

# The Elaboration Likelihood Model: A Meta-Theory for Synthesizing Auditor Judgment and Decision-Making Research

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**SUMMARY:** Critics argue that audit research rarely impacts practice, in part due to challenges associated with synthesizing and interpreting research. We propose that using the Elaboration Likelihood Model (ELM) as a meta-theoretical framework can help in understanding the collective findings within auditor judgment and decision-making (JDM) research. Our goal is to demonstrate the utility of the ELM by interpreting the results of two samples of studies on client cooperation and auditors' moods. Our synthesis of client cooperation studies suggests cooperation on a current issue affects auditors' judgments only when auditors lack motivation to think carefully about the task. In contrast, a history of client cooperation tends to bias even highly motivated auditors' judgments. Our synthesis of mood studies suggests motivational interventions are necessary, but not sufficient, to mitigate mood's effects on judgments. Our ELM interpretations offer theoretical explanations for seemingly unrelated predictions and findings that can inform future research and practice.

**Keywords:** auditor judgment and decision-making; Elaboration Likelihood Model; literature review; research synthesis.

## INTRODUCTION

For over two decades, critics have argued that audit research rarely impacts audit practice (Sullivan 1993; Carcello 2005; Francis 2011). As Francis (2011, 145) explains, “practitioners and regulators have difficulty understanding research findings on a given topic, in part because there are multiple studies with sometimes conflicting results.” Carcello (2005, 38) argues that for research to be of value to practitioners, regulators, and policymakers, academics must “wade through an ever-expanding research literature to identify, understand, and synthesize all of the research findings in a particular area.” However, synthesizing and interpreting studies that employ different theories or report inconsistent results is challenging without a theoretical framework that allows for generalizable theoretical inferences (Cohen and Knechel 2013).

We propose that academics can use the Elaboration Likelihood Model (ELM) (Petty and Cacioppo 1986a, 1986b) as a meta-theoretical organizing framework to help synthesize inferences from multiple auditor judgment and decision-making (JDM) studies under a single theoretical umbrella. Indeed, the ELM was developed initially “to integrate the many seemingly conflicting research findings and theoretical orientations (in the persuasion literature) under one conceptual umbrella” (Petty and Cacioppo 1986a, 3). Therefore, using the ELM to interpret collective findings can potentially offer a clearer path forward

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for future research aimed at informing audit practice. The goal of this review is to demonstrate the utility of the ELM in interpreting collective research results by using it to synthesize two samples of auditor JDM studies.

The ELM posits that variables such as source credibility, accountability, or an individual's emotions can affect judgments differently depending on how combinations of those variables affect an individual's motivation and capacity to elaborate (i.e., perform effortful cognitive processing). Motivation refers to an individual's desire to exert a high level of mental effort; capacity refers to an individual's ability and opportunity to think (Petty, Wheeler, and Tormala 2003).<sup>1</sup> For high elaboration to occur, people must have *both* sufficient motivation and capacity (Petty and Cacioppo 1986b).

Using a sample of client cooperation studies, we demonstrate how the ELM can theoretically unify and extend research beyond the paradigms used in individual studies. Without the ELM framework, the studies collectively imply that when clients cooperate, auditors' judgments tend to be less conservative or less skeptical. However, factors such as higher risk (Hatfield, Agoglia, and Sanchez 2008), stronger audit committees (Brown-Liburd and Wright 2011), smaller initial differences between auditor and client (Hatfield, Houston, Stefaniak, and Usrey 2010), greater task familiarity (Wolfe, Mauldin, and Diaz 2009), and more negotiation experience (Fu, Tan, and Zhang 2011) mitigate its effect. Nonetheless, it remains unclear what these factors have in common that mitigate the effects of client cooperation on auditors' judgments.

From our ELM interpretation, we infer that the mitigating factors (see "Input Variables" in Figure 1) identified in these studies have different effects on auditors' motivation and capacity to think. Risk level, audit committee strength, and audit adjustment magnitude likely influence motivation, directly or indirectly, whereas task familiarity and experience likely influence capacity. Even though these factors similarly affect auditors' judgments in the studies, we infer that they work through different mechanisms and therefore require different interventions to manage the influence of client cooperation. We also infer that cooperation's effect depends on how researchers manipulate it. In our sample of studies, researchers manipulate client cooperation on the current issue (e.g., client is flexible versus inflexible on their current position; Gibbins, McCracken, and Salterio 2010) and/or in the past relationship (e.g., client has or has not made concessions in the past; Hatfield et al. 2010). We argue that cooperation on the current issue only influences judgments when auditors lack motivation, implying that motivational interventions can reduce client cooperation's influence. We also argue that cooperation in the past relationship influences the judgments of even highly motivated auditors, implying that this type of cooperation likely biases auditors' thoughts toward client preferences and therefore requires a de-biasing, rather than a motivational, intervention.

In addition, using a sample of mood studies, we demonstrate how the ELM can reconcile conflicting results across studies. Without the ELM framework, the studies jointly show that sometimes a good mood causes auditors to side with their client, while sometimes a bad mood causes this, and the difference seems to arise from unspecified task differences. From our ELM interpretation, we infer that auditors rely on a good mood as a simple cue to accept their clients' preferences only when auditors lack adequate motivation. In contrast, when auditors have sufficient motivation, mood biases auditors' thoughts in favor of or against clients' preferences, depending on the other input variables present that might activate directional goals (Petty, Schumann, Richman, and Strathman 1993). Our ELM synthesis suggests that motivational interventions are necessary, but not sufficient, to limit the influence of auditors' moods on their judgments.

We demonstrate how using the ELM to interpret JDM studies can provide insights about how the same independent variables (e.g., client cooperation and mood) can engage different cognitive mechanisms depending on the other input variables present (e.g., participants' experience level or case background information). Such interpretations can help to explain seemingly disparate results across studies. Using the ELM as a framework to synthesize and interpret the collective findings of auditor JDM research, and thus, aid in planning and designing future research, has the potential to move our understanding of the collective literature forward and increase the likelihood that the findings are valued outside of academia.

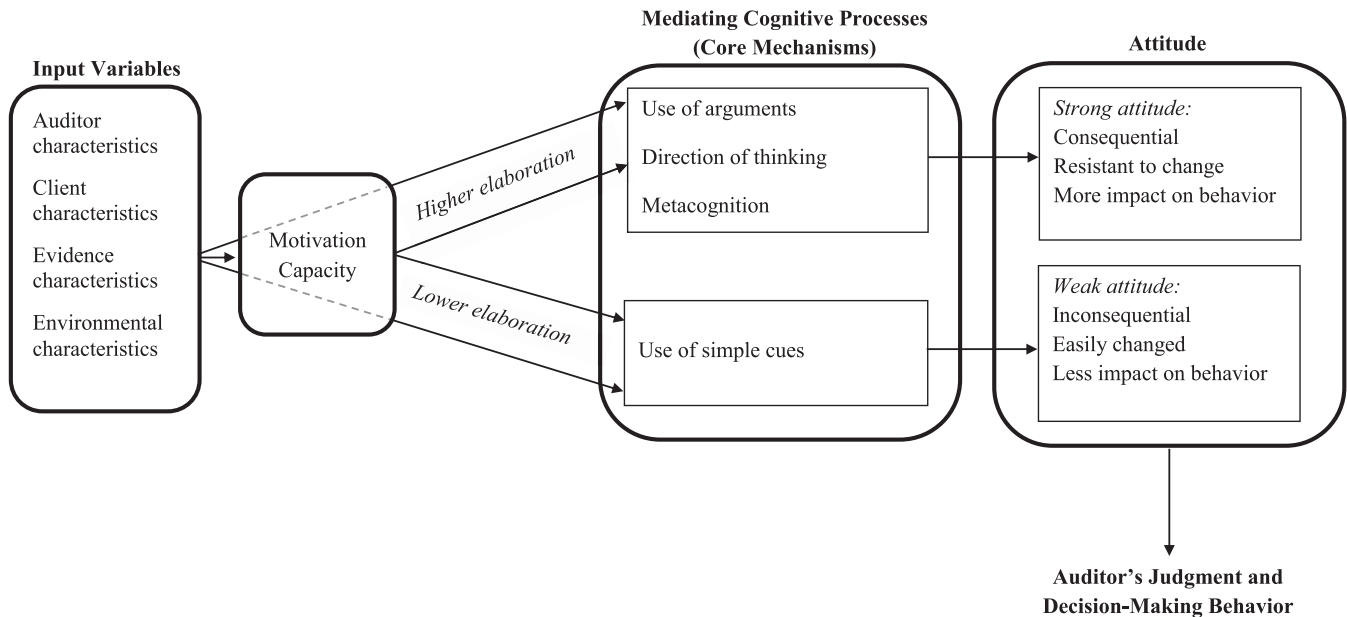
In the next section, we describe the ELM. The third section describes and demonstrates our synthesis method. The fourth section discusses research and practice implications. The fifth section concludes.

## THE ELABORATION LIKELIHOOD MODEL

The Elaboration Likelihood Model (Petty and Cacioppo 1986a, 1986b) arose in response to "a mystifying diversity of findings" in persuasion research examining how people form and change their attitudes. An attitude is an evaluation of a target object, person, behavior, or event on a scale reflecting some degree of good or bad (Banaji and Heiphetz 2010; Thompson, Kruglanski, and Spiegel 2000), such as favor/disfavor, approval/disapproval, liking/disliking, approach/avoidance, attraction/aversion, or similar reactions (Eagly and Chaiken 1993). Attitudes influence judgments and guide behavior by shaping individuals' perceptions of the world (Fazio 1995; Krosnick and Petty 1995). Over four decades of research have revealed that sometimes an independent variable (e.g., one's mood or source credibility) positively influences individuals' attitudes, and

<sup>1</sup> Capacity encompasses personal traits such as knowledge, experience, and intelligence that affect an individual's ability to think, as well as external influences such as task complexity, time constraints, or distractions that affect an individual's opportunity to think (Petty and Cacioppo 1986b).

**FIGURE 1**  
**The Elaboration Likelihood Model Applied to Auditors' Attitudes and Judgments**



Source: Adapted from Petty and Briñol (2010).

other times opposite results occur (see Petty and Briñol 2012). Moreover, sometimes attitudes appear to guide behavior, and other times attitudes have no effect (Wicker 1969). In response, the ELM aimed to explain when and why the same variables (i.e., “Input Variables” in Figure 1) can produce differing effects on individuals’ attitudes and their ensuing judgments and actions.

The ELM posits that variations in judgments and decisions depend on variations in a person’s level of elaboration (i.e., amount of thought), which falls along a continuum ranging from low to high (Petty and Briñol 2014). At the low end, simple cues such as client attractiveness influence judgments (e.g., Haugtvedt, Petty, and Cacioppo 1992). At the high end, individuals carefully consider all available information to form a reasoned judgment (although this reasoning may be biased, as we discuss later; e.g., Wegener, Petty, and Klein 1994). One’s location along the elaboration continuum depends on his or her motivation and capacity to process the information. High elaboration requires high motivation and high capacity (Petty and Cacioppo 1986a). Individuals with high motivation but low capacity will attempt elaboration, but these efforts will be unsuccessful because they lack the capacity for elaboration to occur (Petty and Cacioppo 1986b). Individuals with high capacity but low motivation, in contrast, will not attempt effortful elaboration because they are uninterested in doing so (Petty and Cacioppo 1986b).

Figure 1 depicts, through an ELM lens, the processes through which input variables in the auditing environment can influence auditors’ attitudes and resulting judgments and decisions.<sup>2</sup> The input variables determine auditors’ motivation and capacity to elaborate as well as the mediating cognitive processes (i.e., core mechanisms) that influence auditors’ attitudes, with stronger attitudes being more likely to influence judgments and decisions. Low motivation and/or capacity result in lower elaboration, while high motivation and capacity result in higher elaboration. Thus, the input variables indirectly determine elaboration by influencing motivation and capacity. Lower levels of elaboration increase the likelihood that some input variables will serve as simple cues, which lead to weaker attitudes with less influence on decisions, and often result in lower-quality judgments. Higher levels of elaboration can cause greater differentiation between relevant and irrelevant cues, a focus on a specific subset of the evidence, and more confidence in one’s processing of the evidence. More elaboration leads to

<sup>2</sup> See Nolder and Kadous (2018) and Kadous, Nolder, and Peecher (2019) for further discussion of auditors’ salient attitudes (e.g., professional skepticism and independence of mind) and corresponding measures.

stronger attitudes more likely to influence decisions, and can lead to higher-quality judgments—provided that the enhanced thinking is not biased (see Petty, Haugtvedt, and Smith [1995] for a review).

### Input Variables

The input variables affecting auditors' elaboration, cognitive processing, attitudes, and judgments can be organized into four categories: auditor, client, evidence, and environmental characteristics (Hurt, Brown-Liburd, Earley, and Krishnamoorthy 2013). For example, auditor characteristics include experience, knowledge, and mood. Client characteristics include objectivity, competence, likeability, and cooperation. Evidence characteristics include format, framing, and complexity. Environmental characteristics include accountability, time pressure, standards, review format, and decision aids. Different combinations of input variables will determine auditors' motivation and capacity to elaborate and the resulting cognitive processes that yield their attitudes and judgments.

### Motivation and Capacity

Motivation to elaborate refers to a person's desire or willingness to assess the validity of a message through effortful thinking (Petty and Cacioppo 1986a). In general, input variables such as the personal relevance of the message (Petty and Cacioppo 1990) and personal accountability for a judgment (Petty, Harkins, and Williams 1980) increase motivation to elaborate. In auditing, supervisory reviews or Public Company Accounting Oversight Board (PCAOB) inspections, personal career goals to distinguish oneself, and other factors likely increase motivation to elaborate (Griffith, Kadous, and Young 2016). Auditors have several, often competing, motivations, such as completing their work within budget versus conducting additional unplanned—but desirable—procedures or constraining aggressive client accounting choices versus maintaining positive client relationships (Johnstone, Warfield, and Sutton 2001; Gibbins, Salterio, and Webb 2001; Moore, Tetlock, Tanlu, and Bazerman 2006). Some of these competing motivations can bias auditors' cognition, leading to lower-quality judgments.

Capacity to elaborate refers to a person's ability and opportunity to think (Petty et al. 2003). This capacity depends on individuals' innate and acquired skills (e.g., intelligence, expertise) and external factors (e.g., time constraints, imposed deadlines, distractions) that affect the likelihood that they can successfully process relevant information and accurately assess message validity (Petty, Wegener, and Fabrigar 1997). In auditing, the capacity to elaborate increases with factors such as knowledge, innate ability, and experience (e.g., Bonner and Lewis 1990; Abdolmohammadi and Wright 1987). Factors such as task structure (e.g., decision aids designed to reduce cognitive load) or evidence presentation format (e.g., detailed versus aggregated amounts) can also increase capacity if they reduce the complexity or cognitive demands of the task.<sup>3</sup> In contrast, factors such as fatigue or task complexity reduce auditors' capacity to elaborate (e.g., Lowrey 1998; Hurley 2015).

In sum, the input variables influencing auditors' motivation and capacity jointly determine their likelihood to elaborate. Once input variables determine elaboration likelihood, input variables further influence attitudes and judgments by (1) serving as simple cues, (2) serving as arguments, (3) biasing the direction of thinking, or (4) affecting confidence in one's thoughts or thought processes (i.e., metacognition; Petty and Briñol 2010). These core mechanisms influence the valence and strength of the resulting attitude, which determine its influence on subsequent judgments and decisions. Next, we discuss the core processing mechanisms that arise under varying elaboration conditions and how auditors' attitudes formed via each mechanism influence their judgments and decisions.

### Core Mechanism under Lower Elaboration Conditions

Under lower elaboration, input variables will affect attitudes and judgments by serving as easily evaluated simple cues (Petty and Briñol 2012). For example, an individual (e.g., auditor) under lower elaboration may associate a source's (e.g., client's) credentials with high evidence reliability and thereby accept the source's explanation without scrutinizing it carefully (Briñol and Petty 2009). Other simple heuristics under lower elaboration conditions include using one's good mood as a cue to agree with a message (Petty et al. 1993) or counting the pieces of evidence in support of a message rather than evaluating the merits of each piece (Petty and Cacioppo 1984a). These types of lower elaboration processes produce relatively weak attitudes, which are less likely to influence subsequent behavior and are more susceptible to persuasive attempts to change (Petty et al. 1995).

<sup>3</sup> Note that increased capacity alone, as in the case of a decision aid, does not guarantee improved performance in tasks requiring elaboration, because auditors also need sufficient motivation for elaboration to occur. This potentially explains why some studies show that decision aids do not improve judgments under certain circumstances (e.g., Kachelmeier and Messier 1990).



### Core Mechanisms under Higher Elaboration Conditions

Under higher elaboration, input variables affect attitudes and judgments through more complex and diverse mechanisms. First, input variables can affect attitudes under higher elaboration by serving as evidence for an argument (Petty and Briñol 2010). The same input variable that serves as a simple cue under lower elaboration can serve as an argument that provides evidence regarding the validity of the message under higher elaboration (Petty and Cacioppo 1984b). For example, in a skin cream advertisement, the attractiveness of the endorser provides relevant visual testimony for the merits of the product and thereby influences attitudes under higher elaboration conditions (Petty and Cacioppo 1984b). In contrast, in a car advertisement, the endorser's attractiveness would be ineffective as an argument, because when motivation and ability to think are high, people recognize its irrelevance to the merits of the car (Haugtvedt et al. 1992).

Second, input variables can affect attitudes under higher elaboration by subtly biasing the thoughts that come to mind (Petty and Briñol 2010). For example, when a message takes a specific position that agrees with one's attitude, values, or identity, the message recipient tends to generate biased thoughts to evaluate it consistently with his or her view (Petty and Cacioppo 1990).<sup>4</sup> Other factors, such as a good mood, that make positive thoughts more accessible than negative ones can also bias thoughts (Petty et al. 1993). In contrast, when people are forewarned that someone is trying to influence them, they are biased toward negative thoughts (Petty and Cacioppo 1979). Biased thinking can result in strong, but biased, attitudes.

Third, input variables can affect attitudes under higher elaboration by affecting individuals' metacognition—their perceptions of their thoughts and thought processes (Petty and Briñol 2014). For example, thought confidence represents the extent to which individuals believe that their thoughts about a message reflect reality. Source credibility (Briñol, Petty, and Tormala 2004; Tormala, Briñol, and Petty 2007), social consensus (Petty, Briñol, and Tormala 2002; Sechrist and Stangor 2001), and the ease with which one's thoughts come to mind (Tormala, Petty, and Briñol 2002) can all affect thought confidence. When individuals have the same thoughts when evaluating a message, those with greater confidence in their thoughts use them more and thus the thoughts have a greater impact on judgments (Petty et al. 2002; Petty and Briñol 2015). Metacognition also includes individuals' perceptions of how much time and effort they spent processing information. When a person perceives that they have put forth significant cognitive effort regarding an issue, they generally express greater attitude certainty, which influences behavior (Barden and Petty 2008). Thus, auditors' perceptions of their own processing of the evidence likely influence their judgment and decision-making behaviors.

The ELM thus organizes the cognitive processes by which input variables affect auditors' attitudes into four core mechanisms: simple cues, use of arguments, direction of thinking, and metacognition. Consistent with the ELM, we argue that the core mechanisms auditors use depend on their motivation and capacity, as influenced by input variables present in the setting. The resulting processing will determine what attitudes auditors form, the strength of those attitudes, and their effects on auditor judgment and decision-making behavior.

## USING THE ELABORATION LIKELIHOOD MODEL FRAMEWORK

### Meta-Theoretical Synthesis Method

To demonstrate how the ELM's meta-theoretical approach can overcome challenges in interpreting research results, we next synthesize samples of studies from the client cooperation and auditor mood streams of auditor JDM research. Our samples illustrate two common challenges associated with interpreting collective findings: synthesizing studies employing different theories, and interpreting conflicting results. We limit our samples to studies published between 2000 and 2015 in *The Accounting Review*; *Journal of Accounting Research*; *Contemporary Accounting Research*; *Accounting, Organizations and Society*; and *Auditing: A Journal of Practice & Theory*.<sup>5</sup> We only include studies that (1) manipulate client cooperation or mood as an independent variable, and (2) measure an auditor's judgment or decision that likely reflects variation in an underlying attitude as a dependent variable. A research assistant identified all studies that use client cooperation or auditor mood as an independent variable in the stipulated journals during this 15-year time period.<sup>6</sup> Two authors then determined whether the studies' dependent variables fit our inclusion criteria.

<sup>4</sup> This mechanism accommodates Kunda's (1990) theory of motivated reasoning, which is often used in auditor JDM research (e.g., Kadous, Kennedy, and Peecher 2003; Piercey 2011). This theory posits that people process information in a manner consistent with their directional goals. The ELM holds that motivated reasoning occurs when elaboration likelihood is higher.

<sup>5</sup> We do not aim to synthesize the entire client cooperation and auditor mood research streams, and we note that these samples do not include every paper examining these two constructs (i.e., papers published outside of 2000–2015 and in other journals). However, we believe that these samples are sufficient to illustrate the potential benefits of using the ELM to interpret the studies collectively.

<sup>6</sup> The initial samples included six client cooperation and six auditor mood studies.

To synthesize the studies using the ELM, we first evaluate whether participants in each condition of each study faced lower or higher elaboration conditions based on the independent variables and the case materials (i.e., input variables). Next, for both lower and higher elaboration conditions, we develop an ELM interpretation of the findings, which includes inferences regarding the effects of the input variables on participants' core mechanisms that explain the experimental results. Finally, we discuss the implications of our ELM interpretation for interventions likely to shift auditors' cognitive processing given different motivation, capacity, and elaboration likelihoods. Since the researchers did not conduct their studies from an ELM perspective, we can only develop a speculative set of *ex post* plausible explanations for the findings in each sample of studies based on the overarching theory. We then formulate *ex ante* testable propositions to guide future research in each stream. Although other interpretations of the collective results undoubtedly exist, we contend that our ELM interpretation has value for understanding and adding to collective auditor JDM research streams.

### Unifying Results from Studies That Use Different Theories

To demonstrate how the ELM can unify results of studies that use different theories and extend the implications of those results beyond each study's theoretical paradigm, we synthesize the six studies on client cooperation summarized in Table 1. We chose this research stream because several studies find that client cooperation reduces auditor judgment quality under certain conditions (e.g., Wolfe et al. 2009; Brown-Liburd and Wright 2011; Fu et al. 2011), but it remains unclear why client cooperation only biases auditors in some situations and how practitioners and regulators might counter these biases.

#### Likely Elaboration Conditions in Client Cooperation Studies

We begin by determining the likely elaboration conditions faced by the participants based on factors in each case that may have affected participants' motivation or capacity to perform the task. For example, a mismatch between task complexity and participants' ability would signal a capacity and/or motivation problem at the onset. In all of the studies, the participants appear to have sufficient experience with the task to have internalized the importance of the task, suggesting inherent characteristics of the participants do not limit their capacity or motivation for the task.<sup>7</sup> We infer they therefore have sufficient baseline levels of motivation and capacity to allow higher elaboration to occur, absent any input variables that would reduce motivation or capacity.

In terms of independent variables, the authors of the client cooperation studies manipulate client cooperation in one of two ways: cooperation in the past relationship, or cooperation on the current issue. In terms of motivation, we do not expect either cooperation construct to affect auditors' willingness to assess the validity of the message. In terms of auditors' capacity, we do not expect either cooperation construct to affect auditors' innate or acquired skills relevant to the issue at hand. Also, client cooperation does not impose an external factor that limits or increases capacity within the context of the studies.<sup>8</sup> Therefore, we infer that client cooperation does not affect auditors' elaboration likelihood by influencing motivation or capacity. Rather, as we explain later, cooperation in the past versus in the present appears to influence the core mechanism by which auditors process evidence under higher elaboration conditions.

In terms of case materials, several of the studies include additional independent variables and other information that can increase participants' motivation. For example, higher risk of client loss (Hatfield et al. 2008) and a stronger audit committee (Brown-Liburd and Wright 2011) raise the stakes of an adverse outcome, which increases one's motivation to accurately assess the validity of a message (Petty and Cacioppo 1984b). The researchers manipulate these variables at two levels, creating opposing conditions in which we expect participants to differ in their motivation and, consequently, face higher or lower elaboration conditions within the same study. Fu et al. (2011) measure negotiation experience, which will impact motivation to the extent that participants with more task-specific experience find the task more personally relevant, and are therefore more motivated, due to a stronger relation of the task to one's work-related self-concept (Petty, Cacioppo, and Schumann 1983; Petty and Cacioppo 1990; Petty and Briñol 2012). In addition to the manipulated variables, several studies hold motivation-increasing factors such as high engagement risk (Brown-Liburd and Wright 2011; Gibbins et al. 2010) and high risk of client loss (Hatfield et al. 2010, Experiment 2) constant across conditions. Fu et al. (2011) hold low risk of client loss constant, although the motivation participants bring to the task might outweigh this factor. We infer that auditors' motivation to effortfully process information differs across and within studies, as summarized in Table 2.

<sup>7</sup> Two possible exceptions include the participants assigned to the IT control condition in Wolfe et al. (2009) and the participants with lower measured negotiation experience in Fu et al. (2011). We discuss these exceptions in more detail in the following paragraphs.

<sup>8</sup> Over repeated interactions, lower client cooperation may reduce capacity by restricting information availability (thereby limiting auditors' knowledge acquisition) or by creating delays that cause time constraints. These effects on auditors' capacity fall outside the scope of these studies.

**TABLE 1**  
**Summary of Input Variables, Results, and Implications of Client Cooperation Studies**

Input Variables		Other Factors Present in Case		Main Results	Implications of Results Identified by Authors
Study	Manipulation of Client Cooperation	Other Independent Variables	Other Factors Present in Case	Main Results	Implications of Results Identified by Authors
Wolfe et al. (2009)	Client concedes or denies that there is a control deficiency. <i>Cooperation on the current issue.</i>	Control being evaluated is an IT or manual control (i.e., task familiarity).	Participants are senior auditors with appropriate experience for evaluating the severity of control deficiencies.	For an IT control, participants assess a deficiency as less severe when the client cooperates than when the client does not. For a manual control, severity assessments do not differ across cooperation conditions.	The study provides a rationale for clients' use of concede-or-deny persuasion tactics, because these tactics appear to work on auditors.
Hatfield et al. (2010)	Presence or absence of prior client concession. <i>Cooperation in a past relationship.</i>	Magnitude of difference between auditor and client on current issue is small or large.	Participants are senior managers and partners with appropriate experience for negotiating the amount of a final audit adjustment (setting goal, limit, etc. for adjustment amount).	Participants propose smaller inventory valuation adjustments when the client cooperates than when the client does not. A greater initial difference between the auditor and the client magnifies this effect.	Cooperation causes auditors to give clients the benefit of the doubt when their position and the client's position greatly differ.
Brown-Liburd and Wright (2011)	Prior relationship with client is contending or compromising. <i>Cooperation in a past relationship.</i>	Audit committee is stronger or weaker.	Participants are managers and partners with appropriate experience for negotiating a final audit adjustment (pre-negotiation judgment of goal amount). High engagement risk is embedded in the case information.	Participants accept lower write-off amounts when clients cooperate than when they do not. The presence of a stronger audit committee attenuates this effect.	Client cooperation and audit committee strength affect auditors' perceived bargaining power and expectations about how difficult it will be to reach agreement with the client.
Fu et al. (2011)	Prior relationship with client is contentious, and client opposes making current adjustment; or prior relationship with client is collaborative, and client expresses openness to making current adjustment. <i>Cooperation in a past relationship and on the current issue (within the same manipulation).</i>	Participants are classified as more or less experienced at negotiation based on a composite measure of self-reported negotiation experience.	Participants are managers and partners with appropriate experience for negotiating a final adjustment amount. Low risk of client loss is embedded in the case information.	Participants with less negotiation experience accept lower asset impairment write-downs when clients cooperate than when they do not. For participants with more negotiation experience, accepted write-down amounts do not differ across cooperation conditions.	Negotiation experience reaps benefits when such experience is needed the most—that is, with uncooperative clients.

(continued on next page)

TABLE 1 (continued)

Input Variables		Other Factors Present in Case		Main Results	Implications of Results Identified by Authors
Study	Manipulation of Client Cooperation	Other Independent Variables			
Hatfield et al. (2008) <sup>a</sup>	Prior relationship with client is competitive or collaborative. Cooperation in a past relationship.	Risk of client loss is lower or higher.	Participants are managers and partners with appropriate experience for choosing a negotiation strategy and negotiating the amount of a final audit adjustment (setting goal, limit, etc. for adjustment amount).	Participants tend to choose a more effortful but more effective negotiation strategy when the client does not cooperate and when the risk of client loss is higher, relative to more cooperative clients and/or lower risk of client loss.	Auditors only use the more effortful and effective negotiation strategy when the client and environmental characteristics warrant its use.
Gibbins et al. (2010)	Prior relationship with client is contentious or collaborative. Client is flexible or inflexible on their current position. Cooperation in a past relationship; cooperation on the current issue (in separate manipulations).	None.	Participants are partners with appropriate experience for choosing a negotiation strategy. High engagement risk is embedded in the case information.	Participants are more committed to a goal of reducing the client's net income in a negotiation and tend to choose a more effortful but more effective negotiation strategy when the client does not cooperate than when it does.	When auditors are concerned with both maintaining a positive relationship with the client and obtaining the best audit outcome, they use negotiation strategies that allow them to look for "wins" for their clients. This result suggests a lack of objectivity under these circumstances.

<sup>a</sup> Hatfield et al. (2008) conduct two experiments. We describe the main experiment in the table above. The second experiment holds the client relationship constant at competitive and the risk of client loss constant at high, and manipulates whether the auditor uses a reciprocity-based negotiation strategy or not.



**TABLE 2**  
**Expected Elaboration Likelihoods by Experimental Condition in Client Cooperation Studies<sup>a</sup>**

<u>Study and Experimental Condition</u>	<u>Motivation</u>	<u>Capacity</u>	<u>Elaboration Likelihood</u>
<b>Wolfe et al. (2009):</b>			
No cooperation/manual control	Higher	Higher	Higher
No cooperation/IT control	Higher	Lower	Lower
Cooperation/manual control	Higher	Higher	Higher
Cooperation/IT control	Higher	Lower	Lower
<b>Hatfield et al. (2010):</b>			
No cooperation/smaller difference	Higher	Higher	Higher
No cooperation/larger difference	Higher	Higher	Higher
Cooperation/smaller difference	Higher	Higher	Higher
Cooperation/larger difference	Higher	Higher	Higher
<b>Brown-Libur and Wright (2011):</b>			
No cooperation/weaker audit committee	Lower	Higher	Lower
No cooperation/stronger audit committee	Higher	Higher	Higher
Cooperation/weaker audit committee	Lower	Higher	Lower
Cooperation/stronger audit committee	Higher	Higher	Higher
<b>Fu et al. (2011):</b>			
No cooperation/lower experience	Lower	Lower	Lower
No cooperation/higher experience	Higher	Higher	Higher
Cooperation/lower experience	Lower	Lower	Lower
Cooperation/higher experience	Higher	Higher	Higher
<b>Hatfield et al. (2008):</b>			
No cooperation/lower risk of client loss	Lower	Higher	Lower
No cooperation/higher risk of client loss	Higher	Higher	Higher
Cooperation/lower risk of client loss	Lower	Higher	Lower
Cooperation/higher risk of client loss	Higher	Higher	Higher
<b>Gibbins et al. (2010):</b>			
No past cooperation	Higher	Higher	Higher
Past cooperation	Higher	Higher	Higher
No current cooperation	Higher	Higher	Higher
Current cooperation	Higher	Higher	Higher

<sup>a</sup> Note that elaboration likelihood depends on the combination of motivation and capacity. Higher elaboration requires *both* sufficient motivation and capacity. If an auditor has high motivation but low capacity, or high capacity but low motivation, the ELM predicts that lower elaboration likelihood will result (Petty and Cacioppo 1986b).

Two studies include independent variables that can affect auditors' capacity to process evidence effortfully. Fu et al. (2011) measure participants' specific experience with negotiation. We expect this measure to reflect capacity because experience contributes to one's ability to perform effortful task-related cognition (Petty and Cacioppo 1986b). Wolfe et al. (2009) manipulate the familiarity of the issue—evaluating the severity of a control deficiency—by using either an IT or a manual control. Wolfe et al. (2009) note that auditors have less familiarity with IT controls, which we posit reduces their capacity relative to those evaluating manual controls.<sup>9</sup> Even with sufficient motivation to attempt effortful processing, participants with less negotiation experience or with less familiarity with the issue are unlikely to successfully elaborate. Based on our assessment of the motivation and capacity factors in each study (Table 2), we next explore the likely core mechanisms that influence auditors' attitudes and resulting judgments.

<sup>9</sup> As auditors' experience is increasingly IT-based, the effects of manual versus IT controls on capacity might reverse. We defer to Wolfe et al.'s (2009) assertion that participants in their study had greater familiarity with manual controls and leave the issue of present-day and future auditors' relative familiarity with both types of controls to future research.

### *Effects of Input Variables under Lower Elaboration in Client Cooperation Studies*

In the conditions where we expect lower elaboration (see Table 2), the results are consistent with using client cooperation as a simple cue. Auditors likely expend less effort on processing the relevant evidence and instead use the client's preference, consciously or unconsciously, as a simple cue that influences their judgments.

Wolfe et al. (2009) find that auditors evaluating the severity of an IT control deficiency assess the deficiency as less severe when the client cooperates than when the client does not cooperate on the current issue. Auditors' assessments of severity of a manual control deficiency do not vary depending on the client's cooperation. Consistent with Wolfe et al.'s (2009) reasoning for using the IT (manual) control to manipulate low (high) task familiarity, we assume that the IT control reduces capacity relative to the manual control because auditors view it as more complex and less familiar. Our ELM interpretation is that participants have sufficient motivation to evaluate the IT and manual controls, but relative to evaluating the manual control they lack capacity for evaluating the IT control. This leads to lower elaboration and the use of client cooperation as a simple cue.

Brown-Liburd and Wright (2011) find that auditors accept lower write-off amounts when the client has cooperated in the past, but only in the absence of a strong audit committee. We assume that auditors are less motivated without a strong audit committee, leading to results consistent with relying on client cooperation as a simple cue in the conditions where we expect lower elaboration.

Fu et al. (2011) find that negotiation experience reduces the influence of client cooperation on auditors' judgments. Our ELM interpretation suggests that less experienced auditors rely on client cooperation as a simple cue to acquiesce to the client due to lower motivation and capacity to elaborate driven by their inexperience.

Hatfield et al. (2008) find that client cooperation and risk of client loss interact to affect auditors' use of a more effortful reciprocity-based negotiation strategy. Under this strategy, auditors raise inconsequential audit adjustments to management with the intention of waiving them, thereby encouraging management to reciprocate by accepting other consequential adjustments. Client cooperation does not influence the strategy choices of auditors facing lower risk of client loss. Consistent with the ELM's predictions regarding lower elaboration, auditors facing lower risk of client loss fail to distinguish when the situation warrants the reciprocity strategy—for less cooperative clients.

### *Effects of Input Variables under Higher Elaboration in Client Cooperation Studies*

In the conditions where we expect higher elaboration (see Table 2), the core mechanism through which client cooperation affects judgments seems to depend on whether cooperation occurred in the past relationship or on the current issue. In the studies that manipulate client cooperation on the current issue (Wolfe et al. 2009; Fu et al. 2011; Gibbins et al. 2010), our ELM interpretation suggests that client cooperation influences judgments as an argument.<sup>10</sup> Client cooperation on the current issue does not influence decisions about the amount of an adjustment (Fu et al. 2011) or the severity of a control deficiency (Wolfe et al. 2009). Auditors facing a noncooperative client display greater commitment to the goal of reducing the client's net income and more frequently choose a more effortful negotiation strategy than auditors facing a cooperative client (Gibbins et al. 2010). These results suggest auditors use the information about current client cooperation as an argument. That is, they either discard it, appropriately, as irrelevant (Fu et al. 2011; Wolfe et al. 2009) or use it to strategize about how to negotiate successfully (i.e., by adjusting their negotiation goal and by choosing more effortful negotiation strategies when needed to deal with less cooperative clients; Gibbins et al. 2010).

In the studies that manipulate client cooperation in the past relationship, the results are consistent with client cooperation biasing thoughts under higher elaboration by creating an expectation about how difficult it will be to reach agreement with the client. This expectation influences the goals auditors set in negotiating (Rubin and Brown 1975; Hatfield et al. 2010). In Brown-Liburd and Wright (2011) and Hatfield et al. (2008), participants in the conditions where we expect higher elaboration make judgments consistent with auditors pursuing a directional goal of (not) acquiescing to the client when the client cooperates more (less).<sup>11</sup> Hatfield et al. (2010) find that when the client previously cooperated, auditors agree to a higher inventory valuation in a

<sup>10</sup> Fu et al.'s (2011) manipulation of client cooperation includes cooperation in both the past relationship and on the current issue simultaneously. Gibbins et al. (2010) independently manipulate cooperation in the past relationship and on the current issue and find stronger results for cooperation on the current issue than for cooperation in the past relationship. Thus, we infer that the current cooperation element primarily drives Fu et al.'s (2011) results.

<sup>11</sup> Hatfield et al. (2008) conduct a second experiment that holds constant both low client cooperation in the past relationship and high risk of client loss, and manipulates negotiation strategy as reciprocity based, or not. They measure the pressure auditors feel from the client to concede and auditors' expectations of the final financial statement figures that would result from the negotiation. The reciprocity strategy leads to more conservative expected final financial statement figures because this strategy reduces the pressure auditors feel to concede. These results suggest that client cooperation can also affect auditors' decisions through metacognitive thought confidence. That is, when auditors feel less pressure to concede to clients, they likely feel more confident in proposing adjustments. However, given that the experimental design holds client cooperation constant and manipulates strategy choice, the authors do not make causal inferences about the effect of client cooperation on strategy choices and related judgments.

subsequent negotiation, especially when the client's valuation significantly exceeds the auditor's estimated valuation. Both of these independent variables can activate directional goals for a specific outcome. A client's prior concession fosters a social need to reciprocate (Hatfield et al. 2010), which can foster an unconscious desire in auditors to set their negotiation goal lower. A larger magnitude of difference between the auditor and client reduces auditors' perceived chance of reaching agreement with the client (Hatfield et al. 2010). This can initiate an unconscious desire in auditors to set their negotiation goal lower to increase their odds of reaching agreement with the client.

Finally, Gibbins et al. (2010) find that auditors display less commitment to the goal of reducing the client's net income when the client cooperated in the past and when the client cooperates on the current issue, as described earlier.<sup>12</sup> Gibbins et al. (2010) expect a cooperative past relationship to cause auditors to reduce commitment to an income-reducing goal because this behavior can help auditors preserve the positive relationship. Our ELM interpretation of these studies suggests that past client cooperation biases auditors' thoughts via directional goals to preserve the cooperative relationship by acquiescing to the client.

### *Implications of Client Cooperation Studies from an ELM Perspective*

The distinction in the mechanisms by which current and past client cooperation affect auditors' judgments suggests different approaches for dealing with the effects of each type of client cooperation. If client cooperation concerns a current issue, our ELM interpretation suggests that ensuring higher elaboration conditions is enough to preclude auditors from using this information as a simple cue. Instead, higher-elaboration auditors would use client cooperation as irrelevant evidence, which would not bias their attitudes and judgments. The studies we synthesize suggest that regulators could manage motivational factors through audit committee requirements, and firms could manage capacity factors through minimum experience levels for auditors involved in client negotiations. In addition, incentives and accountability can increase motivation, and decision aids and training can increase capacity. Researchers can explore these and other interventions to address potential shortcomings in auditors' motivation and capacity. A key to addressing the influence of client cooperation on current issues seems to be that the negative influence primarily occurs under lower elaboration conditions, so increasing elaboration should address the problem.

If client cooperation occurred in the past, our ELM interpretation suggests that cooperation can influence judgments by biasing auditors' thoughts. In these instances, auditors already engage in higher elaboration, so increasing motivation or capacity will not reduce cooperation's influence. Increasing motivation can intensify auditors' effortful processing in pursuit of their directional goals (Kadous et al. 2003). We expect a de-biasing intervention such as priming goals of accuracy or objectivity to be more effective (e.g., Griffith et al. 2016). Researchers can adapt interventions such as counter-explanation (Kennedy 1995) or cognitive restructuring (Earley et al. 2008) that mitigate cognitive biases to address past client cooperation's influence on auditors' attitudes and judgments under higher elaboration.

Finally, we observe very limited evidence of client cooperation affecting auditors' judgments through metacognition. The focus and design of the studies, rather than a lack of a theoretical effect, likely account for this limited evidence. To influence metacognition, input variables must be salient after people generate thoughts (Barden and Tormala 2014), whereas client cooperation became salient before thought generation in these studies. Hatfield et al.'s (2010) second experiment finds preliminary evidence that metacognition plays a role in auditors' judgments. Future research can consider how auditors' perceptions of their own thoughts influence their judgments when facing more or less cooperative clients as another promising route for mitigating potential negative effects of client cooperation.

### **Reconciling Inconsistent Results**

To demonstrate how the ELM can reconcile inconsistent results, we synthesize the two studies on auditor mood summarized in Table 3.<sup>13</sup> We chose this research stream for two reasons. First, the studies we identified provide a simple example of studies examining the same independent variable but finding inconsistent results. Second, because auditors' moods vary substantially within and across their more and less busy periods, understanding when moods will influence judgments can provide useful practical, as well as theoretical, insight.

### *Likely Elaboration Conditions in Auditor Mood Studies*

Information in the case materials and the manipulated mood variable likely both affect motivation. Cianci and Bierstaker (2009) include information emphasizing the importance of thorough GAAS-compliant work and the importance of fostering a

<sup>12</sup> This study does not predict or test the interaction of the two types of client cooperation.

<sup>13</sup> The auditor JDM literature defines mood as "positive or negative affective states that are not directed at any specific trigger event" (Bhattacharjee and Moreno 2013, 1).

**TABLE 3**  
**Summary of Input Variables, Results, and Implications of Auditor Mood Studies**

Study	Input Variables			Main Results	Implications of Results Identified by Authors
	Manipulation of Auditor Mood	Other Independent Variables	Other Factors Present in Case		
Chung et al. (2008)	Participants read a passage unrelated to the task to induce positive or negative moods.	None.	Participants in Experiment 1 are senior auditors with appropriate experience for making an inventory valuation judgment. Participants in Experiment 2 are senior accounting students with less knowledge for making an inventory valuation judgment. Participants complete the same task in both experiments.	In both experiments, participants in a good mood accept smaller inventory valuation allowances than participants in a bad mood.	The results extend mood's effect on laypeople's judgments to professional judgments. The authors provide some evidence that the effect of mood arises from mood-congruent information retrieval, but they note that future research is needed to provide further evidence of this explanation.
Cianci and Bierstaker (2009)	Participants read a series of statements unrelated to the task to induce positive or negative moods.	None.	Participants are staff and senior auditors with appropriate experience for generating explanations for fluctuations and for making an inventory valuation judgment. The case information includes the firm's desire to solidify a good relationship with the client, as well as the importance of getting along with the client, conformity of work with GAAS, and the thoroughness of evaluation of the client's financial statement assertions.	Participants in a bad mood accept smaller inventory valuation allowances than participants in a good mood. Participants in a bad mood generate more correct explanations for an unexpected fluctuation than participants in a good mood.	The results demonstrate that mood's effect depends on the task being performed. The authors cite differences in the task setting, specifically the more adversarial client context in Chung et al. (2008), as the likely cause of the difference in results across the two studies. The authors note that no single theory has proposed an explanation for the different mood effects found in different studies.

**TABLE 4**  
**Expected Elaboration Likelihoods by Experimental Condition in Mood Studies<sup>a</sup>**

<u>Study and Experimental Condition</u>	<u>Motivation</u>	<u>Capacity</u>	<u>Elaboration Likelihood</u>
<b>Cianci and Bierstaker (2009):</b>			
Bad mood condition	Higher	Higher	Higher
Good mood condition	Higher	Lower	Lower
<b>Chung et al. (2008): Experiment 1, auditor participants:</b>			
Bad mood condition	Higher	Higher	Higher
Good mood condition	Lower	Lower	Lower
<b>Chung et al. (2008): Experiment 2, student participants:</b>			
Bad mood condition	Higher	Lower	Lower
Good mood condition	Lower	Lower	Lower

<sup>a</sup> Note that elaboration likelihood depends on the combination of motivation and capacity. Higher elaboration requires *both* sufficient motivation and capacity. If an auditor has high motivation but low capacity, or high capacity but low motivation, the ELM predicts that lower elaboration likelihood will result (Petty and Cacioppo 1986b).

good client relationship, which we expect increases motivation and activates a directional goal in favor of the client (Kadous et al. 2003). Chung, Cohen, and Monroe (2008) do not include information likely to influence motivation. While a good mood can reduce motivation to think because people attempt to preserve their good mood by avoiding effortful cognition (Wegener and Petty 1994), mood is more likely to influence motivation in the absence of other, stronger motivational factors such as the firm's emphasis on thorough work and good client relationships (Mitchell 2000). Thus, as shown in Table 4, we expect Chung et al.'s (2008) good mood participants to experience lower levels of motivation compared to their bad mood participants because no other input variables are present to overwhelm mood's effect. In contrast, both good and bad mood participants in Cianci and Bierstaker's (2009) experiment likely experience similarly high levels of motivation due to the motivation-increasing information that is held constant across conditions.

In terms of capacity factors, Cianci and Bierstaker (2009) and Chung et al.'s (2008) first experiment use staff or senior auditors whose sufficient experience, expertise, and internalized recognition of the importance of the task suggest there are no inherent characteristics of the participants that limit the capacity for the task. Chung et al.'s (2008) second experiment uses undergraduate accounting students, who likely have lower capacity due to their relative lack of experience, to complete the same task as the auditor participants in the first experiment.

Mood can also affect capacity. Bad moods narrow individuals' focus to the key information in a decision task, thus increasing individuals' capacity to process information (Payne, Bettman, and Johnson 1988; Blay, Kadous, and Sawers 2012). Good moods foster a top-down, high-level processing approach that is less sensitive to details, thus decreasing capacity (Schwarz and Bless 1991). We therefore infer that, across studies, participants in the bad mood conditions have higher capacity to elaborate. Further, we infer that student participants in Chung et al.'s (2008) second experiment lack capacity due to their mismatch with the task, so that even the increased capacity due to a bad mood will not result in higher elaboration.<sup>14</sup> Table 4 summarizes the expected elaboration likelihoods in each study, by condition, based on our ELM interpretation.

### **Effects of Input Variables under Lower and Higher Elaboration in Auditor Mood Studies**

In the conditions where we expect lower elaboration (see Table 4), the results are consistent with the studies using mood as a simple cue. Participants in Chung et al.'s (2008) two experiments make judgments more favorable to the client when in a good mood. We infer that the lower elaboration conditions faced by these participants allow the good mood to serve as a simple cue to accept the client's valuation without much thought. Consistent with this inference, Chung et al.'s (2008) second experiment finds that student participants in good moods do not use different information than those in bad moods to reach their judgments.<sup>15</sup> This result suggests that a good mood influences judgments as a simple cue rather than by biasing thoughts to

<sup>14</sup> Chung et al. (2008) suggest that the student participants had insufficient experience and knowledge for the task.

<sup>15</sup> The lack of differences in information retrieval may not replicate in a sample of auditor participants. Auditors with adequate experience and knowledge likely have higher capacity, resulting in higher elaboration conditions. Chung et al. (2008) did not measure auditors' information retrieval in their first experiment.



focus more on information supporting the client's valuation.<sup>16</sup> Participants in the good mood condition in [Cianci and Bierstaker \(2009\)](#) likely have high motivation and a directional goal to accept a valuation more favorable to the client, but lower capacity than their bad-mood counterparts. This combination results in lower elaboration that reduces good-mood auditors' ability to justify accepting the client's valuation, leading to results that contrast with [Chung et al. \(2008\)](#), where auditors in a *bad* mood make judgments more favorable to the client.

In the conditions where we expect higher elaboration (see Table 4), our ELM interpretation suggests that mood influences judgments by biasing auditors' thoughts. [Cianci and Bierstaker's \(2009\)](#) emphasis on the importance of the client relationship likely fosters a desire to agree with the client (e.g., [Griffith et al. 2016](#)). Because a bad mood can increase focus on and depth of processing of key information ([Blay et al. 2012](#); [Bless, Bohner, Schwarz, and Strack 1990](#)), participants in the bad mood condition in this study likely have high motivation, high capacity, and a directional goal to agree with the client. Under higher elaboration, in which input variables bias auditors' thoughts toward preserving the client relationship, effortful but biased processing of evidence will likely occur and will yield greater agreement with the client, as [Cianci and Bierstaker \(2009\)](#) find. That is, a bad mood will result in judgments more favorable to the client. The study includes a separate task in which a bad mood increases hypothesis generation, suggesting that participants in a bad mood engage in more effortful processing than those in a good mood, corroborating the higher elaboration interpretation. Finally, [Chung et al. \(2008\)](#) posit that participants engage in mood-congruent information retrieval, so those in a good mood focus more on supportive information and *vice versa*, and they find that bad-mood participants are less likely to side with the client. These results, while seemingly inconsistent with [Cianci and Bierstaker's \(2009\)](#), are consistent with the ELM's biased thinking mechanism under higher elaboration.

### *Implications of Auditor Mood Studies from an ELM Perspective*

The studies' divergent findings seem to result, in part, from how the researchers encourage participants to attend to the cases. When case materials include motivating factors and participants have sufficient capacity for higher elaboration, results are consistent with the ELM's predictions that participants will appropriately ignore mood as an argument or that mood will bias thoughts to influence judgments despite effortful processing. Mood only appears to influence judgments as a simple cue under lower elaboration arising from inadequate motivation. Researchers making overall inferences about how auditors' moods affect their judgments will benefit from carefully considering the factors that contribute to the mood effects they observe.

The ELM provides a framework for understanding how mood impacts auditors' cognition and judgments. When mood affects judgments by causing lower elaboration, firms and regulators can mitigate adverse effects by targeting auditors' motivation and capacity through other variables, such as accountability or incentives for motivation, and training or decision aids for capacity. When mood negatively affects judgments through higher-elaboration mechanisms, audit firms or individual audit teams can develop interventions to counteract mood's biasing effects. Mood's effect via higher elaboration further implies that increasing motivation is a necessary, but not sufficient, intervention for limiting mood's influence on auditors' judgments. Motivation cannot yield higher elaboration without sufficient capacity, and biased processing can occur even with higher elaboration.

Finally, multiple salient factors exist in the auditing environment that might more easily overwhelm mood's effect on motivation than its effect on capacity and on the core mechanisms. Thus, mood's effect on judgments via motivation may be of less concern than its effects via capacity and biasing thoughts. We expect interventions such as decision aids, training, and appropriate staffing to be most effective in curtailing mood's effects on capacity, and de-biasing interventions such as goal priming or counter-explaining to be most effective in curtailing mood's thought-biasing effects.

## DISCUSSION AND FUTURE RESEARCH

Our illustration of the ELM's utility in synthesizing client cooperation and auditor mood studies suggests several implications for future research. First, reconciling conflicting findings using the ELM can help researchers identify and communicate the broad implications of a research stream's results. This tool should help researchers identify relevant future research questions and understand why conflicting results coexist. For example, our reconciliation of the two mood studies suggests that motivational and de-biasing interventions will reduce mood's effect on auditors' judgments and decisions. Future studies can test such interventions to increase theoretical and practical applications. Doing so will enable researchers to communicate their findings to each other and to regulators and practitioners, who likely struggle to implement changes in response to conflicting findings.<sup>17</sup>

<sup>16</sup> Bad mood participants in [Chung et al.'s \(2008\)](#) second experiment, who faced lower elaboration conditions, could also use the bad mood as a simple cue not to accept the client's valuation. This possibility is consistent with [Chung et al.'s \(2008\)](#) results and our interpretation of them.

<sup>17</sup> For example, the widely varying implications of studies examining professional skepticism may coalesce when viewed through the lens of the ELM.

Second, our syntheses illustrate how researchers can use the ELM to integrate existing conceptual frameworks and models of auditor judgment and decision making, such as Bonner's (2008) global accounting JDM framework, Hammersley's (2011) model of auditors' fraud planning judgments, Libby and Luft's (1993) general model of auditor performance, and Kennedy's (1993, 1995) de-biasing framework. The ELM suggests that the effects of the input variables (e.g., expertise, motivation, risk factors) in these models might be due to variations in the core mechanisms underlying auditors' cognition. Hence, the ELM could act as a common thread to summarize collective findings in auditor JDM research, much as it has in psychology; not to replace other theories, but to better understand how existing models and findings relate to one another. Such an organizational framework will help researchers generalize their results beyond one theoretical paradigm to collectively consider a larger set of prior studies in developing future research designs and hypotheses.

Third, the theoretical unification across paradigms that the ELM facilitates can aid researchers in identifying gaps in understanding different independent variables' effects—and how best to fill them. In our client cooperation synthesis, five studies relied on negotiation theory, but one used a different theory and setting for psychological reactions to technology. Our synthesis of these studies illustrates how applying the ELM can help researchers consider all of the results in a given research stream, even when the studies seem theoretically unrelated.<sup>18</sup>

Moreover, our syntheses identify a potential gap in existing research that overlooks the role of metacognition in auditors' judgments. Of the studies we synthesized, only Hatfield et al. (2008) contemplate auditors' confidence as a mediator affecting their judgments. Several psychology studies demonstrate the extent to which individuals' perceptions of their cognitive effort (Barden and Petty 2008; Barden and Tormala 2014) and confidence in their attitudes and thoughts (Briñol and Petty 2009; Rucker, Tormala, Petty, and Briñol 2014) influence their judgments. Metacognition likely plays a similarly important role in auditors' judgment and decision-making behavior. Researchers can design studies that measure or manipulate perceptions of and confidence in thought processes to address this gap in our understanding of auditors' judgment processes.

One area where metacognition—particularly thought confidence—might be important is auditors' willingness to challenge management's assumptions underlying complex estimates. The Independent Forum of Audit Regulators (IFIAR 2015) cites auditors' failure to challenge management assumptions as a leading cause of audit deficiencies, and firms encourage auditors to challenge management estimates (Ranzilla, Chevalier, Hermann, Glover, and Prawitt 2011). We expect auditors' confidence in their thoughts to play a role in their willingness to challenge management. Auditors, particularly those with less experience, might assume the client knows more about the assumptions underlying key assertions. Consistent with this view, auditors more often propose adjustments to estimates—that is, challenge management—when they use specialists (Cannon and Bedard 2017), whose involvement likely increases auditors' confidence in their assessment of the evidence. We view metacognition's role in this area as a promising avenue for future research using the ELM.

## CONCLUSION

We introduce the ELM as a meta-theory applicable to the vast auditor JDM literature, and we demonstrate how applying it to seemingly disparate studies can offer insights about the mechanisms underlying variations in auditors' judgments and decisions. Many studies in different research streams use the ELM to develop hypotheses (e.g., Goodwin 1999; Rich 2004), demonstrating its applicability to diverse auditor JDM settings. We propose using the ELM to understand studies collectively, because it can provide insights that will lead to a deeper understanding of why auditors' judgments vary across studies. Insights gleaned from an ELM interpretation can inform future research on the effectiveness of interventions aimed at changing auditors' motivation (e.g., accountability) or capacity (e.g., decision aids or training). In sum, the ELM has the potential to serve as a framework for synthesizing, reconciling, and understanding the collective findings of auditor JDM research and assist in increasing the contributions this literature can make to research and practice.

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<sup>18</sup> For guidance on synthesizing studies across divergent research streams (e.g., attitude research in auditing versus environmental protection), see Nolder and Blankenship (2019).

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