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Bridging individual, interpersonal, and institutional approaches to judgment and choice:

The impact of accountability on cognitive bias

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Abstract

Research on accountability takes an unusual approach to the study of judgment and decision making. By situating decision makers within particular accountability conditions, it has begun to bridge individual, interpersonal, and institutional levels of analysis. We propose that this multi-level approach can enhance both the study of judgment and choice and the application of such research to real-world settings. To illustrate the multi-level approach, we present a review of accountability research, organized around an enduring question in the literature: Under what conditions will accountability improve judgment and decision making? After considering the shortcomings of two seemingly straightforward answers to this question, we propose a multi-factor framework for predicting when accountability attenuates "bias," when it has no effect, and when it makes matters even worse. Key factors in this framework draw from multiple levels of analysis.

Content

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Psychological theories of judgment and choice have tended to view decision makers as isolated individuals. While elucidating cognitive processes that occur within the individual, they have tended to overlook the impact of interpersonal and institutional settings on thought and action. By contrast, organizational and political theories have tended to view decision makers as the instruments of institutional norms, rules, and constraints. While elucidating social and political processes that occur outside of the individual, they have tended to overlook the impact of intrapsychic processes. We argue that the study of accountability -- pressure to justify one's views to another -- can bridge these historically distinct approaches. It can do so by providing a natural link between individual decision makers and the relationships within which decision makers work and live. Bridging these approaches not only has the potential to improve the applicability of decision-making research to real-world settings, it also has the potential to improve basic theories of judgment and decision making.

In section one of this chapter, we introduce accountability as a universal feature of social life and discuss the social foundations of accountability. In section two, we review the effects of accountability on putative "biases" identified in the judgment and decision making literature. In particular, we consider two overarching hypotheses about the effects of accountability. According to the first hypothesis, accountability will attenuate judgment and decision-making biases to the extent that accountability increases cognitive effort. According to the second hypothesis, accountability will amplify the dominant responses to judgment and decision-making problems -- thereby attenuating bias on "easy" problems and amplifying bias on "difficult" problems. Finding that neither hypothesis receives substantial empirical support, we identify two factors that play an especially important role in determining when accountability will attenuate "bias," when it will have no effect and when it will make matters even worse. We then review evidence for these factors and propose incorporating them into a multi-factor framework

of accountability effects. Finally, in the concluding section we identify specific ways in which accountability research can enhance both the study of judgment and choice and the application of judgment and choice research to real-world settings.

Accountability As A Universal Feature Of Social Life

<u>Social Functions Of Accountability</u>

Many theorists -- from political philosophers (Hobbes, 1660/1968) to organizational behaviorists (Katz & Kahn, 1978; March & Olsen, 1995), to social psychologists (Schlenker, 1980; Scott & Lyman, 1968; Semin & Manstead, 1983; Tetlock, 1992) -- have viewed accountability as a prerequisite for social order. Although accountability ground rules obviously vary dramatically across cultures and history (Bersoff & Miller, 1993; Hong & Chiu, 1992), the underlying functions of accountability are strikingly similar. Accountability systems represent sociocultural adaptations to the perennial problem of how to coordinate relationships among individuals. Whatever the ideological or cultural value system underlying the social system -- be it a decentralized market or command economy -- accountability guidelines prescribe the norms and guidelines in a collectivity (Lerner & Tetlock, 1994; Tetlock, 1998) and how to deal with those who deviate from them (Stenning, 1995). "Accountability serves as a critical rule and norm enforcement mechanism -- the social psychological link between individual decision-makers on the one hand and social systems on the other (Tetlock, 1992 p. 337)." Because the transaction costs of relying on purely external forms of accountability would be prohibitive, most social control takes the form of internalized accountability. People monitor their own judgments and decisions by considering the justifiability of alternative courses of action. Indeed, this idea is a cornerstone of the symbolic interactionist approach to thought. George Herbert Mead maintained that "the very process of thinking is, of course, simply an inner conversation that goes on...He thinks it out, and perhaps writes it in the form of a book; but it is still part of social intercourse in which one is addressing other persons and at the same time addressing one's self, and in which one controls the address to other persons by the response made to one's own gesture (1934, p. 141)."

Modeling Thought as Internalized Dialogue

As long as people are concerned about maintaining their identities as moral, competent beings, a central function of thought is making sure that one acts in ways that can be persuasively justified or excused to observers. Indeed, the process of considering the justifiability of one's choices may be so prevalent that decision makers not only search for convincing reasons to make a choice when they must explain that choice to others; they search for reasons to convince themselves that they have made the "right" choice (cf. Shafir, Simonson, & Tversky, 1993). As Kuhn (1992) argues, the ability to generate persuasive justifications for beliefs may be "the most significant way in which higher-order thinking and reasoning figure in the lives of most people (p. 155)."

A number of researchers have made the case that concerns about the justifiability of action loom large in all judgments and choices (Gonzales, Kovera, Sullivan, & Chanley, 1995; Hsee, 1995; McGraw, Best, & Timpone, 1995; Schlenker, 1980, 1985; Scott & Lyman, 1968). For example, Shafir and colleagues (1993) demonstrated in a series of studies that the justifiability of reasons figured into participants' choices even when participants neither expected to explain their judgments nor even to interact with anyone. When participants were only presented with two options, it should not have mattered whether the experimenter asked them to select the option "they preferred" or the option "they would reject." Nevertheless, participants' selections varied as a function of elicitation procedures; they relied on positive features of each option when they were told to choose an option and negative features when they were told to reject an option (Shafir, 1993). The researchers explained that although this phenomenon defies a value maximization perspective, it readily fits a reason-based choice perspective: "reasons for choosing are more compelling when we choose than when we reject, and reasons for rejecting matter more when we reject than when we choose (Shafir et al., 1993, p. 18)." To recap, both theoretical and empirical arguments suggest that thought may be usefully modeled as dialogue -- even when decision makers are not explicitly held accountable.

Defining Accountability in the Judgment and Choice Literature

Although implicit accountability may be an inevitable feature of real-world decision environments, accountability here refers to an explicit expectation that one will be called upon to justify one's beliefs, feelings, or actions to others (Scott & Lyman, 1968; Semin & Manstead, 1983; Tetlock, 1992). Additionally, accountability implies that positive or negative consequences hinge on the acceptability of one's justification. In a few field studies, the acceptability of one's justification carries such concrete consequences as performance-contingent career advances or setbacks. More typically, however, the acceptability of one's justification carries only intangible consequences (e.g., approval or disapproval from the audience). Specifically, most laboratory studies create a situation in which people expect to explain their actions to someone they have never met before and never expect to meet again. What is remarkable about this literature is that -- despite the prevalence of these minimalist manipulations -- participants still reliably respond as if audience approval matters. And they do so even when the decisions at hand require them to express deeply held moral/ethical beliefs (see Brief, Dukerich, & Doran, 1991; Pennington & Schlenker, 1999). Two implications follow from the fact that researchers achieve these effects with such weak manipulations. First, it implies support for the social interactionist view that concerns about how the self relates to others -- even temporarily significant others -- drive cognition. Second, it implies that much more substantial effects may result from accountability in everyday life -- where the acceptability of one's justification carries significant consequences.

Accountability is not a unitary phenomenon. Just as many distinct sub-types of accountability appear in real-world settings, distinct subtypes also appear in judgment and decision-making research. For example, one may be accountable to an audience: (a) whose views are known or unknown (Philip E. Tetlock, 1983; Tetlock, 1985); (b) who is interested in accuracy or in expediency (Mero & Motowidlo, 1995); (c) who is interested in the quality of one's judgment processes in specific judgment outcomes (Siegel-Jacobs & Yates, 1996; Simonson & Staw, 1992); (d) who is reasonably well-informed or who is naive (Fitzpatrick & Eagly, 1981); and (e) who has a legitimate reason for inquiring into the reasons behind a

decision maker's judgments or who has no legitimate reason (Cvetkovich, 1978; Gordon & Stuecher, 1992). In addition, the conditions under which one is accountable can vary dramatically. For example, one may learn of being accountable prior to encoding judgment-relevant evidence or only afterwards (e.g., P. E. Tetlock, 1983; Tetlock, 1985; Tetlock & Kim, 1987; Thompson, Roman, Moskowitz, Chaiken, & et al., 1994). Similarly, one may learn of being accountable prior to irrevocably committing oneself to a course of action or only afterwards (e.g., Ross & Staw, 1986, 1993; Staw, 1980; Staw & Fox, 1977; Staw & Ross, 1989).

These qualitative differences -- in the nature of the audience and in the context of accountability -- are by no means trivial. Both laboratory and field studies reveal that distinct kinds of accountability activate distinct social and cognitive coping strategies (for reviews, see Lerner & Tetlock, 1994; Lerner & Tetlock, 1999; Tetlock, 1992). Importantly, only certain types of accountability elicit the kind of open-minded and critical thinking that may improve judgments and choices – a point to which we return in the third section.

The Effects of Accountability on Putative Biases:
Examining Support for Two Hypotheses

Multiple studies find that pre-decisional accountability to an audience with unknown views is especially likely to stimulate effortful, self-critical thought (for review, see Lerner & Tetlock, 1999). As such, it has received more attention in the judgment and decision-making literature than any other kind of accountability. But employing this specific kind of accountability by no means ensures improved judgment. Rather, the effects observed in studies employing this kind of accountability are highly variable.

To organize our review of these studies, we attempt to fit two different hypotheses to the literature. Each provides a relatively straightforward, face-valid scheme for predicting when pre-decisional accountability to an audience with unknown views accountability will attenuate, have no effect on, or amplify "bias." According to the first hypothesis, accountability will amplify the dominant responses to judgment and decision-making problems -- thereby attenuating bias on

"easy" problems and amplifying bias on "difficult" problems. According to the second hypothesis, accountability will attenuate biases to the extent that it increases cognitive effort.

Hypothesis One: Does Accountability Facilitate Accuracy on "Easy" Judgments and Inhibit Accuracy on "Difficult" Judgments?

The idea that accountability's effect depends on the difficulty of the judgment or decision task arises from classic-drive (Hull, 1943; Spence, 1956) and social-facilitation (Zajonc, 1965) theories. According to this view, dominant responses are amplified by motivation; and the dominant response to easy problems is, by definition, the "right" answer, whereas the dominant response to difficult problems is wrong (see Pelham & Neter, 1995). For example, researchers invoking this hypothesis posit that "easy judgments about persuasion arguments almost always benefit from motivational manipulations, more demanding person-perception judgments sometimes benefit from motivational manipulations, and highly demanding judgments under uncertainty almost never benefit from motivational manipulations" (Pelham & Neter, 1995, p. 581). For simplicity, we refer to this account as the Motivation-Difficulty Hypothesis.

Several major problems, which we have described in detail elsewhere (see Lerner & Tetlock, 1999), arise when applying the Motivation-Difficulty hypothesis to the accountability literature. For the present chapter, we focus on the most important problems: determining (a) what constitutes a difficult task and (b) if accountability inhibits performance on such tasks. Some advocates of the Motivation-Difficulty hypothesis classify "judgments under uncertainty" (i.e., judgments in which probability values are unknown) as "difficult tasks" based on the idea that no amount of motivation improves accuracy when assessing the precise probability of unusual events (Pelham & Neter, 1995, p. 582). If their classification of difficult judgments as those which are made under uncertainty is right, then several lines of accountability research fail to support the Motivation-Difficulty hypothesis. Each finds that accountability improves judgments under uncertainty.

Specifically, the record shows that overconfidence in judgment accuracy (see Lichtenstein, Fischhoff, & Phillips, 1982) improves with accountability (Kassin, Castillo, &

Rigby, 1991; Siegel-Jacobs & Yates, 1996; Tetlock & Kim, 1987). Accuracy in assessing

covariation improves with accountability (Murphy, 1994); as does awareness of one's judgment

process -- indicated by greater correspondence between (a) the cues that participants say they are

using to make choices and (b) the cues that regression models from participants' data reveal they

are using (Cvetkovich, 1978; Hagafors & Brehmer, 1983; Weldon & Gargano, 1988).

Conjunction errors (i.e., when the likelihood of two events is judged greater than the probability

that one of the events will occur alone, e.g., Tversky & Kahneman, 1982) are also reduced by

accountability (Simonson & Nye, 1992). Moreover, two especially pervasive tendencies: (1)

anchoring on an initial value and insufficiently adjusting a numerical estimate up or down from

that anchor (Tversky & Kahneman, 1974), and (2) weighting sunk costs when considering future

investments (Arkes & Blumer, 1985) are also reduced by accountability (Brockner, Shaw, &

Rubin, 1979; Kruglanski & Freund, 1983; Simonson & Nye, 1992; Simonson & Staw, 1992). If

we accept the idea (suggested by Motivation-Difficulty researchers) that judgments under

uncertainty constitute "difficult judgments," then these well-replicated results contradict the

Motivation-Difficulty hypothesis prediction that accountability will fail to improve judgment in

difficult tasks. Theoretically, this hypothesis could be supported if we were able to re-define

what constitutes a difficult task but that would require so many post-hoc judgment calls that the

original advantage of parsimony is lost.

Hypothesis Two: Does Increased Cognitive Effort Attenuate Bias?

The idea that thinking harder equates thinking better has intuitive appeal. Considering

the tendency for decision makers to use low-effort heuristics and "satisficing" techniques (for

reviews, see Dawes, 1998; Kahneman, Slovic, & Tversky, 1982), any factor that encourages

systematic forms of thought could be beneficial.

To be sure, some research documents that accountability leads research participants to

think "harder and better." For example, accountability prompted participants in an attribution

study to focus on the facts presented in fictional tort cases rather than to simply infer a judgment

based on their present feelings (Lerner, Goldberg, & Tetlock, 1998). Increased cognitive effort

among accountable participants has also been shown to decrease susceptibility to a host of common "biases" such as "the fundamental attribution error" (Tetlock, 1985), oversensitivity to the order in which information appears (Kennedy, 1993; Kruglanski & Freund, 1983; Schadewald & Limberg, 1992; P. E. Tetlock, 1983; Webster, Richter, & Kruglanski, 1996), and overconfidence (Kassin et al., 1991; Siegel-Jacobs & Yates, 1996; Tetlock & Kim, 1987).

Quite often, however, thinking harder (as a result of accountability) does not equate to thinking better. At least two factors moderate the relationship between effortful thought and bias attenuation. The first factor involves characteristics of the judgment and decision-making process; the second involves characteristics of the judgment and decision-making task.

A process moderator. Although both confirmatory thought and exploratory thought can be high-cognitive-effort responses to accountability, they differ in important ways. Whereas confirmatory thought involves a one-sided attempt to rationalize a particular point of view, exploratory thought involves even-handed consideration of alternative points of view. In short, although both exploratory and confirmatory thought can be effortful, one takes place in the service of self-justification whereas the other takes place in the service of optimizing a judgment/decision.

Generally speaking, the timing of accountability determines which process will occur. Whereas pre-decisional accountability prompts exploratory thought and the goal of making an optimal judgment/decision, post-decisional accountability prompts confirmatory and self-justifying thoughts (for review, see Lerner & Tetlock, 1999). A useful example appears in research on the sunk cost effect (i.e., escalating resource commitments to prior courses of action even when future costs from the course of action will exceed future benefits, see Arkes & Blumer, 1985). Whereas post-decisional accountability amplifies commitment to prior courses of action (Conlon & Wolf, 1980; Fox & Staw, 1979), pre-decisional accountability attenuates commitment (Brockner et al., 1979; Simonson & Staw, 1992). In the former situation, learning of the need to justify their actions only after committing themselves to a decision led participants to think of as many reasons as they could to bolster their decision. By contrast, in the latter

situation, learning of the need to justify their actions prior to forming an opinion allowed participants to impartially consider whether or not to continue their commitment. In sum, increased cognitive effort can take the form of confirmatory or exploratory thought.

A task moderator. Depending on the type of task, biases can arise from different sources. Sometimes judgment bias arises from insufficient attention to relevant cues in a task -- what Arkes (1991) calls "strategy-based errors." According to Arkes, people engage in a cursory review of available information when the effort or cost associated with a thorough review of cues in a particular task is greater than the benefit. At other times, bias arises from overuse of available cues -- what Kerr, MacCoun & Kramer (1996) call "sins of commission" or Hastie and Rasinski (1988) call "using a bad cue." According to Kerr and colleagues, people make "sins of commission" when a task contains a proscribed cue that is normatively irrelevant but not obviously so. Importantly, the effects of accountability and increased cognitive effort hinge on whether a bias arises from underused or overuse of cues. Whereas accountability will attenuate the first kind of bias, it will amplify the latter.

To illustrate this moderator, first consider a prototypical strategy-based error: the tendency among perceivers to rely on category- rather than attribute- information. Kruglanski and Freund (1983) showed that accountability attenuates this bias. When Israeli participants graded a paper by an Ashkenazi writer (high status group) under no accountability, the scores were higher than when they graded a paper known to be from a Sepharadic writer (low status group). In effect, the stereotyped-category label shaped grade assignments among unaccountable participants. This reliance on category labels disappeared, however, when participants believed that they had to explain their grade assignments to other members of the group. When accountable, participants paid greater attention to the actual attributes of the paper (for similar results, see Boudreau, Baron, & Oliver, 1992; Pendry & Macrae, 1996).

Now consider a prototypical "sin of commission" (i.e., bias arising from use of a normatively proscribed cue): the dilution effect. This effect occurs when nondiagnostic evidence dilutes the predictive power of diagnostic evidence (Nisbett, Zukier, & Lemley, 1981;

Zukier, 1982) and is amplified by pre-decisional accountability to an unknown audience (Tetlock & Boettger, 1989). When attempting to predict a student's grade point average, accountable and unaccountable participants gave weight to irrelevant information contained in thumbnail sketches of students (e.g., the number of plants a student keeps) but accountable participants were even more likely to do so. Compared to accountable participants, unaccountable participants relied more on the sole valid predictor -- namely, the number of hours the student studied per week. In short, accountability amplified bias by increasing indiscriminate use of information (for similar results, see Gordon, Rozelle, & Baxter, 1988; Hattrup & Ford, 1995; Siegel-Jacobs & Yates, 1996; Tetlock, Lerner, & Boettger, 1996).

To recap, increased cognitive effort sometimes attenuates biases in judgment and decision making; many other times it does not -- it even amplifies some biases. Rather than exerting a main effect on outcomes, both judgment <u>process</u> factors (e.g., exploratory versus confirmatory efforts) and judgment <u>task</u> factors (e.g., the initial source of bias) moderate the effect of cognitive effort on bias.

Toward a Multi-Factor Framework for the Effects of Accountability

Having failed to find support for two face-valid hypotheses -- one positing a main effect, the other a first-order interaction -- we now elaborate on an alternative scheme for predicting the effects of accountability on bias. Building on the process and task moderators identified in the previous section, this framework posits that the effects on bias depend on interactions among multiple factors, including <u>the type and timing of accountability</u>; the <u>original source of the judgment/choice bias;</u> <u>individual differences among decision makers</u> (e.g., in knowledge of decision rules and in sensitivity to social pressures); <u>social constraints on the decision process</u> (e.g., time pressure); and <u>the degree to which accountability systems are perceived as legitimate</u>. We have elsewhere reviewed these and other moderators (see Lerner & Tetlock, 1999). Due to limitations of space, we selectively focus on two especially important factors here, which provide the basis a new framework: the type and timing of accountability and the original source of the judgment/choice bias.

Key Factors

Type and timing of accountability. As discussed in the previous sections, accountability is not a unitary phenomenon. Different kinds of accountability activate qualitatively and quantitatively distinct forms of thought. Below we briefly sketch predictions for the relation between type of accountability and resulting thought processes (for elaboration, see Lerner & Tetlock, 1999).

When decision makers learn of accountability only after encoding judgment/choice cues, they are likely to anchor on initial values and insufficiently adjust their estimates (Tetlock & Kim, 1987). Similarly, learning of accountability only after committing themselves to a particular judgment/choice will trigger confirmatory thoughts and bolstering of their initial selections (Conlon & Wolf, 1980; Fox & Staw, 1979). Pre-decisional and pre-encoding accountability are, therefore, necessary preconditions for integratively complex thought. They are not, however, sufficient. If the decision makers know the views of the prospective audience, conformity is the most likely reactions (Tetlock, Skitka, & Boettger, 1989). Moreover, even if decision makers are unaware of the audience's views, they may believe that an audience favors expedient decisions rather than accurate decisions, and respond accordingly (Mero & Motowidlo, 1995; Siegel-Jacobs & Yates, 1996). Finally, whether the decision maker perceives accountability as legitimate and unobtrusive or not should moderate the kind of thought accountability triggers. Decision makers who sense that an illegitimate audience wants to influence their beliefs may react in a variety of counterproductive ways. They may respond by asserting their own views even more vigorously (Baer, Hinkle, Smith, & Fenton, 1980; Brehm, 1966; Brehm, 1972; Heilman & Toffler, 1976) or by disengaging from the task (Cvetkovich, 1978; Enzle & Anderson, 1993). Figure 1 provides a schematic representation of these predictions. We hasten to note that these predictions necessarily simplify the possible range of responses. Depending on the situational context, other non-integratively complex responses (e.g., buckpassing and procrastination) may also occur (see Tetlock & Boettger, 1994).

To recap, the framework predicts that integratively complex and open-minded thought is most likely to be activated when decision makers learn prior to forming any opinions that they will be accountable to an audience (a) whose views are unknown, (b) who is interested in accuracy, (c) who is reasonably well-informed, and (d) who has a legitimate reason for inquiring into the reasons behind participants' judgments/choices.

Importantly, the framework assumes that even among studies that trigger integratively complex thought, accountability effects will be highly variable across judgment and choice tasks, sometimes improving, sometimes having no effect on, and sometimes degrading judgment and choice. To specify the determinants of these respective outcomes, we introduce the second factor in our framework.

Source of bias. The framework predicts that pre-decisional accountability to an unknown audience will attenuate bias on tasks to the extent that (a) a given bias results from lack of self-critical attention to the judgment process and (b) improvement requires no special training in formal decision rules, only greater attention to the information provided. This prediction is consistent with Arkes's (1991) view that increases in cognitive effort attenuate strategy-based errors. The rationale is as follows. When participants expect to justify their judgments, they want to avoid appearing foolish in front of the audience. They prepare themselves by engaging in an effortful and self-critical search for reasons to justify their action. This leads participants to: (a) survey a wider range of conceivably relevant cues; (b) pay greater attention to the cues they use; (c) anticipate counter-arguments, weigh their merits impartially, and factor those that pass some threshold of plausibility into their overall opinion or assessment of the situation; and (d) gain greater awareness of their cognitive processes by regularly monitoring the cues that allowed to influence judgment and choice.

Pre-decisional accountability to an unknown audience will, however, have no effect on bias to the extent that: (a) a given bias results from lack of special training in formal decision rules (e.g., Bayes' theorem, expected utility theory) that are unfamiliar to the decision maker (see Simonson & Nye, 1992) and (b) no amount of increased effort illuminates these rules. This

prediction is consistent with several recent theories positing that bias correction hinges not only on the motivation to correct, but also on the ability to correct, one's mental processes (Kerr et al., 1996; Wegener & Petty, 1995; Wilson & Brekke, 1996).

Finally, it is useful to distinguish between judgment and choice tasks when predicting the conditions under which pre-decisional accountability to an unknown audience will amplify bias. To be sure, the same overarching motive underlies bias amplification in both judgment tasks and choice tasks: a desire to avoid appearing foolish in front of the audience. This motivation plays out differently, however, in judgment and choice tasks. In choice tasks, accountability to an unknown audience will amplify bias to the extent that a given bias arises because the choice option that appears easiest to justify also happens to be the "biased" option (Simonson, 1989; Simonson & Nye, 1992). That is, a desire to avoid appearing foolish in front of the audience heightens: (a) the need to ensure that one's choice is securely based on reasons and thus (b) the preference for options that are easy to justify (Shafir et al., 1993).

In judgment tasks, pre-decisional accountability to an unknown audience will amplify bias to the extent that a given bias results from naive use of normatively (but not obviously) irrelevant cues. That is, when a bias results from a lack of awareness that certain cues are proscribed, the desire to avoid appearing foolish in front of an audience only makes matters worse: it heightens use of all cues, even irrelevant ones.

Evidence for Hypotheses

In support of our predictions concerning the type of accountability and the integrative complexity of thought, several studies find that timing plays a pivotal role in moderating thought. If decision makers learn of accountability before exposure to judgment/choice cues, accountability can activate integratively complex thought and reduce biases (e.g., overattribution, overconfidence in the accuracy of one's predictions, and the primacy effect, see P. E. Tetlock, 1983; Tetlock, 1985; Tetlock & Kim, 1987). By contrast, if decision makers learn of being accountable only after encoding the information, they do not retroactively compensate for a faulty encoding process.[i]

Another key timing issue concerns whether decision makers learn of accountability before committing themselves to a particular judgment/choice. For example, accountable decision makers who reported their thoughts after making attitudinal commitments bolstered their initial attitude and formed less integratively complex and more rigidly defensive views (Lambert, Cronen, Chasteen, & Lickel, 1996; Morris, Moore, Tamuz, & Tarrell, 1998; Tetlock et al., 1989).[ii]

In support of predictions concerning the views of the audience, several studies have found that when audience views are known prior to forming one's own opinion, conformity becomes the likely coping strategy (see Cialdini et al., 1976; Jones & Wortman, 1973; Klimoski & Inks, 1990; Philip E. Tetlock, 1983; Tetlock et al., 1989). Similarly, if decision makers are unaware of specific views, but sense that the audience wants a particular decision outcome, they will focus on achieving that outcome to the detriment of an open-minded, careful decision process (c.f. Mero & Motowidlo, 1995; Siegel-Jacobs & Yates, 1996).

Finally, several studies find that the perceived legitimacy plays an important role. In cases where accountability was perceived as overly intrusive or illegitimate, predecisional accountability to an unknown-view audience failed to play its typical role in activating integratively complex thought. Rather, overly intrusive accountability led participants to disengage from the tasks (Enzle & Anderson, 1993) and to assert their own initial views more vigorously (Baer et al., 1980; Brehm, 1966; Brehm, 1972; Heilman & Toffler, 1976).

To recap, when decision makers do not feel locked into any prior commitment, when they learn of accountability prior to encoding cues, and when their audience is legitimately interested in the reasons behind a careful decision process, decision makers are likely to engage in preemptive self-criticism (Philip E. Tetlock, 1983; Tetlock et al., 1989). That is, they think in more self-critical, integratively complex ways in which they consider multiple perspectives on the issue and try to anticipate the objections that "reasonable others" might raise to positions that they might take.

Turning to our <u>bias attenuation</u> prediction, pre-decisional accountability to an unknown audience has repeatedly been shown to improve judgments and decisions via increases in the integrative complexity of thought. As examples, pre-decisional accountability to an unknown audience has increased: consideration of often-overlooked situational attributions for a target's behavior (Lerner et al., 1998; Tetlock, 1985; Wells, Petty, Harkins, Kagehiro, & Harvey, 1977); use of effortful, systematic judgment strategies (Ashton, 1992; Cvetkovich, 1978; Doney & Armstrong, 1996; Ford & Weldon, 1981; McAllister, Mitchell, & Beach, 1979; Murphy, 1994; Weldon & Gargano, 1988); attention to effort-demanding cues in persuasive messages (Chaiken, 1980); awareness of judgmental processes, and as a result, improved consistency of cue utilization, consensus within auditing groups, and consistency of judgment strategy use across a rater's judgments (Hagafors & Brehmer, 1983; Johnson & Kaplan, 1991; Siegel-Jacobs & Yates, 1996). (For similar effects, see Boudreau et al., 1992; Kassin et al., 1991; Kennedy, 1993; Kruglanski & Freund, 1983; Mero & Motowidlo, 1995; Pendry & Macrae, 1996; Schadewald & Limberg, 1992; Simonson & Nye, 1992; P. E. Tetlock, 1983; Tetlock & Kim, 1987; Webster et al., 1996).

In sum, accountability attenuates bias on tasks to the extent that (a) sub-optimal performance resulted from lack of self-critical attention to the judgment process and (b) improvement required no special training in formal decision rules, only greater attention to the information provided. For example, heightened awareness of judgment processes led accountable participants to disregard their own previously aroused affect (Bodenhausen, Kramer, & Süsser, 1994; Lerner et al., 1998) because it takes no special training in formal decision rules to realize that one's mood should not influence unrelated judgments.

In support of our <u>no effect on bias prediction</u>, several studies have found that accountability failed to modify biases that were exclusively attributable to lack of knowledge regarding formal decision rules. For example, accountability has no effect on insensitivity to sample size and insensitivity to base-rate information (Simonson & Nye, 1992). Presumably most participants lack the knowledge that one should reduce estimates of sampling variance in

proportion to sample size (Kahneman & Tversky, 1982) or that one should adjust probability estimates for the frequency of a specific event in some relevant population (Kahneman et al., 1982). (For similar examples, see Selart, 1996; Simonson & Nye, 1992). Moreover, the only examples of accountability improving judgments requiring formal rules are those in which participants had previously received training in the relevant rules (cf. Wilson & Brekke, 1996). For example, when MBA students (trained in subjective expected utility theory and its application to investment decisions) were made accountable for their future investments, they became willing to write off sunk costs (Simonson & Nye, 1992; Simonson & Staw, 1992). Confirming that these participants knew formal decision rules, 84% of them later stated an awareness of the principle that sunk costs should be written off.

In support of our bias amplification prediction for choices, accountability has amplified bias in several tasks where the option perceived as easiest to justify also happened to be the "biased" option. The compromise effect -- the tendency for a product to gain attractiveness simply because it becomes a middle option in a choice set (Simonson, 1989; Simonson & Nowlis, 1998) -- nicely illustrates this phenomenon. Accountable participants were especially likely to select the product that represented the compromise option because they thought that products with middle-of-the-road features were more easily defensible than options that were superior on one dimension but inferior on another (Simonson & Nowlis, 1997, p. 18). Similar findings were obtained for the attraction effect (Simonson, 1989) and ambiguity aversion (Curley, Yates, & Abrams, 1986) -- two effects in which the option perceived as easiest to justify also happens to be the "biased" option.

In support of our bias amplification prediction for judgments, accountability to an unknown audience has repeatedly been shown to amplify indiscriminate use of information in prediction tasks (Gordon et al., 1988; Hattrup & Ford, 1995; Siegel-Jacobs & Yates, 1996; Tetlock & Boettger, 1989). Research on the dilution effect, described earlier, serves as a useful example. Because the dilution effect stems from use of normatively irrelevant evidence, motivating accountable participants to become more vigilant thinkers sent accountable

participants off on inferential wild goose chases in which they attempted to weave together into a coherent story the disparate pieces of normatively -- but not obviously -- irrelevant information contained in diluted conditions (Tetlock & Boettger, 1989; Tetlock et al., 1996). In short, when bias arises from the use of normatively (but not obviously) irrelevant information, accountability amplifies bias by increasing indiscriminate use of that information.

At this point, readers may wonder how the conclusion that accountability amplifies use of normatively irrelevant cues can be reconciled with the fact that irrelevant cues are present in virtually all real-life problems. Why doesn't accountability always amplify judgment bias? The answer is straightforward: Amplification hinges on the context in which cues are presented, such as whether the cues have been presented to the judge by someone presumed to have knowledge about the task. When the judge receives information from someone presumed to be knowledgeable (e.g., the experimenter), the judge will follow the reasonable assumption that all information provided is relevant to the task at hand (see Grice, 1975; Schwarz, Strack, Hilton, & Naderer, 1991; Sperber & Wilson, 1986). From this vantage point, the presentation of information in experiments can be likened to a conversation between the researcher and the participant -- an interaction in which participants assume that the experimenter (their conversational partner) is following a widely accepted norm of stating only relevant information in social discourse (see Grice, 1975; Sperber & Wilson, 1986).

If the above predictions hold, it should be possible to attenuate this indiscriminate use of normatively irrelevant information by leading participants to question the otherwise reasonable assumption (when participating in experiments) that all information provided by the experimenter is somehow relevant to the task at hand. Tetlock, Lerner & Boettger (1996) tested this hypothesis on the dilution effect. Some participants were explicitly told that the axioms of conversation (assume relevance of all information) did indeed apply and that the experimenter had carefully screened the information provided participants to ensure its relevance for the prediction task. Other participants were explicitly told that the information may or may not be relevant to the prediction task. Still other participants were not given any explicit guidance one

way or the other concerning the relevance of the information. Accountable participants demonstrated a robust dilution effect when conversational norms were explicitly primed as well as in the no-priming control condition, but no dilution at all when conversational norms were explicitly deactivated. Non-accountable participants demonstrated the dilution effect across norm activation (information relevant) conditions, with the strongest effect under the activation of conversational norms. In other words, accountable participants were fully capable of disregarding irrelevant information, but only when they believed that conversational norms no longer required them to search for relevance in communications from others. So long as they believed conversational norms applied, their judgments were at least as biased as those of nonaccountable participants.

Synthesis. Among the various kinds of accountability, pre-decisional accountability to an unknown-view audience is most likely to trigger integratively complex thought. This form of accountability is likely to attenuate biases that arise from lack of self-critical attention to one's decision processes and failure to use all relevant cues. By contrast, this same form of accountability is likely to amplify bias to the extent that: (a) a given judgment bias results from using normatively (but not obviously) proscribed information or (b) a given choice bias results from the fact that the option which appears easiest to justify also happens to be the "biased" option. Finally, this form of accountability is likely to have no effect on biases that result exclusively from lack of special training in formal decision rules (for additional evidence supporting these predictions, see Lerner & Tetlock, 1999). The above-described moderators are not an exhaustive list, but they provide a solid basis for building a broader multi-factor framework.

Conclusions: Benefits of Accountability Research
for the Study of Judgment and Choice

Although accountability is an inevitable feature of decision environments, it has been overlooked by psychological theories of judgment and choice. In the past two decades, however, an exciting field has begun to document the ways in which accountability systematically shapes

judgment process and content. A driving question in this emerging field has been: Can accountability inoculate decision makers from commonly observed cognitive biases? As the previous section documented, we can now answer this question. We can now predict how specific forms of accountability interact with characteristics of decision makers and properties of the task environment to shape judgment and choice.

In this final section, we move from organizing the empirical effects of accountability to considering the broader benefits accountability research brings to the study of judgment and choice. We focus on two kinds of benefits: enhancing theoretical development and improving applications of research to real-world settings.

Enhancing theoretical development. In the judgment and decision-making literature, a bedrock assumption has been that individuals are motivated to form accurate judgments (see Kelley, 1967). Based on this assumption, researchers label departures from accuracy (e.g., departures from Bayes' Theorem and Subjective Expected Utility) as "errors" or "biases." It is worth noting, however, that social and institutional contexts can alter the goals held by decision makers. For example, accountability can lead decision makers to place greater value on getting along with their conversation partner by respecting norms than on judgment accuracy (Dulany & Hilton, 1991; Grice, 1975; Hilton, 1990; Krosnick, Li, & Lehman, 1990; Lerner & Tetlock, 1999; Schwarz et al., 1991; Tetlock, 1992). As a result, the dilution effect may appear to be evidence of "irrationality" in one social or institutional context but may be judged quite rational within another (what Tetlock, 1998 calls a normative boundary condition on classification of effects as errors or biases).

Numerous other studies support the notion that decision-making goals shift as a function of social and institutional contexts (e.g., Chen, Shecter, & Chaiken, 1996; Cialdini, Kallgren, & Reno, 1991; Goldberg, Lerner, & Tetlock, 1999; Kunda, 1990). For example, Thompson (1995) found that negotiators flexibly shifted their goals according to their constituency's views. When negotiators believed they would be rewarded for their objectivity, accountable bargainers were better able to perceive interests compatible with the other party than were unaccountable

bargainers. By contrast, when they believed they would be rewarded for their partisanship, accountable bargainers were less able to see compatible interests than were unaccountable participants. In short, accountability research implies that before labeling a response tendency a cognitive "error" or "bias," we should consider the interpersonal, institutional, or political goals of the decision maker.

Improving the application of judgment and decision making research to real-world settings. In an age where everyone from physicians to politicians face demands for greater accountability, the judgment and decision-making literature can make a timely contribution. Specifically, incorporating the real-world pressures of accountability into judgment and decision-making research sheds light on how best to structure reporting relationships in organizations. Already we know that accountability is not a cognitive cure-all for lazy or unresponsive workers, as conventional wisdom suggests. Rather, only highly specialized subtypes of accountability lead to increased effort and more cognitive effort is not inherently beneficial; it sometimes makes matters even worse. Moreover, there is ambiguity and room for reasonable disagreement over what should be considered "worse" or "better" judgment when we place cognition in its social or institutional context.

At this stage, our grasp of how accountability effects observed in the lab will translate to real-world settings is still highly tentative. Moreover, the details of how one integrates theoretical and empirical work across levels of analysis remain to be ironed out. Nevertheless, this review suggests that placing judgment and decision-making in its accountability context helps to put in perspective: (a) how the political, institutional, and social setting may require us to rethink what counts as judgmental bias or error; and (b) how accountability ground rules can be engineered to encourage desired, and discourage undesired, forms of human information processing.

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Footnotes

[i]   In one rare circumstance, post-exposure accountability and an explicit emphasis on the value of forming accurate judgments reduced bias. Specifically, participants who initially encoded evidence in heuristic fashion returned to the evidence and re-processed it in a more systematic fashion (Thompson et al., 1994).

[ii]   The dominant tendency to bolster initial thoughts does interact with situational and individual factors. Specifically, the timing of an anticipated discussion and the relative importance of the issue moderate complexity (Cialdini, Levy, Herman, Kozlowski, & Petty, 1976) as do the relative expertise of the audience (Fitzpatrick & Eagly, 1981) and individual differences in dogmatism (Tetlock et al., 1989).