers who observe low employee output. Finally, we find that total effort is significantly higher when managers promote internally versus hire externally.

JEL codes: D91, M10, M12, M40, M51, M54

Keywords: gift exchange; hiring; performance measurement; promotions; reciprocity

1. Introduction

Staffing decisions are among the most critical decisions made in organizations, as they directly influence who will be responsible for the organization's future. Appointing the right personnel to the job can be the difference between failure and success (Cannella, Finkelstein, and Hambrick [2008], Wang et al. [2016]). When making staffing decisions, organizations often face the choice of either promoting an internal employee or hiring someone from the outside (Chan [1996], Bidwell [2011], DeVaro and Morita [2013]). In this study, we shed light on this issue by examining the drivers of managers' promote/hire decisions and employees' behavior surrounding those decisions. Further, we examine how the precision of the organization's performance measurement system can influence managers' promote/hire decisions and employees' responses to the decision outcomes.

Both internal promotions and external hires are common in practice (e.g., Huson, Parrino, and Starks [2001], Tsoulouhas, Knoeber, and Agrawal [2007], Bidwell [2011]). Prior theoretical and archival research has largely focused on examining the economic factors that explain why firms may prefer to promote or hire at the organizational level. On one hand, promoting internally helps keep current employees motivated, stimulates investment in human capital, and reduces various transaction costs, such as screening and training costs (e.g., Chan [1996], Agrawal, Knoeber, and Tsoulouhas [2006], Tsoulouhas, Knoeber and Agrawal [2007], Oyer and Schaefer [2011], DeVaro and Morita [2013], Bertheau [2021]). On the other hand, hiring externally allows firms to potentially attract superior candidates. Because the external labor pool is almost always larger than the internal labor pool, for any vacancy that does not require a highly firm-specific skill set, there will typically be external candidates whose work experience and ability level are superior to that of the best internal candidate.

Our study complements the prior economics-based literature by examining behavioral factors that can influence promote/hire decisions at the individual level. Understanding this is important because managers in practice have substantial discretion when making promote/hire decisions, and their decisions could deviate from the firm's preferences and

the predictions derived from neoclassical economic theory (e.g., Ferris, Buckley, and Allen [1992], Hoffman, Kahn, and Li [2018], Gustafsson and Swart [2020], Lill, Majerczyk, and Tafkov [2022]). Indeed, research shows that managers often follow their own social preferences in their decision making (Charness and Kuhn [2011], Maas, van Rinsum, and Towry [2012], Chan [2018], Hecht, Maas, and van Rinsum [2022]). In this study, we leverage the advantages of a controlled experiment to abstract away many of the previously documented economic factors, which allows us to isolate the behavioral factors that drive decision making in a promote/hire decision setting.

A fundamental insight from behavioral economics is that reciprocity and gift exchange characterize many forms of human interaction (Berg, Dickhaut, and McCabe [1995], Fehr and Gächter [2000]), including employment relationships (Akerlof [1982], Kube, Maréchal, and Puppe [2012]). Based on this insight, we theorize that gift exchange also plays an important role in promote/hire decisions. First, we posit that employees will put forth costly effort prior to the promote/hire decision, and that they will further increase their effort closer to the promote/hire decision. There is tension in this prediction as employees' costly effort investment only pays off if managers respond positively to it and promote the employee instead of hiring an external candidate with superior ability. We next hypothesize that managers will reciprocate and promote employees who exert high effort despite the option to hire an external candidate with superior ability. Finally, we examine promoted and non-promoted employees' effort after the promote/hire decision, and in particular, whether promoted employees will continue to put forth costly effort even when there is no pecuniary incentive to do so.

Our study also focuses on the role of performance measurement systems in promote/hire decisions. We predict that the precision of the performance measurement system plays a critical role in promote/hire decisions. Precision is a fundamental attribute of performance measurement that captures the extent to which "noise" obfuscates the agent's actions (Feltham and Xie [1994], Krishnan, Luft, and Shields [2005]).¹ That is, managers under a *more* precise system can observe relatively accurate indicators of employee effort, whereas the indicators of employee effort under a *less* precise system are noisy and partly uncontrollable. In a promote/hire setting, we hypothesize that managers under a less precise system are more likely to promote internally rather than hire externally than managers under a more precise system. Drawing from behavioral theory and prior research, we argue that managers will tend to give employees the "benefit of the doubt"

¹ The term "precision" as defined in our paper is also sometimes referred to as "accuracy" in other contexts, such as in the description of information systems (e.g., Hannan, Rankin, and Towry [2006], Bol, Kramer, and Maas [2016]). We use "precision" because this term is more commonly used in the context of performance measurement in prior research, particularly in many seminal theoretical studies (Banker and Datar [1989], Feltham and Xie [1994]).

and favor internal promotions when they observe low employee output in a noisy environment (Ganzach and Krantz [1991], Kachelmeier and Van Landuyt [2017]).

We test our theory using an incentivized interactive experiment. The participants are 138 business school students from a large public U.S. university. The experiment consists of two stages, each comprised of three periods. In stage 1, an employee and a manager are randomly matched to form a firm. They are both informed at the beginning that the manager will make a promote/hire decision at the end of stage 1. The employee selects an effort level in each of the three initial periods. Higher effort levels are more costly to the employee but produce higher expected output for the manager. At the end of each period, the manager learns the employee's output, which is the sum of the employee's chosen effort and a random noise factor.

In stage 2, a new higher-level job becomes available, and the manager must fill this new job by either promoting the current employee or hiring an external candidate. Compared to the current employee's original job, this new job pays higher compensation, and employee effort in this job has a larger effect on the manager's payoff. The manager learns that the external candidate's cost of effort is always lower than that of the current employee, which proxies for their differences in ability. If the manager chooses to promote the current employee to the higher-level job, then the external candidate will fill the employee's original job. If the manager chooses to hire the external candidate to fill the higher-level job, then the current employee will remain in their original job. After the manager makes this promote/hire decision, the current and newly hired employees select their effort levels in each of three later periods.

We use a between-participant design to manipulate performance measurement system precision by either supplementing or not supplementing the manager's noisy measure of output with a precise indicator of employee effort. That is, at the end of each period, the manager either observes the employee's exact effort level and a random noise factor separately (precise system), or only observes the sum of the two (imprecise system).

The results support our predictions. Employees provide costly effort prior to the promote/hire decision, and they increase their effort closer to the decision, even though managers can hire an external candidate with lower cost of effort (i.e., higher ability). Managers are more likely to promote internally rather than hire externally when their employees give higher costly effort before the promote/hire decision. Additional analyses suggest that managers view employees' past effort as both a gift that should be reciprocated and a signal that employees will continue to exert high effort in the future. Interestingly, managers base their promote/hire decision on employees' early effort level rather than on the sharp increase in effort immediately before the decision. Moreover, we find that managers are more likely to promote internally under a less precise system, and this result is driven by differences in the promotion of employees who exerted low

effort. After being promoted, many employees continue to put forth costly effort while having no pecuniary incentive to do so, extending the gift exchange relationship. Finally, we conduct a supplemental experimental condition in which we assign employees their prepromotion effort such that effort levels do not communicate gifting or signaling intentions to managers. Consistent with our theory, managers in this setting do not condition their promote/hire decisions on employee effort.

Our study makes several contributions to theory and practice. First, our study contributes to the important, yet sparse research on internal promotion versus external hiring.² Because of data limitations, much of this prior research is theoretical (e.g., Chan [1996], Jongjaroenkamol and Laux [2017]), and the few empirical studies on this topic either rely primarily on data from a single firm (e.g., Bidwell [2011], Bidwell and Keller [2014]) or focus on executive-level jobs (e.g., Agrawal, Knoeber, and Tsoulouhas [2006], Tsoulouhas, Knoeber, and Agrawal [2007]). We extend this literature by adopting a behavioral perspective as opposed to a neoclassical economic perspective, and we focus on decision making at the individual level. Our results indicate that gift exchange theory explains employees' effort choices and managers' decision to promote internal employees over external candidates with superior ability. Specifically, managers view employees' past effort as both a gift that should be reciprocated and a signal of their future effort. Further, we find that the manager-employee gift exchange relationship often extends beyond the promote/hire decision. Overall, our study offers new behavioral insights and a potential alternate mechanism that explains why internal employees are promoted over external candidates in practice.

Second, we contribute to research on performance measurement system design. Prior research finds that performance measurement precision can affect various outcomes, such as the allocation of decision-making authority (Moers [2006]), outsourcing decisions (Bai, Coronado, and Krishnan [2010]), and performance evaluations (Bol, Kramer, and Maas [2016]). Our study shows that precision can also influence managers' promote/hire decisions. We find that more internal employees are promoted under a less precise system, particularly low-effort employees who likely would not have been promoted under a more precise system. This change in the composition of the workforce, with respect to employee type, can have important implications for a firm's long-term success.

Lastly, we extend research on the initiation and development of gift exchange within firms beyond the basic contracting setting. Prior research

²Although we focus on internal promotion versus external hiring, we believe our results could potentially generalize to settings in which managers decide whether to promote an immediate subordinate ("internal" employee) versus an employee from a different business unit ("external" employee). The key factor underlying our theory is that the managers know the history of their "internal" employee's past efforts and have previously benefited from such efforts, which provides the opportunity for signaling and gift exchange.

has largely focused on settings in which managers are the first movers by offering favorable contracts to employees who then reciprocate with increased effort (Akerlof [1982], Hannan [2005], Kuang and Moser [2009], Kube, Maréchal and Puppe [2012]) and/or reduced dysfunctional behavior (Zhang [2008], Chen and Sandino [2012]). Our study documents gift exchange in a promote/hire setting in which employees move first by exerting costly effort and managers reciprocate this effort by promoting them. Moreover, whereas prior research has focused on one-shot games, our evidence suggests that employees' initial gifts often lead to continued gift-giving in the future, thus extending the reciprocal relationship between managers and employees beyond the initial gift exchange.

2. Background

2.1 INTERNAL PROMOTION VERSUS EXTERNAL HIRING

Prior research, mainly in the fields of economics, finance, and management, has documented various benefits and costs pertaining to the decision to either promote internally or hire externally. Compared to hiring externally, the benefits of promoting internally include: (1) saving the transaction costs associated with attracting, screening, and training external candidates (Oyer and Schaefer [2011]); (2) saving the wage premiums typically paid to hire external candidates (Bidwell [2011], Kampkötter and Sliwka [2014]); (3) preserving current employees' promotion-based incentives to exert effort and acquire human capital (Lazear and Rosen [1981], Rosen [1986], Chan [1996]); and (4) retaining employees who have accumulated valuable, firm-specific knowledge (Naveen [2006], Chadwick and Dabu [2009], Bertheau [2021]). Given these reasons, evidence suggests that firms generally favor internal candidates and tend to "handicap" external candidates, such that external candidates are only hired when they are markedly superior to the best internal candidate (Chan [1996], Agrawal, Knoeber, and Tsoulouhas [2006], Tsoulouhas, Knoeber, and Agrawal [2007]).

Although internal promotions are more common, we observe in practice that external candidates are frequently hired over internal candidates (Bidwell [2011], Gregory-Smith and Wright [2019], Chan, Evans, and Hong [2022]). One major reason is that the external labor pool is almost always larger than the internal labor pool. Thus, as long as firm-specific knowledge is not essential to productivity or can be readily learned, there are likely external candidates available with superior abilities and work experiences (Rao and Drazin [2002], Rosenkopf and Almeida [2003], Bidwell and Keller [2014], Williams, Chen, and Agarwal [2017]). Consistent with this notion, empirical evidence suggests that external hires tend to rise through the ranks more quickly than their internally promoted counterparts (Acosta [2010], Bidwell [2011]).

Unlike prior research, our study focuses on understanding the behavioral factors that arise from the interactions between employees and managers at the individual level in a promote/hire setting. In addition,

we introduce the precision of the performance measurement system as a potential factor that can influence behaviors surrounding promote/hire decisions.

2.2 PERFORMANCE MEASUREMENT SYSTEM PRECISION

In the agency theoretical framework, precision is a key dimension of an organization's performance measurement system. It captures the extent to which "noise" in the performance measures obfuscates the principal's ability to infer the agent's actions (Feltham and Xie [1994], Krishnan, Luft, and Shields [2005]). That is, a more precise system better captures an agent's actions by separating out extraneous factors that are outside of the agent's control.

Numerous factors can influence the precision of a performance measurement system, such as the investment in information technology, the task environment, and performance outcome interdependencies. Under agency theory, imprecision in performance measurement constrains the principal to contract on the agent's noisy output rather than effort. Because this imposes risk on the agent, the principal must pay a premium to motivate the agent's effort. As such, economic theory prescribes that a more precise measurement system is generally desirable because it incentivizes the agent more efficiently (Hölmstrom and Milgrom [1991], Baker [1992, 2002]).³ Surprisingly though, recent experimental research has found that agents can sometimes exert *greater* effort in a noisier environment because of loss aversion and their desire to insure against large negative noise (Sloof and van Praag [2010], Corgnet and Hernan-Gonzalez [2019]). Our study examines the effects of performance measurement precision on managers' promote/hire decisions and employees' anticipation of and responses to those decisions.

3. Hypotheses Development

3.1 BASIC SETTING

In our experiment, a manager and an employee form a single firm. They interact over two stages, each comprising three work periods, and they earn points that convert at the rate of 160 points per U.S. dollar. At the beginning of the first period, the manager and employee are both informed that the manager will make a promote/hire decision at the end of stage 1, and that the person selected for the higher-level job will receive a higher fixed wage.

In each work period, the employee selects a level of effort. As shown in panel A of figure 1, possible effort levels range from 0% to 100% in 5%

³Theoretical models also show that under certain conditions, such as in the absence of agency considerations, some degree of imprecision in performance measurement can actually be preferable to noise-free measurement (Kanodia, Singh, and Spero [2005], Kanodia [2006]).

Panel (a) Employee effort-cost table

Effort Level	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
Cost of Effort	0	0	0	0	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80

Panel (b) External candidate effort-cost table

Effort Level	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
Cost of Effort	0	0	0	0	0	0	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70

FIG 1.—This figure provides the cost of effort tables for the employees and the external candidates. Panel A shows employees’ cost of effort table and panel B shows external candidates’ cost of effort table. Each effort level has an associated cost of effort that reduces the employee’s compensation. External candidates have a higher costless effort level (i.e., 30%) compared to employees (i.e., 20%).

increments. Effort levels from 0% to 20% are costless to the employee, but for each effort level beyond 20%, the cost of effort increases by 5 points. At the maximum effort of 100%, the employee’s cost of effort is 80 points.

Including a fixed wage, the employee’s payoff formula for each period in stage 1 is:

$$\text{Employee’s Payoff} = \text{Fixed Wage [200 points]} - \text{Cost of Effort [0 to 80 points]}.$$

The employee’s selected effort level is summed with a random noise factor to determine the employee’s output, which is then multiplied by a fixed multiplier to determine the manager’s payoff. The noise factor ranges from -40% to 40% in 5% increments.⁴ The manager’s payoff is capped at zero for any given period to avoid negative payoffs. The manager’s payoff formula for each period in stage 1 is:

$$\begin{aligned} \text{Manager’s Payoff} = & \text{(Employee’s Effort Level [0 to 100\%]} \\ & + \text{Random noise factor [-40\% to +40\%])} \\ & * \text{Fixed Multiplier [400 points]}. \end{aligned}$$

At the end of stage 1, a new higher-level job becomes available, and the manager must fill the new job by either promoting the current employee or hiring an external candidate.

As shown in panel B of figure 1, compared to the employee, the external candidate’s cost of effort is 10 points lower at each effort level. Thus, effort levels from 0% to 30% are costless to the external candidate. At the

⁴We used a random draw to determine the noise term for most work periods prior to running the experiment and use the same set of noise terms across all conditions and sessions. This eliminates the possibility that differences in the noise term drive our results across conditions. The probability of selection was equal and independent for all possible noise terms except for period 3. In period 3, we selected a noise term that made the first three noise terms sum to zero. Given that some managers knew the noise term and others did not by design, we did not want higher or lower levels of promotions driven by a net positive or negative noise term in the first three periods. The six selected noise terms are 30%, -40%, 10%, 15%, 0%, and -10%, for work periods 1 through 6, respectively. Participants were not aware of how the third period noise term was calculated. As this omission in participants’ understanding was deemed inconsequential, we did not debrief participants about this design choice.

maximum effort of 100%, the external candidate's cost of effort is 70 points. This difference in the cost of effort proxies for the external candidate's superior ability over the employee (i.e., ability to generate higher output at the same cost of effort).⁵ This is a critical assumption that captures the real-world tensions inherent to promote/hire decisions (Chan [1996], Agrawal, Knoeber, and Tsoulouhas [2006], Tsoulouhas, Knoeber, and Agrawal [2007]). If the external candidate's cost of effort were the same as or higher than the employee, the manager would generally prefer to promote internally over hire externally. To eliminate any ambiguity about the external candidate's advantage over the employee, both the manager and the employee see the external candidate's effort-cost table when the manager makes the promote/hire decision.

Compared to the employee's original job, the new higher-level job pays a higher fixed wage (i.e., 400 vs. 200 points) and the employee's output has a larger effect on the manager's payoffs (i.e., fixed multiplier of 800 vs. 400 points). This structure makes the promotion attractive to the employee, and it incentivizes the manager to staff the higher-level job with the individual who will exert relatively higher effort. To hold constant the firm size after the promote/hire decision, if the manager decides to promote the current employee, then the external candidate fills the promoted employee's original lower-level job.⁶ If the manager hires the external candidate for the higher-level job, then the original employee remains in the same job.

As such, in addition to the employee payoff formula shown above for the employee in the lower-level job, the payoff formula for the promoted or newly hired employee in the higher-level job for each stage 2 period is:

$$\begin{aligned} & \text{Higher-level Employee's Payoff} \\ & = \text{Fixed Wage}[400 \text{ points}] \\ & - \text{Cost of Effort}[0 \text{ to } 80 \text{ for promoted internal employee,} \\ & \text{or } 0 \text{ to } 70 \text{ points for external hire}]. \end{aligned}$$

⁵ Our operationalization is similar to how prior theoretical models represent the ability differences between the employee and external candidate. For example, Chan [1996] uses the assumption that "the marginal disutility of work is lower for higher ability workers at any given level of effort" (p. 561). We note that an alternate design would be to keep the same cost of effort structure for the employee and external candidate, but allow the external candidate's maximum effort level to increase beyond 100%. However, because we do not expect the external candidate to choose very high effort levels (as confirmed by our results), this design is unlikely to affect our theory and results.

⁶ We make the design choice to keep the firm size constant regardless of the managers' promote/hire decisions for operationalization purposes to balance the payoffs resulting from the decision. As explained later, the external candidate never learns about the two different jobs and the wage differentials, minimizing the effects of this role. Because our focus is not on the external candidate, we do not theorize or attempt to generalize the behavior of the external candidates in our experiment.

Similarly, the manager's payoff formula for each stage 2 period will include the following additional payoff generated by the employee in the higher-level job:

$$\begin{aligned} \text{Manager's Payoff} = & (\text{Higher-level Employee's Effort Level [0 to 100\%]} \\ & + \text{Random Noise Factor [-40\% to +40\%]}) \\ & * \text{Fixed Multiplier [800 points]}. \end{aligned}$$

Within this setting, we manipulate the precision of the performance measurement system (Precise vs. Imprecise). In the Precise condition, the manager separately observes the employee's selected effort level and the random noise factor at the end of each work period. In the Imprecise condition, the manager only observes the sum of the employee's selected effort level and the random noise factor (i.e., employee's output) and therefore cannot directly infer whether changes in output are because of changes in effort or noise.

3.2 NEOCLASSICAL ECONOMIC PREDICTIONS

Under the neoclassical assumptions that individuals maximize their wealth and anticipate other individuals do the same, the Nash equilibrium in our setting is for employees to never provide any costly effort and for managers to always hire the external candidate rather than promote the internal employee to the higher-level job. To derive this, first consider that our setting is such that after the promote/hire decision, employees have no pecuniary incentive to provide any costly effort. Assuming both the employee and external candidate will give the highest costless effort as the utilitarian outcome, the manager should expect higher effort, and therefore higher output, from the external candidate for whom each level of effort is less costly than for the employee. Thus, the manager will be better off hiring the external candidate for the higher-level job and keeping the employee in their original job. Anticipating this outcome of the promote/hire decision, the employee will also only provide costless effort *before* the promote/hire decision because giving costly effort will not influence the manager's decision.

3.3 EMPLOYEES' EFFORT BEFORE THE PROMOTE/HIRE DECISION

Contrary to the above economic predictions, we posit that employees will exert costly effort based on their belief that doing so will increase their chance of promotion. In practical terms, this means employees will engage in "influence activities" that are valued by their manager in an attempt to alter the manager's decision in their favor (e.g., Milgrom [1988], Milgrom and Roberts [1988]). Although some influence activities, such as bribes, can be detrimental to the firm, we focus on influence activities that are productive and improve firm outcomes, such as when employees choose to work overtime, take on additional projects, and voluntarily help their colleagues (Fairburn and Malcomson [2001]). Based on gift exchange theory, we propose that employees' engagement in such costly and

productive influence activities generates both a “gift” and a “signal,” which, in turn, increase their promotion prospects.

Prior research has documented situations where a gift exchange relationship develops between managers and employees and affects their decision making and outcomes (e.g., Rabin [1993], Fehr and Gächter [2000], Falk and Fischbacher [2006], Chan and Lill [2023]). For example, multiple studies show that when a manager offers the gift of a wage above the market-clearing level, employees often reciprocate with a gift of costly effort that benefits the manager (Fehr, Kirchsteiger, and Riedl [1993], Hannan [2005], Kuang and Moser [2009]).

Although prior studies have focused on situations where managers offer a gift for employees to reciprocate, in the context of a promote/hire decision, employees are the ones who can offer a gift by exerting costly effort to induce their managers to reciprocate by promoting them instead of hiring an external candidate. We predict that employees’ decisions to exert costly effort before the promote/hire decision can have two potential effects: a gifting effect and a signaling effect.

First, exerting costly effort establishes employees’ gifts to their managers because employees bear the full cost of effort, whereas managers gain the full benefit. These gifts are reinforced by the lack of an alternate way for employees to recoup their incurred cost of effort, besides their managers’ decision to promote them to a higher paying job. Second, employees’ willingness to exert costly effort can act as a signal that they will continue to exert high effort in the future, which can help compensate for their higher cost of effort compared to external candidates. In other words, the initial gift establishes the expectations for future gifts.

Importantly, these two effects are not mutually exclusive as managers can interpret employees’ past effort as *both* a gift and a signal. That is, managers can believe that they should reciprocate and promote their employees for their past effort, yet also expect their employees to sustain their effort after being promoted. In either case, we predict that employees will exert costly effort before the promote/hire decision to increase their chance of promotion.

H1: Employees will exert costly effort before the promote/hire decision.

There are at least two practical approaches for employees to make their gifting and signaling intentions apparent to their managers. One approach is for employees to sustain high costly effort throughout the period preceding the promote/hire decision. Although this is likely the most effective way for employees to signal to their manager their “high effort” type and their commitment to sustain their effort level even after promotion, it is also very costly because of the need for employees to continuously incur a high cost of effort over a prolonged period of time.

Alternatively, a relatively less costly approach is for employees to give moderate costly effort early on and then to increase that effort immediately prior to the promote/hire decision. For example, employees could extend

their work hours or take on extra tasks as the promote/hire decision becomes imminent (DeNisi and Stevens [1981]). An intentionally timed spike in effort will affirm the main purpose behind employees' gifts of high effort is to win the promotion, thus establishing a clear expectation for reciprocation. Although research in psychology (e.g., DeNisi and Stevens [1981], Steiner and Rain [1989]) suggests this approach can be successful, it can also backfire if managers view employees as being overly strategic and anticipate employees' effort will drop to a low level after promotion.

Considering the relative cost of the two approaches and the inherent uncertainty that underlies managers' promote/hire decisions regardless of employees' effort, we predict that employees are more likely to use the latter approach and increase their costly effort closer to the promote/hire decision. Thus, we formulate the following second hypothesis:

H2: Employees will exert more costly effort closer to the promote/hire decision.

We make no formal prediction on the effect of performance measurement system precision on employees' effort before the promote/hire decision because of at least two possible opposing forces. On one hand, employees under a less precise system could *reduce* their effort because they believe the random noise will obfuscate their gift or signal of high effort to their managers. On the other hand, such employees could decide to further *increase* their effort to overcome any potential negative noise and ensure that their managers recognize their gift or signal of effort (Sloof and van Praag [2010], Corgnet and Hernan-Gonzalez [2019]). Under normal circumstances in which random noise does not completely dominate and nullify the effect of employees' effort on the observable performance measures, we expect employees under both a more or less precise system to believe that exerting more costly effort before the promote/hire decision will increase their chances of promotion.

3.4 MANAGERS' PROMOTE/HIRE DECISIONS

After managers observe more or less noisy measures of employees' effort under different levels of performance measurement precision, they must decide whether to promote their internal employee or hire an external candidate with a lower cost of effort. To the extent that employees exert costly effort before the promote/hire decision as hypothesized, neoclassical economic reasoning suggests that managers will ignore employees' past efforts and hire the superior external candidate. This is because managers have already benefitted from their employees' past efforts, and because employees are expected to not exert costly effort after being promoted, managers will be better off hiring the superior external candidate rather than promoting the internal employee (Waldman [2003]). However, as described earlier, gift exchange theory predicts that managers will often choose to promote their employees despite their higher cost of effort because managers

want to respond in kind to their employees' gift of high effort (i.e., gifting effect).

Moreover, we predict that managers will also have expectations that employees who choose to exert high costly effort before the promote/hire decision will continue to exert high effort after being promoted (i.e., signaling effect), despite having no pecuniary incentive to do so. Prior research in other settings has documented that individuals often place trust in the signals sent by others, even when they know that the senders have incentives to deceive them. For example, experiments using cheap-talk sender-receiver games (e.g., Cai and Wang [2006], Sánchez-Pagés and Vorsatz [2007]) find that receivers are more likely to follow senders' recommendations than they should if they expect these senders to maximize their monetary self-interest.⁷ Consistent with this, we expect managers to trust the effort signals sent by employees, even though they understand that employees can renege on those past signals after promotion. Furthermore, Gneezy et al. [2012] find that individuals who engage in costly prosocial behaviors often adopt those behaviors into their self-identity such that they subsequently continue to exhibit consistent prosocial behaviors. Thus, even though neoclassical economic reasoning suggests effort in advance of a promote/hire decision is not a credible signal of postpromotion effort, the behavioral literature indicates that managers who place a nonzero weight on prepromotion effort when making promote/hire decisions might ultimately be better off than managers who ignore effort signals.

In sum, we expect managers' decisions to promote internally rather than hire externally will be contingent on their employees exerting high effort before they make these decisions. This is because managers feel a need to reciprocate high effort and because they expect employees to also exert high effort after the promotion. Thus, our third hypothesis is as follows:

H3: Managers are more likely to promote internally rather than hire externally when employees exert higher effort before the promote/hire decision.

We next consider the effects of performance measurement system precision on managers' promote/hire decisions. Although we expect H3 to

⁷ These experiments use versions of the strategic information transmission game developed by Crawford and Sobel [1982]. In this game, one player (the sender) privately observes the true state of the world and sends a message to another player (the receiver) who then chooses an action that affects both players' payoffs. When the preferences of the sender and the receiver vary, senders have incentives to deceive receivers. If the divergence in interests is large, theory suggests the receiver should ignore the sender's message because it does not convey anything about the true state of the world. Our setting has similarities with a cheap-talk game because employees know their willingness to provide post-promotion effort and can use their current effort to signal their intentions. However, managers also know that employees have incentives to distort the signal to earn the promotion.

generally hold regardless of precision, we also predict that the effect of employee effort on managers' promote/hire decisions will be weaker when the performance measurement system is less precise. The reason is that when managers cannot observe employees' effort with precision, they must make subjective attributions regarding the underlying drivers of employees' noisy output measures.

Under a precise system, managers can accurately observe their employees' effort and decide whether or not it meets their minimum standard for promotion. That is, as described earlier, we expect managers will promote employees who exert high effort and not promote employees who exert low effort.

However, under a less precise system, employee effort is obfuscated by noise. This noise can affect promote/hire decisions in two fundamentally different ways. On one hand, it creates some "moral wiggle room" (Dana, Weber, and Kuang [2007]) for managers who desire to hire the external candidate. Specifically, such managers can choose to attribute high employee output to positive noise and low output to employees' low effort to justify their decision to hire externally. On the other hand, although there is evidence that individuals indeed sometimes engage in such egocentric interpretations of ambiguous information (Wade-Benzoni, Tenbrunsel, and Bazerman [1996], Arnold, Hannan, Tafkov [2018, 2020]), prior literature has also found that managers prefer to "err on the safe side" when evaluating employees' performance based on noisy information (Bol, Kramer, and Maas [2016], Du et al. [2018]), and more generally, that individuals often give acquaintances the "benefit of the doubt" when facing uncertainty (Ganzach and Krantz [1991], Koonce, Williamson, and Winchel [2010], Kachelmeier and Van Landuyt [2017]). For example, Bol, Kramer, and Maas [2016] and Du et al. [2018] show that managers are more concerned about underestimating employees' performance than overestimating employees' performance, and that managers' performance assessments are more lenient if they need to rely on relatively noisy measures. Similarly, research in management shows that colleagues from the same organization tend to trust each other and interpret ambiguous signals about each other's actions favorably, reinforcing mutual trust (McKnight, Cummings, and Chervany [1998], Weber, Malhortra, and Murnighan [2004]).

Based on prior research, we predict that rather than act self-servingly, managers will tend to give their employees the benefit of the doubt. This means that under a less precise system, managers who observe *high* output will likely promote their employee because they attribute this high output to high effort, even though the high output may have been driven by luck instead. Moreover, even when managers observe *low* output, we expect many managers will still promote their employee because they attribute this low output to bad luck rather than low effort.

Overall, the above arguments lead to the prediction that managers will be more likely to promote their employees rather than hire a superior external

candidate under a less versus more precise performance measurement system. Thus, our fourth hypothesis is as follows:

H4: Managers are more likely to promote internally rather than hire externally when the performance measurement system is less precise.

3.5 EMPLOYEES' EFFORT AFTER PROMOTE/HIRE DECISIONS

Finally, we explore promoted and non-promoted employees' effort after the promote/hire decision when there are no subsequent promotions on the horizon. This situation arises frequently because organizations typically have a finite number of available positions, and there is often uncertainty about when future promotions will occur again given all vacant positions have been filled (DeVaro [2006]).

There are several opposing factors that can affect the effort choices of employees who receive promotion and those who do not. For promoted employees, they may view their past high effort before the promote/hire decision as a signal and implicit obligation to continue to exert high effort after promotion, as consistent with the social norm of promise-keeping (Bicchieri [2006], Douthit, Kearney, and Stevens [2012]). Alternatively, promoted employees can decide to reduce their effort after promotion because they view their promotion as a reward for their past gift of effort. Thus, they can rationalize that they have fulfilled their social contract of gift exchange and that further reciprocation is unnecessary. Because there is no pecuniary incentive to exert costly effort after the promote/hire decision, employees' reduction in effort is also a response consistent with the neoclassical economic predictions.

For non-promoted employees, they are also unlikely to exert high effort in the absence of pecuniary incentives. Even so, within the range of possible low effort levels, employees can decide whether to exert some level of costless effort, or none at all to punish their managers for passing them over for promotion. Whether non-promoted employees decide to punish their managers likely depends on the extent to which they feel they deserved the promotion. Some non-promoted employees may accept that the external candidate deserved the promotion because of their lower cost of effort. This may occur more under a less precise system because employees understand that managers cannot directly infer their past costly effort. Other non-promoted employees, especially those who exerted costly effort before the promote/hire decision, may feel that they deserved to be promoted, which can potentially lead them to react in a negative retaliatory way (Harvey and Martinko [2009], Fisk [2010]).

Given the different factors that can affect promoted and non-promoted employees' effort after the promote/hire decision, we leave this as an open empirical question:

RQ: What will be promoted and non-promoted employees' effort after the promote/hire decision?

4. Method

4.1 PARTICIPANTS AND PROCEDURES

We recruit participants from a participant pool of business school students at a large U.S. public university.⁸ We collect the data remotely using the LIONESS software program (Giamattei et al. [2020]).⁹ In total, 138 individuals participated in one of six sessions that lasted approximately 60 minutes. On average, the participants are 21 years old, and 75% are female. Participants receive a show-up fee of \$5 in addition to the payoffs from the experiment. In total, they earned an average of \$18.61.

Participants begin by learning their role, reading the instructions, and completing a series of short quizzes to ensure their comprehension. Next, they answer five general knowledge trivia questions. This trivia task is designed to establish a manager-employee relationship by allowing for a basic level of interaction between managers and employees, as exists in typical work environments (Kachelmeier and Van Landuyt [2017]). To prevent the trivia task outcome from potentially influencing participants' decision making in the main task, participants learn neither the trivia answers nor their payoffs from the task until the end of the session.¹⁰

After completing the trivia task, participants proceed to the six work periods described earlier. Recall that during each period, the employee chooses an effort level that is summed with a random noise factor to determine the employee's output and manager's payoff. At the end of stage 1 (i.e., first three work periods), the manager decides whether to fill a new higher-level job by promoting the original employee or hiring the external candidate whose cost of effort is lower than that of the employee.¹¹ After

⁸ The university's Institutional Review Board reviewed and approved the experiment.

⁹ Each remote session takes place in a Zoom meeting room. At the start of each session, a facilitator gives an overview of the experiment procedure and provides the link to the LIONESS instrument. During the sessions, the participants' video and private chat functions are disabled and participants replace their name on Zoom with a randomly assigned participant number to ensure anonymity during the experiment.

¹⁰ The trivia questions are multiple-choice, image-based questions. For example, participants see an image of the Machu Picchu ruins with the question "Where is this landmark?" Using images prevents participants from copying and pasting a text-based trivia question into a search engine. Participants have 30 seconds to answer each question. For each question, the manager and employee first provide an initial answer and report their level of confidence in that answer. They then see each other's initial answer and confidence level before independently selecting their final answers. If either the manager or employee correctly answers the trivia question, they both receive 60 points. Thus, if they both answer the question correctly, they each receive 120 points. The external candidate answers the same five trivia questions and receives 120 points for each correct answer without any help from others. Although we conjecture that the trivia task may have helped facilitate the gift exchange between the employee and manager, we cannot establish this empirically because all employees and managers participated in the task.

¹¹ We note that prior to revealing the external candidate's cost schedule and managers making their promote/hire decision, managers make a nonbinding response to a question that

the promote/hire decision, the employee and external candidate perform the same effort selection task in stage 2 (i.e., last three work periods). At the end of the experiment, participants complete a postexperimental questionnaire.

4.2 KEY DESIGN FEATURES

Several design features of the experimental setting are worth elaborating. First, we have employees perform an effort selection task as opposed to a real effort task to (1) better capture the personal cost of effort, (2) separate the potential confounding effects of effort and ability, (3) maintain greater experimental control over the parameters and payoff functions, and (4) be better able to attribute effort decisions to their intentions. One consequence is that because employees' ability (i.e., cost of effort) is assigned and not "earned," they are less likely to feel "entitlement" over their ability (Naumann, Minsky, and Sturman [2002]). However, because our hypotheses rely on gift exchange theory that is based on employees' effort decisions rather than their internalization of ability, this design choice is unlikely to affect our results.

Second, employees only learn the random noise factors of the previous three work periods at the end of stage 1 and stage 2. This eliminates the possibility that the noise factor influences employees' effort selection. Further, we preselect and hold constant the random noise factors for all firms and conditions. Third, before the first work period begins, employees learn that managers will make the promote/hire decision at the end of stage 1, but employees and managers do not learn the external candidate's effort-cost table until the end of stage 1. This reflects practice where there is typically shared knowledge about the timing of staffing a vacant position, but the details of specific external candidates' profiles are unknown until later. Fourth, external candidates do not perform any task in each of the stage 1 work periods and earn a fixed wage of 150 points, which is lower than the fixed wage in both the lower- and higher-level jobs. External candidates never learn about the two different jobs, and thus should be similarly pleased to be assigned to either job. This design minimizes the role of external candidates in affecting managers' promote/hire decisions.

ask whether they would promote their employee based on different cost of effort spreads between their employee and the external candidate (e.g., "I will promote my current employee, even if my employee's cost of effort at every effort level is *a lot/moderately/slightly higher/lower, etc.* than the External Worker's cost of effort"). Although the intent of this question is to make the external candidate's lower cost of effort (i.e., higher ability) salient to the managers later, there is a possibility that this may have some effect on managers' decisions. Although we cannot be sure, it seems more likely that this effect leads managers towards hiring externally over promoting internally, that is, in the opposite direction of H3. In addition, there are no obvious reasons for why and how such an effect would interact with our precision manipulation to affect our results.

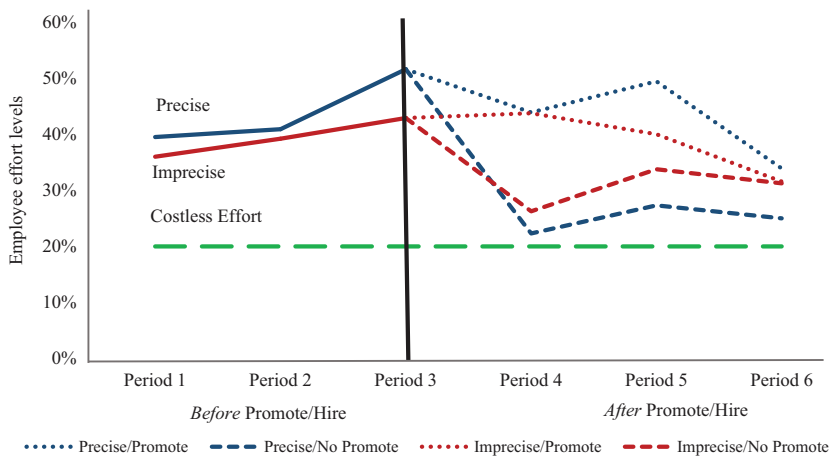


FIG. 2.—This figure provides the average level of effort chosen by employees across work periods and across conditions. Employees chose a level of effort with a corresponding cost of effort as shown in panel A of figure 1. At the end of period 3, the manager makes the promote/hire decision. In the Precise (Imprecise) condition, managers view employees' effort and a random noise factor separately (jointly). Note that the figure only plots the effort levels of the original employees, not of the external candidates hired after the promote/hire decision.

5. Results

We first discuss summary statistics, then test our hypotheses and our research question, and finally provide several supplemental analyses. For expositional ease, we refer to the original, internal employee as the “employee” throughout the results section.

5.1 SUMMARY STATISTICS

Panel A of table 1 and figure 2 present the trend of employee effort across work periods for the Precise and Imprecise conditions. We observe that employees in both conditions choose to exert costly effort both before and after the promote/hire decision. Employees' effort levels increase as the promote/hire decision gets closer, peak in the period immediately prior to the decision (i.e., period 3), and then decrease afterwards. The decrease in effort after the promote/hire decision is greater for non-promoted employees than promoted employees.

Panel B of table 1 summarizes managers' promote/hire decisions. In total, the internal employee is promoted 54.3% of the time. However, promotions occur more often under an imprecise versus precise performance measurement system (66.7% vs. 40.9%). Panel C of table 1 provides employees' effort contingent upon whether or not they were promoted. Average effort levels for stage 1 (i.e., periods 1 to 3) are higher for employees

TABLE 1
Summary Statistics

	Period 1	Period 2	Period 3	Pre-decision		Period 4	Period 5	Period 6	Post-decision
				Effort	Effort				Effort
Precise	39.5% (22.5) [22]	40.9% (20.4) [22]	51.6% (27.2) [22]	44.0% (19.2) [22]	44.0% (19.2) [22]	31.1% (26.6) [22]	36.4% (27.7) [22]	28.6% (17.5) [22]	32.0% (21.5) [22]
Imprecise	36.0% (19.5) [24]	39.2% (15.9) [24]	42.9% (20.4) [24]	39.4% (14.5) [24]	39.4% (14.5) [24]	37.9% (21.4) [24]	37.9% (23.5) [24]	31.5% (21.2) [24]	35.8% (18.3) [24]
Difference	3.5%	1.7%	8.7%	4.6%	4.6%	-6.8%	-1.5%	-2.9%	-3.8%

	Promote	Hire external	Pearson's χ^2 test
Precise	9 (40.9%)	13 (59.1%)	$\chi^2 = 3.07$
Imprecise	16 (66.7%)	8 (33.3%)	$p = 0.08$
Difference	-7	5	
Combined	25 (54.3%)	21 (45.7%)	

(Continued)

Panel B: Frequency (percentage) of promote/hire decisions across conditions

TABLE 1—(Continued)

	Panel C: Average (Std. Dev.) [Obs.] Employee effort across promote/hire decisions and conditions			
	Pre-decision Effort		Post-decision Effort	
	Non-promoted Employees	Promoted Employees	Non-promoted Employees	Promoted Employees
Precise	33.6% (10.3) [13]	59.1% (19.4) [9]	24.9% (15.0) [13]	42.4% (25.8) [9]
Imprecise	34.8% (14.3) [8]	41.7% (14.4) [16]	30.4% (22.5) [8]	38.4% (16.0) [16]
Difference	-1.2%	17.4%	-5.5%	4.0%
Combined	34.0% (11.7) [21]	47.9% (18.1) [25]	27.0% (17.9) [21]	39.9% (19.6) [25]

This table provides descriptive data. Panel A provides the employee effort across periods and conditions. Panel B provides the count of promotions versus external hires across conditions. Panel C provides average pre-decision effort and average post-decision effort across conditions and promotions versus external hires.

TABLE 2
Test of H1 and H2

Panel A: Wilcoxon signed-rank test of employees' pre-decision effort levels and the costless effort level

	Period 1	Period 2	Period 3	Ave. of Periods 1–3
Precise	39.5% vs. 20% n = 22 z = 3.90 p < 0.01 p _{BA} < 0.01	40.9% vs. 20% n = 22 z = 3.61 p < 0.01 p _{BA} < 0.01	51.6% vs. 20% n = 22 z = 3.94 p < 0.01 p _{BA} < 0.01	44.0% vs. 20% n = 22 z = 4.09 p < 0.01 p _{BA} < 0.01
Imprecise	36.0% vs. 20% n = 24 z = 3.32 p < 0.01 p _{BA} < 0.01	39.2% vs. 20% n = 24 z = 3.82 p < 0.01 p _{BA} < 0.01	42.9% vs. 20% n = 24 z = 4.10 p < 0.01 p _{BA} < 0.01	39.4% vs. 20% n = 24 z = 4.12 p < 0.01 p _{BA} < 0.01

Panel B: Repeated measures ANOVA examining employee effort as a function of work period and condition

	df	MS	F-Stat	p-value
<i>Precision</i>	1	29.7	0.87	0.36
<i>Period</i>	2	44.9	4.64	0.01
<i>Precision</i> × <i>Period</i>	2	6.0	0.62	0.54
Residual	88	9.7		

This table provides the test of H1 and H2. Panel A provides the results of Wilcoxon signed-rank tests comparing average employee effort across conditions compared to employees' costless effort level. p_{BA} provides the Bonferroni adjusted p-values. Panel B provides the result of a repeated-measures ANOVA with period 1–3 data. *Precision* is an indicator variable coded 1 (0) when an observation is from the Precise (Imprecise) condition. *Period* is a factor variable that indicates whether the observation is from period 1, period 2, or period 3.

who end up being promoted than for those who do not (47.9% vs. 34.0%). Further, promoted employees choose higher effort levels in the three periods after the promote/hire decision than non-promoted employees (39.9% vs. 27.0%). Overall, these descriptive results are consistent with our theoretical predictions.

5.2 TEST OF H1 AND H2—EMPLOYEES' EFFORT BEFORE THE PROMOTE/HIRE DECISION

Our first formal test is to examine whether, in contrast to neo-classical economic predictions, employees give costly effort before the promote/hire decision (H1). Recall that the economic incentives in our setting are such that employees should always only give *costless* effort. In contrast to this prediction, panel A of table 2 reveals that for all work periods prior to the promote/hire decision, employees choose significantly

higher effort levels than the highest *costless* effort choice of 20% (all $z \geq 3.32$; all Bonferroni adjusted $p < 0.01$), supporting H1.^{12,13}

To further support the notion that employees give costly effort before the promote/hire decision, we compare employees' average level of costly effort (i.e., effort level *above* the maximum level of costless effort) in periods 1–3 to external candidates' average level of costly effort in periods 4–6.¹⁴ Recall that an external candidate joins the firm after the promote/hire decision and can choose to exert costly effort that benefits the manager, even though there are no pecuniary incentives to do so. Therefore, we use the external candidates' effort after joining the firm as a baseline to compare employees' pre-decision effort.¹⁵ An untabulated Wilcoxon signed-rank test reveals that employees choose higher levels of costly effort prior to the promotion decision compared to external candidates' costly effort upon joining the firm (21.6% vs. 12.9%; $z = 2.37$; $p = 0.02$). Overall, these results further support our theory for H1.

We next test whether employees increase their effort closer to the promote/hire decision (H2). To formally test H2, we perform a repeated measures ANOVA using effort in periods 1–3 as the dependent variable, and indicator variables for performance measurement precision (*Precision*) and time periods (*Period*). Consistent with H2, panel B of table 2 shows a significant effect for *Period* ($F = 4.64$; $p = 0.01$). Consistent with our theory that employees believe their effort in the period immediately prior to the promote/hire decision will have the greatest influence on the manager's decision, additional Wilcoxon sign-rank tests indicate that period 3 effort is significantly higher than both period 1 and period 2 effort (47.1 vs. 37.7 and 40.0; $z = 2.68$ and $z = 2.01$; both $p \leq 0.04$, untabulated), providing further support for H2.¹⁶

¹² All reported p -values are two-tailed. Whenever we use multiple simultaneous tests to evaluate the support for hypotheses or make multiple unplanned post hoc comparisons, we calculate p -values using a Bonferroni correction.

¹³ A Wilk-Shapiro test reveals that effort in each of the work periods is not normally distributed, likely because of the nonlinearity of the cost schedule. Thus, we perform a nonparametric test, the Wilcoxon signed-rank test, for these analyses. We find consistent results when running a series of OLS regressions to test H1 and H2.

¹⁴ To calculate *costly* effort, we subtract the costless effort level (i.e., 20% for employees and 30% for external candidates) from the chosen effort level.

¹⁵ Given our focus on the employee and manager, we intentionally minimize the likelihood of external candidates putting forth different effort levels across conditions by not informing them of the higher and lower level position (and the corresponding pay difference) and by not creating any pecuniary incentive to put forth costly effort. For completeness, we run a factorial ANOVA with external candidate effort as the dependent variable and *Precision* and *Promote* as the independent variables. We find no main effects and no interaction effect (all $F \leq 0.83$; all $p \geq 0.37$).

¹⁶ In the post-experimental questionnaire we ask employee participants the following questions about their effort in stage 1, i.e., before the promote/hire decision (Q1) I wanted to increase my chances of being promoted by my supervisor, and (Q2) I wanted my supervisor to know that I chose high effort levels (responses are on a 7-point Likert Scale with 1 = "Not at all," 4 = "Moderately," and 7 = "Very much"). We compare the responses to Q1 and Q2 for

We further observe that the results for H2 are stronger in the Precise condition than in the Imprecise condition. Specifically, in untabulated tests, we find that period 3 effort is significantly higher than both period 1 and 2 effort in the Precise condition (51.6 vs. 39.5 and 40.9; both $z \geq 1.69$; both $p \leq 0.09$), but this is not the case in the Imprecise condition (42.9 vs. 36.0 and 39.2; both $z \leq 1.35$; both $p \geq 0.18$). We interpret these results as suggesting that employees are more willing to exert high costly effort under a more precise system because they recognize that their gift and signal of effort before the promote/hire decision will be more apparent to their managers, and that their managers will only promote them if their effort is sufficiently high.

5.3 TEST OF H3 AND H4—MANAGERS' PROMOTE/HIRE DECISIONS

We next examine managers' promote/hire decisions. H3 predicts that managers are more likely to promote internally rather than hire externally when employees exert higher effort before the promote/hire decision. To test this, we perform a logistic regression with a dichotomous dependent variable (*Promote*) coded 1 (0) if the manager promotes the employee (hires the external candidate) to the higher-level job, and *Pre-Decision Effort* and the interaction term *Pre-Decision Effort* \times *Precision* as the independent variables. We include the interaction term based on our theory that managers are more likely to promote internally under a less precise system because they give employees the benefit of the doubt even when they observe low output.

Consistent with H3, we observe a significant positive coefficient for *Pre-Decision Effort* in model 1 of table 3 (coef. = 0.08; $z = 2.70$; $p < 0.01$), indicating that the manager's likelihood of promoting internally increases as the employee chooses higher effort. We also observe *Precision* is negatively associated with employee promotion, indicating that managers are more likely to promote under an imprecise versus precise system (coef. = -1.57 ; $z = -2.97$; $p = 0.05$). Overall, these results support H3.

We next examine whether managers' likelihood of promoting internally rather than hiring externally is higher under an imprecise versus precise system (H4). A Pearson's chi-square test reported in panel B of table 1 confirms that the percentage of managers who choose to promote internally is marginally significantly higher under the imprecise versus precise system (66.7% vs. 40.9%; $\chi^2 = 3.07$; $p = 0.08$), providing support for H4.

employees whose effort spike puts them in the top 10% of all employees to the remaining employees. We measure the effort spike as the difference between period 3 effort and the average of period 1 and period 2 effort (Mean = 8.2%, Std. Dev = 18.36%; Range = $[-20\%$ to 60%]). We find significantly higher responses to Q1 and Q2 for the subsample of employees with the effort spike (Q1: 6.2 vs. 4.9; $z = 1.76$; $p = 0.08$; Q2: 5.4 vs. 3.8; $z = 2.00$; $p = 0.05$). If we use an alternative cutoff point of 15% instead of 10% the differences remain significant. (Q1: 6.1 vs. 4.8; $z = 2.01$; $p = 0.04$; Q2: 5.3 vs. 3.7; $z = 2.25$; $p = 0.02$). These results support our theory that employees spike their effort to improve their promotion prospects.

TABLE 3
Logistic Regression Examining Promotion Determinants (Test of H3 and H4)

	Model 1	Model 2	Model 3	Model 4
<i>Pre-Decision Effort</i>	0.08*** (2.70)	0.07** (2.26)	–	–
<i>Precision</i>	–1.57** (–1.97)	–1.45* (–1.73)	–	–7.65** (–2.15)
<i>Pre-Decision Effort</i> × <i>Precision</i>	0.10 (1.58)	0.14** (1.94)	–	–
<i>Gender</i>	–	–1.62* (–1.78)	–	–1.91** (–1.94)
<i>Period 1 Effort</i>	–	–	0.04* (1.64)	0.06* (1.64)
<i>Period 2 Effort</i>	–	–	0.01 (0.37)	–0.00 (–0.10)
<i>Period 3 Effort</i>	–	–	0.02 (0.97)	0.02 (0.80)
<i>Precision</i> × <i>Period 1 Effort</i>				0.07 (0.98)
<i>Precision</i> × <i>Period 2 Effort</i>				0.01 (0.09)
<i>Precision</i> × <i>Period 3 Effort</i>				0.07 (1.26)
Observations	46	46	46	46
LR Chi ²	17.48	20.96	9.77	22.89
Pseudo R ²	0.28	0.33	0.15	0.36

Coefficients (Z-scores) provided. *, **, *** indicate two-tailed statistical significance at the 0.10, 0.05, and 0.01 levels, respectively. This table provides the test of H3 and the theory underlying H4. The dependent variable is coded 1 (0) if the manager promotes the employee (hires the external candidate) to the higher-level job. *Pre-Decision Effort* is the mean-centered average of an employee's effort in periods 1–3. *Precision* is the mean-centered average of an indicator variable that takes the value of 1 in the Precise condition and 0 in the imprecise condition. *Gender* is an indicator variable that takes the value of 1 (0) when the manager is male (female).

Model 1 of table 3 also provides marginal support for our argument that the effect of precision on managers' promote/hire decisions depends on employees' past effort based on the *Pre-Decision Effort* × *Precision* term (coef. = 0.10; $z = 1.58$; $p = 0.11$). However, an additional analysis reveals a main effect for gender in the promote/hire decision. Specifically, independent of other effects, females are more likely to promote internally than males (31.3% vs. 66.7%; $z = 2.23$; $p = 0.03$, untabulated).¹⁷ Therefore, we include an indicator variable coded 1 for males, 0 for females (*Gender*) and rerun the regression. Model 2 reveals that, controlling for gender, *Pre-Decision Effort* × *Precision* is significantly associated with *Promote* (coef. = 0.14; $z = 1.94$; $p = 0.05$). We note that controlling for gender does not change

¹⁷ Experimental evidence on trusting and reciprocal behaviors across gender is mixed. Buchan, Croson, and Solnick [2008] and Garbarino and Slonim [2009] find that females are less trusting but more reciprocal and trustworthy than males, whereas Dittrich [2015] find that females are both less trusting and less reciprocal than males. Further research is necessary to examine and reconcile these mixed results.

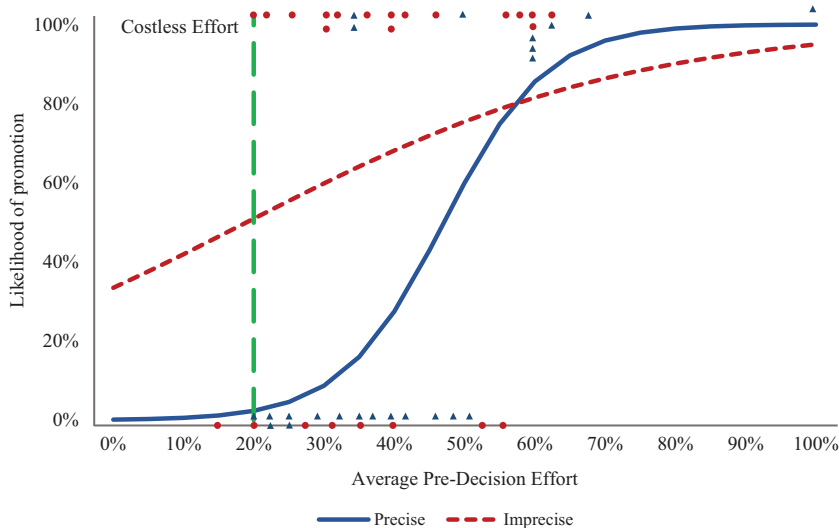


FIG 3.—This figure provides the likelihood of promotion as a function of average effort levels prior to the promote/hire decision across conditions. The triangles (circles) represent the raw data for the Precise (Imprecise) conditions. Those data at 0% (100%) likelihood of promotion represent employees that did not (did) receive a promotion. Although not shown in the figure, the 90% confidence intervals for the two lines do not overlap for average pre-decision effort levels between 15% and 40%. Pre-decision effort is the average effort levels across the first three work periods. In the Precise (Imprecise) condition, managers view employees’ effort and a random noise factor separately (jointly).

our inferences for H1, H2, H3, or for our research question, as described below.¹⁸

Figure 3 provides a visual representation of the interaction using the adjusted predictions (i.e., predictive margins) from model 1. On the y-axis is the probability of promotion, on the x-axis is average effort level across the first three work periods. Examining average marginal effects, we observe that with relatively low costly effort (i.e., effort levels less than 45%), employees are significantly more likely to receive a promotion under an imprecise versus precise system (all $p \leq 0.04$, untabulated). However, for effort levels at or above 45%, there is no difference in promotion likelihood between a precise and imprecise performance measurement system (all $p > 0.25$, untabulated). Overall, these results support our theory underlying H4.

¹⁸ We also run a logistic regression with *Pre-Decision Effort* and the variance of effort across the first three periods as independent variables to determine if managers focus on the absolute levels of effort or the variation in effort when making their promote/hire decision. We find that early effort variance is not a significant predictor of managers’ promote/hire decisions ($z = 0.50$; $p = 0.62$). Further, we find that including early effort variance as an additional independent variable in the regressions reported in table 4 does not change our inferences for H4.

To further understand what performance information managers anchor on when making their promote/hire decision, we examine the effects of employees' effort in each work period and the change in effort from period 1 to 3 on managers' promote/hire decisions. We use the same logistic regression, but decompose *Pre-Decision Effort* into *Period 1 Effort*, *Period 2 Effort*, and *Period 3 Effort*, and then in a separate analysis controlled for *Gender*, *Precision*, and the interaction terms of each period of pre-decision effort with *Precision*.

As shown in models 3 and 4 of table 3, managers appear to anchor on employees' effort in the first period. In particular, we find that *Period 1 Effort* is positively associated with the likelihood of promotion (coef. = 0.04 and 0.06, respectively; both $p = 0.10$), but there is no significant effect for *Period 2 Effort* and *Period 3 Effort*. As a robustness test, we run the same analysis but replace *Period 2 Effort* and *Period 3 Effort* with the change in effort from period 1 to period 2, and from period 2 to period 3, respectively. In untabulated results, we again find that *Period 1 Effort* is positively associated with the likelihood of promotion both without and with controls (both coef. = 0.33; $z = 2.43$ and 2.13 ; $p = 0.02$ and 0.03 , respectively), but the changes in effort for the subsequent two periods are both insignificant (all $z \leq 1.24$; $p \geq 0.22$). A caveat to these results is that because employees often provide their lowest effort in the first period, we cannot cleanly distinguish between managers anchoring on employees' initial effort versus minimum effort.

5.4 RESEARCH QUESTION—EMPLOYEES' EFFORT AFTER THE PROMOTE/HIRE DECISION

We next examine employee effort after the promote/hire decision. Recall that we abstracted away direct pecuniary incentives from our setting such that neoclassical economic reasoning predicts that employees will neither give any costly effort *before* the promote/hire decision, because it should not affect their managers' choice, nor *after* the promote/hire decision, because there are no future economic benefits. That is, wealth-maximizing promoted and non-promoted employees are expected to give the same level of costless effort.

In contrast, as shown in panel A of table 4, we find that promoted employees choose significantly higher effort than non-promoted employees both before (47.9% vs. 34.0%; $z = 2.82$; Bonferroni adjusted $p = 0.01$) and after (39.9% vs. 27.0%; $z = 2.25$; Bonferroni adjusted $p = 0.07$) the promote/hire decision. Although there is a drop in promoted employees' effort from pre- to post-decision of -8.0% , their post-decision effort remains significantly higher than the highest costless effort level of 20% ($z = 3.76$; $p < 0.01$, untabulated).¹⁹ This result is consistent with promoted employees

¹⁹ Interestingly, we find that non-promoted employees' postpromotion effort is also marginally higher than the highest costless effort level of 20% ($z = 1.64$; $p = 0.10$). We interpret this result as reflecting a general sense of work obligation among at least some employees to give *some* costly effort, despite not being promoted.

TABLE 4
Effort Levels After the Promote/Hire Decision

Panel A: Effort levels of promoted and non-promoted employees			
	Promoted Employees	Non-promoted Employees	Significance
Pre-Decision Effort	47.9% (18.1)	34.0% (11.7)	$z = 2.82$ $p < 0.01$ $p_{BA} = 0.01$
Post-Decision Effort	39.9% (19.6)	27.0% (17.9)	$z = 2.25$ $p = 0.02$ $p_{BA} = 0.07$
Effort Change	-8.0% (24.7)	-7.0% (17.9)	$z = 0.56$ $p = 0.58$ $p_{BA} = 1.00$
Panel B: Effort levels of promoted employees across performance measurement precision			
	Precise	Imprecise	Significance
Pre-Decision Effort	59.1% (19.4)	41.7% (14.4)	$z = 2.30$ $p = 0.02$ $p_{BA} = 0.06$
Post-Decision Effort	42.4% (25.8)	38.4% (16.0)	$z = 0.45$ $p = 0.66$ $p_{BA} = 1.00$
Effort Change	-16.7% (31.5)	-3.2% (19.3)	$z = 0.71$ $p = 0.50$ $p_{BA} = 1.00$
Panel C: Effort levels of non-promoted employees across performance measurement precision			
	Precise	Imprecise	Significance
Pre-Decision Effort	33.6% (10.3)	34.8% (14.3)	$z = 0.18$ $p = 0.87$ $p_{BA} = 1.00$
Post-Decision Effort	24.9% (15.0)	30.4% (22.5)	$z = 0.44$ $p = 0.68$ $p_{BA} = 1.00$
Effort Change	-8.7% (19.7)	-4.4% (15.6)	$z = 0.54$ $p = 0.61$ $p_{BA} = 1.00$

This table provides the test of our research question. Panels A through C provide average effort (standard deviation) and the results of Wilcoxon rank-sum (Mann-Whitney) tests. p_{BA} provides the Bonferroni adjusted p-values. *Pre-Decision Effort* is the average of an employee’s effort in periods 1–3. *Post-Decision Effort* is the average of an employee’s effort in periods 4–6. *Effort Change* is the difference between *Pre-Decision Effort* and *Post-Decision Effort*.

acting on their past signal of high effort before the promote/hire decision by continuing to exert costly effort.

We next examine whether the precision of the performance measurement system plays a role in how employees respond to receiving or not receiving a promotion. To provide a more complete picture, we examine

both pre- and post-decision effort levels for promoted and non-promoted employees separately across the Precise and Imprecise conditions. As noted in our results for H2, employees in the Precise condition on average select higher effort before the promote/hire decision than employees in the Imprecise condition. Additional analyses indicate that employees who are ultimately promoted drive this result. Specifically, as shown in panels B and C of table 4, we find that pre-decision effort is significantly higher in the Precise versus Imprecise condition for promoted employees (59.1% vs. 41.7%; $z = 2.30$; Bonferroni adjusted $p = 0.06$) but is not significantly different for non-promoted employees (33.6% vs. 34.8%; $z = 0.18$; Bonferroni adjusted $p = 1.00$). Further, we observe no significant differences in post-decision effort across the Precise and Imprecise conditions for both promoted employees (42.4% vs. 38.4%; $z = 0.45$; Bonferroni adjusted $p = 1.00$) and non-promoted employees (24.9% vs. 30.4%; $z = 0.44$; Bonferroni adjusted $p = 1.00$).

Together, these results suggest that promoted employees in the Precise condition put forth high pre-decision effort to secure a promotion and then drop their effort after the promotion to similar lower levels as those in the Imprecise condition. Examining the change from pre- to post-decision effort yields similar insights. The drop in effort for promoted employees in the Precise condition is on average higher in magnitude than the drop in effort for promoted employees in the Imprecise condition, albeit with lower statistical significance likely because of our small sample size (-16.7% vs. -3.2% ; $z = 0.71$; Bonferroni adjusted $p = 1.00$). Despite this drop, as reported earlier, promoted employees continue to put forth relatively high costly effort, even in the absence of any pecuniary incentives and future economic benefits.

We note that one additional possible explanation for employees' reduced effort after the promote/hire decision is that employees prefer distributional equity (e.g., Fehr and Schmidt [1999], Bolton and Ockenfels [2000]). Specifically, because in stage 2 the newly hired external candidate also contributes to the manager's payoff, employees might consider that reducing their effort will result in a more equitable payoff split between themselves and their manager. However, there are reasons to believe that preferences for pay equity are unlikely to fully explain our results. First, preferences for pay equity cannot explain the spike in effort in stage 1 as reported earlier. Second, employees' responses in the post-experimental questionnaire suggest that their selected effort in stage 2 is affected by their gifting and signaling intentions.²⁰ Thus, although preferences for

²⁰ In the postexperimental questionnaire we asked promoted employee participants the following questions about their effort in stage 2, that is, after the promote/hire decision (all responses are on a 7-point Likert Scale with 1 = "Not at all," 4 = "Moderately," and 7 = "Very much"): (Q1) I wanted to avoid incurring high costs of effort, (Q2) I wanted to reward my supervisor for promoting me, (Q3) I wanted my supervisor to know I chose high effort levels, and (Q4) I wanted my supervisor to receive some compensation from my effort levels.

distributional equity can potentially play a role, they cannot fully explain the observed behaviors.²¹

5.5 ADDITIONAL ANALYSES — EXTERNAL CANDIDATE EFFORT AND PAYOFFS BY ROLE

We next analyze the external candidates' level of effort in the last three periods. As described in section 4.2, external candidates are unaware of the two different job levels and of their manager's promote/hire decision. Instead, they are aware only of the compensation they receive for their assigned job. By examining external candidates' postpromotion effort and comparing it with employees' post-promotion effort, we can get a sense of how the promote/hire decision affected total effort at the firm level and managers' payoff. An important caveat is that these findings are parameter-specific and thus might not generalize to all other settings.

Panel A of table 5 presents external candidates' average effort levels. We observe that external candidates choose similar effort levels, regardless of whether they are hired to the higher level or lower-level job (44.8% vs. 41.2%). This result is unsurprising because the external candidates are not aware that there are two different jobs.²² Panel B of table 5 presents the average payoffs by role across promote/hire decisions. As expected, the employees' payoff is significantly higher when the manager promotes internally versus hire externally, and the opposite is true for the payoff of the external candidates. Interestingly, managers' payoff is directionally higher when they promote internally versus hire externally (2,109 vs. 1,904 points). Total effort, calculated as the sum of the employee's and external candidate's selected effort over all periods, is marginally higher when the manager promotes internally versus hires externally (387 vs. 318; $z = 2.38$; Bonferroni adjusted $p = 0.07$). The latter results suggest that, given our parameters, the decision to promote internally can lead to better outcomes for the manager, which we attribute to promoted employees choosing effort levels that compensate for their higher cost of effort compared to the external candidate.

Employees' responses to these questions are consistent with their selected effort in stage 2. Specifically, promoted employees whose postpromotion effort is relatively low score higher on Q1 and lower on Q2 through Q4 than promoted employees who continue to provide relatively high effort after being promoted.

²¹In our postexperimental questionnaire, we measure participants' prosocial, individualistic, and competitive orientations using the instrument of Van Lange et al. [1997]. We find that all inferences remain unchanged when including a control for participants' orientations in our analyses, although the p -value for *Period* in the repeated-measure ANOVA (panel B of table 2) drops from $p = 0.01$ to $p = 0.08$.

²²External candidates' effort levels also did not differ across the Precise and Imprecise conditions in any of the three rounds in stage 2 (all $z \leq 0.33$; all $p \geq 0.74$).

TABLE 5
External Candidates' Effort Levels and Payoffs by Role Across Promote/Hire Decisions

Panel A: External candidates' effort levels in periods 4 through 6				
	Period 4	Period 5	Period 6	Ave. of Periods 4–6
Hired to higher-level job	42.1% (14.8)	46.7% (21.6)	45.7% (20.1)	44.8% (17.0)
Hired to lower-level job	42.8% (19.1)	41.0% (15.1)	39.8% (12.8)	41.2% (12.7)

Panel B: Payoffs by role and total effort across promote/hire decisions			
	Promoted Employee to Higher-Level Job	Hired External Candidate to Higher-Level Job	Significance
Employee Payoff	1,652 (84)	1,126 (66)	$z = 5.79$ $p < 0.01$ $p_{BA} < 0.01$
External Candidate Payoff	565 (36)	1,153 (48)	$z = 5.81$ $p < 0.01$ $p_{BA} < 0.01$
Manager Payoff	2,109 (573)	1,904 (479)	$z = 1.30$ $p = 0.19$ $p_{BA} = 0.77$
Total Effort over All Periods	387 (95)	318 (87)	$z = 2.38$ $p = 0.02$ $p_{BA} = 0.07$

This table provides detail on external candidates' post-promotion effort and payoffs and total effort across roles. Panel A provides the mean (standard deviation) of external candidates' post-promotion effort across rounds. Panel B provides the results of Wilcoxon signed-rank tests comparing payoffs for each role and aggregated effort across promote/hire decisions. Payoffs are expressed in points that convert at the rate of 160 points per U.S. dollar. p_{BA} provides the Bonferroni adjusted p -values.

5.6 SUPPLEMENTAL CONDITION

Recall that our main results show that under a precise system, managers' decision to promote internally rather than hire externally is contingent on employees exerting high pre-decision effort, which we posit is because such effort is informative about employees' gifting and signaling intentions (see test of H3). To further test our theory, we run a supplemental condition that is identical to the Precise condition described earlier, except employees do not choose, but instead are assigned, their pre-decision effort such that employees' effort is no longer informative about their intentions. Although it is unrealistic for employees to have no control over their effort in practice, the purpose is to use a manipulated moderator approach to show that employees' effort (X) no longer influences managers' promote/hire decision (Y) when employees' effort is disassociated from any gift exchange and signaling effects (W) (Asay, Guggenmos, Kadous, Koonce, and Libby [2022]). That is, based on our theory, managers in the supplemental condition should not base their promote/hire decision on employees'

effort *per se* because employees' assigned effort is uninformative about their gifting and signaling intentions.

In the new Precise - No Gift/Signal condition, we inform all participants that the computer program will assign employees their effort levels in rounds 1 to 3.²³ To maximize the comparability of this supplemental condition against the Precise condition in our original experiment, we assign each employee in the supplemental condition the *actual* effort levels selected by an employee in the original condition using a one-to-one matching process (i.e., 22 firms). This way, we hold constant employees' pre-decision effort levels between the two conditions, with the only difference being employees' choice over their pre-decision effort. We hold all other elements of the supplemental condition the same as the original experiment, including the payoff functions, the participant pool, and the data collection process.²⁴

The findings are summarized in table 6. First, panel A of table 6 reveals that the internal promotion rate in the supplemental Precise - No Gift/Signal condition is 54.5% (12 out of 22), which is directionally higher than in the original Precise condition (41.9%), although this difference is not statistically significant ($z = 0.90$; $p = 0.37$, untabulated). We interpret these results to suggest that, in the absence of gifting and signaling effects, many managers exhibit "in-group bias" or loyalty by promoting their current employee over the external candidate despite employees' higher cost of effort (e.g., Tajfel et al. [1971], Brewer [1979]).²⁵

Second, and more importantly, a logistic regression test (panel B) reveals that, unlike in the Precise condition, *Pre-Decision Effort* is not a significant determinant of managers' decision to promote internally in the Precise - No Gift/Signal condition (coef. = 0.03; $z = 1.07$; $p = 0.29$). A combined logistic regression test (panel C) reinforces this result by showing that *Pre-Decision Effort* drives managers' promote/hire decisions when effort is chosen, but not when it is assigned (i.e., significant interaction of *Early Effort*

²³ We focus only on the Precise condition and not the Imprecise condition because our earlier results show that gift exchange is stronger in the Precise condition where managers can directly observe employees' effort without noise. Thus, by comparing the results from our new Precise - No Gift/Signal condition and the original Precise condition, we can isolate the consequences of removing the gifting and signaling effects documented earlier.

²⁴ T-tests reveal no significant differences in participants' demographics (all $t \leq 1.15$; $p \geq 0.25$) or in the number of trivia questions correctly answered ($t = 0.99$; $p = 0.32$) between the supplemental and original conditions.

²⁵ As described earlier, the supplemental condition is mainly designed for theory-testing purposes and is not intended to reflect practice. Thus, although it is interesting to find that managers appear to exhibit "in-group bias" in this condition, we caution against overinterpreting this effect and generalizing it to more realistic settings in which employees should always have some control over their own effort. We further note that the supplemental condition could also be viewed as an extreme case of our Imprecise condition such that employees' effort choices are completely obscured by random "noise." From this perspective, the relatively high frequency of internal promotions in the supplemental condition could also again reflect managers giving employees the "benefit of the doubt."

TABLE 6
Supplemental Condition Results

Panel A: Frequency (percentage) of promote/hire decisions		
	Promote	Hire External
Precise - No Gift/Signal	12 (54.6%)	10 (45.4%)

Panel B: Logistic regression examining promotion determinants: Precise - No Gift/Signal condition	
<i>Pre-Decision Effort</i>	0.03 (1.07)
Observations	22
LR Chi-square	1.29
Pseudo R^2	0.04

Panel C: Logistic regression examining promotion determinants: Both Precise conditions	
<i>Pre-Decision Effort</i>	0.03 (1.07)
<i>Early Effort Choice</i>	-5.44** (-1.95)
<i>Pre-Decision Effort</i> × <i>Early Effort Choice</i>	0.11* (1.80)
Observations	44
LR Chi-square	15.20
Pseudo R^2	0.25

Coefficients (Z-scores) provided. *, **, *** indicates two-tailed statistical significance at the 0.10, 0.05, and 0.01 levels, respectively. This table provides the test of the theory underlying H3. The dependent variable is coded 1 (0) if the manager promotes the employee (hires the external candidate) to the higher-level job. *Pre-Decision Effort* is the average of an employee's effort in periods 1–3. *Early Effort Choice* is a dummy variable that takes on the value 1 (0) if the observation is from the original Precise condition (the supplemental Precise – No Gift/Signal condition).

Choice and *Pre-Decision Effort*; coef. 0.11; $z = 1.80$; $p = 0.07$). Overall, these results further support our theory that managers make promote/hire decisions based on employees' gifting and signaling intentions reflected in their effort choices.

6. Conclusion

In this paper, we examine the drivers of managers' promote/hire decisions and the behavior of employees before and after those decisions. Based on behavioral theory, we hypothesize that this behavior will be characterized by a gift exchange relationship. Consistent with our predictions, we find that employees provide costly effort in advance of a promote/hire decision, and that they increase their effort as the decision becomes imminent. We also find that managers are more likely to promote employees who provide higher effort levels, even if a higher ability external candidate is available. Additional analyses and the results of a supplemental experimental condition suggest that managers' desire to promote their in-

ternal employee is based on their desire to reciprocate employees' gift of past high effort and their expectations that it is also a signal of their future effort. Further, managers seem to anchor their promotion decision on employees' initial effort rather than on the sharp increase in their effort in the period immediately preceding the promote/hire decision.

In addition, we predict and find that the precision of the performance measurement system can influence managers' promote/hire decisions and employees' response to the decision outcome. Specifically, we find that managers are more likely to promote employees under a less precise system mainly because managers give them the benefit of the doubt when they observe low employee output. Further, our results suggest that employees exert greater pre-decision effort under a more precise system to secure the promotion, but subsequently drop their effort level to a similar level as those promoted under a less precise system. Nevertheless, many promoted employees continue to exert high costly effort for their managers after promotion, despite no future economic benefits from doing so.

Our study is subject to a number of limitations that suggest avenues for future research. First, we test our hypotheses using a stylized economic experiment with simple incentive schemes. Specific design features of our experiment that are noteworthy in this respect are that employees are paid a fixed wage, we assign (rather than observe) ability levels, and we use a chosen effort task instead of a real effort task. We made these design choices to create the controlled conditions that provide a clean test of our theory and hypotheses. Future research could examine if the results are different in settings in which incentive schemes are more complex, employees exert real effort, and ability differences reflect acquired skills or talent. For example, if employees were under a performance-based pay scheme, this could change whether managers view their employees' effort before the promote/hire decision as a gift. In this case, employees may have to go above and beyond their job duties to reinforce their gift to their managers. Second, we model a setting in which one manager chooses between one internal candidate and one external candidate. In most real-world settings, there will be multiple internal and external candidates competing for a vacancy. Future research could examine how a larger competition could affect employees' promotion expectations and effort choices as well as managers' promote/hire decisions. Third, the promote/hire decision is sometimes made by a recruitment committee as opposed to a single manager. Future research can examine how promote/hire decisions made by groups may differ from those made by individuals. Finally, our experiment was not designed to test how promote/hire decisions affect employee effort in the long term. It seems likely that the positive effect of a promotion on an employee's effort wears off over time, but future research is needed to establish whether this is indeed the case. We also note that in most real-world settings, a new promotion opportunity will typically emerge after some time, possibly stimulating a new round of gift exchange between employees and managers.

DATA AVAILABILITY STATEMENT

The data and research instrument are available from the authors upon request.

REFERENCES

- ACOSTA, P. "Promotion Dynamics the Peter Principle: Incumbents vs. External Hires." *Labour Economics* 17 (2010): 975–86.
- AGRAWAL, A.; C. R. KNOEBER; and T. TSOULOUHAS. "Are Outsiders Handicapped in CEO Successions?" *Journal of Corporate Finance* 12 (2006): 619–44.
- AKERLOF, G. A. "Labor Contracts as Partial Gift Exchange." *Quarterly Journal of Economics* 97 (1982): 543–69.
- ARNOLD, M. C.; R. L. HANNAN; and I. D. TAFKOV. "Team Member Subjective Communication in Homogeneous and Heterogeneous Teams." *The Accounting Review* 93 (2018): 1–22.
- ASAY, H.S.; R. D. GUGGENMOS; K. KADOUS; L. KOONCE; and R. LIBBY. "Theory testing and process evidence in accounting experiments." *The Accounting Review* 97 (2022): 23–43.
- ARNOLD, M. C.; R. L. HANNAN; and I. D. TAFKOV. "Mutual Monitoring and Team Member Communication in Teams." *The Accounting Review* 95 (2020): 1–21.
- BAI, G.; F. CORONADO; and R. KRISHNAN. "The Role of Performance Measure Noise in Mediating the Relation Between Task Complexity and Outsourcing." *Journal of Management Accounting Research* 22 (2010): 75–102.
- BAKER, G. P. "Incentive Contracts and Performance Measurement." *Journal of Political Economy* 100 (1992): 598–14.
- BAKER, G. P. "Distortion and Risk in Optimal Incentive Contracts." *Journal of Human Resources* 37 (2002): 728–51.
- BANKER, R. D., and S. M. DATAR. "Sensitivity, Precision, and Linear Aggregation of Signals for Performance Evaluation." *Journal of Accounting Research* 27 (1989): 21–39.
- BERG, J.; J. DICKHAUT; and K. MCCABE. "Trust, Reciprocity, and Social History." *Games and Economic Behaviour* 10 (1995): 122–42.
- BERTHEAU, A. "Employer Search Behavior: Reasons for Internal Hiring." *Labour Economics* 73 (2021): 102064.
- BICCHIERI, C. *The Grammar of Society: The Nature and Dynamics of Social Norms*. New York, NY: Cambridge University Press, 2006.
- BIDWELL, M. "Paying More to Get Less: The Effects of External Hiring Versus Internal Mobility." *Administrative Science Quarterly* 56 (2011): 369–407.
- BIDWELL, M., and J. R. KELLER. "Within or Without? How Firms Combine Internal and External Labor Markets to Fill Jobs." *Academy of Management Journal* 57 (2014): 1035–55.
- BOL, J. C.; S. KRAMER; and V. S. MAAS. "How Control System Design Affects Performance Evaluation Compression: The Role of Information Accuracy and Outcome Transparency." *Accounting, Organizations and Society* 51 (2016): 64–73.
- BOLTON, G. E.; and A. OCKENFELS. "ERC: A theory of equity, reciprocity, and competition." *American Economic Review* 19 (2000): 166–193.
- BREWER, M. B. "In-Group Bias in the Minimal Intergroup Situation: A Cognitive-Motivational Analysis." *Psychological Bulletin* 86 (1979): 307–24.
- BUCHAN, N. R.; R. T. CROSON; and S. SOLNICK. "Trust and Gender: An Examination of Behavior and Beliefs in the Investment Game." *Journal of Economic Behavior & Organization* 68 (2008): 466–76.
- CAI, H., and J. T. Y. WANG. "Overcommunication in Strategic Information Transmission Games." *Games and Economic Behavior* 56 (2006): 7–36.
- CANNELLA, B.; S. FINKELSTEIN; and D. C. HAMBRICK. *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. Oxford, UK: Oxford University Press, 2008.
- CHADWICK, C., and A. DABU. "Human Resources, Human Resource Management, and the Competitive Advantage of Firms: Toward a More Comprehensive Model of Causal Linkages." *Organization Science* 20 (2009): 253–72.

- CHAN, W. "External Recruitment Versus Internal Promotion." *Journal of Labor Economics* 14 (1996): 555–70.
- CHAN, E. W. "Promotion, Relative Performance Information, and the Peter Principle." *The Accounting Review* 93 (2018): 83–103.
- CHAN, E. W., and J. B. LILL. The Effects of Explicit Versus Implicit Targets on Worker Performance, Reciprocity, and Trust, and the Role of Peer Benchmarking. Forthcoming in: *Journal of Management Accounting Research*. (2023).
- CHAN, E. W.; J. H. EVANS III; and D. HONG. Losers of CEO Tournaments: Incentives, Turnover, and Career Outcomes. *The Accounting Review* 97 (2022): 123–148.
- CHARNESS, G., and P. KUHN. "Lab labor: What Can Labor Economists Learn from the Lab?" In *Handbook of Labor Economics Volume 4* edited by O. Ashenfelter and D. Card. 2011: 229–330.
- CHEN, C. X., and T. SANDINO. "Can Wages Buy Honesty? The Relationship Between Relative Wages and Employee Theft." *Journal of Accounting Research* 50 (2012): 967–1000.
- CORGNET, B., and R. HERNÁN-GONZÁLEZ. "Revisiting the Trade-Off Between Risk and Incentives: The Shocking Effect of Random Shocks?" *Management Science* 65 (2019): 1096–114.
- CRAWFORD, V. P., and J. SOBEL. "Strategic Information Transmission." *Econometrica* 50 (1982): 1431–51.
- DANA, J.; R. A. WEBER; and J. X. KUANG. "Exploiting Moral Wiggle Room: Experiments Demonstrating an Illusory Preference for Fairness." *Economic Theory* 33 (2007): 67–80.
- DE NISI, A. S., and G. E. STEVENS. "Profiles of Performance, Performance Evaluations, and Personnel Decisions" *Academy of Management Journal* 24 (1981): 592–602.
- DEVARO, J. "Internal promotion competitions in firms." *The Rand Journal of Economics* 37 (2006): 521–42.
- DEVARO, J., and H. MORITA. "Internal Promotion and External Recruitment: A Theoretical and Empirical Analysis." *Journal of Labor Economics* 31 (2013): 227–69.
- DITTRICH, M. "Gender Differences in Trust and Reciprocity: Evidence from a Large-Scale Experiment with Heterogeneous Subjects." *Applied Economics* 47 (2015): 3825–38.
- DOUTHIT, J. D.; L. W. KEARNEY; and D. E. STEVENS. "Can Agent Cheap Talk Mitigate Agency Problems in the Presence of a Noisy Performance Measure? An Experimental Test in a Single- and Multi-Period Setting." *Journal of Management Accounting Research* 24 (2012): 135–58.
- DU, F.; D. H. ERKENS; S. M. YOUNG; and G. TANG. "How Adopting New Performance Measures Affects Subjective Performance Evaluations: Evidence from EVA Adoption by Chinese State-Owned Enterprises." *The Accounting Review* 93 (2018): 161–85.
- FAIRBURN, J. A., and J. M. MALCOMSON. "Performance, promotion, and the Peter Principle." *The Review of Economic Studies* 68 (2001): 45–66.
- FALK, A., and U. FISCHBACHER. "A Theory of Reciprocity." *Games and Economic Behavior* 54 (2006): 293–315.
- FISK, G. M. "I Want It All and I Want It Now!' An Examination of the Etiology, Expression, and Escalation of Excessive Employee Entitlement." *Human Resource Management Review* 20 (2010): 102–14.
- FEHR, E., and S. GÄCHTER. "Fairness and Retaliation: The Economics of Reciprocity." *Journal of Economic Perspectives* 14 (2000): 159–81.
- FEHR, E.; G. KIRCHSTEIGER; and A. RIEDL. "Does Fairness Prevent Market Clearing? An Experimental Investigation." *The Quarterly Journal of Economics* 108 (1993): 437–59.
- FELTHAM, G. A., and J. XIE. "Performance Measure Congruity and Diversity in Multi-Task Principal/Agent Relations." *The Accounting Review* 69 (1994): 429–53.
- Fehr, E.; and K. M. Schmidt. "A theory of fairness, competition, and cooperation." *The Quarterly Journal of Economics* 114 (1999): 817–868.
- FERRIS, G. R.; M. R. BUCKLEY; and G. M. ALLEN. "Promotion Systems in Organizations." *Human Resource Planning* 15 (1992): 47–68.
- GANZACH, Y., and D. H. KRANTZ. "The Psychology of Moderate Prediction: II. Leniency and Uncertainty." *Organizational Behavior and Human Decision Processes* 48 (1991): 169–92.
- GARBARINO, E., and R. SLONIM. "The Robustness of Trust and Reciprocity Across a Heterogeneous US Population." *Journal of Economic Behavior and Organization* 69 (2009): 226–40.

- GIAMATTEI, M.; K. S. YAHOSSEINI; S. GÄCHTER; and L. MOLLEMAN. "LIONESS Lab: A Free Web-Based Platform for Conducting Interactive Experiments Online." *Journal of the Economic Science Association* 6 (2020): 95–111.
- GNEEZY, A.; A. IMAS; L. D. NELSON; A. BROWN; and M. I. NORTON. "Paying to Be Nice: Consistency and Costly Prosocial Behavior." *Management Science* 58 (2012): 179–87.
- GREGORY-SMITH, I., and P. W. WRIGHT. "Winners and Losers of Corporate Tournaments." *Oxford Economic Papers* 71 (2019): 250–68.
- GUSTAFSSON, S., and J. SWART. "‘It’s Not All It’s Cracked Up to Be’: Narratives of Promotions in Elite Professional Careers." *Human Relations* 73 (2020): 1199–225.
- HANNAN, R. L. "The Combined Effect of Wages and Firm Profit on Employee Effort." *The Accounting Review* 80 (2005): 167–88.
- HANNAN, R. L.; F. W. RANKIN; and K. L. TOWRY. "The Effect of Information Systems on Honesty in Managerial Reporting: A Behavioral Perspective." *Contemporary Accounting Research* 23 (2006): 885–918.
- HARVEY, P., and M. J. MARTINKO. "An Empirical Examination of the Role of Attributions in Psychological Entitlement and Its Outcomes." *Journal of Organizational Behavior* 30 (2009): 459–76.
- HECHT, G.; V. S. MAAS; and M. VAN RINSUM. "The Effects of Transparency and Group Incentives on Managers’ Strategic Promotion Behavior." Unpublished working paper, University of Illinois Urbana-Champaign, University of Amsterdam, Erasmus University, 2022.
- HOFFMAN, M.; L. B. KAHN; and D. LI. "Discretion in Hiring." *The Quarterly Journal of Economics* 133 (2018): 765–800.
- HÖLMSTROM, B., and P. MILGROM. "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design." *Journal of Law, Economics and Organization* 7 (1991): 24–52.
- HUSON, M.; R. PARRINO; and L. STARKS. "Internal Monitoring Mechanisms and CEO Turnover: A Long-Term Perspective." *Journal of Finance* 56 (2001): 2265–97.
- JONGJARONKAMOL, P., and V. LAUX. "Insider Versus Outsider CEOs, Executive Compensation, and Accounting Manipulation." *Journal of Accounting and Economics* 63 (2017): 253–61.
- KACHELMEIER, S. J., and B. W. VAN LANDUYT. "Prompting the Benefit of the Doubt: The Joint Effect of Auditor-Client Social Bonds and Measurement Uncertainty on Audit Adjustments." *Journal of Accounting Research* 55 (2017): 963–94.
- KAMPKÖTTER, P., and D. SLIWKA. "Wage Premia for Newly Hired Employees." *Labour Economics* 31 (2014): 45–60.
- KANODIA, C. "Real Effects of Imprecision in Accounting Measurements" *Foundations and Trends in Accounting* 1 (2006): 182–202.
- KANODIA, C.; R. SINGH; and A. E. SPERO. "Imprecision in Accounting Measurement: Can It Be Value Enhancing?" *Journal of Accounting Research* 43 (2005): 487–519.
- KOONCE, L.; M. G. WILLIAMSON; and J. WINCHEL. "Consensus Information and Nonprofessional Investors’ Reaction to the Revelation of Estimate Inaccuracies." *The Accounting Review* 85 (2010): 979–1000.
- KRISHNAN, R.; J. LUFT; and M. SHIELDS. "Effects of Accounting-Method Choices on Subjective Performance-Measure Weighting Decisions: Experimental Evidence on Precision and Error Covariance." *The Accounting Review* 80 (2005): 1163–92.
- KUANG, X., and D. V. MOSER. "Reciprocity and the Effectiveness of Optimal Agency Contracts." *The Accounting Review* 84 (2009): 1671–94.
- KUBE, S.; M. A. MARÉCHAL; and C. PUPPE. "The Currency of Reciprocity: Gift Exchange in the Workplace." *American Economic Review* 102 (2012): 1644–62.
- LAZEAR, E., and S. ROSEN. "Rank-Order Tournaments as Optimum Labor Contracts." *Journal of Political Economy* 89 (1981): 841–64.
- LILL, J. L.; M. J. MAJERCZYK; and I. D. TAFKOV. "Candidate Selection in Business Units: Be the Best or Surround Yourself with the Best?" Unpublished Working Paper. University of Kansas, Georgia State University, 2022.

- MAAS, V. S.; M. VAN RINSUM; and K. L. TOWRY. "In Search of Informed Discretion: An Experimental Investigation of Fairness and Trust Reciprocity." *The Accounting Review* 87 (2012): 617–44.
- McKNIGHT, D. H.; L. L. CUMMINGS; and N. L. CHERVANY. "Initial Trust Formation in New Organizational Relationships." *The Academy of Management Review* 23 (1998): 473–90.
- MILGROM, P. "Employment Contracts, Influence Activities, and Efficient Organization Design." *Journal of Political Economy* 96 (1988): 42–60.
- MILGROM, P., and J. ROBERTS. "An Economic Approach to Influence Activities in Organizations." *American Journal of Sociology* 94 (1988): S154–79.
- MOERS, F. "Performance Measure Properties and Delegation." *The Accounting Review* 81 (2006): 897–924.
- NAUMANN, S. E.; B. D. MINSKY; and M. C. STURMAN. "The Use of the Concept 'Entitlement' in Management Literature: A Historical Review, Synthesis, and Discussion of Compensation Policy Implications." *Human Resource Management Review* 12 (2002): 145–66.
- NAVEEN, L. "Organizational Complexity and Succession Planning." *Journal of Financial and Quantitative Analysis* 41 (2006): 661–83.
- OYER, P., and S. SCHAEFER. "Personnel Economics: Hiring and Incentives." In *Handbook of Labor Economics Volume 4*, edited by O. Ashenfelter, and D. Card. Amsterdam: Elsevier. 2011, 1769–823.
- RABIN, M. "Incorporating Fairness into Game Theory and Economics." *American Economic Review* 83 (1993): 1281–302.
- RAO, H., and R. DRAZIN. "Overcoming Resource Constraints on Product Innovation by Recruiting Talent from Rivals: A Study on the Mutual Fund Industry, 1986–94." *Academy of Management Journal* 45 (2002): 491–507.
- ROSENKOPF, L., and P. ALMEIDA. "Overcoming Local Search Through Alliances and Mobility." *Management Science* 49 (2003): Amsterdam: Elsevier. 751–66.
- ROSEN, S. "The Theory of Equalizing Differences." *Handbook of Labor Economics Volume 1*, edited by O. Ashenfelter and R. Layard. 1986, 641–92.
- SÁNCHEZ-PAGÉS, S., and M. VORSATZ. "An Experimental Study of Truth-Telling in a Sender-Receiver Game." *Games and Economic Behavior* 61 (2007) 86–112.
- SLOOF, R., and M. VAN PRAAG. "The Effect of Noise in a Performance Measure on Work Motivation: A Real Effort Laboratory Experiment." *Labour Economics* 17 (2010): 751–65.
- STEINER, D. D., and J. S. RAIN. "Immediate and Delayed Primacy and Recency Effects in Performance Evaluation." *Journal of Applied Psychology* 74 (1989): 136–42.
- TAJFEL, H.; M. G. BILLIG; R. P. BUNDY; and C. FLAMENT. "Social Categorization and Intergroup Behaviour." *European Journal of Social Psychology* 1 (1971): 149–78.
- TSOULOUHAS, T.; C. R. KNOEBER; and A. AGRAWAL. "Contests to Become CEO: Incentives, Selection and Handicaps." *Economic Theory* 30 (2007): 195–221.
- VAN LANGE, P. A.; E. DE BRUIN; W. OTTEN; and J. A. JOIREMAN. "Development of Prosocial, Individualistic, and Competitive Orientations: Theory and Preliminary Evidence." *Journal of Personality and Social Psychology* 73 (1997): 733–46.
- WADE-BENZONI, K. A.; A. E. TENBRUNSEL; and M. H. BAZERMAN. "Egocentric Interpretations of Fairness in Asymmetric, Environmental Social Dilemmas: Explaining Harvesting Behavior and the Role of Communication." *Organizational Behavior and Human Decision Processes* 67 (1996): 111–26.
- WALDMAN, M. "Ex Ante Versus Ex Post Optimal Promotion Rules: The Case of Internal Promotion." *Economic Inquiry* 41 (2003): 27–41.
- WANG, G.; R. M. HOLMES JR; I. S. OH; and W. ZHU. "Do CEOs Matter to Firm Strategic Actions and Firm Performance? A Meta-Analytic Investigation Based on Upper Echelons Theory." *Personnel Psychology* 69 (2016): 775–862.
- WEBER, J. M.; D. MALHOTRA; and J. K. MURNIGHAN. "Normal Acts of Irrational Trust: Motivated Attributions and the Trust Development Process." *Research in Organizational Behavior* 26 (2004): 75–101

WILLIAMS, C.; P.-L. CHEN; and R. AGARWAL. "Rookies and Seasoned Recruits: How Experience in Different Levels, Firms, and Industries Shapes Strategic Renewal in Top Management." *Strategic Management Journal* 38 (2017): 1391–415.

ZHANG, Y. "The Effects of Perceived Fairness and Communication on Honesty and Collusion in a Multi-Agent Setting." *The Accounting Review* 83 (2008): 1125–46.