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## Accountability and the Perseverance of First Impressions

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*Previous research indicates that our initial impressions of events frequently influence how we interpret later information. This experiment explored whether accountability—pressures to justify one's impressions to others—leads people to process information more vigilantly and, as a result, reduces the undue influence of early-formed impressions on final judgments. Subjects viewed evidence from a criminal case and then assessed the guilt of the defendant. The study varied (1) the order of presentation of pro- vs. anti-defendant information, (2) whether subjects expected to justify their decisions and, if so, whether subjects realized that they were accountable prior to or only after viewing the evidence. The results indicated that subjects given the antipro-defendant order of information were more likely to perceive the defendant as guilty than subjects given the pro-anti-defendant order of information, but only when subjects did not expect to justify their decisions or expected to justify their decisions only after viewing the evidence. Order of presentation of evidence had no impact when subjects expected to justify their decisions before viewing the evidence. Accountability prior to the evidence also substantially improved free recall of the case material. The results suggest that accountability reduces primacy effects by affecting how people initially encode and process stimulus information.*

Cognitive and social psychologists have identified a formidable list of human judgmental biases and failings (Einhorn and Hogarth, 1981; Nisbett and Ross, 1980; Slovic et al., 1977; Tversky and Kahneman, 1974). On the one hand, people sometimes attach considerable importance to information that, on normative or logical grounds, is irrelevant to the judgments they are asked to make. On the other hand, people sometimes ignore information that, on normative or logical grounds, should be given considerable weight.

The current study focuses on one particular bias: the tendency to maintain existing beliefs

in the face of evidence that ought to weaken or even totally reverse those beliefs—a phenomenon that Nisbett and Ross (1980) have termed belief perseverance. A wide range of research attests to the power of preconceptions to exert undue influence on our interpretations of events. This research includes work on sets in problem solving (Luchins, 1942), the resistance of stereotypes and attitudes to change (Allport, 1954; Hamilton, 1979), and the persistence of causal attributions even after the total discrediting of the evidence on which they were initially based (Nisbett and Ross, 1980).

The largest body of research on this topic, however, derives from the order-effect paradigms used in studies of impression formation (Asch, 1946; Anderson, 1965; Jones and Goethals, 1971). These paradigms involve comparing the inferences that people draw from one sequence of information to the inferences they draw from the same information presented in reverse order. The results of this research literature defy simple summary (cf.

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Jones and Goethals, 1971). Suffice it to say here, numerous studies have found primacy effects: information presented early in a sequence has more influence on final judgments than information presented late in the sequence.<sup>1</sup> Researchers have obtained this effect employing diverse stimulus materials (trait adjectives, paragraphs, direct observation of behavior) and judgment tasks (attribution of personal characteristics, general evaluative ratings, behavior prediction measures). Researchers have also offered three major explanations for primacy effects. (1) The attention decrement interpretation. As a result of fatigue, boredom or perhaps a more active process of protecting existing beliefs from incompatible evidence, subjects pay less attention to information that comes later in the sequence (Anderson and Hubert, 1963; Hendrick and Constantini, 1970; Stewart 1965). (2) The discounting interpretation. Subjects assume that later information is less reliable or valid than earlier information (Anderson and Jacobson, 1965). (3) The biased assimilation interpretation. Subjects form first impressions of the stimulus entity being judged. They then interpret later evidence in ways that render it consistent with the initial impressions they have formed (e.g., Asch, 1946; Jones et al., 1968; Nisbett and Ross, 1980: Chapter 8).

The central goal of the present study is not to test the validity of these alternative formulations, but rather to explore boundary conditions for the perseverance of first impressions. Research on order effects has typically presented subjects with minimally involving tasks. Subjects have had no reason to suppose that their judgments would have important consequences for themselves or others. If people really are "cognitive misers" who avoid expending mental effort whenever possible (cf. Taylor, 1980), existing research has offered them few, if any, inducements to change their ways. The question inevitably arises: Are people who are motivated to arrive at accurate judgments less susceptible to primacy effects? There are plausible reasons for suspecting that this is the case. Subjects with a personal commitment or stake in the judgments they make may be less likely to tune out later information, to jump to conclusions on the basis of fragmentary evidence or to reinterpret inconsistent evidence in ways that protect prior beliefs. (See Payne, 1982, on the need for contingency theories of judgment and decision making.)

<sup>1</sup> Recency effects have also been observed under certain conditions (see Jones and Goethals, 1971). Our discussion is limited to primacy effects and the processes that underlie these effects.

The study reported here manipulated the motivational significance of the research task by varying whether subjects expected to justify the conclusions or impressions they formed. Previous work suggests that accountability does under some conditions lead subjects to process information in more analytical and complex ways. For instance, McAllister et al. (1979) found that subjects who felt accountable for their decisions in a business simulation task used more complex choice strategies requiring greater investment of time and effort than subjects who did not feel accountable for their decisions. Cvetkovich (1978) found that subjects who expected to justify their choices in a betting game were more aware of the information they used in making decisions than were subjects who did not expect to justify their choices. Chaiken (1980) found that subjects who felt accountable for their attitudes attempted to comprehend and process the arguments and evidence in a persuasive message, whereas subjects who did not feel accountable for their attitudes simply relied on the likableness of the source of the message in deciding what position to take. Tetlock (1983) found that subjects who expected to justify their opinions to an individual with unknown views interpreted policy issues in more multidimensional ways than subjects who did not expect to justify their opinions. (For other relevant evidence, see Rozelle and Baxter, 1981; Wells et al., 1977; Zajonc, 1960.)

The key assumption underlying this study was that accountability can motivate complex and vigilant information processing. To explore this issue, we presented subjects with descriptions of evidence from a murder trial. Half of the items of evidence cast doubt on the defendant's guilt; the other half suggested that the defendant was, indeed, guilty. We also varied the order in which subjects received the evidence: an exonerating/incriminating, an incriminating/exonerating, or a randomly alternating order of presentation.

One major hypothesis was that subjects who felt accountable for their judgments of the defendant's guilt would be much less susceptible to primacy or belief perseverance effects than subjects who did not. Accountability would eliminate the primacy effect by leading subjects to pay closer attention to the entire sequence of information presented, to analyze each item of information more carefully, to be more cautious in drawing inferences from incomplete evidence, and to be more receptive to evidence that challenged initial beliefs. In brief, accountable subjects would become more vigilant, self-critical, information processors.

A second major hypothesis was that subjects who felt accountable for their judgments of the defendant's guilt would recall substantially more of the evidence presented to them than subjects who did not feel accountable. If accountability actually motivates people to attend to and think carefully about the evidence, it should promote what cognitive psychologists have called greater "depth of processing" ( Craik and Lockhart, 1972) or "elaboration of encoding" (Anderson, 1980). Accountable subjects will retain items of evidence in working memory for longer periods of time as they attempt to analyze the implications of each item thoroughly and to integrate the discrepant information into a coherent, overall impression. The result will be the formation of more "interitem" associative paths which theoretically facilitate retrieval and recall. For instance, Anderson's (1980) model of human associative memory posits that, in general, the more associative paths connecting a given proposition to other propositions stored in memory, the more likely subjects will be successful in retrieving that proposition.

Finally, we should note an important qualification to the above hypotheses. The effects of accountability may depend on whether subjects realize they must justify their decisions before or only after viewing the evidence on which they are basing their judgments. If, as argued earlier, accountability eliminates primacy effects by encouraging people to attend to and process incoming information vigilantly, accountability prior to viewing the evidence will be much more effective in eliminating primacy effects and enhancing recall than accountability after viewing the evidence. Alternatively, accountability may eliminate primacy effects via other psychological processes. One possibility is that accountability motivates people to search their memories especially carefully, to retrieve a large and unbiased sample of evidence, and to integrate all this information in forming final judgments. In this case, accountability will eliminate primacy effects and enhance recall, regardless of the timing of the manipulation. A second possibility is that accountability simply affects subjects' willingness to express certain types of judgments (a response bias explanation). For instance, subjects who feel accountable may be more likely to become "fence-sitters" who avoid committing themselves to strong positions on the guilt or innocence of the defendant. In this case, both pre- and post-exposure accountability may again eliminate primacy effects. There is no reason, though, to expect either type of accountability to enhance recall of the case materials. In short, the pattern of results one

expects depends critically on the psychological processes that one assumes underlie the effects of accountability.<sup>2</sup>

## METHOD

### *Subjects*

Subjects were 72 undergraduates at the University of California who took part in the experiment in return for course credit or payment (\$3.00). Subjects were randomly assigned to conditions in a 3 (order of information)  $\times$  3 (type of accountability) design (8 subjects per cell).

### *Procedure*

The experimenter introduced the study by informing subjects that they would be participating in a research project concerned with "how people process and combine information in making decisions on important real-world problems." Subjects received a booklet with instructions and a description of a court case involving the death of a Mr. Dixon. The experimenter told subjects that they would be reading summaries of the most important evidence relevant to the case. Subjects then read the following "background information" on the case.

Mr. Smith has been charged with murder. The apparent victim is Mr. Dixon. Smith and Dixon had shared an apartment for nine months (up to the time of Dixon's death). Early on the night of his death, Dixon had attended a party at which there was considerable drinking. He returned from the party some time between 12:00 and 12:30 A.M. The autopsy revealed that Dixon died from the joint effects of alcohol and an overdose of barbiturates. The autopsy also revealed that Dixon had taken the barbiturates some time between midnight and 2 A.M.

Subjects were then given 30 seconds to read and think about each of 18 brief summaries of evidence relevant to the case. These sum-

<sup>2</sup> The pre- versus post-exposure accountability manipulation included in this study is, in principle, similar to a variety of pre- versus post-exposure manipulations included in other studies of impression formation. The general objective is to determine when in the cognitive processing sequence a given effect for an independent variable occurs. Does the effect occur as information is initially encoded or later at the retrieval or response selection stages? A common method of resolving this issue is to introduce the independent variable prior to stimulus exposure for half the subjects and after stimulus exposure for the other half (e.g., Rothbart et al., 1979; Taylor and Fiske, 1981; Zadny and Gerard, 1974).

maries were presented on separate pages of the booklet given to all subjects. Half of the arguments implied that the defendant was guilty, whereas the other half cast some doubt on the defendant's guilt. To facilitate recall scoring, each argument contained only one basic theme. Examples of arguments that suggested Smith's guilt include:

- There were no signs that Dixon was depressed or on the verge of suicide. He was very successful in his career and engaged to be married.

- Smith's fingerprints were on the glass of liquor at Dixon's bedside. Chemical analysis indicated that the glass contained large traces of the barbiturates involved in Dixon's death.

- Acquaintances of Dixon testified that he was extremely cautious in using drugs of any sort and had a general policy of never mixing alcohol and drugs.

- Neighbors reported having overheard Dixon and Smith engaged in violent quarrels on numerous occasions during the previous two months.

Examples of arguments that cast some doubt on Smith's guilt include:

- Smith had no record of criminal activity and was generally liked and respected in the community.

- The bottle of liquor (rum) had only Dixon's fingerprints. There were no signs that Smith touched the bottle.

- The medicine chest contained a half-empty bottle of aspirins and a similar appearing, partly-empty bottle of barbiturates. Dixon's and Smith's fingerprints were on both bottles.

- An acquaintance of Smith thought he saw Smith driving in his car about halfway between the theatre and Smith's apartment sometime after 2 A.M. He could not, however, make a positive identification.<sup>3</sup>

Subjects were run individually or in small groups of 2 to 4 persons. Subjects who participated in small groups were always: (a) randomly assigned to different experimental conditions; (b) seated so as to minimize communication among them.

#### *Accountability Manipulation*

Subjects in the "no accountability" conditions were assured prior to reading the evidence that their impressions of the accused person's guilt or innocence would be totally confidential and not traceable to them personally.

<sup>3</sup> Pretest data indicated that subjects exposed only to the items suggestive of guilt ( $n = 16$ ) tended to be quite confident of Smith's guilt ( $M = 84\%$ , on a 0-100 subjective likelihood scale). Subjects exposed only to the items casting doubt on Smith's guilt ( $n = 14$ ) tended to be very skeptical of his guilt ( $M = 21\%$ ).

ally. Subjects in the "pre-exposure accountability" conditions learned before reading the case material that the researchers were interested in "the interpersonal communication of beliefs and attitudes" and that subjects would later be asked to justify their impressions of the accused person's guilt or innocence to an associate of the experimenter. Subjects in the "post-exposure accountability" conditions received the same information, but only after they had read the case material.

#### *Order of Information Manipulations*

Subjects were presented the 18 items of evidence in one of three orders: (1) evidence suggestive of guilt followed by evidence suggestive of innocence; (2) evidence suggestive of innocence followed by evidence suggestive of guilt; (3) a randomly alternating order of evidence suggestive of guilt and evidence suggestive of innocence.

#### *Major Dependent Variables*

There was a 3-minute delay between the presentation of the evidence and the administration of the dependent variables (to give subjects "an opportunity to think about the evidence"). Subjects were then asked: "How likely do you think it is that Smith killed Dixon?" Subjects responded on a 0-100 scale anchored at "certain he is innocent" and "certain he is guilty," with the midpoint labelled "uncertain." Subjects were also asked to render a verdict on Smith's guilt or innocence as if they were members of a jury. Finally, subjects were asked to recall as many items of evidence from the original case as they could. We subsequently coded each recall protocol for the number of pro- and anti-defendant items of evidence listed. Coders employed a "gist" or "substance" criterion (i.e., did the subject remember the critical evidentiary idea?). Interrater agreement was high ( $r = .88$ ).

#### RESULTS

Figure 1 presents the mean ratings of the probability of the defendant's guilt. Order of information significantly influenced these judgments of guilt ( $F(2,63) = 5.71, p < .01$ ). As predicted, there was a primacy effect. Subjects perceived the defendant as more likely to be guilty when they received the anti-defendant/pro-defendant order of information than when they received the pro-defendant/anti-defendant order of information ( $M_s = 62.5$  and  $45.0$ ,  $F(1,63) = 8.85, p < .01$ ). No significant differences existed between the randomly alternating order of evidence and either the pro/anti or anti/pro orders of presentation.

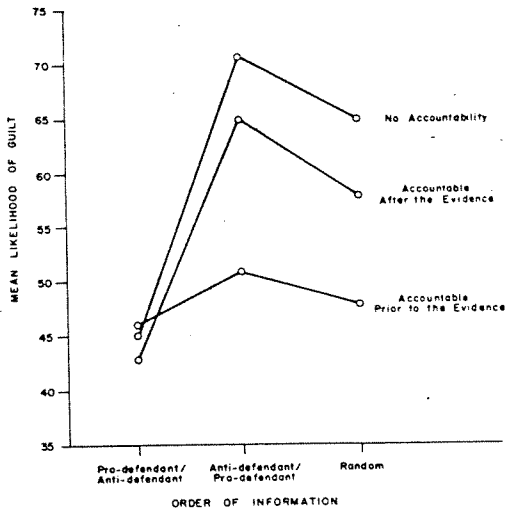


Figure 1. Mean ratings of likelihood of defendant's guilt as a function of order of presentation and accountability. Higher values indicate that subjects perceived defendant as more likely to be guilty.

Analysis of variance indicated no main effect for accountability on perceptions of the defendant's guilt. Planned comparisons did reveal, however, support for the hypothesis that accountability prior to reading the evidence would eliminate the perseverance of initial impressions of guilt. There was a significant order of information effect for subjects who did not expect to justify their decisions ( $M_s = 71.25$  and  $45.0$ ,  $F(1,63) = 8.06$ ,  $p < .01$ ) and for subjects who expected to justify their decisions only after reading the evidence ( $M_s = 65.0$  and  $43.75$ ,  $F(1,63) = 5.29$ ,  $p < .05$ ). In contrast, there was no sign of an order of information effect for subjects who expected to justify their decisions prior to reading the evidence ( $M_s = 51.25$  and  $46.25$ ,  $F(1,63) < 1$ , ns). We also performed a specific interaction contrast to assess whether the order of information effect was significantly greater in the no-accountability and post-exposure accountability conditions than in the pre-exposure accountability conditions. This contrast was of borderline significance ( $F(1,63) = 3.84$ ,  $p = .06$ ).

No effects emerged as significant on the dependent variable of "convict-acquit." This was apparently due to the insensitivity of the dichotomous measure.<sup>4</sup>

<sup>4</sup> Interviews with subjects after the experiment indicated that most subjects were unwilling to "convict" the defendant when they were less than 80% confident in his guilt. Many subjects felt they needed to be 100% confident before judging the defendant guilty.

We performed analyses of variance on the recall measures to examine the effects of order of information and accountability on memory. These analyses revealed no order of information effects. The analyses did, however, consistently support the hypothesis that subjects who were accountable prior to reading the evidence would recall more case material than would subjects who were either unaccountable or accountable only after reading the evidence (see Figure 2). This was true for recall of both pro-defendant evidence ( $M_s = 6.16$  and  $5.04$ ,  $F(1,63) = 13.50$ ,  $p < .001$ ) and anti-defendant evidence ( $M_s = 6.0$  and  $4.88$ ,  $F(1,63) = 13.19$ ,  $p < .001$ ). No significant differences existed between the no-accountability and post-exposure accountability conditions. We also computed a "biased recall" measure for each subject: the number of pro-defendant items of evidence recalled divided by the number of anti-defendant items recalled. Analysis of variance of this measure did not, though, reveal any significant effects.

There were moderate but significant correlations between the recall measures and the subjective probability estimates of the defendant's guilt. Subjects who recalled more anti-defendant information and less pro-defendant information viewed the defendant as more likely to be guilty ( $r(70) = .27$  and  $r(70) = -.25$ ,  $p < .05$ ). There was also a significant negative correlation between the biased recall measure and subjective probability of guilt ( $r(70) = -.46$ ,  $p < .01$ ). To explore the possible mediating role of recall, we performed analyses of covariance on the subjective probability of guilt measure, using each of the recall mea-

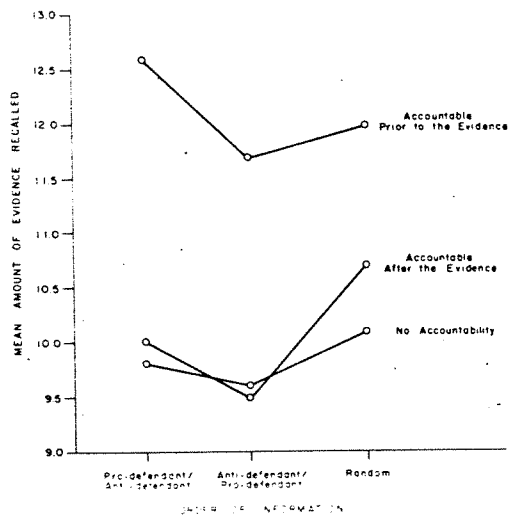


Figure 2. Mean Number of Items of Evidence Recalled as a Function of Order of Presentation and Accountability

asures as covariates. Only the biased recall measure emerged as a significant covariate ( $F(1,62) = 17.17, p < .01$ ). However, the effects of order of presentation and accountability on perceptions of guilt remained essentially identical to those of the analysis of variance reported earlier. Biased recall thus does not appear to mediate the effects of these independent variables on judgment.

#### DISCUSSION

Consistent with much previous work, early presented information exerted significantly more influence on perceptions of the defendant's guilt than later presented information. However, this effect occurred only when subjects did not expect to justify their impressions of the defendant's guilt or expected to justify their impressions only after exposure to the evidence. Subjects who expected to justify their impressions before exposure to the evidence were "immune" to the impact of the order-of-presentation manipulation.

Overall, the data strongly suggest that accountability prior to viewing the evidence eliminated the primacy effect by affecting how subjects encoded and processed incoming information, not by affecting how subjects retrieved or integrated information already in memory or by affecting the types of judgments subjects were willing to express. Two specific findings support this interpretation. First, as noted above, accountability per se was not sufficient to eliminate the order effect. Subjects who realized they had to justify their views only after exposure to the evidence were still affected by the order of presentation of the evidence. Second, subjects who realized they had to justify their views prior to exposure to the evidence recalled significantly more case information than subjects who felt unaccountable or accountable only after exposure to the evidence. These recall data suggest that pre-exposure accountability led to greater elaboration of encoding or depth of processing of the stimulus materials. Numerous memory experiments indicate that manipulations which promote active analysis and processing of incoming information enhance recall of the information (Anderson, 1980; Chapter 7). Accountability appears to fall into this class of experimental manipulations.

Given these data, it is obviously tempting to attribute the absence of a primacy effect in the pre-exposure accountability conditions to the tendency of subjects in these conditions to engage in "deeper" or "more elaborative" processing of the evidence. However, this explanation does not appear to be the full story. The primacy effects (when they occurred) were ap-

parently not mediated by selective recall of evidence. Analysis of variance indicated no order of presentation effects on the amount or types of evidence recalled. Moreover, analysis of covariance indicated that order of presentation influenced subjective probability estimates of guilt, even after controlling for the number of pro- relative to anti-defendant items of evidence recalled.<sup>5</sup> If selective recall of evidence did not produce the primacy effect, it is implausible that pre-exposure accountability eliminated the primacy effect by simply enhancing recall of evidence.

What other psychological processes might explain why pre-exposure accountability eliminated the primacy effect? One possibility is that pre-exposure accountability somehow interfered with the biased assimilation of later evidence into the initial impressions that subjects formed of the defendant's guilt. Pre-exposure accountability may have done so via at least two interrelated processes: (1) making people more cautious about jumping to confident conclusions from incomplete evidence (thus increasing subjective uncertainty and decreasing the salience and strength of initial impressions); (2) making people more receptive to later contradictory evidence (cf. Lanzetta, 1963, on the power of uncertainty to motivate information-search behavior).<sup>6</sup>

The "interference with biased assimilation" interpretation may also help to explain the failure of post-exposure accountability to eliminate the primacy effect. Many lines of work suggest that the cognitive assimilation process is very difficult to reverse. Once subjects have assimilated or integrated information into their impressions of a person or event, they have a hard time discounting that information. For instance, Greene et al. (1982) explored the effectiveness of warnings in preventing "misinformation" from influencing people's memories of

<sup>5</sup> The finding that order of presentation effects on judgments do not disappear after controlling for "biased recall" is consistent with other research on impression formation (e.g., Anderson and Hubert, 1963; Dreben et al., 1979; Risky, 1979). Forming an impression often seems to involve judgmental processes "distinct from, and not dependent on, immediate verbal memory" for the stimulus materials presented (Anderson and Hubert, 1963:386).

<sup>6</sup> A related possibility is that accountability motivated subjects to pay serious attention to the full sequence of evidence presented to them. If primacy results from people tuning out later information (as Anderson and Hubert's (1963) attention decrement hypothesis and Newton and Rindner's (1979) point of sufficient information hypothesis assert), then any experimental manipulation which induces subjects to heed all of the relevant information should be effective in eliminating primacy.

events. They found that warnings just prior to exposure to misinformation increased resistance to the misinformation, whereas warnings given after the misinformation had been processed were ineffective. Similarly, Zillman and Cantor (1976) found that information about mitigating circumstances surrounding an aggressive act had greater impact if it preceded rather than followed a description of the act (see also Jones et al., 1979). Fischhoff (1977) found that subjects given the correct answers to general knowledge questions consistently overestimated how much they would have known about the answers had they not been told. These diverse bodies of evidence suggest that people are often unaware of the determinants of their beliefs and the changes that have occurred in those beliefs (cf. Nisbett and Wilson, 1977). It seems reasonable in light of this evidence to expect accountability to be much more effective in preventing than in reversing the biased assimilation process.

Finally, we should consider the broader theoretical implications of the study. The results add to the substantial evidence indicating that under certain conditions accountability can promote complex or vigilant information processing. The results are also encouraging to advocates of "contextualist" or "contingency" models of human judgment which emphasize the capacity of people to shift information-processing strategies in response to task or situational requirements (e.g., Jenkins, 1981; Payne, 1982). The rules or strategies people employ in making judgments appear to depend on whether they expect to justify the positions they take. Further work is needed to explore the processes that mediate the effects of accountability as well as the impact of accountability on other cognitive biases (e.g., overconfidence in the correctness of one's judgment, the fundamental attribution error, the illusory correlation). Accountability may represent a simple, but surprisingly effective, social check on many judgmental shortcomings documented in the current experimental literature.

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