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On the Social Psychology of Agency Relationships: Lay Theories of Motivation Overemphasize Extrinsic Incentives

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Three laboratory studies and one field study show that people generally hold lay theories which contain an *extrinsic incentives bias*—people predict that others are more motivated than themselves by extrinsic incentives (job security, pay) and less motivated by intrinsic incentives (learning new things). The extrinsic incentives bias can be separated from a self-serving bias and it provides an empirical counterexample to the traditional actor–observer effect in social psychology (although its theoretical explanation is similar). This kind of bias may hinder organizations from organizing because people who act as principals may use improper lay theories to offer inappropriate deals to agents.
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Organizations must convince their members to adopt the goals of the organization. If they do, they will meet the fundamental challenge of organizing. This fundamental challenge has attracted attention from theorists of organizations and theorists of individual motivation. Organizational theorists have described the challenge and outlined its solution—organizations offer their members a *deal*: inducements in exchange for contributions (Barnard, 1938; March & Simon, 1958). Theorists of individual motivation have examined the potential content of this deal—organizations must address their members' various needs

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(Maslow, 1954; Herzberg, Mausner, & Snyderman, 1959; Alderfer, 1972) and must combine and administer incentives so that their members are effectively motivated (Vroom, 1964; Nadler & Lawler, 1989; Locke & Latham, 1990). Thus, research on organization theory has recognized the deal's importance, and research on motivation has discussed the deal's content.

However, almost no research has discussed the deal's social psychology—i.e., how well does the person who is proposing the deal understand the person who is the deal's target? "Organizations" cannot make a deal—at some point one individual (a principal) must infer what kind of deal would effectively motivate another (an agent). Thus the deal requires an accurate act of social inference. Yet, we know little about such inferences. If principals accurately infer how to motivate agents and offer them an attractive deal, then organizations may successfully align the goals of their members; if not, then organizations may fail to meet their fundamental challenge. The social psychology of agency raises an interesting but unexplored question for organizational scholars: How accurately do principals infer the motivations of agents?

Some writers have suggested, either explicitly or implicitly, that principals have problems inferring how agents are motivated. For example, Douglas McGregor (1960) explicitly acknowledged problems when he bemoaned the commonness of Theory X managers (who believed that employees dislike work, wish to avoid responsibility, and desire security above all) and the scarcity of Theory Y managers (who believed that employees like work, wish to develop their skills, and desire to participate in tasks that advance worthy organizational goals). Other writers implicitly acknowledged problems. For example, if managers accurately inferred how employees are motivated, writers would not need to remind them to communicate the importance and relevance of the organization's mission (Hall, 1973; Katzenbach & Smith, 1993), to provide employees with feedback on their performance (McGregor, 1960), or to use techniques to make jobs more interesting or meaningful (Hackman & Oldham, 1980; Deming, 1982).

Readers of the management literature might easily conclude that these incorrect inferences are unique to managers, perhaps because they have been socialized inappropriately by their organizations. In contrast, I propose that these incorrect inferences arise because people in general have the wrong theories of motivation. People have intuitive, lay theories about many things (see, e.g., Nisbett & Ross, 1980; Furnham, 1988), and they also have lay theories about how others are motivated (Miller & Ratner, 1998). When people become managers or principals in organizations, they can act on their lay theories. If lay theories of motivation are incorrect, then people who act as principals may offer ineffective deals to agents. Thus, lay theories may produce friction when organizations try to meet their fundamental challenge.

In this paper, I explore the social psychology of agency relationships by focusing on a particular error in lay theories of motivation, an extrinsic incentives bias. The next section introduces this bias and explains how it relates to the broader management and social psychological literature.

THE EXTRINSIC INCENTIVES BIAS

The words "extrinsic" and "intrinsic" call to mind many issues for psychologists, so let me first clarify how I use these terms in this paper. There is a large literature in psychology on intrinsic motivation (e.g., Deci & Ryan, 1985), but in this paper I use the terms extrinsic and intrinsic, not to reference this literature, but simply because of their definitions. Extrinsic factors are "outside a thing, outward or external"; intrinsic factors are "inward," "belonging to or lying within a given part" (*Webster's New Universal Unabridged Dictionary*, 1994). At a deep level all motivations depend on an interaction between external and internal factors—an extrinsic factor like pay will affect behavior only if individuals have some internal desire for it; an intrinsic factor like "doing something worthwhile" will affect behavior only if there is something in the external environment that individuals consider worthwhile. In the paper, I try to avoid some of these complex issues by defining intrinsic and extrinsic motivation empirically based on the responses of independent sets of observers. In general, observers in my studies classified motives as extrinsic when they involved an aspect of a situation that would be easily verified by independent judges (e.g., pay, benefits, job security) and as intrinsic when they involved an internal state that independent judges might find hard to verify (e.g., an internal change in knowledge like "learning new things" or an internal state of satisfaction like "feeling good about oneself"). However, because motivation depends on an interaction between internal and external factors, even this empirical definition will not completely resolve the issue, and I will revisit this issue at various points in the paper.[1]

Within the management literature, different schools of management have disagreed about whether workers are more motivated by extrinsic or intrinsic factors. Frederick Taylor's scientific management was infamous, in part, because it argued that the deal between organizations and their members should emphasize extrinsic factors: "scientific" managers offered workers better wages and greater security in exchange for working in the most efficient way. Although this efficient work was often menial and intrinsically uninteresting, scientific managers assumed that workers would be willing to make this sacrifice because they were primarily interested in stable, high-paying jobs: "what workers want most from their employers beyond anything else is high wages" (F. W. Taylor, 1911). In objecting to scientific management, McGregor and other members of the human relations school of management plausibly argued that scientific managers suffered from a kind of *extrinsic incentives bias*: they overestimated how much employees care about extrinsic task features (like pay or job security), and they underestimated how much employees were motivated by intrinsic features (like having a meaningful task).[2]

[1] For more on this point, see discussion of Study 1.

[2] These lay theories might contain a self-serving bias as well as an extrinsic incentives bias. The empirical studies in this paper show that the extrinsic incentives bias can be documented even when self-serving biases are controlled. At this point note that, while self-serving biases might explain why we think others are more motivated by money, they seem unlikely to explain

McGregor and other writers in the human relations school identified the extrinsic incentives bias, but they were less clear about its cause. I propose that this bias is not limited to scientific managers, or even managers in general; it is a property of people's lay theories. In this view, the extrinsic incentives bias is not an occupational hazard; it is a psychological one.

Evidence suggests that an extrinsic incentives bias can be documented in people other than scientific managers. Consider a survey of 486 prospective lawyers, who were questioned by Kaplan Educational Centers during their preparation for the Law School Admissions Test ("Motives of Prospective Lawyers," 1995). They were asked to describe their own motives for pursuing a legal career and to speculate about the motives of their peers. Sixty-four percent said that they were pursuing a legal career because it was intellectually appealing or because they had always been interested in the law, but only 12% thought so about their *peers*. Instead, 62% speculated that their peers were pursuing a legal career because of financial rewards. Thus, their lay theories stressed their peers' response to money and denied their peers' intellectual interest in the law. In both respects, the lay theories of the prospective lawyers resemble the ideology of scientific managers.

Similar evidence for the extrinsic incentives bias can be documented in the population at large. Results from the General Social Survey (GSS) confirm a similar pattern in a randomly sampled group of U.S. adults (General Social Survey, 1998). For over 25 years, the GSS has asked a sample of adults to rank the importance of five different aspects of their jobs: pay, security, free time, chances for advancement, and "important work" that "gives a feeling of accomplishment." Inevitably, "important work" is, on average, ranked first (and by over 50% of the individual respondents). Pay typically ranks third. Yet, in the late 1980s, when the GSS asked respondents about the role of extrinsic incentives for others, people generally believed that pay was quite important. Of this sample, 73% thought that "large differences in pay" were necessary "in order to get people to work hard," and 67% agreed that "people would not want to take extra responsibility at work unless they were paid extra for it."[3]

Combined, these observations suggest that an extrinsic incentives bias may play a role in lay theories of motivation. If so, then McGregor may have erred in describing an extrinsic incentives bias as a characteristic of *Theory X managers*. In their lay theories, members of the general population assess others' motives using Theory X, while they assess their own motives using Theory Y.

An extrinsic incentives bias, if it exists, might intrigue organizational scholars because it illustrates a lay theory that might lead principals to craft ineffective deals with agents (and in turn hinder an organization from organizing).

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the full pattern of the extrinsic incentives bias exhibited by the scientific managers. For example, it is not clear that a self-serving bias would imply that others would be more interested in job security or less interested in a meaningful task.

[3] The results on personal importance are from variables JOBINC, JOBSEC, JOBHOUR, JOBPROMO, and JOBMEANS. The perceptions of others are from variables SOCDIF1 and INEQUAL1.

An extrinsic incentives bias might intrigue social psychologists because it seemingly contradicts another result in social psychology, the *actor–observer effect*. In this effect, observers (e.g., principals) tend to explain the behavior of actors (e.g., agents) in terms of intrinsic motivations, while actors explain their own behavior in terms of extrinsic motivations. Thus an extrinsic incentives bias would be intriguing because it reverses a traditional empirical result in social psychology.

Thus, an extrinsic incentives bias would raise interesting issues for the organizational and social psychological literatures. However, researchers in social psychology have focused their theoretical and empirical attention on the opposite actor–observer effect, so the question remains whether an extrinsic incentives bias could be understood theoretically, much less documented in a systematic way. The next section provides a theoretical account of why people might exhibit an extrinsic incentives bias (rather than the traditional actor–observer effect) in the domain of agency relationships. It describes the empirical actor–observer effect and the theory that has been used to explain it; then it argues that the same theory might predict an extrinsic incentives bias when researchers consider the social psychology of agency.

ACTOR–OBSERVER EFFECTS AND THE EXTRINSIC INCENTIVES BIAS

In social psychology, a large literature on attribution has documented an actor–observer effect or a related effect, the dispositionist bias. Let us start by considering the dispositionist bias, which focuses primarily on the observers' side of the actor–observer effect. In the traditional attribution experiment, participants observed the behavior of an actor, and then they were asked to explain the actor's behavior (i.e., attribute it to various causes). In such experiments, observers often overemphasized the actor's intrinsic disposition, a tendency that has been labeled the correspondence bias (Jones & Harris, 1967; Gilbert & Malone, 1995) or, more transparently, the dispositionist bias (Ross & Nisbett, 1991). In the classic demonstration of this bias, observers attributed pro-Castro attitudes to a student who wrote a pro-Castro essay, even when they knew the student was assigned the essay topic (Jones & Harris, 1967). More recently, observers witnessed another student give a prolife or prochoice speech on abortion; afterward, they assumed that the speaker held an attitude consistent with his or her speech even though the speech was based on prespecified arguments and the observers themselves assigned the topic (Gilbert & Jones, 1986). Thus, observers frequently attribute behavior to dispositions instead of acknowledging the power of situations. This mistake has been documented by investigators in so many situations that it has been called the *fundamental* attribution error (Ross, 1977; Ross & Nisbett, 1991; Gilbert & Malone, 1995).

In contrast to observers, actors do *not* exhibit a dispositionist bias when they explain their own behavior. For example, actors in the experiments above would not explain their behavior in terms of intrinsic attitudes or dispositions (e.g., Communist sympathies); instead they would attribute their behavior to extrin-

sic, situational factors ("I wrote the pro-Castro essay because it was important for the experiment"). Thus, actors tend to emphasize extrinsic attributions for their behavior, while observers emphasize intrinsic ones. Combined, this pattern of attributions has been labeled as the actor–observer effect.

Although researchers have documented some exceptions (see Fiske & Taylor, 1991, pp. 72–75), a reader who digested the large literature on attribution could easily conclude that the actor–observer effect is a social constant. However, the lawyer survey and the General Social Survey hint that this empirical result may reverse when people consider agency relationships and explain the workplace or career choices of others. In the traditional attribution study, people say that their own motivations are extrinsic but others' are intrinsic. The lawyers claimed the opposite. As actors, the prospective lawyers claimed they were motivated by two intrinsic factors: the appeal of a legal career and their long-term interest in the law. As observers, they claimed that their peers were motivated by an extrinsic factor: financial rewards. This extrinsic incentives bias differs from the traditional actor–observer effect; thus it may alter our understanding of the attribution process.

I propose that the traditional actor–observer effect will frequently reverse when people explain behavior in agency relationships. To understand this proposal, we must first consider why the traditional theory predicts the actor–observer effect in the traditional attribution study and then consider why it might predict an extrinsic incentives bias when observers and actors explain behavior in agency relationships.

In explaining the actor–observer effect, the traditional theory has argued that observers and actors differ on two dimensions: perception and information. First, observers and actors perceive different features of the world. Observers "perceive" the actor (the actor's behavior "is figural or dynamic against a more pallid and dull situational background"; Fiske & Taylor, 1991, p. 73). Actors "perceive" the situation (they notice the situational factors that influence their behavior more than they notice the behavior itself). In response, both observers and actors attribute behavior to whatever is perceptually salient (Storms, 1973). Second, observers and actors also differ in information. Observers lack information about the actor's past behavior; thus they may infer that actors "always or usually act in this way" (Fiske & Taylor, 1991, p. 73). On the other hand, actors may have information that they have reacted differently in the past, so they resist explaining their behavior as a product of their intrinsic disposition (Jones & Nisbett, 1972).

While perceptual and informational differences produce an actor–observer effect in the traditional attribution study, the same differences may produce an extrinsic incentives bias in agency relationships. Agency relationships differ from the traditional attribution study in three key features: First, agency relationships involve an explicit deal between an organization and employees, and the deal involves salient incentives like money. Second, agency relationships are long-term, unfolding over months or years, which means that actors have a chance to habituate to the incentives that are involved. Below, I discuss how these two factors may alter the *perceptual* differences between actors and

observers. Third, in agency situations, actors typically make a conscious choices about their jobs and careers that requires them to consider their own long-term preferences and rank their importance. Below, I discuss how this factor can alter the *informational* asymmetries between actors and observers.

First, consider perceptual differences between actors and observers in agency relationships. To attribute behavior to situational factors, observers must first perceive them (Gilbert & Malone, 1995). Observers may not perceive situational factors in the traditional attribution study because they are typically quite subtle (Ross & Nisbett, 1991; Gilbert & Malone, 1995). Consider, for example, how difficult it would be for observers to perceive the peer pressure experienced by subjects in conformity experiments (Asch, 1955) or the authority of a lab-coated experimenter in obedience experiments (Milgram, 1963). Although observers may not perceive these subtle situational factors, actors clearly did.

Although situational forces may be subtle in the traditional attribution experiment, the agency relationship is likely to make situations much more salient. The agency relationship involves an explicit deal between organizations and their members (e.g., we sign employment contracts that specify our pay and benefits). Not only is the deal explicit, but it concerns specific situational factors that are also relatively salient. While attribution experiments involve situational factors like peer pressure that may be perceptually *subtle*, the agency relationship involves situational factors like pay, benefits, and job security that are perceptually *salient*. For example, research on cognitive dissonance has demonstrated the salience of money (e.g., Festinger & Carlsmith, 1959). In that study, all participants agreed to perform a task, whether they were paid $1 or $20. Thus, the experimenter's persuasive powers, and not the money, really determined their choice. However, later on, the only participants who experienced cognitive dissonance were those in the $1 condition, who did not have a salient monetary explanation for their own behavior. Thus, the deal between organizations and their members is explicit and it involves salient situational factors; in turn, observers who explain behavior in agency relationships may perceive situational factors to be more salient than do observers in the traditional attribution study.

In fact, in agency relationships, observers may perceive situational factors salient even when they are relatively invisible to actors. In contrast with the typical lab demonstration of the actor–observer effect, which is based on a brief sample of behavior, agency relationships involve situations that unfold over a long period of time. In such long-term situations, actors are likely to adapt or habituate to whatever situational factors exist, especially when those factors remain relatively constant. For example, in the classic study, Brickman, Coates, and Janoff-Bulman (1978) found that, within a year of winning a large sum of money in a state lottery, the lottery winners expressed no greater life satisfaction than a control group of nonwinners. Thus actors can habituate to even strong situational factors like a dramatic monetary windfall. Most observers, however, are quite surprised to find that the lottery winners are no happier despite the salient situational difference. Consider another example. Researchers asked Midwestern university students to predict the happiness

of students in California (Schkade & Kahneman, 1997). The Midwesterners predicted that the Californians would be significantly happier—after all, the weather is better in California and the cultural opportunities more numerous. In reality, however, the two groups of students expressed identical happiness. The California actors adapted to their better weather and cultural opportunities, and the Midwest observers overestimated the impact of these situational factors. Similarly, agents in organizations are likely to habituate to constant situational factors—even when they include high salaries or strong job security. Because salary and security are constant, they are likely to fade into the background for actors, but these situational factors may be quite salient for external observers.

I have discussed perceptual differences that might cause the traditional actor–observer effect to reverse in agency relationships, but informational differences are also important, particularly because actors' choices in agency relationships are often based on relatively stable, long-term preferences. In both agency relationships and the traditional attribution experiment, observers lack any information about actors' previous behavior. However, the actors have very different information in the two contexts. In the traditional attribution experiment, actors confront a situation that is designed to elicit novel behavior (e.g., writing a pro-Castro essay). Here, actors attribute their behavior to their situation because they have information that it is *inconsistent* with their previous behavior. In agency relationships, on the other hand, actors have information that their current behavior is *consistent* with their previous behavior (Monson & Hesley, 1982). Actors typically spend many years working to acquire the skills necessary to pursue their chosen career. Thus, they know that their job or career choice is consistent with their long-term preferences (Anderson & Ross, 1984). Actors in the traditional attribution experiment have information that their behavior is *inconsistent* with their preferences (so they attribute it to the situation); actors in agency relationships have information that it is *consistent* (so they attribute it to their intrinsic interests).

To summarize, agency contexts are likely to reverse the perceptual and informational asymmetries that characterize the traditional actor–observer effect, and thus, the actor–observer effect may be replaced by an extrinsic incentives bias. Table 1 summarizes this theoretical argument. The theory not only explains why people may generally exhibit an extrinsic incentives bias, but also identifies the factors that would need to change in order for the bias to be reduced. For example, observers should display a reduced extrinsic incentives bias in situations where they are more likely to perceive the intrinsic interest of a job. Overall, however, I predict that people will exhibit an

> *Extrinsic incentives bias*: People will believe that others are more motivated than themselves by motivations that are situational or extrinsic and less motivated than themselves by motivations that are dispositional or intrinsic.

While an extrinsic incentives bias in agency relationships would not contradict existing theory about attribution in social psychology, the empirical result would be quite unusual. In the actor–observer literature, only one paper, Quattrone (1982), is cited as evidence that people may occasionally overattribute

TABLE 1

Theoretical Differences between the Traditional Actor–Observer Study and Agency Relationships

	Traditional actor–observer study	Agency relationships
Perception	Involves *subtle* situational factors (e.g., peer pressure or request from experimenter)	Involve *obvious* situational factors (pay, benefits, job security)
	Actors: Perceive situational factors because they experience them	*Actors*: May not perceive situational factors because they habituate to constant features of the environment
	Observers: May not perceive situational factors	*Observers*: Have lay theories that highlight situational factors
Information	*Observers*: Have no information about the actor	*Observers*: Have no information about the actor
	Actors: Have information that their behavior is *inconsistent* with previous behavior	*Actors*: Have information that their behavior is *consistent* with previous behavior
Result	Actor–observer effect	Extrinsic incentives bias

others' behavior to situational factors. If people display an extrinsic incentives bias when making inferences about agency relationships, then the extrinsic incentives bias would provide a counterexample to the traditional actor–observer effect in a common life domain.

This paper presents four studies that demonstrate an extrinsic incentives bias. Study 1 demonstrates that the extrinsic incentives bias exists even when the task is very clear and when participants are rewarded for accurate predictions. It also expands the evidence of the extrinsic incentives bias from salary to other situational factors like job security. Study 2 shows that the extrinsic incentives bias holds even if self-serving biases are controlled for. Study 3 shows that the extrinsic incentives bias occurs even when people frame fixed but ambiguous incentives to others. Study 4 shows that the extrinsic incentives bias persists even in a field setting where participants have a great deal of experience with those whom they are trying to predict.

STUDY 1: DIVERGENT MOTIVATIONS AND EXTRINSIC INCENTIVES

The lawyer survey and the GSS suggest that people may demonstrate an extrinsic incentives bias, but both anecdotes are limited because the surveys provided no way to *measure* accuracy or reward it. In this study, I attempted to document the existence of an extrinsic incentives bias using a more precise procedure. Participants predicted how multiple actors would *report* their own responses to many different types of motivations. Participants were given a list of eight different motivations (e.g., pay, job security, learning new skills). They were asked to rank-order the eight stimuli for themselves and then to predict how the eight items would be ordered by three different target groups

(their classmates, and managers and employees of a specific company). Because I had data about the actual rankings of the three target groups, this procedure allowed me to measure the accuracy of predictions and to reward participants appropriately.

This procedure has a number of advantages: First, it minimizes the effects of specific group stereotypes. If observers predict an extrinsic incentives bias across multiple actors, then it is less likely that a specific group stereotype is responsible.

Second, the procedure asked participants to predict how actors would react to multiple motivations (e.g., pay, job security, accomplishing something worthwhile, developing skills and abilities). If participants predict consistent reactions to multiple motivations, then this provides evidence for an extrinsic incentives bias and against a dispositionist bias. A traditional dispositionist bias can most comfortably explain attributions about only *one* motivation at a time. For example, when the prospective lawyers predicted that their peers responded strongly to financial incentives, the traditional dispositionist bias could explain this by invoking a particular disposition: greed. However, if people overestimate the impact of multiple extrinsic motivations—e.g., financial incentives, *and* job security *and* praise from a manager—then an extrinsic incentives bias becomes more plausible because the dispositionist bias must invoke a separate disposition to explain each extrinsic incentive.

Third, the procedure included a number of incentives to encourage participants to predict accurately: To appeal to their intrinsic motivation of predicting accurately, participants were promised specific feedback about the accuracy of their responses; to appeal to their social motivations, they were told that their accuracy would be revealed to their classmates; to appeal to their extrinsic motivation, they were promised $10 if their predictions were sufficiently accurate.[4]

Thus, Study 1 was designed to determine whether people exhibited an extrinsic incentives bias when they predicted the motivations of others. It involved multiple targets and multiple motivations, and it allowed accuracy to be evaluated. Perhaps most importantly, it was designed to explore whether participants were willing to bet on their inferences—the predictions in this study were the basis of personal feedback as well as social and financial rewards.

Participants

Participants were 74 MBAs enrolled in an organizational behavior course at the University of Chicago Graduate School of Business. On average, participants had 5.7 years of work experience and had spent 2.8 quarters at the GSB. At the time, 23 of the participants were acting as managers.

[4] I added the monetary motivations primarily to address concerns in the experimental economics literature that participants will not take a task seriously if they are not adequately compensated (see Davis & Holt, 1993; Roth, 1995). This task takes about 5 min, so the monetary rewards here meet the criterion for significant rewards described in this literature (see Davis & Holt, 1993, pp. 24–26). In fact, the rewards have little effect on the results. (See Study 2 for similar results with anonymous surveys with no feedback and no rewards.) Any resemblance between the method-

Method

In the survey, participants rank-ordered the importance of eight different motivations for themselves, and then they predicted the rank-order that would be provided by their classmates and by managers and employees (customer service representatives, or CSRs) of a specific unit at Citibank. Participants were given one-paragraph job descriptions for the Citibank managers and CSRs. To ensure that these descriptions were adequate, I sent the initial drafts to three managers at Citibank and incorporated their suggestions into the final descriptions. Participants were told that their objective was to predict the rank order of the average responses of the three target populations.

Participants were also given a number of incentives to encourage correct prediction. First, they were promised specific feedback; they were told that I would analyze the data and report the correlation between their predictions and the targets' average responses for each of the three targets. They were also told that the accuracy of their responses would be seen by everyone in their class. Finally, they were told that if the average correlation between their predictions and the actual responses exceeded .30, they would earn $10. The week after the questionnaire was collected, I provided the promised report in class and awarded the money to those who had earned it.

Stimuli. The eight motivation items are based on a questionnaire by Nadler and Lawler (1989), who endorsed the expectancy theory argument that motivations differ across people, and offered the questionnaire to managers as a way to document that fact. So, they carefully listed a wide variety of possible motivations. From their original list of 11 items, I selected 8 items, 4 of which are relatively extrinsic (benefits, pay, security, praise from manager) and 4 of which are relatively intrinsic (learning new things, developing skills, accomplishing something worthwhile, feeling good about oneself). Items were categorized as extrinsic or intrinsic using ratings from the three target populations. (See below and Study 4 for details.) Ratings were collapsed across the three target populations, and *t* tests indicated that all of the extrinsic items were significantly more extrinsic than the intrinsic items (all $ps < .01$ by paired *t* test).[5]

Norms. The norms for Citibank managers and CSRs come from the population described in Study 4. The classmate data was taken from a sample of 33

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ological recommendations of social scientists and the lay theories of my experimental participants is, perhaps, accidental.

[5] The ratings of extrinsicness by the three different target groups show significant convergence. Average ratings for each of the target groups correlate at above $r = .95$ with those for each of the other groups ($p < .01$). Furthermore, the ratings of extrinsicness converge in understandable ways with other scales. For example, ratings of extrinsicness correlate positively with a scale that runs from "personality-specific" to "situational (i.e., it creates a strong external force that will work for all people)" ($rs > .92$, $p < .01$). Ratings of extrinsicness also correlate highly with scales that ask about habituation. People say it would be easier to grow accustomed to extrinsic motivations "to the point you wouldn't notice it anymore" ($rs > .87$, $p < .01$) and they say that intrinsic motivations affect their job more on a day-to-day basis ($rs > .83$, $p < .01$). The results on habituation are discussed more extensively in the General Discussion section.

MBAs at the same school who were taking the same class, using a procedure that paralleled the CSR and manager self-ratings of Study 4.

Results

Table 2 displays the actual ordering of the eight items for participants and for the three target groups. It also displays participants' predictions for each target group.

Evidence for an extrinsic incentives bias. As predicted by the extrinsic incentives bias, participants seemed to overestimate how highly their targets would rank the extrinsic incentives—e.g., they predicted that the top four incentives for CSRs would be extrinsic (pay, security, benefits, and praise)—but the actual CSRs listed only one extrinsic incentive in their top four (benefits). To provide a statistical test of the extrinsic incentives bias, I counted the number of times that a participant listed an extrinsic item in the top position, and I compared this to the number of times that he or she predicted that an extrinsic item would be listed in the top position by classmates, Citibank managers, and CSRs. For themselves, participants listed an extrinsic item in top position only 22% of the time; however, they predicted that targets would do so more often: classmates (32%), managers (54%), and CSRs (85%). Overall, participants predicted that the managers and CSRs would be much more extrinsic than themselves ($ps < .01$ by χ^2). (This analysis arbitrarily focuses on the first position but similar results hold no matter where the distribution is cut.)

Additional tests indicate that the extrinsic incentives bias reduced accuracy—if we compare predictions to the targets' actual responses, participants significantly overestimated the frequency with which managers and CSRs would list an extrinsic incentive in the top position ($ps < .01$ by χ^2). In summary,

TABLE 2

Order of Items for Self-Responses, Actual Responses, and Predictions for Study 1

	Actual responses			Predictions		
Self	Previous class	Managers	CSRs	Classmate	Manager	CSR
Learning[a]	Skills	Worthwhile	Skills	Skills[a]	Pay[a]	Pay[a]
Skills[a]	Learning	Skills	Worthwhile	Pay[a]	Skills[ab]	Security[a]
Feel good[a]	Feel good	Feel good	Learning	Learning[a]	Security[b]	Benefits[b]
Pay[ab]	Pay	Learning	Benefits	Feel good[b]	Benefits[bc]	Praise[c]
Worthwhile[bc]	Worthwhile	Security	Security	Worthwhile[c]	Feel good[cd]	Feel good[c]
Praise[d]	Praise	Benefits	Feel good	Benefits[d]	Learning[cd]	Skills[cd]
Benefits[d]	Benefits	Pay	Pay	Security[d]	Worthwhile[d]	Worthwhile[de]
Security[d]	Security	Praise	Praise	Praise[d]	Praise[d]	Learning[e]

Note. Items are listed vertically according to average ranks. In the columns containing data from Study 1, entries that differ by a superscript are significantly different by a sign test at the .05 level.

participants showed an extrinsic incentives bias and they predicted less accurately because of this bias.

The extrinsic incentives bias did not differ based on how much managerial experience participants had. This suggests that this experiment was actually assessing lay theories rather than "managers'" theories. (This has been true in all my studies with this participant group.)

Accuracy. This study defined accuracy for participants as the average correlation between their predictions and the targets' self-reports. I thus computed for each participant the Spearman rank correlation between his or her predictions and the actual responses of each target group (see Table 3 for the average of these individual correlations). Column 1 indicates that participants' predictions correlated positively with the actual responses of their classmates ($r = .47$, $t(73) = 10.1$, $p < .001$), but they did not correlate with the actual responses of Citibank managers ($r = -.02$, *ns*) and they correlated negatively with the actual responses of CSRs ($r = -.30$, $t(73) = -7.52$, $p < .001$). Participants were surprised by their lack of accuracy. At the time they turned in their questionnaires, I asked them how many expected to earn the $10 prize, and about 50% of them raised their hands. However, because of their overall performance, only 12% of them actually won the $10.

Although participants' lay theories led them to predict quite poorly, Table 2 suggests a particular assumption that might have improved their predictions and earned them more substantial rewards. Consider that, in Table 2, participants' own ranks were similar to the ranks of the three target populations they were trying to predict. How well would participants have performed if they had assumed that others were motivated *exactly* as they were (i.e., an "identical motivations" assumption)? The answer to this question is found in Table 3. This table reports the average results of individual analyses that correlate each participant's prediction and self-response with the actual responses of each target group. Consider, for example, the last row of the table,

TABLE 3

Accuracy of Predictions and Self-Responses for Study 1

	Correlation between prediction and actual target (accuracy)	Correlation between self and actual target (accuracy of identical motivations)	Percentage who would have predicted as well or better by assuming identical motivations
Classmate	.47**	.52**	58
Citibank manager	−.02	.30**[a]	78[b]
Citibank CSR	−.30**	.22**[a]	88[b]
Average across three targets	.05	.35**[a]	84[b]

Note. Table reports the average of the $N = 74$ individual correlations.

[a] Columns 2 and 3 differ significantly by paired t test.

[b] Differs significantly from 50% by chi-square test.

** $p < .01$.

which averages across the three target groups. Column 3 indicates that the identical motivations assumption would have increased the average correlation between predictions and targets from $r = .05$ to $r = .35$ ($t(73) = 7.88$, $p < .001$). In fact, Column 4 indicates that this assumption would have allowed 84% of participants to predict their targets at least as well or better. Because they did not assume identical motivations, participants sacrificed financial rewards. As mentioned above, participants won the $10 only 12% of the time. However, if participants had held a lay theory that assumed identical motivations, they would have won 62% of the time ($\chi^2(1) = 39.6$, $p < .001$).

Discussion

Study 1 provides evidence of an extrinsic incentives bias that occurs for multiple targets and across multiple items. For example, participants listed an extrinsic incentive in the top position for themselves only 22% of the time, but they predicted that the CSRs would list an extrinsic incentive in the top slot 85% of the time—nearly four times more often. Participants erred in their predictions in the direction predicted by the extrinsic incentives bias, and they did so even when the task was explained precisely and when there were incentives to predict carefully.

Although participants exhibited an extrinsic incentives bias when they predicted Citibank managers and CSRs, they did not do so for classmates. This could occur because participants had simple stereotypes of "workers" versus "students," but the next two studies show that an extrinsic incentives bias can be documented even when participants predict fellow students. As Table 1 suggests, there are theoretical reasons (other than simple stereotypes) to expect that the size of the extrinsic incentives bias will differ across targets depending on perception (e.g., MBAs may be more likely to perceive the intrinsic interest of a classmate's job in finance than that of the CSRs' job at the phone center) or information (MBAs know that their fellow classmates are at least somewhat interested in "learning new things," but they may not assume this about managers or CSRs at Citibank). Just as the actor–observer bias has been shown to vary in size depending on how well the theoretical conditions are met (Fiske & Taylor, 1991, p. 75), the extrinsic incentives bias may vary as well. In this paper, I will focus primarily on demonstrating that the extrinsic incentives bias exists across a number of targets and contexts. However, the differences in the magnitude of the bias are theoretically interesting, and Study 3 will examine one source of these differences.

For organizational theory, the results of Study 1 suggest that the social psychology of agency may be an interesting topic. People's lay theories overestimated the importance of extrinsic incentives, suggesting that people who act as principals may misinfer the desires of agents. If people had adopted a lay theory that assumed identical motivations, they would have performed much better. Although their actual theories allowed only 12% to win the $10, the identical motivations assumption would have allowed 62% to win. Thus, the expected value of their payoff would have been more than five times greater.

Study 1 may have found an extrinsic incentives bias rather than traditional actor–observer effect because of procedural differences. In the traditional attribution experiment, a participant learns about a specific behavior of a target and then is asked to state its cause. In the current study, participants do not make explicit attributions about specific behaviors. However, even though Study 1 uses a novel procedure, its results suggest that people do not always discount extrinsic, situational causes when they explain others' behavior or discount intrinsic, dispositional causes when they explain their own.

If we wanted to remain committed to the traditional actor–observer effect, we could note that for every incentive, participants, in their role as observers, might have inferred an internal disposition that would lead a target actor to respond to a particular incentive. However, this approach quickly threatens to violate any reasonable standard of parsimony. Participants may have believed that targets respond more to money because they are greedy, but why do they also believe that targets respond more to job security (risk aversion?) and praise from a supervisor (insecurity?), less to learning new things (incuriousness?) and exercising their skills (laziness?)? Dispositional assumptions cannot parsimoniously explain the general tendency for participants to believe that targets were less motivated by intrinsic incentives and more motivated by extrinsic ones. The overall pattern is more easily explained by an extrinsic incentives bias.[6]

STUDY 2: AN EXTRINSIC INCENTIVES BIAS AND SELF-SERVING BIASES

Although Study 1 showed that people did not predict others' motivations very accurately, the analysis should be interpreted with caution because the extrinsic incentives bias may have been enhanced or even caused by self-serving biases. Research has indicated that actors tend to interpret their own behavior in a self-serving way. For example, the *majority* of people rate themselves "above average" on positive traits and abilities and "below average" on negative traits (Alicke, 1985; Campbell, 1986). Perhaps participants in Study 1 believed that others were more motivated by salary and job security, not because they overestimated the impact of extrinsic incentives, but because they underestimated how much others would be motivated by admirable motivations like "doing something worthwhile for the organization." Indeed, the actor–observer effect is weakened (or sometimes reversed) when people explain events that are especially positive (see Fiske & Taylor, 1991, pp. 74–75).

Note that it is possible that people exhibit both self-serving biases *and* an

[6] Others might argue that all these motivations are "situational." However, items like "learning new things" are reliably rated below the midpoint of the extrinsic/intrinsic scale, and items like pay are reliably rated above. Since "intrinsic" was defined as "within a person," this indicates that participants saw at least some of the items as dispositional. Similar results were found when I asked another group of people to rate items on a scale from "situational (i.e., outside the person in the external environment)" to "personality-driven (i.e., they would only work for people with certain personalities." This scale produces results that are very similar to the intrinsic/extrinsic scale.

extrinsic incentives bias. However, for my argument, it is important that I be able to show an extrinsic incentives bias after controlling for self-serving biases. This is the purpose of Study 2.

Participants

Participants were MBAs in a weekend MBA program of the University of Chicago ($N = 47$).

Method

As in Study 1, participants completed a questionnaire for themselves and then predicted the ratings of two targets. However, participants did not rank-order the items; they *rated* them on a 7-point scale (1 = *moderately important or less*; 7 = *extremely important*). (The 11 items and the scale anchors were taken from the original Nadler and Lawler (1989) questionnaire.) The items are listed in the Appendix.

All participants filled out the questionnaire for themselves and then they predicted how a typical classmate would respond. In addition, some participants predicted how a "typical Fortune 500 employee" ($N = 22$) would respond, and some participants predicted a "typical Fortune 500 manager" ($N = 25$). Study 2 used general targets to avoid idiosyncratic reactions to the specific job descriptions used in Study 1. Different participants received the questionnaires in a different counterbalanced order. In Study 1, responses were made public to allow people to receive personal feedback and rewards; but in Study 2, responses were made anonymously to eliminate any attempts at impression management (modifying one's responses to impress others) that might interfere with the study's ability to detect true self-serving biases.

To provide a control for self-serving biases, participants rated how "admirable" each motive was. For the ratings of admirability, participants were asked "how admirable, good, or noble would you consider a person who responds strongly to this motivator?" They responded on a 7-point scale (1 = *not admirable, good, noble*; 7 = *very admirable, good, noble*). In the analyses below, I use these individual ratings to control for self-serving biases. Self-serving biases are presumably most likely on dimensions that a given individual thinks are admirable.

A separate group of 25 MBAs rated the 11 items on how extrinsic they were. For extrinsicness, participants were asked to rate "how extrinsic or intrinsic is this motivator?" (7 = *extrinsic, outside the person in the external environment*; 1 = *intrinsic, within a person*). In the analyses below, the average ratings of extrinsicness will be used to test hypotheses about the extrinsic incentives bias.

Results

Mean predictions. Figure 1 displays the means for self-responses and predictions of the targets. On the *y* axis, the figure lists the 11 items in the survey,

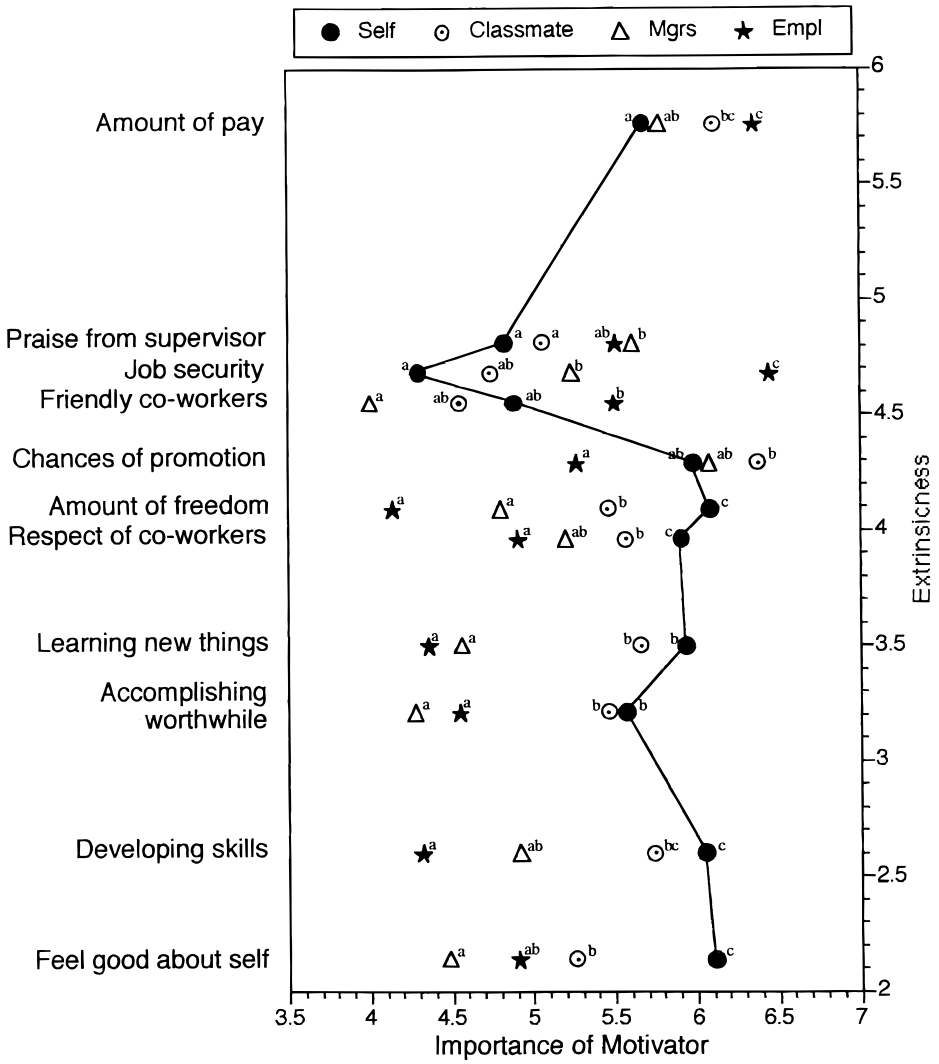

FIG. 1. Study 2. Ratings of importance of motivators for self, classmate, and typical Fortune 500 manager and employee. Symbols that do not share a superscript indicate means that differ significantly at $p < .05$ by t test.

with their vertical position indicating their average extrinsicness. Items at the top of the figure (e.g., amount of pay) were rated as highly extrinsic, and items at the bottom of the scale (e.g., feeling good about yourself) were rated as highly intrinsic. The *x* axis plots how people rated the average importance of the item for themselves and for the three target groups.

Evidence of an extrinsic incentives bias. Figure 1 suggests that participants may have exhibited an extrinsic incentives bias. Note that at the top of the graph, for motivations that were rated as extrinsic, participants generally assumed that others would be *more* motivated than they were, and at the bottom of the graph, for items which were intrinsic, participants assumed that others would be *less* motivated.

TABLE 4

Study 2: Individual OLS Regressions on Extrinsicness and Admirability

	Extrinsic		Good/admirable	
	Mean	% Positive	Mean	% Positive
	Predictions versus self			
Classmate–self	.289**	70**	−.034	50
Manager–self	.435**	64	−.220^	40
Employee–Self	.620**	81**	.124	38
	Accuracy of predictions (prediction − actual response)			
Class	.326**	75**	−.028	48
Employee	.770**	89**	.083	47

Note. The table reports the average coefficients from individual regressions for each participant (significance is measured by a *t* test relative to zero). The table also reports the percentage of participants who had a positive coefficient on each variable (significance is measured by a binomial test relative to .50).

^ $p < .10$.

** $p < .01$.

Is this pattern consistent with the extrinsic incentives bias, self-serving biases, or both? To test this, I computed, for each of the 11 items on the questionnaire, the difference between a participant's prediction of a target and the participant's own self-response. This difference served as the dependent variable and I tried to predict it based on two independent variables (the admirability and extrinsicness of each item) using a separate ordinary least square (OLS) regression for each participant.[7] The top half of Table 4 presents the aggregated results from these individual regressions (e.g., there were $N = 47$ regressions for the predictions of classmates). It reports the average coefficient on each independent variable (significance is based on a *t* test relative to zero) and the percentage of individual coefficients that are positive (significance is based on a sign test relative to .50). Note that because the individual regressions contain only 11 items, this procedure runs the risk of having too little power to detect effects. However, the results below suggest that the analysis is sufficiently powerful to detect an extrinsic incentives bias.[8]

[7] Edwards (1995) and others have discussed potential problems that arise when difference scores are analyzed. In this case, however, analyzing the difference scores provides the most straightforward tests of my hypotheses. Both self-serving biases and the extrinsic incentives bias are stated in relative terms. Thus, if we were conducting separate regressions, $Y = b_{1t,s}$ EXTRINSIC + $b_{2t,s}$ ADMIRABLE, where Y = the rated importance of a motive, and the subscripts s = self and t = target, the extrinsic incentives hypothesis would predict that $b_{1t} > b_{1s}$ and the self-serving bias hypothesis would predict that $b_{2t} < b_{2s}$. By the analysis of the difference between target and self, these hypotheses can be tested directly as a positive coefficient on EXTRINSIC and a negative coefficient on ADMIRABLE.

[8] For each regression I report in this paper, I have run a parallel regression that stacks the data across all responses and all subjects. The stacked regressions provide more power than the

The results in Table 4 indicate that there is an extrinsic incentives bias that can be separated from a self-serving bias. First, consider the evidence of a self-serving bias. While no self-serving bias was found for classmates (avg. $b = -.034$, *ns*) or employees (avg. $b = .124$, *ns*), participants did exhibit a self-serving bias when predicting the typical manager (avg.$b = -.220$, $p < .10$). Consistent with work on self-serving biases (e.g., Taylor & Brown, 1988), participants evidently preferred to believe that they were more motivated than the typical manager by incentives that were good and noble.

Even after effects of a self-serving bias are separated, Table 3 provides substantial evidence of an extrinsic incentives bias. People believed that each target group was less motivated than themselves by intrinsic motivations and more motivated by extrinsic motivations. This was true for classmates (avg. $b = .289$), managers (avg. $b = .435$), and employees (avg. $b = .620$, all ps $< .01$). Furthermore, the majority of individual participants showed a positive effect of extrinsic incentives for each target group.

Accuracy. Note in Fig. 1 that if participants predicted their classmates accurately then their predictions should have been indistinguishable from the average self-reports of the class as a whole (i.e., the open circle should have fallen on top of the closed circle). For each item that differs significantly (e.g., pay, freedom), predictions were measurably inaccurate.

To explore accuracy more completely, the bottom part of Table 4 explores whether the extrinsic incentives bias and the self-serving bias reduced accuracy. The "actual" responses for testing classmate predictions are simply the average self-reports of the participants in this experiment. The actual responses for testing employee predictions are taken from the 1982 GSS, which asked a random sample of people to rate the importance of a variety of workplace conditions on a scale like the one used in this survey. Seven of the items in the GSS parallel the items in the Nadler and Lawler (1989) questionnaire that was used in this study (see Appendix for the wording of the GSS items).[9]

The accuracy regressions indicate whether participants overestimated or underestimated how much targets would respond to extrinsicness and admirability. The extrinsic incentives bias reduced accuracy; predictions for both target groups overemphasized extrinsic incentives (avg. $b = .326$ for classmates and avg. $b = .770$ for employees, ps $< .01$). Self-serving biases had no detectable effect on accuracy.

Discussion

The results of Study 2 confirm and extend the results of Study 1. The extrinsic incentives bias persists and it reduces accuracy even when self-serving biases

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separate regressions. In general, they produce similar coefficients but they provide higher levels of significance for marginally significant coefficients (e.g., in regression for managers, the coefficient on admirability is essentially unchanged at $b = -.223$, but it is significant at $p < .001$). In this paper, I report the individual regressions because they provide more detail about what is happening at the level of individual participants.

[9] These results are in a set of variables starting with JOBKEEP and ending with JOBSAFE.

are controlled. This paper focuses on the extrinsic incentives bias because it is the most novel empirical effect, and thus it has stronger implications for theory. Study 2, however, indicates that people may have other biases that affect how they judge others' motives—participants believed that the typical manager was less admirable as well as more extrinsic.

In Studies 1 and 2, I asked participants to predict the motivations of different targets primarily to show that the extrinsic incentives bias can be documented across a variety of targets. However, the magnitude of the extrinsic incentives bias is larger for employees than for managers and classmates. These differences are interesting, and they are consistent with the theoretical explanation of the actor–observer effect in agency relationships. I have explained the extrinsic incentives bias by arguing that actors and observers differ in their perceptions and information. When perceptions and information differ across situations and targets, the size of the bias should also differ. For example, observers have information that their classmates value learning sufficiently to enroll in graduate school, but they do not have this information about frontline workers.

More subtly, information may differ across situations because observers may use their own personal reactions to a job as "information" about the preferences and desires of the actors. In Studies 1 and 2, the participants may have thought that their classmate's jobs provided more opportunities to learn or accomplish something worthwhile than the jobs of the typical frontline employee. Study 3 explores this idea further by looking at whether the extrinsic incentives bias is altered based on how much participants like the jobs of the targets they are trying to predict.

STUDY 3: AN EXTRINSIC INCENTIVES BIAS WHEN INCENTIVE PROGRAMS ARE FRAMED TO OTHERS

The results of the first two studies indicate that lay theories of motivation frequently lead people to believe that others are quite motivated by extrinsic incentives and less motivated by intrinsic ones. Are such theories held only in the abstract, or do they also affect the incentive programs people would choose to motivate others? It seems likely, for example, that if lay theories of motivation assert that others are *not* intrinsically motivated by interesting or challenging work, principals may reject incentive programs to create more challenging jobs for agents (Hackman & Oldham, 1980). Do lay theories of motivation affect how people evaluate incentive programs?

A pilot study provided some evidence that lay theories do indeed affect how people evaluate incentive programs. In this study, I constructed a specific incentive program to appeal to each of the motivations explored in the earlier studies. The results indicated that the extrinsic incentives bias altered how people evaluated incentive programs; for example, participants believed that a pay raise of 5% and an increase in job security would motivate each target group much more than themselves.

Below, Study 3 uses a similar procedure to test whether lay theories might also affect how people frame fixed incentive programs to others. Although the

introduction assumed that principals craft deals and choose incentive programs to motivate agents, principals may not have this much discretion. Many incentive programs (e.g., pay and benefits) may be largely determined by market forces or organizational norms that are outside the control of principals.

However, even if incentive programs are predetermined, principals can still choose how to describe or frame these incentive programs to agents. In turn, agents may react differently to different frames. For example, people respond positively when they perceive verbal praise as information about their competence on a task, and negatively when they perceive it as a social attempt to control their behavior (see Deci & Ryan, 1985, chap. 4, for a review)—when people perceive verbal praise as information about competence, they are more likely to pursue the task later; when they perceive it as controlling, they are more likely to quit. This evidence suggests that even when principals cannot affect the content of an incentive program, they may still alter agents' motivations based on how they decide to frame the program. Agents care what incentives mean, and principals can alter meaning by the frames they use. In such cases, lay theories may affect agency relationships even if principals do not actively craft the content of deals.

In Study 3, I offered participants a variety of ways to frame a particular incentive program. One of the items, for example, described a monetary bonus program that offered $1000 for achieving certain performance targets. Participants chose whether to frame the $1000 in terms of exchange value (e.g., "a down-payment on a new car or a new home improvement"), increased security ("money for a rainy day"), or a signal of the employee's significance ("the company recognizes how important you are to its performance—it doesn't spend money for nothing"). If people frame specific motivations differently for themselves than for others, then lay theories may affect an organization's ability to organize even in situations where incentive programs are predetermined.

Participants

Participants were 94 MBAs in an organizational behavior course at the University of Chicago.

Method

Participants completed questionnaires that asked them to rate the motivating potential of three different descriptions of each of four motivations: a bonus of $1000 for hitting performance targets, a job in a department that plays an important role in the company, a job that allows people to choose the tasks and issues they work on, and an assignment that allows people to learn new things about their company or industry. For the complete stimuli, see the Appendix.

Participants rated each frame on a 7-point scale for themselves and they predicted how targets would rate the frame (1 = *Bad way to describe the program. Not very motivational*; 7 = *Good way to describe the program. Very*

motivational.). On the last page of the packet, participants rated admirability: "How good, noble or admirable would you consider someone who responded strongly to this description?" (7 = *very good, noble, admirable*; 1 = *not good, noble, admirable*). The survey was completed anonymously as a part of a classroom exercise. A separate set of participants (N = 56) rated the extrinsicness of each description using a scale from 7 (*Very intrinsic. Requires somebody to be internally motivated*.) to 1 (*Very extrinsic. Doesn't require someone to be internally motivated*.). After I calculated means for each item, I reverse-coded the scale to make presentation of the results similar to that of the results in previous studies.

Participants participated in one of two groups. Some participants (N = 40) filled out the questionnaire for themselves and predicted the responses of three different targets: their typical classmate and a typical Fortune 500 manager and employee. The questionnaires were counterbalanced. A second group of participants (N = 54) participated in the same procedure except for two changes. First, they faced a reward structure that was identical to that used in Study 1, so they knew that accuracy would be the basis of personal, social, and financial rewards. Second, to allow accuracy to be measured, they predicted the responses of two specific classmates who were enrolled in a different section of the same course. The specific classmates had written a one-page description of their responsibilities in their most recent job. Names were removed to preserve anonymity. Participants predicted how each specific classmate would respond to the questionnaire. They also rated how interesting they found the work of the classmate (1 = *not at all interesting*; 7 = *very interesting*), and they indicated whether they would consider doing the kind of work performed by the classmate (1 = *never*; 7 = *definitely*). Although these two groups of participants were run in separate experiments, I report the results together because the procedure was essentially identical except for the targets that participants predicted.

Results

In Fig. 2, the y axis lists the average extrinsicness of each description. These ratings indicate that framing is not completely malleable. For example, the three framings of the $1000 bonus program were rated as relatively extrinsic and the three framings of the "job that allows you a great deal of opportunity to choose tasks and issues" were rated as relatively intrinsic. However, within each program, different framings obviously strike participants as more or less extrinsic. The x axis displays the means for self-responses and target predictions. Consistent with the pattern in the first two studies, participants thought that others would respond better to descriptions that highlighted extrinsic aspects of the program, while they claimed that they would respond better to descriptions that highlighted intrinsic aspects.

Evidence of an extrinsic incentives bias. Table 5 presents regressions that test for the extrinsic incentives bias and a self-serving bias. These analyses are identical to those in Study 2. Consistent with a self-serving bias, people

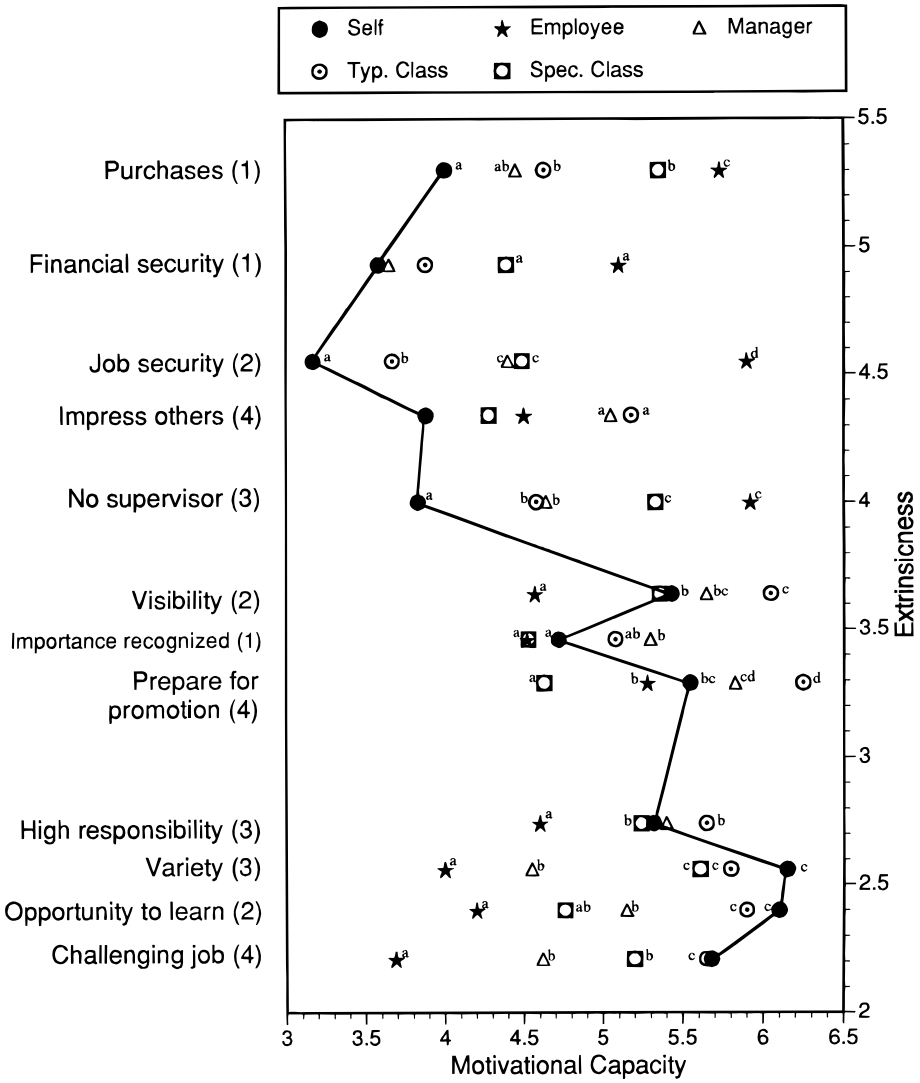

FIG. 2. Study 3. Ratings of the motivational potential of various framings for self, classmate, and typical manager and employee for different framings of four motivators. Motivators are (1) bonus of $1000 for hitting performance targets, (2) a job in a department that plays an important role in the company, (3) a job that allows you to choose the tasks and issues you work on, and (4) an assignment that allows you to learn new things about your company or industry. Symbols that do not share a superscript indicate means that differ significantly at $p < .05$ by t test.

believed that managers (avg. $b = -.127$, $p < .10$), employees (avg. $b = -.298$, $p < .01$), and their specific classmates (avg. $b = -.207$, $p < .01$) would be less motivated than themselves by frames that invoked admirable motivations. Consistent with the extrinsic incentives bias, participants believed that each of the other target groups would be more motivated than they were by frames that emphasized extrinsic motivations. This was true for managers (avg. $b = .504$), employees (avg. $b = 1.02$), their typical classmate (avg. $b = .261$), and the two specific classmates (avg. $b = .200$) (all ps $< .01$).

TABLE 5

Study 3: Individual OLS Regressions on Extrinsicness and Admirability

	Extrinsic		Good/admirable	
	Mean	% Positive	Mean	% Positive
	Predictions versus self			
Classmate–self	.261**	63	−.001	53
Manager–self	.504**	74**	−.127^	29*
Employee–self	1.020**	90**	−.298**	31*
Specific classmate–self	.200**	63*	−.207**	31**
	Accuracy of predictions (prediction − actual response)			
Classmate	.483**	85**	.226**	74**
Specific classmate	.377**	67**	.082	57

Note. The table reports the average coefficients from individual regressions for each participant (significance is measured by a t test relative to zero). The table also reports the percentage of participants who had a positive coefficient on each variable (significance is measured by a binomial test relative to .50).

^ $p < .10$.

* $p < .05$.

** $p < .01$.

Is the extrinsic incentives bias affected by how well participants liked the jobs held by their classmates? To test this, I combined the responses to the questions that asked participants how interested they were by their classmates' job and whether they would consider it (Cronbach's $\alpha = .86$), and performed a median split on this measure of "liking" (see Table 6). Participants who expressed high liking for their classmate's job showed a reduced extrinsic incentives bias compared with participants who did not express liking ($p < .05$ by t test).

Accuracy of predictions. Table 5 indicates that the extrinsic incentives bias contributed to inaccuracy; participants overestimated the extent to which "typical" (avg. $b = .483$, $p < .01$) and specific classmates (avg. $b = .377$, $p < .01$) would respond to extrinsic motivations. The self-serving bias did not affect accuracy for specific classmates, and it was reversed for typical classmates. Participants overestimated the extent to which their typical classmate would respond positively to frames that they themselves thought were admirable (avg. $b = .226$, $p < .01$).

For the participants who predicted specific classmates, we can also evaluate accuracy with respect to the payment threshold. Similar to the results of Study 1, 39% won the $10 based on their average predictions across the two classmates but 58% would have won the $10 if they had assumed their classmates were identical to themselves ($\chi^2(1) = 2.98$, $p < .10$).

TABLE 6

Study 3: Specific Classmates by Liking

	Extrinsic		Good/admirable	
	Mean	% Positive	Mean	% Positive
	Predictions versus self			
High liking	.030	54	−.113	32*
Low liking	.359**	72**	−.296**	28**
	Accuracy of predictions (prediction − actual response)			
High liking	.315**	64^	.061	52
Low liking	.438**	71**	.103	63^

Note. The table reports the average coefficients from individual regressions for each participant (significance is measured by a *t* test relative to zero). The table also reports the percentage of participants who had a positive coefficient on each variable (significance is measured by a binomial test relative to .50).

^ $p < .10$.

* $p < .05$.

** $p < .01$.

Discussion

Study 3 replicated the basic pattern of results of the first two studies using different stimuli. Again there was an extrinsic incentives bias along with a self-serving bias; both existed even when participants evaluated specific classmates.

The extrinsic incentives bias was largest when participants predicted the responses of classmates who held jobs they disliked. This result is consistent with the theory summarized in Table 1. Observers have no information about actors' intrinsic motivation, but they seem to use their own (egocentric) reactions to a job to infer the actor's reactions. This egocentric strategy may be especially likely to mislead observers when they are trying to predict actors who have different preferences and skills.

The results indicate that people believe that others are *primarily* motivated by extrinsic incentives. Suppose, for example, a principal believes that agents respond primarily to money, but also that they may desire respect. To appeal to both motives, this principal might offer agents a $1000 bonus but frame it as a signal that "the company recognizes how important you are to its performance." This tactic would satisfy agents' financial needs at the same time it honored their desire for respect. However, when framing the $1000 bonus for employees, participants felt that the *best* description highlighted the bonus' *purchase power*. This suggests that participants assumed that employees only care about money; respect seemingly did not arise even as a secondary concern.

The results suggest that lay theories may affect the fundamental challenge of organizing even when markets or organizations constrain the incentive programs that principals can offer agents. Principals can typically frame a

given incentive program in various ways, and Study 3 suggests that they will choose to frame it extrinsically. If people respond differently to different framings of the same motive (Deci & Ryan, 1985), an extrinsic incentives bias may produce friction even when incentive programs are predetermined.

STUDY 4: EXPLORING THE EXTRINSIC INCENTIVES BIAS IN AN ORGANIZATIONAL SETTING

In order to further generalize the evidence of the extrinsic incentives bias, Study 4 attempts to address some potential problems with the first three studies. First, Study 4 considers workers and managers in a major organization rather than the MBAs used in the first three studies, who may be unusual for a number of reasons. Study 4 expands the subject population to people at two different levels of a major corporation.

Second, Study 4 examines lay theories as they occur in a natural work environment. The first three studies examined lay theories in a classroom exercise. In a natural setting, people have a great deal of opportunity to interact with coworkers and assess their motivations and attitudes, and this may improve the accuracy of their inferences. In Study 4, participants were managers and employees of an organization who had daily contact with each other.

Third, Study 4 asks participants to predict the motivations of specific individuals that are well known to the participant. The first three studies typically asked people to predict the motivations of abstract targets (e.g., "a typical classmate" or "typical frontline employee") rather than specific individuals. In Study 4, participants predict specific coworkers and friends.

Fourth, Study 4 asks participants to predict the motivations of some targets who hold the same job. The first three studies asked participants to evaluate the motivations of targets who sometimes held very different (and possibly less attractive) jobs. For example, if MBAs felt that the job of the Citibank CSR or the "typical frontline employee" was not exciting or challenging, then they may have assumed that the targets took those jobs because of situational inducements. In Study 4, participants evaluated some targets who held the same job they did.

Participants

Participants were 29 CSRs and 25 managers at a unit of a Citibank that answers *incoming* customer questions about company products and services. The unit is organized into 10 teams, each of which has 20 to 80 customer service representatives and one to four managers (about one manager per 20 representatives). The site holds constant a number of task dimensions across participants—all representative perform equivalent jobs, as do all managers. All CSRs who participated had more than 2 years of experience in their current job, and all managers had more than 4.

I surveyed every manager at the site and three CSRs from each team. Because I could not survey every CSR, I tried to maximize variance in the CSRs who

were surveyed. Thus, I asked the managers from each team to nominate three different CSRs—one who was "more concerned than the average CSR with situational features of the job: pay, schedule, etc."; one who was "more concerned than the average CSR with personal aspects of the job: learning a new skill, helping customers, etc."; and one who was "fairly typical in their motivations." I refer to these participants as situational, internal, and typical CSRs, respectively. For teams with more than one manager, the managers agreed on the three CSRs to be surveyed. (The data include 29 rather than 30 CSRs because 1 CSR was sick the day of the survey.)

Method

Each participant completed a 10-item questionnaire for a variety of targets. Participants understood that their individual responses would be seen only by me and not by anyone at their workplace.

Managers. After managers nominated the three CSRs to be surveyed, they individually completed the 10-item questionnaire for themselves, and they predicted the responses of the "typical manager" and the three specific CSRs that they had nominated. They also rated how extrinsic and admirable each item was using scales similar to those in Study 2.

CSRs. CSRs completed the 10-item questionnaire for themselves, and then they predicted the responses of the "typical CSB," a specific friend on their team, and one of their managers (whom they specified). They also rated how extrinsic and admirable each motive was.

Results

Figure 3 presents the means for CSRs, and Fig. 4 presents the means for managers.

Evidence of an extrinsic incentives bias. As in previous studies, I analyzed whether CSRs (Table 7) and managers (Table 8) showed a self-serving bias and an extrinsic incentives bias.[10] Across the regressions in Tables 7 and 8 there is evidence of both biases: Although the results on self-serving biases were often weak, participants typically held an extrinsic incentives bias. This was true when managers predicted their fellow managers, the situational CSRs, and the typical CSRs, and when CSRs predicted their typical coworker and friend ($ps < .01$). The only exceptions occurred when managers predicted the internal CSRs and when CSRs predicted their managers.

Accuracy. Self-serving biases reduced accuracy, but the extrinsic incentives bias reduced accuracy more. The extrinsic incentives bias reduced accuracy when participants predicted general targets—both managers and CSRs overestimated how much their typical coworker would respond to extrinsic incentives

[10] To parallel the analyses of Studies 2 and 3, I used individual ratings of admirability and average ratings of extrinsicness.

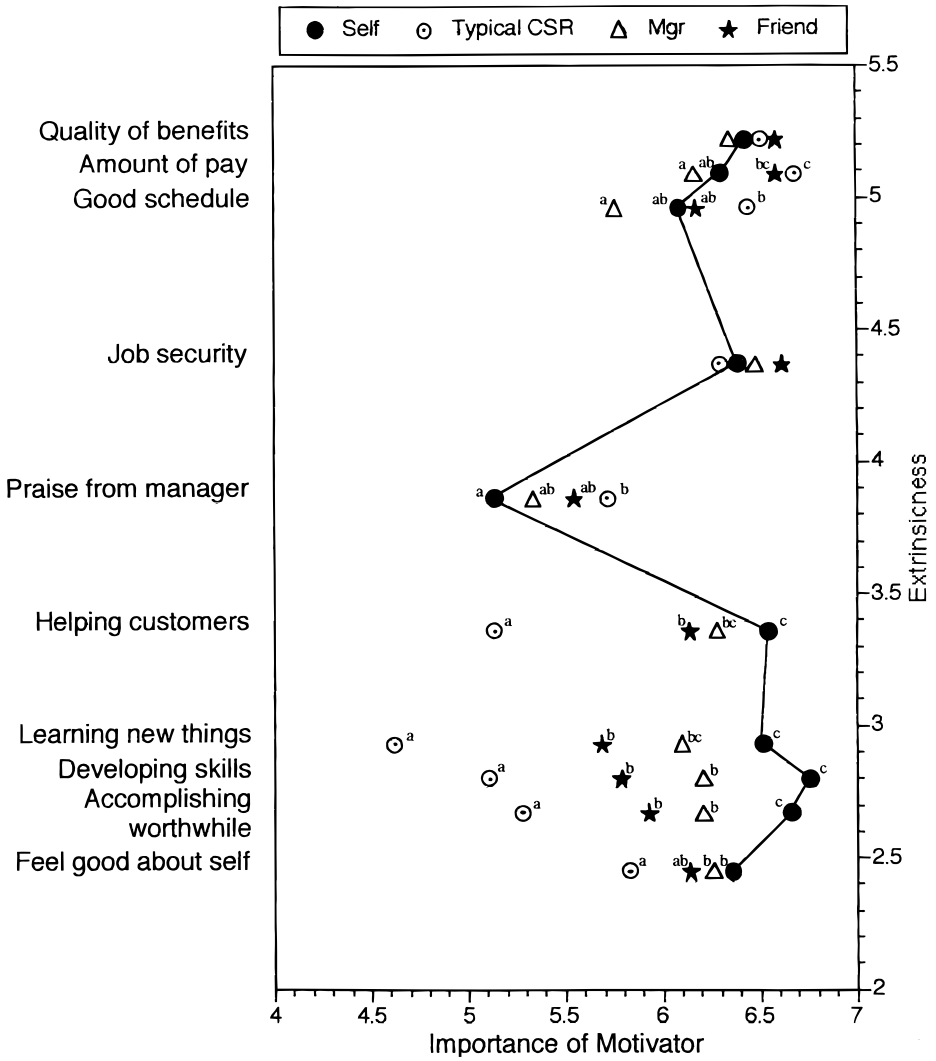

FIG. 3. Study 4. CSRs' ratings of importance of motivators for self, manager, typical CSR, and friend. Symbols that do not share a superscript indicate means that differ significantly at $p < .05$ by t test.

(avg. $b = .904$ for managers, avg. $b = .443$ for CSRs, $ps < .01$). The extrinsic incentives bias also reduced accuracy when participants predicted specific targets—e.g., when managers predicted the three specific CSRs on their team ($ps < .05$) and when CSRs predicted their manager ($p < .10$). Note that the results are particularly strong when managers predict "situational" CSRs.

Discussion

This study demonstrates that the findings of the earlier studies hold even when participants have a great deal of experience with one another and interact on a daily basis, and even when they predict the motivations of targets who

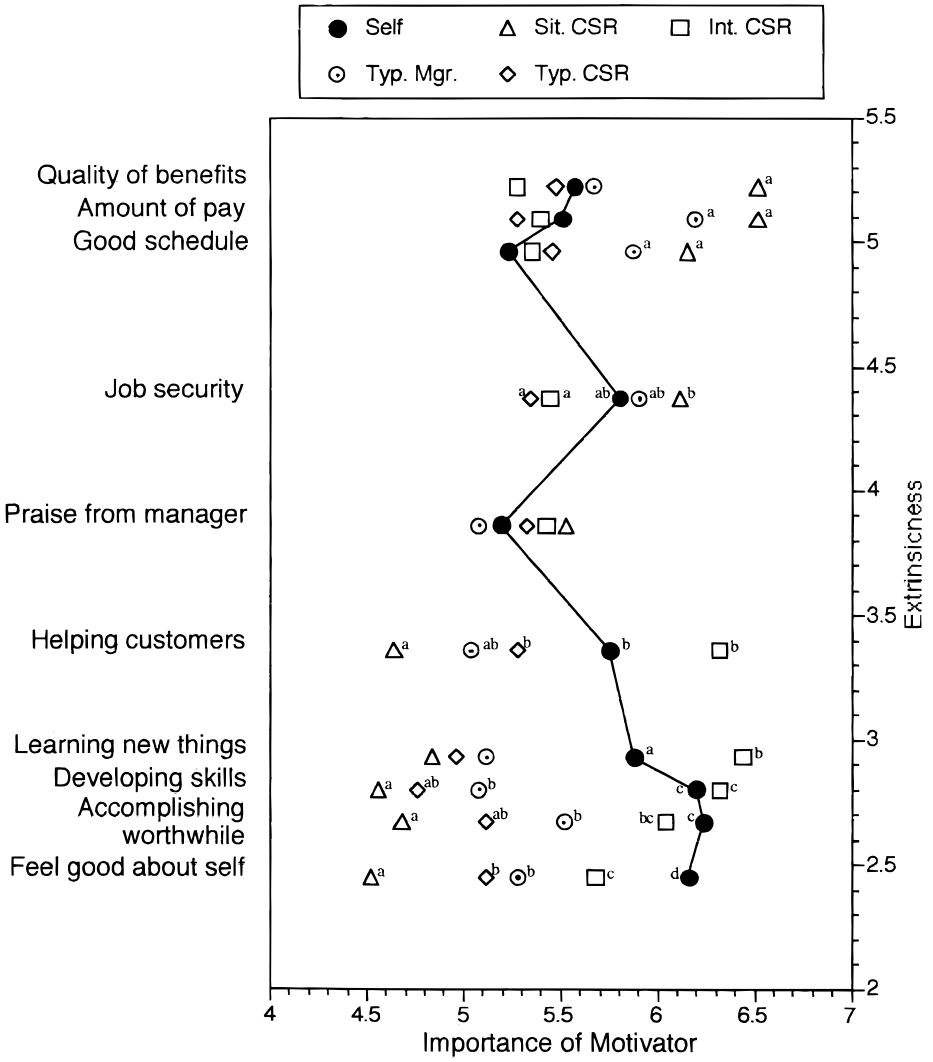

FIG. 4. Study 4. Managers' ratings of importance of motivators for self, typical manager, and situational, typical, and internal CSRs. Symbols that do not share a superscript indicate means that differ significantly at $p < .05$ by t test.

hold the same job. The extrinsic incentives bias was quite apparent when managers rated their typical fellow manager or when representatives rated their typical coworker; however, it also occurred even when managers rated specific employees and when employees rated a specific friend. The result for friends is particularly striking because it indicates that close affective ties do not eliminate the extrinsic incentives bias.

The extrinsic incentives bias was common but not universal. For example, managers selected one CSR who they thought was highly motivated by internal motivations like "learning a new skill" or "helping customers"; when they rated this internal CSR, they predicted that he or she would express motivations that were fairly similar to their own. This suggests that although people may

TABLE 7

Study 4: Regressions for Individual CSRs

	Extrinsic		Good/admirable	
	Mean	% Positive	Mean	% Positive
	Predictions versus self			
Typical CSR–self	.406**	79**	−.258*	31^
Friend–self	.294**	71*	−.042	47
Manager–self	.012	43	−.139^	32^
	Accuracy of predictions (prediction − actual response)			
Typical CSR	.443**	89**	−.145	38
Manager	.224^	67	.007	60

Note. The table reports the average coefficients from individual regressions for each participant (significance is measured by a *t* test relative to zero). The table also reports the percentage of participants who had a positive coefficient on each variable (significance is measured by a binomial test relative to .50).

^ $p < .10$.

* $p < .05$.

** $p < .01$.

hold an extrinsic incentives bias about most individuals in a population, they may be able to pick out individuals who they believe are *not* more motivated by extrinsic incentives.

As in the first three studies, people predicted less accurately because they thought others were motivated very differently from themselves. In addition, accuracy decreased when participants predicted a target whom they regarded as extreme. When managers predicted the motivations of the specially selected, "situational" CSRs, their predictions produced the most predictable errors documented in this study. As in other prediction domains (Ross & Nisbett, 1991), people erred most when they predicted most extremely.

GENERAL DISCUSSION

The fundamental challenge of organizing requires organizations to offer their members an appropriate deal, and to do this, principals must accurately infer the motivations of agents. The results of Studies 1–4 suggest that lay theories of motivation may hinder this process. These studies suggest that lay theories of motivation demonstrate at least two identifiable biases: a self-serving bias and an extrinsic incentives bias. While the self-serving bias has been documented in previous work, the extrinsic incentives bias has not. The conclusion will discuss some unresolved methodological issues that might be addressed by future studies, will then discuss the theoretical implications of the current results for social psychologists and organizational scholars, and will close by discussing some practical implications for organizations.

TABLE 8

Study 4: Regressions for Individual Managers

	Extrinsic		Good/admirable	
	Mean	% Positive	Mean	% Positive
	Predictions versus self			
Typical manager–self	.697**	87**	−.067	43
Situational CSR–self	.887**	87**	−.351**	17*
Typical CSR–self	.355**	83**	−.174^	35
Internal CSR–self	−.056	44	−.074	30^
	Accuracy of predictions (prediction − actual response)			
Typical manager	.904**	95**	.189^	69^
Situational CSR	1.07**	95**	.048	53
Typical CSR	.278*	83**	.281*	70*
Internal CSR	.345*	65	.388*	78**

Note. The table reports the average coefficients from individual regressions for each participant (significance is measured by a *t* test relative to zero). The table also reports the percentage of participants who had a positive coefficient on each variable (significance is measured by a binomial test relative to .50).

^ $p < .10$.

* $p < .05$.

** $p < .01$.

Methodological Issues and Future Work

Although the current studies share two limitations with previous work on attributions, they attempt to go beyond previous research in addressing both limitations. First, like previous work, the current studies concentrated more on eliciting lay theories than on actual behavior. However, Study 1 and Study 3 included a behavioral measure by making rewards contingent on accurate prediction. The extrinsic incentives bias did not disappear even when people were forced to bet on the accuracy of their predictions. Thus, people seem to rely on lay theories even when they create costly mistakes. However, there is much left to be done to solidify the link between the lay theories of managers and actual managerial practice. Future research could productively examine how lay theories affect organizational decisions about job design, communication, justice, and compensation. At present, these results suggest that lay theories are flawed, and that the flaws do not disappear even when people have incentives to predict accurately.

Second, like previous work, the current studies document a difference in attributions between actors and observers without *proving* which party is in error. Although this issue is worth further study, there are methodological and theoretical reasons to believe that observers erred. Methodologically, the current studies suggest observers erred because they were given a particularly clear task: they were asked to predict actors' *self-reports*, and they failed to do

this accurately. Even if actors distorted their self-reports in some fashion (e.g., because of self-serving biases), savvy observers should have been able to take into account these distortions and still predict accurately. Because observers failed to predict accurately despite the clear task, there are methodological reasons to assign the error to them.

There are also theoretical reasons to believe that observers erred. First, the discussion of habituation in the introduction indicated that observers may be perceptually attuned to situational factors that actors themselves do not notice. In Studies 1–4, actors claimed not to be motivated by constant situational factors like benefits and job security. This claim is consistent with habituation. Observers, however, claimed the opposite—inconsistent with habituation. Second, as discussed in the introduction, observers lack information about actors' preferences so they probably are not in a good position to infer how much actors respond to intrinsic motivations. In fact, as will be discussed below, observers' own preferences may actually mislead them about actors' true intrinsic interests. Third, even if we assumed that people are *primarily* motivated by extrinsic incentives, it seems implausible to assume that intrinsic incentives play *no* role in motivation; yet, participants in Study 3 chose frames that emphasized extrinsic aspects of extrinsic incentives. These responses suggest that participants thought that intrinsic factors played no role in motivation, not even a secondary one. In sum, although the current studies do not prove which party is in error, there are reasons to believe that observers erred. If so, then in organizations people who play the role of observers (i.e., principals) are likely to make mistakes in predicting the motives of actors (i.e., agents).

Theoretical Implications

Implications for social psychologists. Social psychologists may be interested in the extrinsic incentives bias because it suggests that certain common social contexts (e.g., agency relationships) create conditions that reverse the traditional empirical finding of the actor–observer effect, and thus it may broaden our understanding of the attribution process in social psychology.

Although the extrinsic incentives bias provides a different empirical starting point than the actor–observer effect, the theoretical explanation is the same: actors and observers make different attributions because they differ in perception and information. First, consider perception. As discussed in the introduction, observers may perceive situational factors as salient even when actors have habituated to them. In an unpublished study, I found that the extrinsic incentives bias was enhanced by observers' tendency to underestimate how much others will habituate to their situations. In one study, observers said that they, themselves, would habituate to job security and benefits but not to the chance to learn skills or do something worthwhile. However, they predicted that targets would be strongly motivated by the same things that they would habituate to. In fact, once I controlled for habituation, there was no independent effect of extrinsicness. This result suggests that the extrinsic incentives bias

is magnified because of habituation; observers perceive situational factors that actors do not perceive for themselves.

Interestingly, this same mechanism may sometimes even hinder people's ability to predict their own future preferences or behavior. In a book titled *The Joyless Economy*, Tibor Scitovsky (1992) argues that American culture overemphasizes *comforts* rather than *pleasures*. According to his analysis, Americans fail to maximize their own satisfaction because they spend their money on comforts such as a slightly bigger car or apartment, rather than on pleasures, such as vacations or fresh flowers. Because people are more likely to habituate to comforts than to pleasures, Scitovsky argues that people underestimate the role of habituation when they make choices for themselves. If Scitovsky is correct, then the same principles that led people to mispredict others in the current studies may also lead people to make improper choices for themselves (Klayman, Hsee, Loewenstein, & Heath, 1999).

It is tempting to speculate that the extrinsic incentives bias is merely a special case of a more general phenomenon that occurs whenever observers estimate the impact of salient situational factors. Traditional experiments involve *small* situational factors that have a *large* impact on behavior; in contrast, the world often offers *large* situational factors that have only a *small* impact. In the latter case we are likely to see a "situationist bias." For example, people overestimate the extent to which a serious illness like cancer is likely to make normal pleasures impossible for those who suffer from it (S. E. Taylor, 1989). Similarly, U.S. readers may have talked with a foreigner who could not imagine living in a society where violent crime was so common and who refused to believe that this fact does not affect behavior on an hourly basis. Undoubtedly crime affects many aspects of American life; however, some foreigners refuse to believe that this salient situational factor does not affect life more pervasively.

Second, consider how information might cause the traditional actor–observer effect to reverse in agency relationships. In agency relationships, observers may be particularly unable to infer the intrinsic interests of actors because their own preferences may actually mislead them about what the actor may like or dislike. In Study 3, when participants predicted the motivations of peers who held jobs they themselves would dislike, the extrinsic incentives bias was much larger—e.g., those who disliked accounting were especially convinced that the accountants would respond to frames that emphasized extrinsic factors like money or job security. Here, observers showed an *enhanced* extrinsic incentives bias because their own preferences corrupted their ability to empathize with actors—observers who did not like accounting seemingly found it easier to simulate the accountants' response to money than the accountants' response to balance sheets. Thus informational differences may also lead people to display an extrinsic incentives bias rather than the traditional actor–observer effect.

In sum, social psychologists may find the extrinsic incentives bias to be of interest because it confirms the importance of traditional theoretical mechanisms, yet it provides a different empirical starting point so that social psychologists can understand those theoretical mechanisms more deeply.

Implications for organizational scholars. Organizational scholars may also find the extrinsic incentives bias of interest because it suggests an interesting interaction between the fundamental challenge of organizing and lay theories of motivation. In order for organizations to organize, principals must strike a deal with agents to convince them to adopt the goals of the organization. These studies suggest that the salience of this deal may create a paradox: In order for the deal to work, principals must offer appropriate inducements to agents; however, the salience of the deal may cause principals to overemphasize extrinsic inducements in a way that undermines its success.

Another fundamental feature of organizations, the division of labor, may enhance the extrinsic incentives bias. As part of the division of labor, organizations divide their overall task into subtasks, and they assign these subtasks to specialists who differ in their interests and skills and who are trained and rewarded in ways that reinforce their initial differences. Thus, in an organization that pursues an effective division of labor, principals must motivate specialist agents. Yet, Study 3 suggests that principals may find this difficult; participants exhibited an "enhanced" extrinsic incentives bias when they tried to infer the motivations of others whose interests differed from their own.

More generally, organizational scholars may find lay theories of interest because they may help organizations to organize around some principles and practices and they may hinder them from organizing around others. Scientific management, for example, resonated with lay theories of motivation that contain an extrinsic incentives bias, and thus managers may have been likely to adopt it. In contrast, other theoretical principles (e.g., those of the human relations school) or management practices (e.g., job design, communication) may be neglected or ignored because they clash with lay theories.

Implications for Organizations

In addition to their theoretical interest, the biases documented in these studies also have practical implications. For example, if principals exhibit a self-serving bias and assume that others' motives are less noble than their own, then they may fail to communicate the importance and relevance of the organization's task (Bennis & Nanus, 1985). If principals hold an extrinsic incentives bias, they may overlook the importance of feedback, neglect opportunities to make jobs more interesting, and underestimate agents' desires to participate in organizational decisions (McGregor, 1960; Hall, 1973; Hackman & Oldman, 1980; Deming, 1982; Katzenbach & Smith, 1993).

Lay theories of motivation may hinder principals' attempts to motivate agents, but one potential solution immediately presents itself. In the current studies, participants could have improved their predictions if they assumed that others were motivated exactly like they were. Ross and Ward (1995) quote the philosopher Thomas Hobbes, who argued that we can infer others' motivations more accurately if we think more carefully about our own:

> Given the similitude of the thoughts and passions of one man to the thoughts and passions of another, whosoever looketh into himself and considerth what he doth when he does think,

> opine, reason, hope, fear, etc., and upon what grounds, he shall thereby read and know what are the thoughts and passions of all other men upon the like occasions.

The results above suggest that when we predict how others will to respond to extrinsic or intrinsic motivations, we can do much worse than to follow Hobbes' advice.

APPENDIX

Wording of Questionnaires: Studies 1–4

STUDY 1

Learning new things
Quality of fringe benefits
Amount of praise from your supervisor
Doing something that makes you feel good about yourself
Having job security
Accomplishing something worthwhile
Amount of pay
Developing skills and abilities

STUDY 2 (items from the GSS are in italics)

The amount of job security you have (*Job security*)
The amount of pay you get (*High income*)
The friendliness of people you work with
The praise you get from your supervisor
Your chances for a promotion or getting a better job (*Good opportunities for advancement*)
The respect you receive from the people you work with (*An occupation that is recognized & respected*)
The chances you have to accomplish something worthwhile (*Gives a feeling of doing something meaningful*)
The chances you have to do something that makes you feel good about yourself as a person
The amount of freedom you have on your job (*A job that allows one to work independently*)
The chances you have to learn new things (*Interesting job*)
The opportunity to develop your skills and abilities

STUDY 4

Quality of benefits
Amount of pay
Having a good schedule

Having job security
Amount of praise from your manager
Helping customers solve their problems
Learning new things
Developing skills and abilities
Accomplishing something worthwhile
Doing something that makes you feel good about yourself

STUDY 3

A new incentive program at your company offers bonuses of up to $1000 for achieving certain performance targets.

Think of what that $1000 means: a down-payment on a new car or that new home improvement you've wanted to make.

Think of the increased security of having that $1000 in your bank account for a rainy day.

Think of what the $1000 means: the company recognizes how important you are to their overall performance. They don't spend money for nothing.

A job is open in a department that plays an important role in the success of the company.

Think about how much security this job provides. It's so important that the company will always need someone in this job.

Think about the visibility provided by this job. Became the job is so important, a lot of people will be watching your performance.

Think about how rewarding it will be to work in such a central job. It offers such a unique opportunity to learn how the company really works.

A job is open that allows a great deal of opportunity to choose the tasks and the issues you work on.

Think about how nice it will be to not have a superior looking over your shoulder all the time.

Think about how much trust the company puts in your judgment to give you so much choice.

Think about how much variety this job provides—you could do something completely different every day.

An assignment that allows you to learn about a new aspect of your company or industry.

Think about how impressed others will be with the fact that you know about this aspect of your company.

Think about how much better prepared you will be for a promotion after learning about this part of the company/industry.

Think about how challenging it would be to learn about something completely new.

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