

**Participative Budgeting, Psychological Contracts, and
Honesty of Communication**

Ranjani Krishnan
Michigan State University

Eric Marinich
Michigan State University

Michael D. Shields
Michigan State University

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PARTICIPATIVE BUDGETING, PSYCHOLOGICAL CONTRACTS, AND HONESTY OF COMMUNICATION

ABSTRACT: While participative budgeting can improve financial outcomes, it can also influence psychological outcomes by establishing psychological contracts whereby subordinates expect their superiors to fulfill the promise of participative budgeting. When subordinates' expectations are not met, their psychological contracts are breached, which leads to feelings of violation, even when the terms of their economic contracts are fulfilled. We examine whether subordinates whose psychological contracts are breached seek redress with less honest budgetary communications than subordinates whose psychological contracts are fulfilled. As predicted, the experimental results indicate that breach of subordinates' psychological contracts of participative budgeting is associated with lower levels of honesty. Honesty is highest when subordinates have full influence (participative budgeting) on their approved budgets. When subordinates have no influence (authoritarian budgeting) on their approved budgets, their honesty is higher than when they have some influence (consultative budgeting). Furthermore, the effects of previous psychological contract breach on honesty persist in the future, even when psychological contracts are no longer breached.

Keywords: budgeting; honesty; participative budgeting; pseudo-participation; psychological contracts.

I. INTRODUCTION

Organizations routinely use budgeting as an important basis for communicating, planning, motivating, and evaluating performance. Participative budgeting refers to a process in which subordinates are involved with and have influence on the determination of their budgets (Shields and Shields 1998). Research finds that participative budgeting can improve organizational outcomes (Baiman and Evans 1983; Antle and Fellingham 1995; Covaleski et al. 2003). The benefits of subordinates' participation in budgeting are especially salient in the presence of information asymmetry (i.e., when subordinates have better information than their superiors about costs, revenues, or cash flows). Considerable research in accounting investigates the economic and psychological mechanisms by which the effects of participative budgeting occur (Shields and Young 1993; Shields and Shields 1998; Libby 1999; Covaleski et al. 2003).

While participative budgeting can benefit organizations, it can also be the basis of *psychological contracts* between employees and their organizations. Psychological contracts arise from employees' beliefs about the obligations and responsibilities of parties in exchange relationships (Rousseau 1995). Psychological contracts can arise either in the presence or absence of economic contracts.¹ For psychological contracts to exist, employees must believe that mutual obligations exist between them and their organizations (represented by their superiors) and that the other party has made a promise (which could be an implicit promise) to fulfill those mutual obligations (Rousseau 1995). A *breach* of a psychological contract occurs when employees believe that their organization "has failed to meet one or more obligations

¹ Throughout this study, we refer to contracts that are designed using an agency theory perspective as economic contracts. Economic contracts are also referred to as employment contracts (Baiman 1990) and compensation contracts (Lambert 2001, 2007) in the accounting literature. Economic contracts have three distinguishing features (Baiman and Rajan 2002). First, all information is jointly observable by contracting parties. Second, all information is verifiable by a court. Third, they are costless to write and enforce.

within one's psychological contract in a manner commensurate with one's contributions" (Morrison and Robinson 1997, 230). Psychological contract breach leads to feelings of violation, defined as "emotional distress and feelings of anger and betrayal arising from the realization that one's organization has not fulfilled highly salient promises" (Dulac et al. 2008, 1080). We examine the effects of breach of psychological contracts of participation on the honesty of subordinates' budget communications.

Organizations can implement different types of budgeting, which vary in their economic and psychological implications for subordinates (Cotton et al. 1988; Dachler and Wilpert 1978; Wagner 1994). Budgeting can vary in at least three important and related ways. First, budgeting can vary in the influence that subordinates have on their approved budgets (Argyris 1952, 1953). Second, as a result of subordinates' varying influence on their approved budgets, the economic incentives that subordinates face for honest communication can also vary among different types of budgeting. Third, budgeting can vary in subordinates' psychological incentives to report honestly. The type of budgeting that organizations implement, therefore, not only has important financial implications for organizations, but also has important psychological implications for subordinates. Specifically, participative budgeting can influence whether subordinates believe that their psychological contracts of participation have been fulfilled or breached by their superiors during budgeting.

Consistent with the accounting and management literature on budgeting, we investigate three types of budgeting that are commonly found in practice. These three types of budgeting vary in subordinates' influence on their approved budgets and the economic and psychological incentives that subordinates face for honest communication. The three types of budgeting lie on a continuum. At one end of the continuum is the *participative budgeting*, where the purpose of

budgeting is to facilitate the bilateral flow of information. Under this type of budgeting, subordinates make budget requests and superiors take into consideration these requests. If resources are available, then subordinates' budget requests have high influence on superiors' budget allocations. If superiors' budget allocations are different from subordinates' requests, then superiors provide an explanation to subordinates for the difference (Libby 1999). At the other end of the continuum is *authoritarian budgeting*, where the purpose of budgeting is to facilitate unilateral information flows from subordinates to superiors (Baiman and Evans 1983). That is, the primary purpose of authoritarian budgeting is for superiors to elicit information from subordinates in the form of budget requests. Approved budget allocations could be markedly different from subordinates' requests; however, superiors do not provide information to subordinates about the criteria for budget allocations. Between the ends of the continuum is *consultative budgeting*. While the purpose of consultative budgeting is to facilitate bilateral information flows between superiors and subordinates, the subordinates do not receive complete explanations from their superiors for their approved budgets. Under consultative budgeting, information flows upwards from subordinates to their superiors, who use that information along with other information (some of which may be unknown to subordinates, such as the resources available and alternate uses of the resources) to determine budget allocations, which are communicated downwards to subordinates.

Regardless of the type of budgeting that organizations implement, organizations often communicate to subordinates that budgeting is participative. Budgeting, however, may be implemented such that subordinates do not believe that budgeting is participative. Specifically, by communicating that budgeting is participative, organizations can create an expectation such that subordinates believe that their involvement in budgeting will significantly influence their

approved budgets, when in fact their involvement in budgeting has lower influence on their approved budgets than they expect; such participation is termed *pseudo-participation* (Argyris 1952, 1953). Importantly, when organizations communicate that budgeting will be participative, we argue that psychological contracts of participation are established between subordinates and their superiors. When subordinates subsequently experience budgeting that does not meet their expectations of participation (e.g., when budgeting is pseudo-participative), the subordinates' psychological contracts of participation are breached. We investigate whether breach of subordinates' psychological contracts of participation influences the honesty of their budgetary requests (hereafter, honesty).

Unlike economic contracts, psychological contracts do not specify the consequences of breach. To determine whether their psychological contracts are fulfilled or breached, subordinates evaluate their exchange relationships in relation to their psychological contracts. Through such evaluations, subordinates form beliefs about their exchange relationships, which influence their subsequent behavior (Rousseau 1995). If subordinates believe that their superiors have promised participative budgeting but delivered pseudo-participative budgeting, then subordinates are likely to believe that their superiors have broken their promise and that their psychological contracts of participation are breached, resulting in feelings of violation and undermining their trust in their superiors. In these situations, subordinates reevaluate the subordinate-superior exchange relationship and conclude that it is *transactional* (i.e., based entirely on economic currency) rather than *relational* (i.e., based on the socioeconomic currency of trust and loyalty) (Thomson and Bunderson 2003). As a result, we expect that subordinates under pseudo-participative budgeting will communicate less honestly than subordinates under participative budgeting, when their psychological contracts of participation are fulfilled. Based

on the theory of psychological contracts, we also expect that the effects of psychological contract breach will persist in the future even after organizations revise budgeting such that subordinates' psychological contracts are no longer breached.

To test our predictions, we use a laboratory experiment in which budgeting is operationalized at three levels in which participants' involvement in budgeting is held constant, while their influence on their approved budgets (and, as a result, their economic incentives for honest communication) vary. In the participative budgeting condition, participants have full influence on their budgetary allocations (full participation). In the consultative budgeting condition, participants have some influence on their budgetary allocations (some participation). In the authoritarian budgeting condition, participants have no influence on their budgetary allocations (no participation).²

The experimental results support our three hypotheses. First, we provide evidence that participants in the participative budgeting condition believe that their psychological contracts are fulfilled while participants in the authoritarian and consultative budgeting conditions believe that their psychological contracts are breached. Consistent with our first hypothesis, participants respond to breach of their psychological contracts by communicating less honestly than participants whose psychological contracts are fulfilled. Honesty therefore is lower under authoritarian and consultative budgeting than under participative budgeting. Consistent with our second hypothesis, psychological contract breach has a larger negative effect on honesty when budgeting is consultative (i.e., when participants have some influence on their approved) than

² We manipulate whether psychological contracts are fulfilled or breached rather than the presence or absence of psychological contracts. It is rare to find an organization in which employees do not have psychological contracts (Rousseau 1995; Morrison and Robinson 1997). Psychological contracts are pervasive in organizations because employees work interdependently over time within a social context and, as a consequence, form beliefs about their social exchanges which become the basis of psychological contracts.

when it is authoritarian (i.e., when participants have no influence on their approved budgets). We posit that this occurs because subordinates' assess the pseudo-participative relationship as transactional and therefore attempt to extract monetary slack when the opportunity exists. Finally, consistent with our third hypothesis, the effect of psychological contract breach on honesty persists in the future even when psychological contracts are fulfilled in the future.

Our paper makes five contributions to the accounting literature and has implications for accounting practice. First, we provide evidence that subordinates' behavior is motivated by their psychological contracts as well as the economic incentives that different types of budgeting create. Specifically, we are the first study of which we are aware that provides evidence of the types of budgeting under which subordinates are more likely to be motivated by economic or psychological factors. Interestingly, when subordinates' psychological contracts of participation are breached during budgeting, they reduce the honesty of their budgetary communications, even when the terms of their economic contracts are fulfilled.

Second, consistent with the psychology theory of psychological contracts, we provide evidence that psychological contract breach can motivate subordinates to communicate dishonestly even when there is no financial benefit from dishonest communication. This indicates that even in the absence of economic benefits of dishonesty, dishonest communication provides psychological benefits for subordinates whose psychological contracts are breached. Although prior research provides evidence that honesty is driven by economic motives (Baiman and Lewis 1989) and psychological motives such as preferences for reciprocity, honesty, and distributional equity (Evans et al. 2001; Kuang and Moser 2009), we provide evidence that honesty can also be driven by subordinates' psychological contracts and can arise from an

underlying theoretical mechanism that is distinct from preferences for reciprocity, honesty, and distributional equity.

Third, our evidence indicates that consultative budgeting, which is perhaps most common in practice, is likely to lead to negative economic and psychological consequences for organizations and their managers when organizations communicate that this type of budgeting is participative. We provide evidence that subordinates under consultative budgeting expect more influence than they experience and therefore believe that the consultative budgeting is a breach of their psychological contracts of participation. Fourth, prior research provides evidence that pseudo-participative budgeting is associated with negative psychological outcomes such as decreased job satisfaction, organizational commitment, motivation, and performance, as well as increased stress and interpersonal conflict (Argyris 1952; Libby 1999; Shields and Shields 1998). We provide evidence of an additional negative effect of pseudo-participative budgeting—psychological contract breach and decreased honesty. Finally, we provide evidence that the negative economic and psychological consequences of psychological contract breach that occurs under authoritarian and consultative budgeting persist in the future even when budgeting in the future is changed such that it is participative and subordinates' psychological contracts are no longer breached.

The theory and hypotheses are developed in the following section. The experiment is described next, followed by the results and conclusions.

II. THEORY AND HYPOTHESIS DEVELOPMENT

This section develops hypotheses about the effects of fulfillment and breach of subordinates' psychological contracts of participation in budgeting on the honesty of their budget communications.

Psychological Contracts

Psychological contracts represent subordinates' beliefs about their exchange relationships with their organizations (Blau 1964; Rousseau 1995).³ They can arise from a number of factors such as written and oral communications, organizational policies and procedures, and interpersonal interactions. Although they share some common features, psychological contracts are theoretically distinct from gift-exchange or reciprocity-based contracts. Gift-exchange contracts pay higher wages than those predicted by agency theory to motivate subordinates to reciprocate with effort that is higher than the minimum effort required (Fehr and Gächter 2000; Hannan et al 2002; Kuang and Moser 2009). Subordinates under gift-exchange contracts do not believe that they are *obligated* to provide high effort, but rather provide high effort as a gift to the firm because they prefer reciprocity. Psychological contracts do indeed arise from the value placed by subordinates on reciprocity; however, reciprocity is a theoretically distinct construct because while subordinates may prefer reciprocity, they do not necessarily believe that it has been *promised* to them. When subordinates have psychological contracts, they believe that an *obligation* of reciprocity exists, but this belief is held unilaterally by the subordinate.

The operationalization of psychological contracts is also distinct from the operationalization of reciprocity-based contracts. In reciprocity-based contracts, the organization moves first by offering a higher wage, which is reciprocated by the subordinate as higher effort. That is, in reciprocity-based contracts an overt or visible action is required by the organization to signal reciprocity. In psychological contracts, organizations (represented by superiors) are not

³ In the psychological contract literature, the term “contract” is used as a construct to refer to an individual's beliefs about the relationship between the organization and the individual. Although these beliefs are not formally documented in a legal contract, they are like a contract to the individual. The individual expects the psychological contract to be enforced during the exchange process (Rousseau 1995).

required to offer anything; subordinates can nevertheless believe in the existence of a psychological contract based on covert or subtle actions of the organization (Rousseau 1989, 2001). Finally, a psychological contract is an individual-level construct, whereas gift-exchange and reciprocity-based contracts are organizational-level constructs. Rousseau (1989, 126) states that “individuals have psychological contracts, organizations do not.” Next, we analyze how budgeting can give rise to psychological contracts of participation with negative outcomes when breached.

Participative Budgeting and Psychological Contracts

Agency theory establishes conditions under which budget communication between principal and agent improves financial outcomes (Baiman and Evans 1983; Penno 1984; Antle and Eppen 1985; Antle and Fellingham 1995) and research provides evidence of the positive financial effects of participative budgeting on organizational outcomes (Shields and Young 1993; Baiman, Larcker, and Rajan 1995; Baiman and Rajan 2002; Rajan and Reichelstein 2009). Participative budgeting research since Argyris (1952, 1953), however, warns that budgeting can also have negative psychological effects depending on the type of budgeting that organizations implement. When organizations or superiors explicitly or implicitly communicate that budgeting will be participative, subordinates expect that their budget communications will influence their approved budgets. If their actual influence is commensurate with their expectations, then subordinates are likely to believe that their superiors have fulfilled their psychological contracts of participation. In exchange for their superiors’ fulfilled promise of participation, we argue that subordinates are likely to respond by communicating honestly during budgeting.

When subordinates expect that their budget communications will influence their approved budgets (i.e., when they believe that their superiors have promised participative

budgeting), but they subjectively experience less influence than they expected (i.e., when budgeting is pseudo-participative), their psychological contracts are breached. Subordinates who experience psychological contract breach believe that their exchange relationships are fundamentally undermined because their superiors have violated their trust (Rupp and Cropanzano 2002). Subordinates can respond to psychological contract breach in a number of ways including termination of their exchange relationships, reduced effort, sabotage, or dishonesty. Empirical research provides evidence that psychological contract breach leads to decreased performance, lower organizational commitment, and increased turnover (Morrison and Robinson 1997; Dabos and Rousseau 2004). Importantly, we investigate whether breach of subordinates' psychological contracts of participation affects the honesty of their budget communications even when the terms of their economic contracts are fulfilled.⁴

Breach of Psychological Contracts and Honesty of Reporting

Our first hypothesis predicts the effect of psychological contract breach on the honesty of subordinates' budget communications. We expect that subordinates' honesty will depend on whether they come to believe through repeated budget interactions that budgeting is participative or pseudo-participative. We consider a situation in which a subordinate first accepts an employment contract (i.e., economic contract) and then a superior communicates that budgeting at their organization will be participative. Based on the superior's communication, we predict the

⁴ Psychological contract breach evokes a broader set of affective responses relative to breach of procedural or distributive justice. Individuals assess justice based on the fairness of the decision-making process that leads to the allocation of resources (procedural justice) and the allocation of resources relative to effort (distributive justice). Individuals' reactions to psychological contract breach do not arise exclusively in response to their beliefs about procedural or distributive injustice. Indeed the process of resource allocation or the actual outcome is not the driver of the belief that breach has occurred but rather the cognition that the terms of their psychological contract have not been met. While the ratio of inputs to outcomes is used to determine whether justice has been rendered, breach of psychological contract is assessed by comparing outcomes relative to what the individual believes was promised (Morrison and Robinson 1997).

subordinate to expect that his or her budget communications will influence his or her approved budgets. If the subordinate experiences participation (i.e., influence) that is commensurate with his or her expectations, then the subordinate's psychological contract of participation is fulfilled. When subordinates' psychological contracts of participation are fulfilled, they will respond by communicating honestly because they believe that a mutual obligation of honesty exists.

Under pseudo-participative budgeting, however, subordinates' psychological contracts of participation are breached because the subordinates experience budgeting during which their influence on their approved budgets is lower than they expected. Psychological contract breach leads subordinates to engage in an active process of cognitive sense-making, whereby they seek to understand why the contract was breached. If subordinates attribute psychological contract breach to factors that were under the control of their superiors, then the negative feelings associated with breach are heightened.

Unlike breach of an economic contract, subordinates facing breach of psychological contract cannot seek redress from the legal system. Subordinates whose psychological contracts are breached, however, require some type of redress to bridge the discrepancy between the outcomes they believe they were promised and the outcomes they experience. One type of redress that is available to subordinates is dishonest communication. By communicating dishonestly, subordinates are able to retaliate economically and/or psychologically against their superiors for their superiors' failure to fulfill their obligations to the subordinates. Subordinates whose psychological contracts are breached are also likely to recalibrate their beliefs about their exchange relationships with their superiors and conclude that their relationships are transactional and governed by self-interest by both parties. Therefore, based on the psychology theory of psychological contracts, we predict that subordinates' honesty will be higher under participative

budgeting than under pseudo-participative budgeting (i.e., authoritarian and consultative budgeting).

We operationalize participative budgeting following the trust contract in Evans et al. (2001). The trust contract in Evans et al. (2001), however, is designed primarily to investigate the *extent* of honesty in the absence of a cost hurdle and whether honesty is higher than the standard economic assumption of no honesty. Our research on the other hand is interested in testing whether there is a *difference* in honesty between participative budgeting (wherein subordinates' psychological contracts of participation are fulfilled) and pseudo-participative budgeting (wherein subordinates' psychological contracts of participation are breached). That is, we build on the results of Evans et al. (2001) and posit that while individuals will exhibit preferences for honesty and there will be non-trivial honesty in their budget communications under each type of budgeting, the extent of honesty will vary depending on whether subordinates' psychological contracts of participation are fulfilled or breached. Thus,

H1: *Subordinates' honesty will be higher under participative than under pseudo-participative budgeting.*

Breach of Psychological Contracts and Opportunity to Miscommunicate

Consultative budgeting, which is popular in practice, allows subordinates to have some influence on their approved budgets; however, the final budget allocation is at the discretion of the superior who typically reduces the subordinate's budget request in order to account for slack that the superior expects the subordinate to include in the budget request. Relative to participative budgeting, we expect that subordinates under consultative budgeting will believe that they have experienced less participation than they expected and therefore that their psychological contracts of participation will be breached.

Relative to participative and consultative budgeting, authoritarian budgeting is a complete breach of subordinates' psychological contracts of participation. Under authoritarian budgeting, the ratio of benefits promised to benefits received is more imbalanced than under participative or consultative budgeting. Although we expect consultative budgeting to lead to a partial breach of subordinates' psychological contracts and authoritarian budgeting to lead to a complete breach of subordinates' psychological contracts, we predict that consultative budgeting can lead to *higher* dishonesty than authoritarian budgeting because consultative budgeting provides subordinates the opportunity to retaliate against their superiors economically as well as psychologically. Subordinates under authoritarian budgeting, however, can only retaliate psychologically against their superiors by communicating dishonestly because subordinates under authoritarian budgeting have no influence on their approved budget and therefore, on average, cannot benefit monetarily from dishonest communication.

Our operationalization of authoritarian budgeting is based on a hurdle contract (Antle and Eppen 1985; Antle and Fellingham 1995), which we modify such that subordinates are unaware of the cost hurdle *ex ante*. Under our modified hurdle contract, the subordinate first communicates a budgeted cost request to the superior, who then decides whether or not production occurs based on whether the subordinate's budget request is higher or lower than the pre-determined cost hurdle, which is known to the superior, but unknown to the subordinate. Our operationalization of authoritarian budgeting as a modified hurdle contract is necessary for at least two reasons. First, pseudo-participative budgeting is a practice-defined variable. When budgeting is pseudo-participative, subordinates do not know their superiors' resource allocation rules *ex ante* and can only infer their influence on their approved budgets through repeated interaction with their superiors. Further, subordinates under pseudo-participative budgeting do

not receive explanations from their superiors for resource allocations that are inconsistent with the subordinates' budget requests. Therefore, in order to strengthen construct validity, we operationalize authoritarian budgeting as a modified hurdle contract under which subordinates are not informed of the cost hurdle ex ante. Second, consistent with theoretical accounting research and recent empirical studies that investigate hurdle contracts, we do not implement a hurdle contract because it is infeasible in our setting (Arya, Glover and Sivaramakrishnan 1997; Dutta and Fan 2009; Hannan, Rankin and Towry 2010; Poterba and Summers 1995).

Although accounting research considers the hurdle contract to be participative budgeting because the superior's budget allocation decision is based on the subordinate's budget communication (Baiman and Evans 1983), the superior's resource allocation equals the amount of the cost hurdle regardless of the subordinate's budget request in any period in which production occurs. In this way, the subordinate's budget request under authoritarian budgeting has less influence on his or her approved budget than under consultative or participative budgeting. Consistent with the definition of pseudo-participative budgeting, hurdle contracts offer minimal opportunity for subordinate influence. Superiors' budget allocation decisions depend only on whether they report costs above or below a cost hurdle, which is determined by the statistical parameters of the cost distribution. The optimality of the hurdle contract depends on the simplifying assumption that subordinates will be completely dishonest in their budgetary communications in order to maximize slack. If subordinates have preferences for honesty, then the hurdle contract is no longer optimal (Evans et al. 2001; Kuang and Moser 2009).

Subordinates, however, are likely to consider hurdle contracts to be authoritarian budgeting because the only information the superior uses from the subordinate's budget request is whether the requested cost is above or below the cost hurdle. There is no opportunity in a

hurdle contract for bilateral communication between the superior and the subordinate regarding the budget allocation. Therefore, from a psychological perspective, participative budgeting that is implemented as a hurdle contract is likely to give rise to complete breach of subordinates' psychological contracts (i.e., subordinates are likely to believe that the ratio of benefits provided to benefits promised is very low). Under such circumstances, subordinates' budget requests will reflect the complete breach of their psychological contracts. Furthermore, subordinates are likely to reevaluate their psychological contracts and conclude that their employment relationships are transactional and governed by self-interest by both parties. Consequently, subordinates are likely to feel violated and question the integrity of their supervisors (Robinson and Rousseau 1994).

Subordinates who experience authoritarian budgeting, on average, have no opportunity to gain monetary payoffs by reciprocating their superiors' unkind act of breach of psychological contract with dishonest communication. Subordinates may, however, gain psychological redress by communicating dishonestly under authoritarian budgeting to the extent that dishonest communication is interpreted by subordinates as appropriate, reciprocal behavior that reduces cognitive dissonance in subordinates that can arise when subordinates provide honest communication to a superior who has not communicated honestly with the subordinate. Budgetary communication under the hurdle contract therefore likely represents one of two responses to psychological contract breach. First, consistent with psychological contracts theory, subordinates can communicate dishonestly as an emotional reaction to obtain psychological redress for the breach (Rousseau 1995), with no economic implications for either them or their superiors. Second, consistent with the economic theory of the Revelation principle, subordinates can minimize their involvement in and psychological commitment to budgeting and respond by

communicating honestly (Lambert 2001; Myerson 1979). Importantly, subordinates under authoritarian budgeting can only benefit psychologically by communicating dishonestly.

Alternatively, when subordinates' budget requests have some influence on their approved budgets as in the case of consultative budgeting, subordinates have the opportunity to gain monetary as well as psychological payoffs by reciprocating their superior's unkind act of breach of psychological contract with dishonest communication. Dishonesty under consultative budgeting can therefore redress to a greater extent than authoritarian budgeting the imbalance in the ratio of benefits received versus benefits promised. Communicating a cost higher than the actual cost obtains two benefits for subordinates. First, they can obtain additional financial payoffs. Second, they can retaliate and use their influence to punish their superiors for psychological contract breach. Research in economics (Rabin 1993) and psychology (Goranson and Berkowitz 1966) finds that people are willing to punish those who behave unfairly towards them. Subordinates therefore have a greater opportunity to retaliate against and punish their superiors for breach of psychological contract when they have some influence on their approved budgets than when they have no influence. Thus,

H2: *Subordinates' honesty under pseudo-participative budgeting will be higher when they have no influence on their approved budgets than some influence.*

Psychological Contracts and Future Honesty

The first and second hypotheses rely on economic and psychology theories to predict that subordinates' honesty will depend on whether they believe that their psychological contracts are breached by their superiors during budgeting (H1) and on the economic and psychological incentives that subordinates face to retaliate against their superiors for breach of psychological contract (H2). Next, we argue that the effects of psychological contract breach will persist even when subordinates' psychological contracts are subsequently fulfilled. Subordinates whose

psychological contracts have been breached by their superiors are likely to believe that their superiors have abused their trust. Subordinates' beliefs influence not only their current but also their *future* behavior in their exchange relationships. Subordinates' current evaluations of their psychological contracts allow them to form expectations about their future interactions with their superiors (Rousseau 1995; Morrison and Robinson 1997). When subordinates believe that their superiors have violated their trust, they are likely to believe that their superiors will continue to violate their trust in the future, which will influence the subordinates' future behavior. If subordinates believe that their psychological contracts are breached in the current period, then we expect that their responses to psychological contract breach (i.e., lower honesty) will persist in the future even when their psychological contracts are fulfilled because they do not trust their superiors.

H3: *Subordinates' honesty under participative budgeting will be lower when they have previously experienced pseudo-participative budgeting.*

III. EXPERIMENTAL METHOD

Participants

Eighty-two full-time MBA students enrolled in an accounting course at a large public university participated in the experiment. The experiment was conducted in two sessions on the same day. Participants in each session worked independently using their own personal computers. Statistical analysis of the dependent variable between the two sessions did not find a session-specific effect ($p = .82$, two-tailed).

Design and Treatment Conditions

The experiment had three independent variables: budgeting, round, and period. Budgeting was operationalized at three levels, which varied in the degree of influence that subordinates had on their approved budgets and in the economic and psychological incentives

participants faced to communicate honestly:⁵ Under participative budgeting, subordinates had full influence on their approved budgets (hereafter, F). Under authoritarian budgeting, subordinates had no influence on their approved budgets (hereafter, N). Under consultative budgeting, subordinates had some influence on their approved budgets (i.e., influence is non-zero but less than full influence) (hereafter, S). Round was manipulated at two levels and there were five experimental periods in each round. After completing the first round in one randomly assigned budgeting condition, participants were randomly assigned to a different budgeting condition for the second round. For example, participants who were randomly assigned to the F condition in the first five periods were randomly assigned to either the N or S condition in the second five periods. This design enables us to test H3.

In each condition, participants communicated their budget requests to their superiors during budgeting. In the F condition, participants' approved budgets equaled their budget requests each period, as long as their budget requests were within the range of the cost distribution specified in their economic contracts. This is consistent with the trust contract in Evans et al. (2001). In the N condition, participants' approved budgets were independent of their budget requests and equaled the mean of the cost distribution specified in their economic contracts. This is consistent with the hurdle contract in Antle and Eppen (1985) and Evans et al. (2001) with one exception: in the N condition, participants were not aware of the hurdle and only learned about it as they gained experience with their superiors. If the requested cost was greater than the hurdle, then there was no production and the subordinates received only their salary for that period. If the requested cost was less than or equal to the hurdle, then there was full production. In each period in which production occurred, superiors transferred an amount equal

⁵ Involvement in budgeting was held constant across the three budgeting conditions.

to the hurdle cost and subordinates received slack which equaled the difference between the hurdle cost and actual cost, regardless of their budget request and whether they were interested in obtaining slack. Finally, in the S condition participants' approved budgets equaled their budget requests minus a randomly determined cost, as long as their budget requests were within the range of the cost distribution specified in their economic contracts.

Compensation

Participants were compensated using a budget-based compensation plan, which provided financial incentives to overstate the costs of production (Evans et al. 2001). Their compensation was a function of their salary, actual production costs, approved budgets, and donations to charity.⁶ Participants' financial compensation for each period was calculated as:

$$\left. \begin{aligned} C &= S - D && \text{if } A \geq B \\ C &= S + (B - A) - D && \text{if } A < B \end{aligned} \right\} \quad (1)$$

where:

C = compensation;

S = salary;

A = actual cost;

B = approved budget; and

D = donation.

Slack is equal to $B - A$. For participants who communicated honestly, this compensation plan resulted in expected compensation of \$1.00 per period in each experimental condition. Participants' total compensation for the experiment was the sum of their compensation in each of the ten experimental periods.

⁶ Participants had the option to anonymously donate some or all of their payoffs claimed (e.g., slack) to charity. Donations to charity are explained in detail in a later section.

Task Description and Procedure

The experimental task was adapted from Evans et al. (2001). We used a budgeting setting in which participants assumed the role of subordinate managers with private production cost information that they used to communicate their budget requests each period to their hypothetical (i.e., mechanical) superiors who approved their budgets.⁷ The use of hypothetical superiors allowed us to determine in advance the superiors' response to participants' budget requests. This eliminated variance in the operationalization of the three budgeting conditions that would have occurred if human participants assumed the role of the superior managers.

Participants read instructions that explained their role in the experiment, the experimental setting, and their compensation plan. Participants were informed that they and their superiors had entered into an economic contract that stipulated that (1) their actual production cost would be between \$2.00 and \$8.00 in each period and (2) any cost within the range of \$2.00 to \$8.00 was equally likely to occur. Subsequently, participants obtained access to a private production-cost forecasting system, which provided information on actual production costs with 100% accuracy. Participants were informed that their superiors could never obtain access to their private cost information and could never learn whether their budget requests equaled their actual costs. Participants were informed that their superiors would review their budget requests and approve their budgets for the next period and, in order to avoid the use of deception of any kind, participants were informed that their approved budgets may be greater than, less than, or equal to their budget requests.

After reading the instructions, participants completed a pre-experiment quiz on which they were required to score 100% to ensure that they understood the task and compensation plan.

⁷ Participants were not aware that their superiors were hypothetical.

The pre-experiment quiz also confirmed that participants understood that the production cost information that was generated by their private forecasting system could never be accessed by anyone besides themselves. After successful completion of the quiz, the first five experimental periods commenced. Participants were randomly assigned to one of the three budgeting conditions. After the first five periods in one budgeting condition, participants were informed that they had a different superior due to a personnel change in their organization. Participants were then randomly assigned to one of the two budgeting conditions to which they were not assigned in the first five periods. Participants communicated with their new superiors for the remaining five periods. In order to control for end-game effects, participants were not aware that the experiment had ten periods or that the type of budgeting (and their superiors) would change during the experiment.

At the beginning of each budget period, participants privately learned their department's actual production cost for that period with certainty. Next, they communicated their budget request for that period to their superiors. They could choose to communicate budget requests that were equal or unequal to their actual production costs. After they communicated their budget requests to their superiors, they were informed of their approved budgets for that period. In the F condition, participants' approved budgets were exactly equal to their budget requests. In the S condition, participants' approved budgets were equal to their budget requests minus a random cost amount that was uniformly distributed between \$0.80 and \$1.20. In the N condition, participants' approved budgets always equaled the mean of the actual cost distribution (i.e., \$5), regardless of their budget requests.

After budget approval, participants were informed of whether or not production occurred in that period. Production occurred in any period in which participants' approved budgets were

greater than or equal to their actual costs. If production occurred, then participants were informed of the amount of their budget slack (if any) and that nobody in their organization could ever learn whether or not they had slack or the amount of their slack. Budget slack is the difference between participants' approved budgets and their actual costs. Production did not occur in any period in which participants' approved budgets were less than their actual costs (i.e., when a budget deficit existed) because participants were not endowed with money to fund production in excess of their approved budgets.

Donations to charity could be made anonymously by participants who had budget slack. Before the end of each period, participants who had budget slack chose either to anonymously consume all or part of their slack as compensation or to anonymously donate all or part of their slack to charity. The option to donate all or part of their budget slack to charity was provided for participants who wanted to reciprocate their superiors' dishonesty under pseudo-participation by communicating dishonestly themselves, but who did not want obtain money by doing so.

At the end of each period, participants were informed of their compensation for that period and their cumulative compensation for all completed periods. After participants completed all ten experimental periods, they responded to post-experiment questions related to demographic information, factors that influenced their budget requests, and the manipulation of the independent variable. Participants were paid approximately one week following the experiment and their average earnings were \$17.09 for approximately 50 minutes of participation.

Honesty of Budget Communications

The dependent variable is the honesty of participants' budget requests, which is measured following Evans et al. (2001) as the percentage of the payoff available to participants that is *not*

claimed. Honesty is a continuous variable that ranges from 0% to 100%. Specifically, honesty is measured as $\%HONEST = 1 - (\text{payoff claimed} \div \text{payoff available})$, where payoff claimed is the amount of the available payoff claimed by participants based on their budget requests, and payoff available is the amount of payoff available to participants if they communicated completely dishonestly. For example, consider a participant under F whose actual cost of production was \$5.00. The participant's compensation would be maximized when the approved budget equaled \$8.00 (i.e., the highest possible production cost) because the participant could keep the difference between the actual cost of production and the approved budget as compensation. Thus, the payoff available to this participant was \$3.00. If the participant communicated a budget request of \$8.00, then the payoff claimed would be \$3.00 (i.e., \$8.00 budget request – \$5.00 actual cost = \$3.00 claimed) and $\%HONEST = 1 - (\$3.00 \div \$3.00) = 0\%$. Alternatively, if the participant communicated a budget request of \$5.00, then the payoff claimed would be \$0 (i.e., \$5.00 budget request – \$5.00 actual cost = \$0 claimed) and $\%HONEST = 1 - (\$0 \div \$5.00) = 100\%$.

IV. RESULTS

Participants mean work experience was 45 months. Thirty-nine (48%) participants had work experience that included budgeting as a subordinate manager and 21 (26%) participants had work experience that included budgeting as a superior manager. There were no significant effects of work experience on the honesty of participants' communications (all p -values > .50, untabulated); therefore, we did not include these variables in the hypotheses tests.

Participants' responses to a post-experiment questionnaire tested whether the budgeting manipulation was successful. Participants' beliefs about their participation in budgeting were measured by their responses to the following question: "To what extent did your budget requests

influence your superior's budget approval decisions?" The question was asked about participants' first superior manager (i.e., round 1) and then about their second superior manager (i.e., round 2). The question had a response scale from one (no influence) to seven (extreme influence). We estimated a one-way analysis of variance (ANOVA) with budgeting condition (*CONDITION*) as a three-level between-subjects factor and participants' responses to the two post-experiment questions as the dependent variable. Results indicate that participants under F believed that their budget communications influenced their approved budgets more than participants under N and S (round-1 means = 6.19, 2.89, 4.15 respectively, round-2 means = 6.29, 2.37, 3.85 respectively, untabulated). Contrast analysis indicates that all pair-wise differences are significant (round 1 p 's < .02, round 2 p 's < .01). This evidence provides support that the budgeting manipulation was successful.

Descriptive Statistics

Periods 1 – 5

Mean honesty in periods 1- 5 is highest under F (76.60%) and lowest under S (54.03%); mean honesty under N is 64.55% (Appendix, Panel A). The honesty of participants' budget communications ranges from 0% to 100% in each budgeting condition in periods 1 – 5 and is not normally distributed. Participants' requests are completely honest (i.e., %*HONESTY* = 100%) more frequently in the F condition than in either the N or S conditions, regardless of experimental period. Completely honest reports occur with higher frequency in the N condition than in the S condition in all experimental periods in round 1.

Periods 6 – 10

The mean percentages of honesty in periods 6-10 have limited interpretive value without controlling for the type of budgeting faced by participants in the first five periods. Recall that

participants under F in periods 6-10 were assigned to one of the two pseudo-participative budgeting conditions (i.e., N or S) in periods 1-5. For example, participants under F in periods 6-10 had previously experienced breach of their psychological contracts because they were assigned to either the N or S condition in periods 1-5. In Appendix, Panel B, we report the mean percentages of honesty in periods 6-10, however, for completeness.

Test of Hypothesis 1

H1 predicts that subordinates' honesty will be higher under participative budgeting (i.e., F) than under pseudo-participative budgeting (i.e., N and S). We test H1 using data from round 1, which provides insights into subordinates' responses to psychological contract breach when it first occurs (i.e., when subordinates have not previously experienced psychological contract fulfillment or breach during the experiment). We use data for periods 2-5 to test H1. We exclude period 1 because when participants decided their budget request in period 1, they had not yet received budget feedback from their superiors and therefore they could not know if their psychological contracts were fulfilled or violated.⁸

The test of H1 uses a repeated measures analysis of variance (ANOVA) with period (*PERIOD*) as a 4-level within-subjects factor, budgeting condition (*CONDITION*) as a 2-level between-subjects factor (F or N and S), and participants' honesty in periods 2 – 5 as the dependent variable. The mean honesty of budget communications is higher under F (76.17%) than under N and S (57.51%) (Table 1, Panel A). The results of the ANOVA indicate a significant main effect of budgeting (*CONDITION*) on honesty (*%HONEST*) ($F = 6.37, p < 0.01$) (Table 1, Panel B). These results support H1. Thus, budget requests of participants whose

⁸ We do not exclude period 5 data from the test because participants were not aware of the number of periods in the experiment or that they would experience a change in their budgeting conditions during the experiment.

psychological contracts of participation were fulfilled are more honest than budget requests of participants whose psychological contracts of participation were breached. These results provide evidence that breach of subordinates' psychological contracts has repercussions on their honesty, even when the terms of their economic contracts are fulfilled.

Results also indicate neither a significant main effect of period ($F = 2.71, p > 0.10$) nor a significant interaction effect of period-by-condition ($F = 0.66, p > 0.50$), indicating that mean honesty did not significantly change over the experimental periods in any of the three conditions. If, for example, there was a tendency for participants to reduce their honesty over the experimental periods because of learning effects (i.e., if participants learn over multiple periods that dishonesty has no repercussions), then the period variable would have been statistically significant. Further this absence of potential change in mean honesty over periods is not different across the three conditions, as indicated by the insignificant period-by-condition interaction.

Insert

Table

1

Test of Hypothesis 2

H2 predicts that subordinates' honesty will be higher under N than under S. It must be tested using data from the periods in which participants were able to distinguish whether they are in N or S. That is, participants should have been able to distinguish whether their budget communications influenced their approved budgets to some extent (S) or not at all (N). To test H2, we use data from the final two periods of round one (i.e., periods 4 and 5). We exclude period 1 because, as previously stated, participants could not know the type of budgeting because they had not yet received any budgetary feedback. We exclude periods 2 and 3 because in these

periods participants could know that their psychological contracts of participation were breached, but they could not know whether they were in the N condition (where they always received a budget allocation of \$5) or in the S condition (where they always received a budget allocation for an amount less than their request). We therefore assume that three periods of feedback were required before participants could know whether they were in the N or the S condition.

The test of H2 uses repeated measures ANOVA with period (*PERIOD*) as a 2-level within-subjects factor, budgeting condition (*CONDITION*) as a 2-level between-subjects factor, and participants' honesty in periods 4 and 5 as the dependent variable. The mean honesty of budget communications is higher under N (63.26%) than under S (45.72%) (Table 2, Panel A). The results of the ANOVA indicate a significant main effect of the type of pseudo-participative budgeting (*CONDITION*) on honesty (*%HONEST*) ($F = 3.49, p < 0.07$) (Table 2, Panel B). These results support H2.

Neither a significant main effect of period ($F = 1.19, p = 0.28$) nor a significant interaction effect of period-by-condition ($F = 0.01, p = 0.95$) is present. These results indicate that mean honesty did not change over these two periods in any of the conditions. Thus, similar to the findings for the test of H1, the test of H2 does not find evidence of a change in mean honesty over periods.

Insert

Table

2

Test of Hypothesis 3

H3 predicts that subordinates' honesty under participative budgeting will be lower when they have previously experienced pseudo-participative budgeting. To test H3, we compare the mean honesty of participants in the F condition in round 1 with the mean honesty of participants

in the F condition in round 2. All participants in the F condition in round 2 previously experienced breach of psychological contract because they were randomly assigned to either the N or S condition in round 1. If the effects of psychological contract breach persist, even in periods in which psychological contracts are fulfilled, then we would expect that participants' mean honesty in the F condition in round 2 would be lower than their mean honesty in the F condition in round 1.

The test of H3 uses a repeated measures ANOVA with period (*PERIOD*) as a 4-level within-subjects factor, budgeting condition (*CONDITION*) as a 2-level between-subjects factor, and participants' mean honesty in periods 2 – 5 and 7 - 10 as the dependent variable. Recall that the F condition uses data from periods 2 – 5 for participants in the first round because one round of budgetary communication is necessary for them to know that there was no breach of their psychological contract. Using the same logic, data from periods 7 – 10 are used for participants in the F condition in the second round.

The mean honesty of budget communications is lower when subordinates had previously experienced pseudo-participative budgeting (63.23%) than when they have not (76.17%) (Table 3, Panel A). The results of the ANOVA indicate a significant main effect of participative budgeting (*CONDITION*) on mean honesty (*%HONEST*) ($F = 9.60, p < 0.01$) (Table 2, Panel B). These results support H3. Thus, when subordinates experienced pseudo-participative budgeting, the dishonesty of their budget requests continued even in a subsequent period when their psychological contract was not breached.

Table 3

Results in Table 3 show neither a significant main effect of period ($F = 0.99, p = 0.32$) nor a significant interaction effect of period-by-condition ($F = 2.17, p = 0.15$). Therefore, mean honesty does not change over these periods in the two rounds.

Supplemental Analyses

This section reports the results of three analyses: evidence from the post-experimental questions regarding participants' responses to their participative budgeting conditions, firm profit under each of the participative budgeting conditions, and analysis of participants' donation decisions.

Post-Experiment Questions

We used post-experiment questions to measure participants' beliefs about whether their psychological contracts were fulfilled or breached, as well as their beliefs about their superiors' honesty and trustworthiness under each type of budgeting they experienced. Participants responded to the following two questions about whether their psychological contracts were fulfilled or breached. First, participants' beliefs about their superiors' obligations to them were measured by their responses to the following question: "To what extent did your superior manager fulfill his or her obligations to you?" Second, participants' beliefs about their superior's promises to them were measured by their responses to the following question: "To what extent did your superior manager keep his or her promises to you?" The questions were asked about participants' first superior manager (i.e., round 1) and then about their second superior manager (i.e., round 2). Both questions had response scales that ranged from one (not at all) to seven (completely).

Participants under F believed that their superiors' obligations to them were fulfilled to a greater extent than participants under S or N (round 1 means = 6.04, 4.00, 3.00, respectively,

untabulated; round 2 means = 5.89, 3.33, 2.93, respectively, untabulated). Contrast analyses indicate that two of three pair-wise contrasts (F and S, F and N) are significant in both rounds 1 and 2 (p 's < .01). Participants under F believed that their superiors' promises are kept more than participants under S or N (round 1 means = 6.11, 3.59, 3.36, respectively, untabulated; round 2 means = 6.18, 3.52, 2.81, respectively, untabulated). Contrast analyses indicate that two of three pair-wise contrasts (F and S, F and N) are significant in rounds 1 and 2 (p 's < .01). This evidence is consistent with our assumption that participative budgeting is the basis for psychological contracts that are fulfilled under F and breached under N and S.

Participants also responded to two questions about their superiors' honesty and trustworthiness in each round. First, participants' beliefs about their superiors' honesty were measured by their responses to the following question: "To what extent do you believe that your superior was honest?" This question had a response scale that ranged from one (completely honest) to seven (completely dishonest). Second, participants' beliefs about their superiors' trustworthiness were measured by their responses to the following question: "To what extent did you trust your superior manager?" The response scale ranged from one (completely trust) to seven (completely distrust). Both questions were asked twice; first about participants' first superior manager (i.e., round 1) and then about their second superior manager (i.e., round 2).

Analysis of participants' responses to the questions about the honesty and trustworthiness of their superiors yields three results that are consistent with the theory of psychological contracts (Rousseau 1995). First, participants under F in round 1 believed that their superiors were more honest than participants under S or N in round 1 (means = 2.56, 3.93, 4.21, respectively, untabulated). Pair-wise contrast analyses indicate that two of three contrasts (F and S, F and N) are significant (p 's < .01).

Second, participants under F in round 1 trusted their superiors more than participants under S or N (means = 2.33, 4.00, 3.96, respectively, untabulated). Pair-wise contrast analyses indicate that two of three contrasts (F and S, F and N) are significant (p 's < .01). Participants' beliefs that their superiors were less honest and trustworthy when budgeting was pseudo-participative (i.e., in conditions S and N) correspond to lower honesty of budget communications in these conditions relative to the F condition. This is consistent with the theoretical mechanisms driving lower honesty in the S and N conditions relative to the F condition as predicted in H1.

Third, participants in the F condition in round 2, despite their beliefs that their psychological contracts are fulfilled in round 2, believed that their superiors were significantly less honest than participants in the F condition in round 1 (means = 4.26, 2.56, respectively, untabulated; p < .01). Participants in the F condition in round 2 believed that their superiors were significantly less trustworthy than participants in the F condition in round 1 (means = 4.85, 2.33, respectively, untabulated; p < .01). These results provide further evidence in support of the theoretical mechanism driving the prediction in H3. That is, the effects of a previous breach of a psychological contract persist in subsequent periods even when psychological contracts are fulfilled in those periods. Participants' beliefs about the lower honesty and trustworthiness of their superiors translated into lower honesty of subordinate budgetary communication in the second round of F after a previous breach, relative to the first round of F where there was no previous breach, as predicted in H3.

Firm Profit

This section reports analysis of the effects of subordinates' honesty on firm profit. Specifically, we analyze whether the higher honesty of subordinates whose psychological contracts are fulfilled in the F condition translates into higher firm profits relative to the

economically optimal contract (i.e., N), which causes breach of subordinates' psychological contracts. Recall that the firm's actual production cost in each period was distributed uniformly over the range of \$2 to \$8. For the purpose of this analysis, we assume a selling price of \$8. If subordinates' budget requests were aimed at wealth maximization, then expected firm profit is \$0 in each period under F because the subordinates would request \$8 in each period and the superior would approve a budget of \$8 in each period. Subordinates' expected slack under F in each period is \$3. Under N, expected firm profit is \$1.50 and subordinates' expected slack is \$0.75 in each period.⁹ Under S, expected firm profit is \$0.83 and subordinates' expected slack is \$2.08 in each period.¹⁰

Mean realized firm profit in periods 2 – 5 is \$2.21 in the F condition, \$1.49 in the N condition, and \$1.05 in the S condition. Mean firm profit in the F condition is significantly

⁹ Under N, the superior always approves a budget of \$5. If the requested cost is less than \$5, then production occurs and expected firm profit is \$3 (i.e., selling price of \$8 minus the approved budget of \$5). The subordinate's expected slack is \$1.50 (i.e., the approved budget of \$5 minus the actual cost of \$3.50, which is the mean of the uniform cost distribution with a range of \$2 to \$5.) If requested cost is greater than \$5, then production stops, expected firm profit is \$0, and the subordinate's expected slack is \$0. In a uniform distribution with a range of \$2 to \$8, there is a 50% probability that actual cost will be greater or less than \$5 in any period. Therefore, expected firm profit is $(\$3 * 50\%) + (\$0 * 50\%) = \$1.50$, and the subordinate's expected slack is $(\$1.50 * 50\%) + (\$0 * 50\%) = \$0.75$.

¹⁰ Under S, the superior always approves a budget that is randomly less than the subordinate's budget request by a mean of \$1, uniformly distributed between \$0.80 and \$1.20. If actual cost is greater than the approved budget, then there is no production. Assuming a wealth-maximizing subordinate, the budget request will always be \$8. The mean approved budget would be \$7 (i.e., the request of \$8 less the reduction with a mean of \$1). One-sixth of the time the actual cost will be greater than \$7 and the approved budget will be insufficient for production to occur; five-sixths of the time the actual cost will be less than \$7 and the approved budget will be sufficient for production to occur. The expected firm profit during the five-sixths of the time that production occurs is \$1 (i.e., selling price of \$8 less budget allocation of \$7) and the subordinate's expected slack is \$2.50 (i.e., the mean approved budget of \$7 less \$4.50, which is the mean of a uniform cost distribution with the range of \$2 to \$7.) The expected firm profit is \$0 for the one-sixth of the time when there is no production and the expected slack of the subordinate is \$0. Therefore, the firm's expected profit in this condition is $(\$1 * 5/6) + (\$0 * 1/6) = \$0.83$ and the subordinate's expected slack is $(\$2.50 * 5/6) + (\$0 * 1/6) = \$2.08$.

higher than the economic prediction of zero ($p < 0.01$). These results are consistent with the findings of Evans et al. (2001) that individuals have preferences for honesty. Furthermore, the mean profit in the F condition is significantly higher than the mean profit in the N condition ($p < 0.01$). These results provide evidence that the type of budgeting that fulfills subordinates' psychological contracts (i.e., F) outperforms the type of budgeting that is based on the economic contract that assumes that subordinates will report to maximize monetary wealth and disregards subordinates' psychological contracts (i.e., N). The mean profit in the F condition is also significantly higher than the mean profit in the S condition ($p < 0.01$). These results indicate that consultative budgeting, which allows subordinates some influence on their approved budgets, is less likely to encourage honesty than participative budgeting, which gives subordinates more influence on their approved budgets.

Donations

Participants who had budget slack in any period had the option either to anonymously consume all or part of their slack as compensation or to anonymously donate all or part of their slack to charity. The option to donate to charity was provided for participants who wanted to reciprocate their superiors' dishonesty under pseudo-participation by communicating dishonestly themselves, but who did not want to obtain money in the process. We analyze donations as a percentage of total slack (*DONATION*) for all periods in which participants have budget slack. The mean *DONATION* is 18.55% in the F condition, 27.14% in the S condition, and 40.71% in the N condition. Pair-wise contrast analyses indicate that mean *DONATION* is higher in the N condition than in the F condition ($p = .03$).

Dishonesty by participants in the F condition cannot be attributed to breach of subordinates' psychological contracts. In the F condition, slack was earned at the discretion of

subordinates because budget allocations were equal to subordinates' requests. Therefore, any slack that was obtained in the F condition was obtained intentionally. Participants in the N condition, however, sometimes had slack even when they communicated honestly (e.g., when actual cost equaled \$3 and the approved budget equaled \$5). Participants in the N condition, however, donated more than participants in the F condition and preferred not to consume slack even when it was provided to them. This indicates that a significant number of participants are unwilling to benefit from slack, even when they unexpectedly have it.

V. CONCLUSION

Our study provides evidence that breach of subordinates' psychological contracts during participative budgeting influences their behavior even when the terms of their economic contracts are fulfilled. Although participative budgeting improves organizational outcomes in the presence of *ex post* information asymmetries, it also is the basis of subordinates' psychological contracts, which influence their behavior. Subordinates who are told that budgeting is participative are likely to believe that their superiors have promised them significant influence on budgeting. When subordinates subsequently experience less than expected influence (i.e., pseudo-participative budgeting), they are likely to believe that their psychological contracts have been breached, even when the terms of their economic contracts are fulfilled. We provide evidence that subordinates' honesty during participative budgeting depends on whether their psychological contracts with their superiors are fulfilled or breached, and that fulfillment (breach) of subordinates' psychological contracts is associated with higher (lower) honesty during budgeting.

Our evidence also indicates that subordinates are least honest when budgeting is consultative and they have some but not full influence on their approved budgets. Furthermore,

subordinates under consultative budgeting are significantly less likely to believe that their superiors' obligations and promises to them are fulfilled than subordinates under participative budgeting. These results suggest that subordinates are likely to misinterpret the meaning of consultative budgeting.

Subordinates who are informed by their superiors that budgeting is participative expect that budgeting will be participative. When subordinates experience less influence than they expect, they construe budgeting as a breach of psychological contract and seek redress by communicating dishonestly during budgeting. A practical implication of this result is that organizations should have participative or authoritarian budgeting because consultative budgeting results in the lowest subordinate honesty. A second implication of this result is that organizations should provide subordinates with accurate and truthful information about the type of budgeting in the organization. Ambiguity about the type budgeting in an organization provides the opportunity for different interpretations of the degree of influence that subordinates will expect to have on their approved budgets. When subordinates experience budgeting that is inconsistent with their expectations about participative budgeting there are negative economic and psychological consequences for subordinates, superiors, and organizations.

Although our study provides evidence that participative budgeting is the basis of subordinates' psychological contracts that influence their honesty during budgeting, several questions remain unanswered. First, do subordinates revise their psychological contracts in response to changes in their economic contracts? If so, then under what conditions do subordinates revise their psychological contracts? If subordinates do not revise their psychological contracts in response to changes in their economic contracts, then what is the effect of their failure to do so on their behavior and on financial outcomes for the organization?

Economic and psychological contracts influence and are influenced by accounting and by the preferences, beliefs, and behavior of superiors and subordinates in exchange relationships. When organizations enter into economic contracts with their employees, it is important to consider whether and how these contracts also create psychological contracts in employees because psychological contracts influence employees' behavior and affect organizational outcomes.

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TABLE 1
Effect of Psychological Contract Fulfillments and Breach
on Honesty of Budget Communications (H1)

Panel A: Mean (standard deviation) honesty of budget communications by participative budgeting condition for periods 2 – 5

	Period 2	Period 3	Period 4	Period 5	Overall
Participative – Full influence (F)	78.02% (26.03%) n = 26	78.97% (23.16%) n = 26	78.78% (25.03%) n = 26	68.92% (33.04%) n = 26	76.17% (26.81%) n = 104
Pseudo-participative – No (N) & Some (S) influence	65.02% (31.91%) n = 49	53.93% (37.30%) n = 49	57.71% (34.32%) n = 49	53.38% (38.56%) n = 49	57.51% (35.52%) n = 196
Overall	71.52% (28.97%) n = 75	66.45% (30.23%) n = 75	68.24% (29.67%) n = 75	61.15% (35.80%) n = 75	66.84% (31.16%) n = 300

Panel B: Repeated measures analysis of variance

Factor	df	Sum of Squares	F	p-Value (Two-Tailed)
<i>Between-subjects</i>				
CONDITION	2	3.37	6.372	0.003
Error	72			
<i>Within-subjects</i>				
PERIOD	1	0.460	2.710	0.104
PERIOD x CONDITION	2	0.222	0.655	0.522
Error	72			

This table reports the mean honesty of subordinates' communications during participative budgeting when they have full influence (F), no influence (N), and some influence (S) on their approved budgets (Panel A) and the significance of differences in mean honesty among the three conditions (Panel B). H1 predicts that honesty will be higher when budgeting is fully participative (F) than when it is pseudo-participative (N, S). Tests of statistical significance in Panel B are from a repeated measures analysis of variance in which participative budgeting condition is a between-subjects factor with 2 levels (F or N and S), experimental period is a within-subjects factor with 4 levels (periods 2 – 5), and %HONESTY in periods 2 – 5 is the dependent variable. The dependent variable, %HONESTY, is the percentage of monetary payoffs to dishonesty available to participants but not claimed and is calculated as $1 - (\sum_{i=1}^n \text{payoff claimed} \div \sum_{i=1}^n \text{payoff available})$. All p-values are two-sided.

TABLE 2
Effect of Pseudo-Participative Budgeting Type
on Honesty of Budget Communications (H2)

Panel A: Mean (standard deviation) honesty of budget communications by pseudo-participative budgeting condition for periods 4 – 5

	Period 4	Period 5	Overall
Pseudo-participative – No influence (N)	65.40% (31.04%) n = 27	61.13% (42.65%) n = 27	63.26% (36.84%) n = 54
Pseudo-participative – Some influence (S)	48.15% (37.23%) n = 25	43.30% (36.18%) n = 25	45.72% (36.71%) n = 50
Overall	56.77% (34.13%) n = 52	52.21% (39.41%) n = 52	54.49% (36.77%) n = 104

Panel B: Repeated measures analysis of variance

Factor	df	Sum of Squares	F	p-Value (Two-Tailed)
<i>Between-subjects</i>				
CONDITION	1	0.799	3.491	0.068
Error	50			
<i>Within-subjects</i>				
PERIOD	1	0.054	1.194	0.280
PERIOD x CONDITION	1	0.000	0.005	0.945
Error	50			

This table reports the mean honesty of budget communications under pseudo-participative budgeting in which subordinates have no influence (N) and some influence (S) on their approved budgets (Panel A) and the significance of differences in mean honesty among these two conditions (Panel B). H2 predicts that honesty will be higher under N because there are no opportunities to obtain monetary payoffs from dishonesty in this condition. Tests for statistical significance in Panel B are from a repeated measures analysis of variance in which participative budgeting condition is a between-subjects factor with 2 levels (i.e., N or S), experimental period is a within-subjects factor with 2 levels (i.e., periods 4 and 5), and %HONESTY in periods 4 and 5 is the dependent variable. The dependent variable, %HONESTY, is the percentage of the monetary payoffs to dishonesty that is available but not claimed and is calculated as $1 - (\sum_{i=1}^n \text{payoff claimed} \div \sum_{i=1}^n \text{payoff available})$. All p-values are two-sided.

TABLE 3
Effect of Prior Psychological Contract Breach
on Current Honesty of Communication (H3)

Panel A: Mean (standard deviation) honesty of budget communications for full influence condition for periods 2 - 5 and 7 - 10				
Full influence (F) (Periods 2 - 5)		76.17%		
		(26.83%)		
		n = 26		
Full influence (F) (Periods 7 -10)		63.23%		
		(51.11%)		
		n = 27		
Panel B: Repeated measures analysis of variance				
Factor	df	Sum of Squares	F	p-Value (Two-Tailed)
<i>Between-subjects</i>				
CONDITION	1	3.328	9.602	0.003
Error	51			
<i>Within-subjects</i>				
PERIOD	3	0.133	0.991	0.324
PERIOD x CONDITION	3	0.292	2.165	0.147
Error	51			

This table reports the mean honesty of budget communications when psychological contracts have not been previously breached (i.e., F in periods 2 – 5) and when psychological contracts have been previously breached (i.e., F in periods 7 – 10) (Panel A) and the significance of the differences in mean honesty among these two conditions (Panel B). H3 predicts that honesty will be lower when psychological contracts have been previously breached (F in periods 7 - 10) than when psychological contracts have not been previously breached (F in periods 2 - 5). Tests for statistical significance in Panel B are from a repeated measures analysis of variance in which participative budgeting condition is a between-subjects factor with 2 levels (i.e., F in periods 2 – 5 and F in periods 7 – 10), experimental period is a within-subjects factor with 4 levels (i.e., the second, third, fourth, and fifth periods of rounds 1 and 2). The dependent variable, %*HONESTY*, is the percentage of monetary payoffs to dishonesty that is available but not claimed and is calculated as $1 - (\sum_{i=1}^n \text{payoff claimed} \div \sum_{i=1}^n \text{payoff available})$. All *p*-values are two-sided.

APPENDIX
Mean Percentage Honesty of Communication (Standard Deviation)
by Period by Participative Budgeting Condition

Panel A: Round 1 (Periods 1 - 5)

<u>Period 1</u>			<u>Period 2</u>			<u>Period 3</u>		
<u>F</u>	<u>N</u>	<u>S</u>	<u>F</u>	<u>N</u>	<u>S</u>	<u>F</u>	<u>N</u>	<u>S</u>
81.32	67.87	70.99	77.22	72.87	60.62	78.97	57.78	47.42
(24.07)	(35.24)	(26.89)	(25.86)	(30.19)	(33.78)	(23.16)	(37.57)	(38.15)
n = 26	n = 27	n = 27	n = 27	n = 27	n = 26	n = 26	n = 27	n = 26
<u>Period 4</u>			<u>Period 5</u>					
<u>F</u>	<u>N</u>	<u>S</u>	<u>F</u>	<u>N</u>	<u>S</u>			
76.55	63.16	46.80	68.92	61.13	43.30			
(27.15)	(32.69)	(37.12)	(33.04)	(42.65)	(36.19)			
n = 27	n = 28	n = 26	n = 26	n = 27	n = 25			

(CONTINUED)

APPENDIX (CONTINUED)

Panel B: Round 2 (Periods 6 - 10)

<u>Period 6</u>						<u>Period 7</u>					
<u>FN</u>	<u>FS</u>	<u>NF</u>	<u>NS</u>	<u>SN</u>	<u>SF</u>	<u>FN</u>	<u>FS</u>	<u>NF</u>	<u>NS</u>	<u>SN</u>	<u>SF</u>
77.05	63.51	44.16	72.38	64.39	56.13	55.61	53.67	46.76	61.11	66.45	53.89
(27.58)	(33.47)	(36.80)	(29.01)	(30.68)	(37.92)	(40.99)	(43.14)	(35.26)	(35.12)	(32.65)	(41.30)
n = 14	n = 13	n = 14	n = 13	n = 12	n = 14	n = 14	n = 13	n = 14	n = 13	n = 12	n = 14
<u>Period 8</u>						<u>Period 9</u>					
<u>FN</u>	<u>FS</u>	<u>NF</u>	<u>NS</u>	<u>SN</u>	<u>SF</u>	<u>FN</u>	<u>FS</u>	<u>NF</u>	<u>NS</u>	<u>SN</u>	<u>SF</u>
74.39	59.63	43.07	41.52	56.17	49.43	83.18	63.66	55.61	55.41	52.06	58.32
(32.01)	(31.01)	(37.43)	(47.13)	(35.26)	(42.93)	(16.24)	(30.61)	(42.39)	(36.97)	(42.34)	(46.03)
n = 14	n = 13	n = 14	n = 14	n = 11	n = 14	n = 13	n = 12	n = 14	n = 13	n = 13	n = 14
<u>Period 10</u>											
<u>FN</u>	<u>FS</u>	<u>NF</u>	<u>NS</u>	<u>SN</u>	<u>SF</u>						
78.82	59.20	51.39	54.20	41.34	57.18						
(27.89)	(36.17)	(40.64)	(37.73)	(38.04)	(42.41)						
n = 14	n = 13	n = 14	n = 14	n = 12	n = 13						

This table reports the mean honesty of budget communications by participative budgeting condition in rounds 1 (i.e., periods 1 – 5) and 2 (i.e., periods 6 – 10) of the experiment. There are three participative budgeting conditions to which participants are assigned in round 1 (Panel A): “F” denotes full influence, “N” denotes no influence, and “S” denotes some influence. There are six participative budgeting conditions to which participants are assigned in round 2 of the experiment (Panel B) because participants experience different participative budgeting conditions between rounds 1 and 2. Each condition in round 2 is denoted by two letters. The first (second) letter in Panel B indicates the condition to which participants are assigned in round 1 (round 2) of the experiment. For example, participants in the “FN” condition in Panel B are assigned to the full influence condition in round 1 of the experiment and the no influence condition in round 2.