Fairness, Ethics and the Effect of Management Accounting on Transaction Costs

Joan L. Luft
Michigan State University

Abstract: The use of management accounting information in reducing trans-action or contracting costs depends both on characteristics of the accounting information and on the preferences of the contracting parties. Much of the existing literature on accounting and contracting assumes a utility function representing preferences for wealth and leisure only. However, a wider range of accounting-related behavior can be explained by using a broader repre-sentation of preferences, including fairness and ethics considerations. Areas for further research are proposed. In particular, the value of more accurate product costing may not be completely specified unless alternative-prefer-ence-related contracting costs are taken into account.

I. INTRODUCTION

A significant stream of management accounting research has focused on the use of accounting information to reduce contracting or transaction costs (see Baiman (1990) and Young and Lewis (1995) for reviews).[1] The agency models which have played a dominant role in this literature use a simplified representation of individuals' preferences, in which individuals have utility for wealth and leisure only (hereafter referred to as the simple self-interest model) (Baiman 1982, 1990). In contrast, a number of exper-imental studies in accounting and economics have captured behavior that is inconsistent with this representation of preferences but consistent with additional preferences for "fairness," "trust," "accountability," or "integrity and conscience." Theoretical papers in economics (Thaler 1985; Bolton 1991; Rabin 1993) have devised models that formally represent some of these preferences through interdependent utilities, arguments represent-ing standards of fairness, or redefinitions of equilibrium.

This article addresses two major questions raised by this literature about alternative preference models. First, can the limited experimental

---

[1] The terms contracting and transaction costs are used interchangeably in this paper, as in much of the accounting and theory-of-the-firm literature (e.g., Baiman 1990, Williamson 1985). These costs are defined by Milgrom and Roberts (1990, 60–61) as "the costs of de-ciding, planning, arranging, and negotiating the actions to be taken and the terms of exchange when two or more parties do business; the costs of changing plans, renegotiating terms, and resolving disputes as changing circumstances may require; and the costs of ensuring that the parties perform as agreed. Transaction costs also include any losses resulting from inefficient group decisions, plans, arrangements, or agreements; inefficient responses to changing circumstances; and imperfect enforcement of agreements."

data supporting alternative models be reconciled with the ability of simple self-interest models to predict behavior in empirical research (e.g., Watts and Zimmerman 1986; Milgrom and Roberts 1992)? Second, how do alternative representations of preferences affect current key issues in management accounting? For example, would the value of more refined product-costing systems depend on whether individuals had significant preferences for fairness?

The remaining discussion proceeds as follows. Section II addresses the first question and argues that many empirical tests of the simple self-interest model offer little evidence against plausible alternatives. Section III develops a number of testable research propositions, showing how alternative-preference models change the specification of contracting costs, which in turn changes optimal management accounting choices. Section IV provides a conclusion.

II. TESTING THE SIMPLE SELF-INTEREST MODEL

The simple self-interest model is commonly presented, not as an exact representation of reality, but as an adequate approximation for predictive purposes. For example:

> ...even though it is an extreme caricature to regard people as amorally motivated solely by narrow self-interest, *the predicted institutions and practices are often not very sensitive to this caricature.* A bank has guards, vaults, and audits because it would otherwise be robbed; this explanation of practices is unaffected by the observation that many honest people would not rob an unguarded bank. (Milgrom and Roberts 1992, 42) (emphasis added)

However, this insensitivity to distortions in utility models may be due not only to the strength of the model, but also to the weakness of the tests. While much of the existing accounting and economics literatures provide results consistent with simple self-interest, the results are also consistent with alternative-preference models, and the tests employed often lack the power to distinguish between them. The subsections below develop the following three arguments:

1. Alternative preferences such as fairness or ethical concerns may diminish self-interested behavior in ways that are both statistically and practically significant. Typical empirical tests are not designed to detect or measure these countervailing effects.
2. Some apparent self-interest effects can in fact be driven by alternative preferences. Many empirical tests of the self-interest model, as well as experimental tests based on conventional economic models, are not designed to distinguish wealth maximization from alternative preferences as a source of these effects.
3. Agency models of contracting, which have had a strong influence on management accounting research (Baiman 1990), do not focus on the same set of contracting costs as research on preferences for fairness and ethical behavior. Insofar as empirical research and conventional economics-based experimental studies have not tried to measure the

contracting costs that are most strongly affected by alternative preferences, it is not surprising that they have not detected significant effects of these preferences.

Countervailing Effects of Preferences Other Than Simple Self-Interest

Most empirical tests of the simple self-interest model show behavior consistent with its predictions. For example, Banker et al. (1996) report that the introduction of performance-based compensation plans in retail outlets, which appeal to employees' utility for wealth rather than their work ethic or intrinsic motivation, significantly increased sales. Rogerson (1992) shows that a combination of cost-based government reimbursement policies and labor-based cost allocations provide incentives for defense firms to over-utilize direct labor and under-utilize outsourcing in government contracts; and evidence consistent with behavior driven by this incentive was found. Similarly, Eldenburg and Kallapur (1995) find that monetary incentives to distort cost allocations in hospitals resulted in allocation changes consistent with opportunism.[2] Several studies (Healy 1985; Gaver et al. 1995; Holthausen et al. 1995) have shown evidence consistent with the proposition that accounting-based incentive schemes lead managers to manipulate accounting numbers.

These studies capture behavior shifts in response to incentives in particular settings, but do not provide decisive tests of the simple self-interest model vs. plausible alternative utility functions. Thus, while these studies offer evidence *for* the existence of a preference for wealth, they do not offer evidence *against* the existence of other significant preferences. The null hypothesis in these studies is that the observed wealth-based incentive has no effect. Thus, the hypothesis rejected by these tests is either (1) individuals have no interest in increasing their own wealth (or the profits of the units for which they are responsible), or (2) the ethical considerations that would prevent individuals from shirking or manipulating accounting numbers completely dominate considerations of wealth. These are not particularly plausible or interesting alternatives to the simple self-interest model, and rejecting them does not imply rejection of other alternatives. It is not known how great the distortions in hospitals and defense firms would have been if decision makers had no utility for honesty, or how much performance pay would have been required to raise sales to the observed level if employees had no intrinsic motivation. Therefore it is impossible to say, on the basis of empirical tests such as these, whether the effect of additional preferences is significant.

If the only important practical questions faced by managers depended on the existence of opportunistic behavior, this argument would be of only theoretical interest. However, managers must often make decisions that depend on the *magnitude* of opportunistic behavior, which may be significantly conditioned by additional preferences. In the Milgrom and Roberts

---

[2] The link between defense firm profits or hospital revenues and the wealth of the managers who made the observed accounting choices is not explicitly tested in Rogerson (1992) and Eldenburg and Kallapur (1995). It seems reasonable to suppose, however, that managers expect to be ultimately better off in monetary terms if the unit they manage makes more profit.

(1992) example above, the question of *whether* a bank has guards and audits (an existence question) is insensitive to the existence of preferences for honesty in some individuals. But questions of *how many* guards and *how great* an expenditure on audits the bank needs may well be sensitive to preferences for honesty among the bank's employees and the residents of the surrounding area. Similarly, in the case of distorted cost allocations that raise the prices on cost-based contracts, the fact that distortions occur can be predicted without modeling or measuring managers' preferences for honest reporting. But the *magnitude* of the distortion may be quite sensitive to alternative preferences. In consequence, the amount of resources other contracting parties expend in searching for or deterring distortions also may be sensitive to alternative preferences.

Fairness as an Alternative Explanation for "Self-Interested" Behavior

An assumption implicit in empirical defenses of the simple self-interest model (Milgrom and Roberts 1992; Watts and Zimmerman 1986) is that self-interest and alternative preference models result in opposing, not identical, directional effects. The alternatives are seen as amoral pursuit of consumption and leisure for oneself, on the one hand; and on the other, altruistic and ethical concerns that direct individuals *not* to pursue wealth and leisure for themselves, at least not beyond a certain point.

Recent research on fairness in behavioral economics suggests, however, that additional preferences that significantly affect economic behavior are not always altruistic or ethical in a conventional sense. Demonstrations of fairness effects in market (Kachelmeier et al. 1991) and bargaining (Kahneman et al. 1986a) settings demonstrate not so much generous or moral behavior as a willingness to retaliate for perceived inequities in ways that do not maximize the wealth of either contracting party. Tests that look only for ethical or altruistic actions will fail to detect this behavior and therefore will underestimate the extent to which actions in the natural environment are affected by alternative preferences. Moreover, if retaliatory actions benefit the individuals who perform them, increasing their wealth at the expense of other contracting parties, such actions may appear to be driven by simple self-interest even when alternative motives are present.

Greenberg (1990) provides an example of an empirical study that would appear consistent with simple self-interest if examined using a test based only on a simple self-interest model, but more consistent with fairness models when fairness-related variables are incorporated in the analysis. Greenberg's (1990) data come from a firm that cut manufacturing workers' wages at two plants and subsequently observed increases in the employee quit rate and theft rate (as measured by inventory counts). These increases are consistent with the predictions of a simple self-interest model: as the monetary payoff for staying on the job decreased, it became relatively less attractive than the expected payoffs from taking other jobs or from supplementing wages by stealing.

Greenberg's (1990) analysis shows, however, that only a small portion of the increase in turnover and theft can be accounted for by this explanation. At one of two comparable plants, an equal cut was imposed on all

employees (including top management), justified by detailed data on lost profits, and followed by expressions of concern and regret by management. This course of action was consistent with the criteria of fairness models, which include equality of payoffs (Forsythe et al. 1994), concern for the other contracting party's well being (Rabin 1993), and a belief that firms are entitled to a "reference" (often past) level of profit, justifying wage cuts to maintain this level of profit (Kahneman et al. 1986a, 1986b). At the other plant, the same wage cut for manufacturing workers was announced, but the criteria for fairness were not met. Nearly a quarter of the workers left at the plant with the unfair cut, while only five per cent left at the plant with the fair cut. Similarly, the theft rate nearly tripled at the former plant, but rose only slightly at the latter. The greater part of the theft and turnover increase therefore appeared to be a reaction to the perceived unfairness rather than simply a measure to replace lost consumption due to the wage cut. The design of the test, explicitly incorporating comparisons based on fairness variables, enabled Greenberg (1990) to capture variation in behavior which might otherwise have been missed.[3]

Which Contracting Costs are Measured?

A great variety of contracting costs exist; we do not yet have a complete catalog of such costs or an adequate identification of the factors that determine their magnitude (Baiman 1990; Milgrom and Roberts 1988). Experimental and empirical tests based on simple self-interest models are designed to detect the specific contracting effects predicted by these models. For example, basic agency problems focus on two kinds of contracting costs: losses from inadequate motivation or selection of the agent and from inefficient risk sharing. Empirical and experimental tests of the basic agency model look for evidence that contracts are structured to reduce these costs (e.g., Wolfson 1985; DeJong, Forsythe, and Lundholm 1985a; DeJong, Forsythe, Lundholm, and Uecker 1985b). The results of these tests are consistent with simple self-interest models, but this does not mean that they provide evidence for rejecting alternatives.

Fairness research in accounting and economics has been primarily occupied with a *different* set of contracting costs: for example, frictions that delay adjustment to a new equilibrium when market supply and demand change (Kahneman et al. 1986a, 1986b; Kachelmeier et al. 1991; Fehr et al. 1993), costly delay or failure to agree in bilateral bargaining (Güth et al. 1982; Ochs and Roth 1989; Luft and Libby 1997), or excessive (non-wealth-maximizing) expenditures on monitoring (Evans et al. 1994). Tests that do not specifically address the predictions of alternative models can say little about the validity of these models.

---

[3] Given the limited control characteristic of field experiments, it may not be possible to decisively exclude all self-interest-based explanations for the additional theft and turnover at the unfair plant. For example, workers may have believed that their wage prospects in the future were better at the fair than at the unfair plant, and so were less likely to quit. For a more tightly controlled laboratory demonstration of an increase in dishonest behavior that increased individuals' monetary payoffs but was driven by reaction to unfairness rather than simple utility for wealth, see Moser et al. (1995).

III. ALTERNATIVE PREFERENCE MODELS, CONTRACTING COSTS AND THE DEMAND FOR MANAGEMENT ACCOUNTING

Section II argued that the predominance of the simple self-interest model in accounting research has arisen in part because plausible alternative-model predictions have not been made, not because plausible alternative predictions have been made and rejected by empirical evidence. Section III illustrates predictions about management accounting that can be generated from alternative-preference models. It further develops two themes from section II. First, the predicted effects of preferences for ethical behavior can vary considerably, depending on how the preference is specified. Detailing these specifications can help to reconcile apparently contradictory results in the accounting literature. Second, aversion to perceived unfairness can generate contracting costs that are not predicted by simple self-interest models. Insofar as accounting information affects perceptions of unfairness, and thus affects the magnitude of these contracting costs, fairness models predict roles for accounting information beyond those specified by simple self-interest models.

Ethics and the Demand for Monitoring

Simple self-interest approaches to contracting assume that individuals will freely misrepresent their actions and characteristics (e.g., skill) when doing so maximizes their wealth and leisure (Baiman 1982). They can therefore be restrained from misrepresentation only by incentive schemes that make misrepresentation costly in wealth or effort terms. Accounting has value as a monitor because it provides information to support such incentive schemes. Ethics-based approaches have sometimes suggested less need for monitoring, and thus less demand for accounting, than simple self-interest models. For example, "If enough people adhere to the ethical code...resources can be diverted away from monitoring, enforcing, and protecting into more productive uses" (Noreen 1988).

In the management accounting literature, conflicting views on this point are particularly conspicuous in the area of communication and budgeting. Based on one set of experimental results, Baiman and Lewis (1989) conclude that preferences for honesty are not strong enough in most individuals to limit misrepresentation significantly; thus preferences for honesty do not represent a serious threat to the predictive validity of the agency literature on budgeting, transfer pricing and incentive system design. By contrast, evidence in other experimental studies such as Young (1985), Waller (1988), and Chow et al. (1988) suggests that ethical factors (labeled "personal integrity and conscience" in Chow et al. (1988)) play an important role in limiting misrepresentations. In these experiments, the loss from theoretically suboptimal control schemes was substantially less than that predicted by simple self-interest models, implying that the demand for such controls would be less than simple self-interest models predict.

More explicit descriptions of alternative preferences can help sort out these results and their implications. Consider a utility function $u(w, d)$, where w represents wealth and d represents dishonesty. For individuals

TABLE 1
Utility Functions, Monetary Payoffs and Choices of
Truth or Misrepresentation

In all cases below, a truthful representation of the agent's productive capability
(T) is 20, and the monetary payoff for truth-telling is 79.

$U_1 = \sqrt{w} - d$, where w = monetary payoff, $d = 0$ (truth), 2 (misrepresentation)

$U_2 = \sqrt{w} - 0.75d$, where w = monetary payoff,
       d = actual productive capability T–misrepresentation L.

L	w(L)	u_1(L)	u_1(T)	Choice$_1$	u_2(L)	u_2(T)	Choice$_2$
Panel A: Misrepresentation (L) is Held Constant; Payoffs for Misrepresentation, w(L), are Varied							
18	100	8.00	8.89	T	8.50	8.89	T
18	120	8.95	8.89	L	9.45	8.89	L
18	140	9.83	8.89	L	10.33	8.89	L
18	160	10.65	8.89	L	11.15	8.89	L
Panel B: Payoff Increases with Magnitude of Misrepresentation							
18	100	8.00	8.89	T	8.50	8.89	T
16	140	9.83	8.89	L	8.83	8.89	T
15	160	10.65	8.89	L	8.90	8.89	L
14	180	11.42	8.89	L	8.92	8.89	L
12	220	12.83	8.89	L	8.83	8.89	T
11	240	13.49	8.89	L	8.74	8.89	T

who have a preference for honesty, $u_d < 0$. Behavior cannot be predicted
unambiguously, however, without a further description of the form the
function takes. In one view, all lies are viewed as unacceptable behavior,
and a large negative weight is assigned to any lie regardless of its nature
or circumstances. In a mathematical representation of this view, d would
take on only two values, one value when the truth was told and the other
value when it was not. In another view, the difference between big lies and
small lies is much more significant, and the difference between truth and
relatively trivial falsehoods is less important. In this case, d is a continu-
ous variable. (See Bok (1978) and Solomons (1993) for philosophers' dis-
cussions of both views.)

Much of the psychological research on lying (see Lewicki's (1983) con-
ceptual model of lying, underlying the predictions of Baiman and Lewis
(1989)) does not take a clear position on this issue. As the argument below
illustrates, however, predictions of behavior and inferences that can
be drawn from experimental results depend critically on how d is
represented.

Table 1 provides a stylized numerical example of the effects of this
difference in functional form. In this example, it is assumed that the
agent's true productive capability is 20, and that the agent can increase
his or her monetary payoff by understating this capability.[4] The magnitude

---

[4] If overstatement of productive capability led to higher payoffs, as in Baiman and Lewis
(1989), d would be defined as L–T instead of T–L.

of the lie is the difference between the agent's believed actual and self-reported productive capability. U_1 is the utility function of an individual who would feel equally uncomfortable about any lie, regardless of magnitude. U_2 is the utility function of an individual for whom the distinction between small and big lies is more important. Panel A shows that *both* of the proposed utility functions are consistent with the basic pattern of Baiman and Lewis' (1989) results. Panel A represents Baiman and Lewis' (1989) setting, in which a given misrepresentation generated different payoffs in different conditions. The utility of telling the truth outweighed the increased payoff when the payoff was small, but not when the payoff was larger. A heavier weight on d (a value larger than 2 for lies) would represent the utility functions of the handful of subjects in Baiman and Lewis (1989) who did not lie for any of the offered payoffs.

The two functions in table 1 behave similarly only when the magnitude of the lie is held constant, however, since the second function is sensitive to this magnitude and the former is not. Panel B of table 1 illustrates this point. In the setting used in many participative budgeting studies (Young 1985; Waller 1988; Chow et al. 1988) and represented by panel B, individuals have the opportunity to choose among lies of different magnitude, each of which generates a different payoff. If they choose the lie with the highest utility payoff, individuals with a U_1-type function will choose the lie with the highest monetary payoff, but individuals with a U_2-type function will choose a lie with a moderate monetary payoff—neither the largest nor the smallest in this particular case. The behavior predicted by U_2 in panel B is consistent with the behavior of subjects in the participative budgeting studies (Young 1985; Waller 1988; Chow et al. 1988), who did not tell the lie with the largest possible monetary payoff. It also is consistent with results in social psychology: for example, Newman (1979) found that passers-by who found a dropped coin were more likely to keep money that was not theirs if the value of the coin was smaller than if it was large. Similarly, Goldstone and Chin (1993), unobtrusively observing a copy machine where copies were charged to individuals on a self-report honor system, found that individuals tended to report large jobs even when they omitted reporting smaller ones.

A function like U_2 is consistent with Baiman and Lewis (1989) (panel A) *and* with the results of the participative budgeting studies (panel B), while U_1 is consistent only with Baiman and Lewis (1989). However, only U_1 supports the inferences Baiman and Lewis (1989) make from their results. U_2, which also is consistent with their results, does not support their inferences. Under the assumptions of U_1, a willingness to tell a small lie for 25 cents also implies a willingness to tell bigger lies for larger sums of money. Under the assumptions of U_2, this implication does not hold across all ranges of lies and payoffs.

Because U_2 supports different predictions than U_1 about the likelihood that contracting parties will not report truthfully, it also supports different predictions about the need for monitoring and incentive systems to limit untruthful reporting. Both functions, like simple self-interest models, predict that (all other things equal) lying will increase as the payoffs for misrepresentation increase. U_2, however, also generates an additional prediction. Under U_2, holding the *payoffs* for lying constant, lying is expected to

increase as the size of the lie required to generate a given payoff decreases (i.e., as the sensitivity of the payoff function to changes in the agent's report increases). Thus, stronger control systems to prevent lying might be expected in settings where the payoff function is more sensitive to the magnitude of the lie. Neither a simple self-interest model nor a U_I-type model of preferences can generate this prediction, since neither includes an argument for the magnitude of the lie.[5] Further research in the laboratory and natural environment is needed to test the validity of these prediction.

This discussion of preferences for honesty has provided an illustration of the need for more detailed specification of the nature of alternative preferences. Alternative-preference models that are based on fairness rather than strictly ethical preferences, such as honesty, have been formally represented by economists (e.g., Thaler 1985; Bolton 1991[6]; Rabin 1993), but many implications of these models for management accounting remain to be investigated, as the following section suggests.

Fairness and Product Costing:
Frictions in Markets and Bargaining

A number of recent studies have examined firms' experience with activity-based costing systems, identifying factors that affect the decision to move to an ABC system and the success of the subsequent implementation (e.g., Cooper et al. 1992; Shields 1995; Swenson 1995; Anderson 1995). One of the challenges in this area of research is that there is as yet no full catalog of the costs and benefits to the firm of implementing ABC (see Merchant and Shields 1993 for a partial list of costs and benefits of more accurate product costs). Although much of the prior research on the benefits of activity-based costing has focused on the potential of more accurate product costs to support more profitable pricing or product-quantity decisions (Banker and Potter 1993; Banker and Hughes 1994; Gupta and King 1997; Berg and Sprinkle 1996), anecdotal evidence (Romano 1994) suggests that the effect of ABC on transaction costs also is important. The subsections below provide examples of how fairness-based research can identify transaction costs that would not be predicted by simple self-interest-based models, and thus suggest additional testable predictions about the demand for management accounting information.

Market Frictions

In a world governed by simple self-interest, product costs are relevant in determining the supply of an item at any given price, but not in determining market demand (Banker and Potter 1993; Banker and Hughes 1994). That is, holding the quality of the item constant, buyers' willingness

---

[5] If lies of greater magnitude are more detectable, and monetary penalties are imposed for detected lies, a simple self-interest model also will predict an effect of the magnitude of the lie. The mechanism is different, however. The self-interest version of the prediction does not apply to situations of asymmetric information in the strongest sense, where lies are not detectable, and therefore a moderate lie is no more detectable than a smaller lie.

[6] Bolton's (1991) model represents an aversion to getting smaller payoffs than the other party in a bargaining game. Bolton does not specifically label this an aversion to unfairness, but other studies have done so (e.g., Straub and Murnighan 1995; Güth et al. 1982).

to pay a given price should not change as the seller's costs or profits change. In this view, transmitting internal accounting information like product costs from the seller to the buyer has no value because it does not affect the prices or quantities of goods traded on the market.

Survey data has suggested, however, that buyers' willingness to pay a given market price depends in part on whether they regard the price as fair, and that fairness judgments are influenced by information about sellers' costs and profits (Kahneman et al. 1986a, 1986b; Thaler 1985). Specifically, price increases that are driven by cost increases are widely regarded as fair, while price increases based on short-term fluctuations in supply and demand are not (Kahneman et al. 1986a, 1986b). Kachelmeier et al. (1991) tested the accounting implications of these predictions in experimental markets, finding that market prices tended to adjust more slowly to increased costs when cost information was not made available to buyers. Even though trade at a higher price would have generated a trading surplus for both buyers and sellers, buyers resisted paying the higher price for some time—and thus failed to make profitable trades—when they were not given cost information justifying the increased prices.

These results may have important, as yet uninvestigated, implications for product costing. Kachelmeier et al. (1991) used a setting in which the firm sold only one product and the information of interest was the firm's total cost or profit. For multiproduct firms, however, judgments about the fairness of a price increase for a particular product depend on the profit from that particular product, not on the firm's total profits. Respondents to Kahneman et al.'s (1986a, 1986b) surveys did not consider it fair for a firm to raise the price of one product to cover cost increases in another. Thus, fairness judgments and the corresponding market-price effects depend crucially on individual *product-cost* calculations. If buyers suspect that the product they purchase is being loaded with overhead costs generated by other products, they may not be convinced that cost-based price increases are fair, and profit-reducing market frictions of the kind discussed by Kahneman et al. (1986a, 1986b) and Kachelmeier et al. (1991) may ensue. Anecdotal evidence is consistent with the proposition that activity-based costing smoothes the path of price increases (Cooper et al. 1992; Romano 1994), but systematic research is needed to determine whether and under what conditions this smoothing takes place.[7]

Bargaining

Prices for many goods and services are set not by the impersonal workings of a market but rather by bilateral bargaining between buyer and seller. Milgrom and Roberts (1988, 1990) argue that negotiation or bargaining costs are a key determinant of how economic activity is organized:

---

[7] Firms that expect to increase prices frequently in response to short-term supply/demand fluctuations may find it disadvantageous to disclose high-quality product-cost data, because these data will make it clear that price increases are unfair and consequently increase customer resistance. Firms in markets where such fluctuations occur less frequently or firms that choose not to respond to such fluctuations with price increases (see Kahneman et al. (1986a) for examples) should find the disclosure of product-cost data more advantageous.

an important part of efficient contracting consists of reducing the losses in wealth due to bargaining impasses, time and effort spent in negotiation, delay in implementing profitable projects that require a long time to negotiate, and second-best agreements reached because bargainers cannot afford to negotiate long enough to reach a better agreement.

Simple self-interest models and fairness models generate different predictions about the value of information in reducing bargaining costs. Simple self-interest models predict that increases in information about the other party's payoffs lead to greater efficiency in bilateral bargaining (or at least do no harm) (Linhart et al. 1992; Kennan and Wilson 1993), while fairness models distinguish between conditions in which additional information reduces bargaining costs and conditions in which additional information *increases* bargaining costs (Camerer and Loewenstein 1993; Thompson and Loewenstein 1992).

Contrary to the predictions of simple self-interest models, experimental tests have shown that common knowledge of payoffs is *not* sufficient to eliminate impasses and haggling in settings where the Nash equilibrium solution to the bargaining game calls for highly unequal payoffs. Subjects often are willing to delay or refuse agreement, and to sacrifice moderate monetary payoffs as a result, in order to avoid a solution that yields payoffs they regard as unfair—either because they are highly unequal (Güth et al. 1982; Ochs and Roth 1989; Forsythe et al. 1994; Bolton 1991) or because they differ from prior payoffs (Camerer and Loewenstein 1993) (see Bolton 1991 and Rabin 1993 for formal models consistent with this behavior). Bargaining costs can be lower when subjects have no information about the other party's payoffs at all than when they have information that clearly indicates unequal payoffs (Straub and Murnighan 1995). Information also increases bargaining costs when it is ambiguous enough to support more than one definition of a "fair" outcome (Camerer and Loewenstein 1993; Thompson and Loewenstein 1992). The latter result occurs because bargainers choose the definition of fairness that is most advantageous to themselves. Impasses occur when bargainers refuse agreements that they perceive to be unfair (even when these agreements would be more profitable than impasse), or when bargainers mistakenly believe that others share their judgment of fairness and will ultimately agree with them (Camerer and Loewenstein 1993; Thompson and Loewenstein 1992; Babcock et al. 1995).

These results have important implications for the use of management accounting information to reduce transaction costs within firms. Consider a stylized firm consisting of an owner-manager and two subordinates (divisional managers) who trade with each other and are rewarded based on divisional profit. A divisional manager with private information may conceal it from the other divisional manager in order to gain an advantage in bargaining, if he or she expects the resulting increase in divisional profits to exceed the time and effort costs of additional negotiation. This profit-shifting from one division to another does not increase the profits of the firm as a whole, however. Insofar as the prolonged negotiation distracts managers' attention from other valuable activities, it may decrease the profits of the firm as a whole. Thus, while costly bargaining benefits the divisional manager who gains by it, it does not benefit the owner/top manager,

who will therefore wish to restrain it. If the simple self-interest model is correct and common knowledge always improves bargaining efficiency, top management would be expected to support widespread sharing of payoff information in negotiations between subunits of a firm. For example, top management could mandate the sharing of accounting information on the costs and profits of internally traded products. Although such information sharing is frequent in transfer pricing negotiation, it is far from universal (Price Waterhouse 1984; Eccles 1985). Fairness research suggests testable propositions to explain some of the observed variation.

First, intrafirm disclosure should be less likely when market forces or other exogenous factors result in highly unequal divisional payoffs from internal trade or sharp increases in one party's payoffs. Simple self-interest models assume all information about the other party's payoff is valuable. But experimental evidence suggests that informing the disadvantaged party that he or she is disadvantaged will probably *not* reduce frictions in internal trade (Camerer and Loewenstein 1993; Straub and Murnighan 1995). A fairness-based approach predicts that the sharing of product-cost and profit information will be more prevalent between divisions that have more equal and stable payoffs, so that the information they share is less likely to raise fairness concerns.

Second, intrafirm disclosure should be less likely when the information increases the number of plausible definitions of fair exchange that can be rationalized. For example, consider a transfer-price setting where managers believe that a transfer price which divides the surplus from trade equally is fair (see Eccles (1985) and Luft and Libby (1997) for evidence of this view). Suppose the cost allocation system that assigns indirect costs to particular products is known to be somewhat arbitrary. Managers know the details of the product-cost data well enough to generate alternative allocations of indirect costs that they believe are plausible; but there is no firm-wide agreement on which allocation system corresponds most closely to actual resource usage (see Eccles (1985, 150) for an example). Suppose further that one plausible estimate of the product cost requires a high transfer price to generate an equal profit split. Another plausible estimate requires a lower transfer price to generate an equal split. Either price can be defended as fair; buyers are likely to demand the low transfer price on fairness grounds and sellers to insist on the high price also on fairness grounds (cf., Thompson and Loewenstein 1992; Camerer and Loewenstein 1993). While simple self-interest also would motivate buyers to ask for low prices and sellers to ask for high ones, it would not drive them to insist on these positions in an inefficient, non-wealth-maximizing way. In this setting, because the accounting system cannot determine which product cost is more accurate, sharing accounting information that allows the generation of alternative cost estimates has the potential to increase conflict. If a more refined costing system can convincingly determine which estimate is best, it should be able to lower bargaining costs within and between firms. This suggestion is consistent with anecdotal observations that ABC reduces interdepartmental conflict in firms (Romano 1994), but a more precise specification of ABC benefits awaits further testing.

Not all refined costing systems provide more convincing estimates of product costs (Datar and Gupta 1994; Cooper et al. 1992). If an ABC system provides new estimates of product costs that are *not* convincing to all parties because the system is still too new, too experimental, or too dependent on imprecise estimates, then providing its output to managers can increase bargaining costs. As one manager involved in an ABC implementation observed:

> You have to be very careful in showing any data you're not completely comfortable with. If it's not precise enough, people can take the results and make them support a particular decision or anything else they want. I think we have to be very accurate before we show these data around. (Cooper et al. 1992, 98)

Simple self-interest models also can predict strategic use of ambiguous information, but they suggest that the magnitude of the problem is smaller: managers will insist on their own interpretations and goals only up to the point that insistence is expected to increase their own wealth or leisure. Fairness approaches predict a greater probability of destructive conflict: individuals will refuse agreement "on principle," or systematically misestimate the course of action that will lead to agreement (Camerer and Loewenstein 1993; Babcock et al. 1995).

Product cost data may be less clear and defensible in the early stages of development of a new product-costing system (Cooper et al. 1992). While distributing ABC data may be valuable at an early stage in development to get feedback and buy-in from managers; there is also a cost to this distribution in the form of increased bargaining conflicts. Accordingly, fairness approaches predict slower implementation and/or higher implementation costs than simple self-interest models. They also predict that implementation speed and costs will be sensitive to the amount of intra-firm negotiation that involves allocated-cost numbers.

IV. CONCLUSION

Alternative-preference models representing concerns such as fairness and ethics can enrich the basic economic contracting framework and yield additional predictions about how management accounting affects the magnitude of transaction costs. As suggested above, these predictions can take two forms. First, alternative-preference considerations can be used to explain observed management accounting practice. For example, managers may demand more accurate product cost data in order to reduce frictions in market trading and bilateral bargaining. Conversely, the characteristics of management accounting data can be used to explain a particular feature of observed contracts: namely, levels of honesty or fairness. Because of characteristics of management accounting data, fairness may sometimes be too costly to achieve. For example, in the situation described in Greenberg (1990), an important component of creating perceived fairness was disclosing accounting data (declining profits) to employees. In some cases, disclosing such data can be extremely costly, because the data (e.g., profits of a particular plant or product) have significant value to competitors, or because employees may conclude that prior profits have been too high relative to wages, or because they are too complex for most

employees to understand without extensive training. In such cases, perceived fairness might be more costly to achieve than the alternative of accepting increased employee turnover and intensifying monitoring to counteract the increase in theft that arises from perceived unfairness.

The basic approach suggested here aims at increasing researchers' ability to explain management accounting practice by including additional preferences and additional contracting costs in the analysis of accounting and contracting. Future research could go well beyond the specific suggestions made here. The treatment of pure ethical issues[8] was limited to honesty, and the only factor examined that might affect the disutility of lying was the magnitude of the lie. Philosophical and psychological treatments of the subject (e.g., Bok 1978; Lindskold and Walters 1983) suggest that a number of other factors, such as the cost or benefit to other parties, also have significant effects on the disutility of lying. The implications of these effects for budgeting and control systems remain to be investigated.

The treatment of fairness was limited to a discussion of the fairness of outcomes. Fairness of management accounting processes (e.g., budgeting procedures) can have an independent effect (cf., Lindquist 1995; Libby 1996). Similarly, the transaction costs addressed here—primarily monitoring costs, market-adjustment frictions, and bilateral bargaining costs—were a limited set. Other transaction costs also might be significantly affected by alternative preferences. Milgrom and Roberts (1990) point out a number of inefficiencies in contracting arising from measurement costs and influence costs, i.e., costs of activities engaged in before contracting that do not increase the total surplus but help one party gain a larger share of it. If contracting parties value fairness, they may pursue excessive measurement or influence activities in an attempt to insure fairness, as well as in attempts to increase their wealth.

A multimethod approach is evident in the behavioral economic studies previously cited, including analytic, archival, experimental and survey approaches. Future research addressing the management accounting implications of alternative-preference models needs to take the same broad perspective. As Kahneman et al. (1986a, S299) point out, the community standards of fairness that have detectable effects on economic behavior "cannot be inferred either from conventional economic principles or from intuition and introspection." There is no substitute for observation in a natural context. Descriptive field research can be valuable in discovering what managers seem to care about, what factors generate significant frictions within the firm, and what role management accounting information plays in reducing or exacerbating these frictions. Field evidence of these issues is important but needs to be supplemented with additional analysis. Well-designed experimental and archival tests are needed to distinguish among different explanations for observed behavior, and analytic work is needed to verify that the stated assumptions about alternative

---

[8] Ethics and fairness have been treated as non-identical categories in this paper. Fairness is used in the behavioral-economics sense (Kahneman et al. 1986a, 1986b): it is defined by observed community standards that do not necessarily correspond to any philosophical theory of ethics.

preference models actually support the predictions being tested. The alternative-preference models currently available in the economics literature address only limited issues: aversion to unequal payoffs in two-person games, fairness (more broadly defined) in two-person games (Rabin 1993), and fairness (broadly defined) in market transactions (Thaler 1985). Formal representations of ethical preferences are largely absent.

People have varying ideas about exactly what behavior is entailed by ethical preferences, such as honesty or the work ethic, or what it means to behave fairly in contracting. This ambiguity of definition has sometimes been cited as a major deterrent to using alternative-preference models as a basis for *ex ante* predictions of behavior (e.g., Eccles 1985). The variation is not infinite or unsystematic, however. For example, regularities in judgments about fairness (Kahneman et al. 1986a, 1986b) and the acceptability of lies (Lindskold and Walters 1983; Maier and Lavrakas 1976) have been observed. Even when individuals make divergent judgments on these subjects, the divergence itself is sometimes predictable, and the degree and direction of divergence can be used to predict contracting costs. For example, the greater the divergence of judgment, the less efficient the bilateral bargaining (Roth and Murnighan 1982; Camerer and Loewenstein 1993; Luft and Libby 1997).

Further research in this area has the potential to explain more fully how management accounting choices affect the efficiency of contracting. It also can help to provide a bridge between the language of managers, which often contains references to ethical and fairness concerns (see, e.g. Eccles 1985; Merchant 1989) and the language of accounting and contracting research, from which these concerns often have been absent.

REFERENCES

Anderson, S. W. 1995. A framework for assessing cost management system changes: The case of activity based costing implementation at General Motors, 1986–1993. *Journal of Management Accounting Research* 7: 1–51.

Babcock, L., G. Loewenstein, S. Issacharoff, and C. Camerer. 1995. Biased judgments of fairness in bargaining. *The American Economic Review* 85 (5): 1337–1343.

Baiman, S. 1982. Agency research in managerial accounting: A survey. *Journal of Accounting Literature* 1: 154–213.

———. 1990. Agency research in managerial accounting: A second look. *Accounting, Organizations and Society* 15 (4): 341–371.

———, and B. L. Lewis. 1989. An experiment testing the behavioral equivalence of strategically equivalent employment contracts. *Journal of Accounting Research* 27 (1): 1–20.

Banker, R. D., and J. S. Hughes. 1994. Product costing and pricing. *The Accounting Review* 69 (3): 479–494.

———, and G. Potter. 1993. Economic comparison of single cost driver and activity-based costing systems. *Journal of Management Accounting Research* 5: 15–32.

———, S. Y. Lee, and G. Potter. 1996. A field study of the impact of a performance-based incentive plan. *Journal of Accounting and Economics* 21 (April): 195–226.

Berg, J. E., and G. B. Sprinkle. 1996. The benefits of improved product costing systems: Evidence from controlled laboratory economies. Working paper, University of Iowa.

Bok, S. 1978. *Lying: Moral Choice in Public and Private Life*. New York, NY: Pantheon.

Bolton, G. E. 1991. A comparative model of bargaining: Theory and evidence. *The American Economic Review* 81 (5): 1096–1136.

Camerer, C. F., and G. Loewenstein. 1993. Information, fairness, and efficiency in bargaining. In *Psychological Perspectives on Justice: Theory and Applications*, edited by B. A. Mellers, and J. Baron, 155–179. New York, NY: Cambridge University Press.

Chow, C. W., J. C. Cooper, and W. S. Waller. 1988. Participative budgeting: Effects of a truth-inducing pay scheme and information asymmetry on slack and performance. *The Accounting Review* 63 (1): 111–122.

Cooper, R., R. S. Kaplan, L. S. Maisel, E. Morrissey, and R. M. Oehm. 1992. *Implementing Activity-Based Cost Management*. Montvale, NJ: Institute of Management Accountants.

Datar, S. M., and M. Gupta. 1994. Aggregation, specification and measurement errors in product costing. *The Accounting Review* 69 (4): 567–591.

DeJong, D., R. Forsythe, and R. J. Lundholm. 1985. Ripoffs, lemons, and reputation formation in agency relationships: A laboratory market study. *Journal of Finance* 40: 809–820.

——, ——, ——, and W. C. Uecker. 1985b. A laboratory investigation of the moral hazard problem in an agency relationship. *Journal of Accounting Research* 23 (Supplement): 81–123.

Eccles, R. 1985. *The Transfer Pricing Problem*. Lexington, MA: Lexington Books.

Eldenburg, L., and S. Kallapur. 1995. Changes in hospital service mix and cost allocation in response to changes in Medicare reimbursement schemes. Working paper, University of Arizona.

Evans, J. H. III, V. B. Heiman-Hoffman, and S. E. Rau. 1994. The accountability demand for information. *Journal of Management Accounting Research* 6: 24–42.

Fehr, E., G. Kirchsteiger, and A. Riedl. 1993. Does fairness prevent market clearing? An experimental investigation. *Quarterly Journal of Economics* (May): 437–459.

Forsythe, R., J. L. Horowitz, N. E. Savin, and M. Sefton. 1994. Fairness in simple bargaining experiments. *Games and Economic Behavior* 6: 347–369.

Gaver, J. J., K. M. Gaver, and J. R. Austin. 1995. Additional evidence on bonus plans and income management. *Journal of Accounting and Economics* 19 (1): 3–28.

Goldstone, R. L., and C. Chin. 1993. Dishonesty in self-report of copies made: Moral relativity and the copy machine. *Basic and Applied Social Psychology* 14 (1):19–32.

Greenberg, J. 1990. Employee theft as a reaction to underpayment inequity: The hidden cost of pay cuts. *Journal of Applied Psychology* 75 (5): 561–568.

Gupta, M., and R. R. King. 1997. An experimental investigation of the effect of cost information and feedback on product cost decisions. *Contemporary Accounting Research* 14 (1): 99–127.

Güth, W. R., R. Schnittberger, and B. Schwarze. 1982. An experimental analysis of ultimatum bargaining. *Journal of Economic Behavior and Organization* 3 (December): 367–388.

Healy, P. M. 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7 (1): 85–107.

Holthausen, R. W., D. J. Larcker, R. G. Sloan. 1995. Annual bonus schemes and the manipulation of earnings. *Journal of Accounting and Economics* 19 (1): 29–74.

Kachelmeier, S. J., S. T. Limberg, and M. S. Schadewald. 1991. A laboratory market examination of the consumer price response to information about producers' costs and profits. *The Accounting Review* 66 (4): 694–717.

Kahneman, D., J. L. Knetsch, and R. H. Thaler. 1986a. Fairness and the assumptions of economics. *Journal of Business* 59 (Supplement): S285–S300.

———, ———, and ———. 1986b. Fairness as a constraint on profit-seeking: Entitlements in the market. *The American Economic Review* 76 (September): 728–741.

Kennan, J., and R. Wilson. 1993. Bargaining with private information. *Journal of Economic Literature* 31 (March): 45–104.

Lewicki, R. J. 1983. Lying and deception: A behavioral model. In *Negotiating in Organizations*, edited by M. H. Bazerman, and R. J. Lewicki, 68–90. Beverly Hills, CA: Sage Publications.

Libby, T. 1996. The incentive effects of fairness: A study of the effect of perceived fairness on budgetary slack and performance. Unpublished dissertation, University of Waterloo.

Lindquist, T. M. 1995. Fairness as an antecedent to participative budgeting: Examining the effects of distributive justice, procedural justice, and referent cognitions on satisfaction and performance. *Journal of Management Accounting Research* 7: 122–147.

Lindskold, S., and P. S. Walters. 1983. Categories for acceptability of lies. *Journal of Social Psychology* 120: 129–136.

Linhart, P. B., R. Radner, and M. A. Satterthwaite, eds. 1992. *Bargaining with Incomplete Information*. San Diego, CA: Academic Press.

Luft, J., and R. Libby. 1997. Profit comparisons, market prices and managers' judgments about negotiated transfer prices. *The Accounting Review* 72 (2): 217–229.

Maier, R. A., and P. J. Lavrakas. 1976. Lying behavior and the evaluation of lies. *Perceptual and Motor Skills* 42: 575–581.

Merchant, K. 1989. *Rewarding Results: Motivating Profit Center Managers*. Boston, MA: Harvard Business School Press.

———, and M. Shields. 1993. When and why to measure costs less accurately to improve decision making. *Accounting Horizons* 7 (2): 76–81.

Milgrom, P., and J. Roberts. 1988. Economic theories of the firm: Past, present, and future. *Canadian Journal of Economics* 21 (August): 444–458.

———, and ———. 1990. Bargaining costs, influence costs and the organization of economic activity. In *Perspectives on Positive Political Economy*, edited by J. E. Alt, and K. Shepsle, 57–89. New York, NY: Cambridge University Press.

———, and ———. 1992. *Economics, Organization and Management*. Englewood Cliffs, NJ: Prentice Hall.

Moser, D. V., J. H. Evans III, and C. K. Kim. 1995. The effects of horizontal and exchange inequity on tax reporting decisions. *The Accounting Review* 70 (4): 619–634.

Newman, C. V. 1979. Relation between altruism and dishonest profiteering from another's misfortune. *The Journal of Social Psychology* 109: 43–48.

Noreen, E. 1988. The economics of ethics: A new perspective on agency theory. *Accounting, Organizations and Society* 13 (4): 359–369.

Ochs, J., and A. E. Roth. 1989. An experimental study of sequential bargaining. *The American Economic Review* 79 (3): 355–384.

Price Waterhouse. 1984. *Transfer Pricing Practices of American Industry*. New York, NY: Price Waterhouse.

Rabin, M. 1993. Incorporating fairness into game theory and economics. *The American Economic Review* 83 (5): 1281–1302.

Rogerson, W. P. 1992. Overhead allocation and incentives for cost minimization in defense procurement. *The Accounting Review* 67 (4): 671–690.

Romano, P. L. 1994. *Activity-Based Management in Action*. Montvale, NJ: Institute of Management Accountants.

Roth, A., and J. K. Murnighan. 1982. The role of information in bargaining: An experimental study. *Econometrica* 50 (September): 1123–1142.

Shields, M. D. 1995. An empirical analysis of firms' implementation experiences with activity-based costing. *Journal of Management Accounting Research* 7: 148–166.

Solomons, R. C. 1993. What a tangled web: Deception and self-deception in philosophy. In *Lying and Deception in Everyday Life*, edited by M. Lewis, and C. Saarni, 30–58. New York, NY: Guilford Press.

Straub, P. G., and J. K. Murnighan. 1995. An experimental investigation of ultimatum games: Information, fairness, expectations, and lowest acceptable offers. *Journal of Economic Behavior and Organization* 27 (3): 345–364.

Swenson, D. 1995. The benefits of activity-based cost management to the manufacturing industry. *Journal of Management Accounting Research* 7: 167–180.

Thaler, R. 1985. Mental accounting and consumer choice. *Marketing Science* 4 (3): 199–214.

Thompson, L., and G. Loewenstein. 1992. Egocentric interpretations of fairness and interpersonal conflict. *Organizational Behavior and Human Decision Processes* 51 (2): 176–197.

Waller, W. 1988. Slack in participative budgeting: The joint effects of a truth-inducing pay scheme and risk preferences. *Accounting, Organizations and Society* 13 (1): 87–98.

Watts, R. L., and J. L. Zimmerman. 1986. *Positive Accounting Theory*. Englewood Cliffs, NJ: Prentice Hall.

Williamson, O. 1985. *The Economic Institutions of Capitalism*. New York, NY: Free Press.

Wolfson, M. 1985. Empirical evidence of incentive problems and their mitigation in oil and tax shelter programs. In *Principals and Agents: The Structure of Business*, edited by J. Pratt, and R. Zeckhauser. Boston, MA: Harvard Business School Press.

Young, J. M., and B. L. Lewis. 1995. Incentive contracting in managerial accounting. In *Judgment and Decision-Making Research in Accounting and Auditing*, edited by R. A. Ashton, and A. H. Ashton. Cambridge, MA: Cambridge University Press.

Young, S. M. 1985. Participative budgeting: The effects of risk aversion and asymmetric information on budgetary slack. *Journal of Accounting Research* 23 (Autumn): 829–842.