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Novice and Expert Judgment in the Presence of Going Concern Uncertainty the Influence of Heuristic Biases and Other Relevant Factors

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Anandarajan, Asokan; Kleinman, Gary; and Palmon, Dan, "Novice and Expert Judgment in the Presence of Going Concern Uncertainty the Influence of Heuristic Biases and Other Relevant Factors" (2008).
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Novice and expert judgment in the presence of going concern uncertainty

Novice and
expert judgment

The influence of heuristic biases and other relevant factors

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Abstract

Purpose – Prior literature provides clear evidence that the judgments of experts differ from those of non-experts. For example, Smith and Kida concluded that the extent of common biases that they investigated often are reduced when experts perform job related tasks as compared to students. The aim in this theoretical study is to examine whether “heuristic biases significantly moderate the understanding of experts versus novices in the going concern judgment?”

Design/methodology/approach – The authors address the posited question by marshalling extant literature on expert and novice judgments and link these to concepts drawn from the cognitive sciences through the Brunswick Lens Model.

Findings – The authors identify a number of heuristics that may bias the going concern decision, based on the work of Kahneman and Tversky among others. They conclude that experience mitigates the unintentional consequences played by heuristic biases.

Practical implications – The conclusions have implications for the education and training of auditors, and for the expectation gap. They suggest that both awareness of factors that affect understanding of auditing reports and greater attention to training are important in reducing the expectation gap.

Originality/value – This paper develops additional theoretical understanding of factors that may impact the expectation gap. While there has been limited prior discussion of the impact of cognitive factors on differences between experts and novices, the paper significantly expands the range of factors discussed. As such, it should provide a stimulus to new research in this important area.

Keywords Cognition, Experiential learning, Uncertainty management, Training

Paper type Conceptual paper

Objective

Prior literature provides clear evidence that the judgments of experts differ from those of non-experts. In this paper, we seek to present new ideas for further exploration with respect to the differences between experts and novices. Specifically, our focus in this theoretical study is the influence of heuristic biases when examining a going concern modified report.



One contribution of this study is that we develop a model which can be used by future researchers when examining and developing theory to explain factors that may act to diminish expert performance toward the level of novices in general, and concerning going concern tasks in particular. In addressing this issue, we introduce many factors that have not appeared in the expert versus novice judgment literature previously. These factors include native ability, problems in memory matching of presenting situations to prior experiences, selective perceptions, and the affect heuristic. The second contribution of this study is our suggestions for at least partially overcoming the effects of the heuristics that affect the auditor's judgment. The third contribution consists of our suggestions for future research to understand, and address, the problems that these heuristics cause.

In this paper, we pose the question "does training matter?" For example, would training reduce the bias introduced by heuristics? The answer from prior research would be that training may not matter because both novices and expert auditors are equally influenced by heuristics (Nelson and Tan, 2005; Wüstemann and Koch, 2006). The problem with these findings is that almost all the research used fairly structured tasks. In order to analyze this, we examine the differences between experts and novices relating to the going concern opinion decision, a task which is relatively unstructured. Unlike many accounting decisions, it cannot be accomplished by applying a set of rules to details of a specific transaction since many of the considerations that the auditor must take into account are relatively unstructured, requiring the exercise of reasoned and perhaps seasoned judgment to understand and evaluate. We evaluate prior research and underpin our conclusions using an adapted Lens Brunswick Model (1955). Our conclusions are that, in a principles-based system, training does matter because experts are as equally affected by heuristics as novices. In a principles-based system, therefore, it becomes important to provide training to mitigate the effects of heuristics on going concern opinion decisions. With regard to both principles-based and rules-based systems, problems may exist. Accordingly, we recommend specific methods to help overcome the effects of cognitive heuristics, as well as suggestions for improving the training that novices receive with the aim of helping them develop richer cognitive domains to better enable them to understand presenting situations.

Background and motivation is presented in the second section of the paper. We discuss pertinent literature and then we use prior literature to develop theory as to why understanding of the going concern message by both experts and novices may not differ significantly. We subsequently present our model to explain our findings and then follow with our conclusions.

Background and motivation

Auditors are asked to attest to the fairness of historical information which is contained in financial statements. Under Statement of Auditing Standard No. 59 (1989) in the USA, the role of the auditor has been expanded with respect to prediction of the going concern status of the company. The auditor now has to actively search for red flags that could indicate possible failure. Previously, the role of the auditor could be considered to be more passive. The auditor's role was more of the "watchdog" rather than "bloodhound" as is required today. The auditor only issued a going concern modified report if s/he came across red flags during the course of the audit. They did not need to actively search for potential problems.

Even though the role of the auditor has been expanded, does SAS No. 59 result in a greater understanding of the message conveyed by the auditors in their report when it is modified for going concern uncertainty? The question we pose and analyze is, “Do heuristic biases significantly diminish the performance of experts to the level of novices with respect to making decisions concerning the issuance of a going concern report?”

Underlying our entire discussion, of course, is the question of what we expect from an expert. We believe it is normatively correct to say that we expect the expert to make fact-based decisions that are superior to those of relative novices in any domain where expertise and knowledge matter (Mayer, 2003). The problem with this formulation, of course, is that often the evidence does not support the existence of systematic differences in decision-making quality between experts and novices. We analyze this in the framework of the Brunswick Lens Model (Brunswick, 1955). We use the findings of Lundberg and Nagle (1999) to justify our rationale.

Lundberg and Nagle (1999) examined the post-decision editing of auditors’ judgment. They were interested in post-decision restructuring of a decision: did auditors (experts) and students (novices) amend a decision to issue a going concern decision based on feedback? If so, how and did heuristics play a role in that? Though this research is not directly related to the objectives of this study, the findings are pertinent and are used to substantiate a theoretical model developed here.

This paper is timely because there is a growing recognition in the financial community that the current rule-based accounting system does little to improve financial reporting and reduce the frequency and magnitude of accounting scandals. Currently, much behavioural research in auditing seems to point to the fact that auditors and novices appear to be equally influenced by heuristics, and hence could arrive at similar, perhaps fallacious, conclusions (e.g., Nelson and Tan, 2005; Wüstemann and Koch, 2006). Robert Herz, Chairman of the FASB, speaking at Rutgers University (2006) stated that, in this scenario, there was a need to move from a rule-based system to a principles-based system. However, in the current rule-based environment, this finding has not gained traction because if accountants are simply expected to follow rules, heuristics may play less of a role. This is because the complex rules, regulations and procedures provide a “check the box” type environment that structures the decision-making process, perhaps limiting the effects of the heuristics. In the principle-based system envisaged by Robert Herz, auditors would be expected to apply professional judgment. Hence, heuristics would play an important role since auditors are forced to critically evaluate a situation with only general guidance, rather than focus on a narrow application of the rules[1].

Understanding factors that auditors use in processing information is important given the changes in our business environment. These developments primarily include the advent of Sarbanes-Oxley (2002) in the USA and its equivalent, the Eighth Directive in Europe and the Enron scandal in the USA and the Parmalat scandal in Europe. To the extent that the legal environment has become more problematic for auditors (Hanson *et al.*, 2004), it is important to understand the factors that diminish the accuracy of auditor understanding of the client situation, and that diminish the adequacy of the auditor’s processing of the information that he/she believes characterize the client’s situation. We believe that the model presented here represents the most comprehensive exploration of cognitive factors affecting the auditor’s judgment concerning presenting client situations.

Literature review

Since the objective of this study is to examine and understand going concern decision-making with particular emphasis on the differences between experts and novices, we focus on literature that deals particularly with decision outcomes in the presence of going concern uncertainties. In this area there are few studies that directly compare and contrast going concern reporting decisions between experts and novices. Hence, we dichotomize our literature review into those studies involving first, experts and second, students. Much of the literature has used loan officers as “expert” subjects, predominantly because they are much easier to access than auditors (LaSalle and Anandarajan, 1997). It must be emphasized that there are many more studies involving expert subjects than students. After the literature review, we develop a model for differentiating differences in perceptions and reactions between both types of users. For the purpose of this study, sophisticated users are defined as those users who have specialized training in reading and understanding financial statements and unsophisticated users as those lacking this specialized training or are in the process of acquiring it.

Studies involving expert subjects in the presence of going concern uncertainties

Most experimental studies, as previously mentioned, used bank loan officers (Libby *et al.*, 1979a, b; Bamber and Stratton, 1997; LaSalle and Anandarajan, 1997), presumably because of their specialized training, to assess an entity’s financial condition, expected future cash flows and going concern status. An additional advantage to using loan officers is that they are likely to have similar training and make similar decisions. It has also been suggested that any results using loan officers can be generalized to other sophisticated financial statement users. Other studies used financial analysts as “experts” (Reckers and Pany, 1979; Pany and Smith, 1982; Robertson, 1988). While auditors have been used as subjects in many studies, the objectives of those studies did not specifically deal with the going concern judgment in an “expert” versus “student” context and hence, could not be included here. The key studies relevant to this paper will be considered in chronological order.

Libby (1979a, b), categorized his sample of loan officers into two groups: one group was provided with an unqualified report and the other with a qualified “subject to” report. The results showed that the qualified report did not significantly increase users’ perceptions of risk of their clients. Johnson *et al.* (1983) studied loan officers’ reactions to four different scenarios: three different reports and a situation in which no audit report was provided. In all instances the financial statements were the same. Therefore, any difference had to be attributed to the report. The reports provided were the compilation report, review report and audit report. The authors did not find any statistically significant differences in decision-making concerning the granting of the loan or the interest rate, thus further corroborating the conclusions of Libby (1979a, b) that the wording of a report did not influence judgment once the requisite financial information had been provided.

Robertson (1988) conducted an experiment to test the communication effectiveness of the “subject to” reports and other qualified reports. He provided a case study to six groups of financial analysts. The financial statements were held constant so that the only difference between the groups was the type of audit report issued. The six reports included a “subject to” audit report and a disclaimer for uncertainties. The subjects were also given a standard unqualified opinion. The analysts were asked to react to the

financial statements in light of the audit reports. The reactions of interest included the subject's view of the statements' credibility, their willingness to rely on the statements, and the extent to which the statements satisfied their information needs. Except for the disclaimer report, Robertson did not find a significant difference in the amount of credibility added to financial statements, nor did he find a significant difference in the extent to which the auditor's report satisfied analysts' investment needs. He concluded that the results suggested that audit report messages fail to convey the information that the auditors expected would be conveyed. This result, namely that the information in a qualified audit report did not convey the message the auditor intended, further corroborated the findings of Libby (1979a, b) who used loan officers.

Not all of the published research, however, reached the same conclusions. Both Shank and Dillard (1979) and Campbell and Mutchler (1988) found evidence to support the opposite conclusion. These researchers surveyed various financial statement user groups and financial executives, and found that they perceived the "subject to" qualified opinion to be useful. The difference between these studies and those previously mentioned is that Shank and Dillard (1979) and Campbell and Mutchler (1988) merely conducted a survey and asked subjects to respond with one question asking if they perceived qualified audit reports as useful. In the prior studies, the subjects were not directly asked if going concern audit reports were useful. Rather, they were asked questions about the financial position of a company with one group receiving a qualified report and a control group receiving a clean report. The lack of significant differences in responses was attributed to the lack of information content of the audit report. Carmichael and Pany (1993; 1995) note, however, that when users are placed in experimental decision making contexts, the results may be different relative to when they are merely asked if a report is perceived as useful. Sophisticated financial statement users may subconsciously perceive qualified audit reports as useful; however, their perceptions and reactions to the report indicated otherwise. The possibility remains that the perception results arise from experimental demand effects.

The year 1989 is an important demarcation point in this research. The Auditing Standards Board (ASB) in the USA, recognizing the existence of an expectations gap, developed new standards in order to reduce the perceived gap between auditors and financial statement users. These were referred to as the expectation gap standards. The standards relevant to this study are Statement on Auditing Standards (SAS) No. 58 entitled *Reports on Audited Financial Statements* (AICPA, 1988a) and SAS No. 59 entitled *The Auditor's Consideration of an Entity's Ability to Continue as a Going Concern* (AICPA, 1988b). The purpose of these standards was to enhance user understanding of auditor's reports (SAS No. 58) and to make changes to the manner in which a going concern uncertainty was reported should the auditor wish to qualify the report (SAS No. 59). However, the word "qualified" was discarded and replaced with the term "modified". Henceforth, qualified reports were referred to as modified reports. Miller *et al.* (1993) suggested that the expectation gap standards helped to clarify the nature of the auditor's communication with financial statement users. We now discuss the findings of relevant studies involving the modified report.

Bamber and Stratton (1997) examined whether the information content of a modified audit report affected the decisions of bank loan officers. The authors found that when a loan application included a modified audit report, bank loan officers gave the application a higher risk assessment and a higher interest rate premium. They were also

significantly less likely to grant the loan. Bamber and Stratton (1997) noted that “rather than simply causing bank loan officers to give greater weight to the uncertainty disclosed in the financial statements accompanying the loan application, bank loan officers attached greater weight to the audit report itself when it contained the explanatory paragraph”. They concluded that the report modified to reflect uncertainty conveys information to bank loan officers. However, the information content in their audit report related to litigation uncertainty and not going concern uncertainty. LaSalle and Anandarajan (1997) also used loan officers. They manipulated the gravity of the going concern uncertainty communication in the auditor’s report. They found that when the audit report was modified with a going concern uncertainty, it did not appear to have information content for loan officers. However, when the audit report was modified with a disclaimer report it conveyed a very strong message to the loan officers. In one of the more recent studies, Elias and Johnston (2001) found that the modified report did not appear to convey significantly greater information to loan officers. Thus, the evidence using sophisticated investors in experimental situations is not conclusive. Overall, subject to the Bamber and Stratton (1997) study, the preponderance of evidence suggests that, for sophisticated users of financial statements the qualified/modified report does not appear to have significant information content.

Studies involving unsophisticated users (students)

There are not many studies involving unsophisticated users. We define unsophisticated users as students. This may be due to the difficulties in publishing studies using student subjects. The students used in this type of study are predominantly MBA students, though undergraduate students have also been used. In an early study, Reckers and Pany (1979) and Pany and Smith (1982) found that student subjects (MBA students surrogating for financial analysts) did not perceive the importance of information contained in audit reports. In fact, subjects could not tell the difference between an audit report and review engagement report, apparently equating the two with respect to reliability. Though this was not the object of their study (the object was to compare perceived reliability of audit reports with review engagement reports) the general conclusion is that the message conveyed in an audit report is not clearly conveyed (understood) by the subjects. Pringle *et al.* (1990) compared the new SAS 59 unqualified modified report to the superseded SAS 34 “subject to” report. They found that the student subjects did not appear to find incremental information content in either form of report. They did find, however, that the student’s confusion was heightened in the presence of the new modified report where the term “subject to” – implying qualified, wording which was used prior to SAS 59 – was now absent. Finally, Gay *et al.* (1998) attempted to examine how different groups, namely, shareholders (MBA students holding stocks) and company chief administrative officers reacted to audit reports. Unlike the other studies this was a survey, not an experiment which manipulated the audit report. The general conclusion was that there were no significant differences between the groups regarding the interpretation of the audit report. If so, the “expectations gap” issue, which was a source of concern remains so since expert understanding does not appear to differ significantly from that of novices. We now develop theory to explain why sophisticated and unsophisticated users may react in similar ways to the signal conveyed by the qualified/modified auditor’s report.

Theory development based on prior literature

In accounting research, there are two different types of theories. One group of research borrows theories from psychological literature to suggest that sophisticated and unsophisticated users may not be significantly different with respect to decision making. Another line of research suggests that there should be a significant difference. Both streams of research will be considered.

Research suggesting no difference between sophisticated and unsophisticated investors

In the accounting literature, the organization of information has been shown to affect subjects' going concern judgments (Ricchiute, 1992). Some studies warn that increasing the number of cues often "overloads" decision makers, leading to judgments of lower quality (Chewning and Harrell, 1990; Iselin, 1993; Paredes, 2003). In accounting, users are frequently overloaded with information. These studies warn that levels of experience, the frequent surrogate for "sophistication," may not improve the quality of decision making.

Tversky and Kahneman (1973) indicate that availability of information and, by extension, multiple redundancies, will result in greater understanding of the message conveyed. Slovic and MacPhillany (1974) state that decision makers place greater weight on common measures and, unconsciously, at measures that are repeated. Slovic and MacPhillany (1974) demonstrate that when two alternatives have a common attribute, along with unique attributes, the common attribute is weighted more. Payne *et al.* (1993) theorize that people, irrespective of the nature of their experience (sophistication level), choose simplifying strategies when making decisions. They note that reliance on common attributes or an attribute that is repeated is one such simplifying strategy; and more importantly, this form of decision making is not deliberate, but done subconsciously. Marsh *et al.* (2004) argue that such simplifying strategies may approach the normative model in accuracy, and significantly reduce the search costs of arriving at a solution. Viger *et al.* (2004) note that both sophisticated and unsophisticated users have a common attribute: they seek simplifying strategies. If so, we should not find a significant difference between both forms of users in the presence of financial statements including the auditor's report.

The conclusions from cognitive and judgment research (Slovic and MacPhillany, 1974) also indicate that multiple reinforcements of the going concern contingency should accentuate the overall message conveyed. If financial distress can be determined from the numbers in the financial statements and from a footnote explaining the going concern uncertainty, then modifying the auditor's report for the going concern uncertainty should not convey incremental information. This applies to both sophisticated and unsophisticated users.

Finally, the placement of particular items within the financial statements has also been shown to affect users' judgments (though not in the context of going concern reporting). Hopkins (1996), for example, indicated that the location or placement of securities had an effect on financial analysts' stock price judgments. Hirst and Hopkins (1998) showed that presenting comprehensive income in the income statement affected financial analysts' stock price judgments differently than presenting the information in the statement of changes in equity. The conclusion is that specific placement of particular pieces of information affected judgment and the use of the information by financial statement users. In their respective studies, the subjects were sophisticated users. The question then arises, would this finding hold for non-sophisticated investors as well?

The findings of Hodge (2001) suggest that both non-sophisticated subjects (MBA students) and sophisticated ones were both affected by placement[2]. That such a normatively irrelevant factor as information placement impacted both the sophisticated and non-sophisticated subjects is problematic for financial accounting regulators and policy makers. It suggests that their efforts may be overcome by elements beyond their control.

Generally then, higher levels of redundancy accentuate the signal conveyed by the message. Hirst and Hopkins (1998) note that presentation format may affect analysts' judgments partly because of the failure to sufficiently record information in memory. This shortcoming can be rectified by redundancy in information presentation. Similarly, Lipe and Salterio (2000) provide evidence that incorporating reinforcement and providing direct links between information may help decision makers mentally "chunk" these items and thus increase the emphasis on these items in forming judgments. Such "chunks" are used by both sophisticated and unsophisticated users. In this research the "items" represent the going concern information.

Research suggesting significant difference between sophisticated and unsophisticated investors[3]

Maines and McDaniel (2000) suggest that nonprofessional users will differ significantly, with respect to perceptions and reactions, from professional users. This is attributed to what is referred to as "unintentional cognitive effects". These include factors such as overweighting certain types of information. In the accounting literature, Joyce and Biddle (1981) and Smith and Kida (1991) show that non-sophisticated users, due to their lack of specific task related knowledge, are more likely than sophisticated users to fall into the trap of overweighting certain types of information and thus making erroneous decisions. Maines and McDaniel (2000) also note that most unsophisticated users of financial statements may possess little knowledge (relative to sophisticated users) about the importance of specific financial statement items or the relations among financial statement items. If this applies to the modified going concern audit report then we should expect significant differences in perceptions and reactions between sophisticated and unsophisticated users. Shelton (1999) examined differences in decision making with respect to the going concern decision between audit seniors (accepted to be less sophisticated) and audit managers and partners (assumed to be more sophisticated). She introduced both parties to both relevant and irrelevant information. In effect, she compared the going concern judgments of less-experienced auditors (audit seniors) to more experienced auditors (managers and partners). She concluded that irrelevant information "diluted" the decision of audit seniors but not that of managers. In the most recent published study, Lehmann and Norman (2006) investigated problem representation and judgment by auditing professionals within the context of a going concern task and came to conclusions that support the findings of Shelton (1999).

No research has developed a model to explain their findings. In the next section, we develop a model to explain the findings and conclusions of prior research.

Model development

We use Brunswick's (1955) Lens Model to explain and rationalize why the understanding of experts and novices may not differ significantly in the presence of

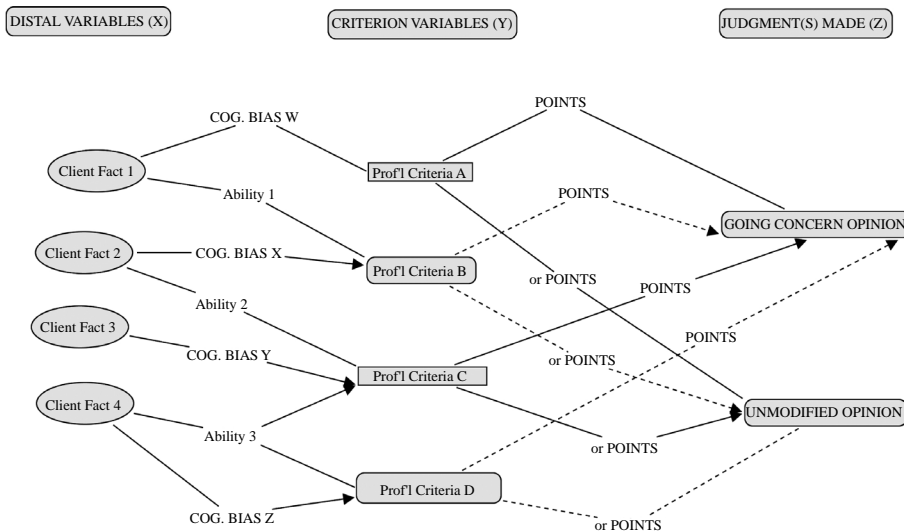
a going concern report. The work of Egon Brunswick resulted in the development of an important framework for conceptualizing and investigating human judgment. One of Brunswick's most basic positions was that individuals frequently must rely on probabilistic information for the purpose of comprehending information and making judgments in an uncertain environment. Brunswick's framework is represented most often in a "lens" model as shown in Figure 1.

In this lens model, the world is divided into two parts:

- (1) the environmental, represented by the left side of the lens; and
- (2) the individual's judgment system, represented by the right side of the lens model.

The three basic elements of the model are:

- (1) the criterion, or distal variable about which the individual is concerned;
- (2) the cues, or items of information, that may be used to judge or predict the criterion; and
- (3) the individual's judgment or prediction.



BRUNSWICK LENS MODEL LEGEND AND EXPLANATION:

X VARIABLES—DISTAL VARIABLES. THESE ARE THE ENVIRONMENTAL CUES.
 Y VARIABLES—CRITERION VARIABLES. THESE ARE THE JUDGMENT CRITERIA.
 Z VARIABLES—JUDGMENT MADE. SELF-EXPLANATORY.

Please note that the shapes of the criterion variables differs, suggesting that these may be differentially important in the decision to be made.

The relationship between X and Y reflects the correspondence between the cues as he auditor perceives them, as moderated by cognitive biases (e.g., Availability and Anchoring) and abilities (e.g., Logico-Mathematical), and their actual value. The placement of the Cognitive Bias and Ability nodes reflects this mediating effect.

The number of connections shown between the X and Y variables is limited in order to avoid cluttering the diagram.

The Difference in line styles between the criterion variables and judgments is for clarity.

Figure 1. Brunswick lens model

With respect to this study, the environment represented by the left side of the lens, is the analysis of the information contained in the going concern modified report. The individual's judgment system processes of that information in order to decide whether to invest or lend to that company.

In our study, the three basic elements of the model are:

- *Stage 1.* The criterion or distal variable. This is the presentation of the factors causing the auditor to modify the report in the presence of going concern uncertainties.
- *Stage 2.* The cues represent the factors that the auditors cite as the reason for modifying the auditor's report.
- *Stage 3.* The individual choice judgment involves the final choice, namely a decision based on comprehension of the information presented in the report.

Cognitive biases and related factors affecting user reaction to the distal variable

Our concern is with the connection between the Stage one variables, which reflect the true state of nature and Stage 2, which reflects the normative criteria that the auditor is required to use in coming to his/her judgment, as reflected in Stage 3. We argue that the true state of the variables in Stage 1 is not perceived perfectly by the auditor because of intervening cognitive abilities, biases, and other distortions. Accordingly, the auditor may fail to make the correct judgment in Stage 3. This section, then, details the abilities, biases, and other distortions that may impact the auditor's ability to perceive the true correspondence between the Stage 1 and 2 variables. We do not specify all the variables shown in Figure 1 because it would make the diagram too complicated.

We now consider the linking nodes between stage one and stage two in greater detail. An indication of the extent to which the individual relies upon cues and perceives them correctly, both individually and in combination with one or more others, has to be explained theoretically. It is important to emphasize that we use cognitive factors not motivational or conflict-of-interest factors to explain differences (or lack thereof) between experts and novices. These cognitive factors are referred to by Tversky and Kahneman (1973) as heuristics and biases. Tversky and Kahneman discuss three types of heuristics: these are representativeness, availability and anchoring and adjustment. These, and additional cognitive and related issues that have appeared in the literature, will be considered individually. We assert that they may act to distort the auditors' understanding of the correspondence between the client condition and the criterion against which the client's condition is to be judged.

Representativeness. A person who follows this heuristic evaluates the probability of an uncertain event, or a sample, by the degree to which it is:

- similar in essential properties to its present population; and
- reflects the salient features of the process by which it is generated.

(Kahneman and Tversky, 1972, p. 431). Events that are more representative often are better understood than less representative events. In our study, since unqualified reports have a much higher probability of occurrence and are more representative, the bias would be towards understanding the message contained in an unqualified format but not necessarily the message in a modified format. The question is: does this apply to both experts and novices? Interestingly, Lundberg and Nagle (1999) imply that if

subjects are not experienced, a major characteristic of representativeness is insensitivity to the information presented. Hence, they imply that novices may be biased by the representativeness characteristic (i.e. understand the message contained in the representative report (unmodified report) but not the report which is unrepresentative (the modified report)).

Availability. Another heuristic identified by Tversky and Kahneman (1973) is availability. "A person is said to employ the availability heuristic whenever he estimates frequency or probability by the ease with which instances or associations can be brought to mind" (Tversky and Kahneman, 1973, p. 208). The ability to retrieve instances or associations may depend on familiarity, salience and latest occurrence. The availability heuristic provides an explanation for what Ashton (1982) refers to as the "illusory correlation". Thus, when a person finds that the association between items is strong, s/he is likely to conclude that an event is likely to occur in the presence of another. With respect to this study, the presence of red flags may provide a warning signal to experts due to the availability heuristic (perceived correlation between the red flags and bankruptcy). However, novices with no prior experience may not be affected by the availability heuristic and that could affect their judgment. In the context of Figure 1, then, the availability heuristic may distort the decision maker's apprehension of the true nature of the distal variable. That is, she/he may view it as reflecting a condition that it is not because of the decision maker's greater recall of certain events rather than others.

Anchoring and adjustment. The third heuristic identified by Tversky and Kahneman (1973) is anchoring and adjustment. They argue that individuals often make estimates by establishing some initial value (an anchor) that may be suggested by the task or may be the result of a partial computation, and then making some adjustment to this initial value. Ashton and Ashton (1988) notes that anchoring and adjustment may explain many of the problems individuals have in probability assessment. Ashton notes that estimated probabilities of compound events are systematically biased in the direction of the probabilities of the sample events that compute them. In the presence of a modified report, an expert may "anchor" their decision to either not lend or invest. Any further information results in adjustments to the anchor. The anchor of a novice, on the other hand, may be towards providing a loan due to the combined effect of the other two biases discussed earlier. Further, experienced auditors may be more willing to make adjustments to their anchor based on new information. Novices, however, may cleave more to their original anchor.

Abilities. Abilities may be conceptualized as the upper limit on the individual's capacities in any number of domains. Although ability is not a cognitive heuristic, we believe that it should be discussed also since it sets the ceiling on achievement. In the context of Figure 1, ability represents the extent of the decision maker's power to understand the true correlation between the distal and the criterion variables. Stanovich *et al.* (2004) found a negative correlation between SAT scores, a widely acknowledged surrogate for intelligence quotient scores, and susceptibility to use of cognitive heuristics. Abilities may differ between those who can accurately be classified as experts and those who are best described as novices. Gardner (1999) describes eight different kinds of intelligences. Logico-mathematical intelligence seems most likely to impact understanding financial statement matters and audit reports. Individuals whose abilities lie primarily in the musical, artistic, and other realms, for example, are less likely to accurately appreciate the meaning and content of

audit reports. Typically, the profession's normative standard for financial statement presentation is to prepare statements that are meaningful to a reasonably sophisticated investor who is willing to invest time in understanding them. Many members of the user community, however, have abilities that are not of the logico-mathematical realm. Presumably, such individuals could only develop a reasonable understanding of the audit reports and/or the accompanying financial statements via enormous effort. This suggests that the normative standard must fail before this test. Expertise may be developable without ability, but that may be difficult.

Krampe and Baltes (2003) distinguish between ability and expertise. Ability derives from both nature and nurture. Expertise, on the other hand, reflects the investment of extensive time and effort resources. The practice explicit in this effort creates a much greater understanding of the various nuances that financial statements may have and develops context knowledge and a database of experience concerning the relationship between audit reports and financial statement reality. This practice helps cement the newly acquired knowledge and helps the user form connections between any particular combination of an audit report and a set of financial statements to a broader collection of audit reports and financial statements. Over time, the linkages between different audit reports and related financial statements would solidify into sets of rules for understanding the import of such combinations. Those with lesser levels of logico-mathematical abilities, however, would have a much greater difficulty in forming those connections. . . or require much more than a reasonable effort to acquire the same. Other issues also divide those with and without expertise in the accounting/auditing domain. We will address those next.

Memory matching. Ability is useless without experience since no one is born understanding the relationship between financial statement information and audit reports. Experience leads to development of what Ericsson (2003) calls mental representations of the problem area. Possessing this, they can then quickly link presenting facts to their pre-existing mental representations, understand the concordances and dissimilarities between them, and come to a conclusion.

Since experts can understand new domain information more quickly than can the unsophisticated or novice user, experts can improve their capacity relative to non-experts (Willingham, 2006; Hirsch, 2006; for a contrary view, see Gladwell, 2005). Part of this advantage in learning comes from the expert's ability to match new information to pre-existing information. In effect, the rich get richer. To the extent that memory is unreliable, however, the lessons learned may be incorrect. Thus, in the context of Figure 1, the decision maker does not understand the true association between the distal and criterion variables, leading to an incorrect decision.

Affective heuristic. Psychological defensiveness and poor intrapersonal ability might prevent even experts from learning from experience about the appropriateness of given audit reports, conditional on financial statement and related contextual information. If so, there would be a weakening of the link between ability, the acquisition of experience, and the accuracy of the auditor's determinations of the proper form of audit reports. From a relative novice's point of view, regardless of ability type, however, such psychological factors as anxiety over being confronted with unfamiliar decision situations, the characteristic over-optimism in one's future and overconfidence in one's decision-making prowess will all combine to make it more difficult for the novice to develop expertise (Finucane *et al.*, 2003). Effort aversion and a

low level of what Stanovich *et al.* (2003) call “thinking disposition” may further undermine the novice’s development of expertise. Thinking dispositions, as Stanovich *et al.* (2003) describe it, consists of a willingness to remain open-minded, seeking contrary or alternate points-of-view and information, and to work hard to understand the underlying logic of a presenting situation. Thus, emotion and effort aversion may cloud the relative novice’s understanding of the link between the distal and criterion variables in Figure 1, leading to a poor judgment outcome.

Perceptual clarity. Although not technically a cognitive heuristic, perceptual clarity (the ability to perceive the world as it exists) influences the link between the reality of the distal cues and the expert or novice’s decisions with respect to them. For example, memory matching fails if the expert perceives the presenting situation incorrectly and believes an inappropriate opinion is appropriate. With regard to novices, their understanding of the distal object (the presenting financial condition of the client) is likely to be problematic to begin with since their ability to determine the true nature of these cues is likely to be far more limited than that of the expert. Once one adds in problems born of a lack of perceptual clarity, the initial problems that the novice may have had in understanding what a correct audit report should have been, as well as the true meaning of the audit report that was given, is compounded. The result will be an inadequate analysis of the situation and the choice of an incorrect solution. Whether we are discussing experts or novices, thinking dispositions will lose some of their effectiveness when an incorrect perception of a situation leads to a line of reasoning based on a wrong premise. Even without other problems, the failure to perceive the distal variable correctly must lead to a poor understanding of its fit with the criterion variable! Thus, there is a poor link between the distal variable in Figure 1 and the criterion variable.

Schemata (mental models). Another difference between experts and novices in understanding either the presenting information that is normatively to be relied on in arriving at a going concern opinion, or in understanding the true import of such an opinion once rendered, is that of problem representations. The goal of standards like SAS59 is to provide guidelines for the auditor (here, the expert) in deciding on the appropriateness of a going concern report for a given client. In effect, the range of material to be considered may be narrowed in some circumstances, but expanded for others. A difference between principles-based and rules-based accounting is that in the latter case, the auditors are given explicit, attention-directing guidance on the factors to consider. With a principles-based approach, however, the auditors may look to the substance of the situation as they perceive the substance to be. Auditors/experts, of course, may always apply professional judgment in coming to their conclusion, whichever regime is in force. This may have been behind the findings of Lundberg and Nagle (1999).

Expert judgment is notoriously inconsistent across experts (Sternberg and Grigorenko, 2003; Gladwell, 2005). In terms of the going concern opinion, one auditor may have a specific mental model consisting of SAS No. 59 and his/her own preferred extensions of considerations involved in arriving at a going concern decision and may specify a solution in terms of that mental model. Another auditor may have in mind a different mental model and a different interpretation of the problem, and so the two auditors will disagree (Stanovich *et al.*, 2004). A mental model may be seen as a “frame” that forms the basis within which further discussions of a problem are understood. Frames may affect the ways that the auditor’s perceive and understand the criteria set forth by SAS No. 59 and the client’s presenting situation.

Libby and Luft (1993), for example, noted that practising auditors develop schemata against which situational evidence is weighed. Novices will not have well-developed criteria. To them, depending on their levels of financial sophistication and logico-mathematical ability, as well as effort expended in mastering financial information, the presenting going concern information may be a “blooming, buzzing confusion.” (pace William James). With regard to Figure 1, then, the mental model may affect the decision maker’s take on the distal variable, distorting its interpretation with the result that it is misunderstood, and/or that is perceived differently by a different decision-maker.

Selective perception and confirmation bias. Other things will interfere with the correct perception of the criterion variables. For example, expecting to see something will influence or bias what is seen. That is, people seek information that is consistent with their own views or hypotheses, and disregard or downplay contrary or conflicting evidence. In part, this is related to perceptual clarity in that only a subset of the entire field of information is perceived. Selective perception, then, suggests that the decision-maker will apprehend only part of the distal cues being provided to him, and this, therefore, will distort his/her ability to meaningfully apply the criterion values. Confirmation bias has the same impact. It suggests that an expert expecting to see a “healthy” corporation will tend to notice evidence that is consistent with this view. The implications for the connection between distal and criterion variables in Figure 1, and the resulting decision, should be self-explanatory.

This confirmation bias has been confirmed within the auditing domain (Nelson and Tan, 2005). A novice, in contrast to an expert, may have very limited ideas as to what is or is not important. Therefore, selective perception may not operate as forcefully for them, as they view the contents of financial statements, as for the expert. While it may seem that the novice, therefore, has the upper hand in understanding the going concern status of a firm, the guidance that the profession provides to the expert hopefully guides the latter’s eye toward the broader field of evidence with regard to the financial status of the corporation. The “check the box” approach to accounting/auditing guidance therefore forces accountants/auditors to pay attention to a wider range of variables.

Frequency/illusory correlation and the law of small numbers. Illusory correlation is said to exist when a decision-maker believes that two variables are correlated when they are not. Also, the law of small numbers suggests that people generalize based on a few observations. Expert auditors are more likely to have a wide experience with firms that have, or are considered good candidates for, going concern status. Given that, the experts in this case are less likely to make an error in giving, or understanding the meaning of, a going concern opinion. In contrast, novices looking at the distal criteria may have very limited knowledge of the determinants of going concern status and may generalize to any particular firm information that they believe they know about a few other firms. For the novices then, in terms of Figure 1, they are less likely to understand the true relationship between a given distal and a given criterion variable than otherwise. Obviously, the possibility of error is very high in this situation. Interestingly, though, Lundberg and Nagle (1999) found that their auditor sample was less likely to believe that stimulus firms merited a going concern opinion than was their novice group. The novice group actually predicted going concern status more accurately! This result suggests that knowledge may bias experts in that they may be more likely to indulge in nuanced argument that ends up leading them astray. This bias will not exist with novices.

Halo effect. With the halo effect, the entire person or object is evaluated based on the assessment of one main trait. If other traits are uncorrelated with the key trait, then an error will occur. With respect to our concern, a novice may fail to understand the determinants of a going concern opinion and believe that the presence of a “name” auditor conferring an unqualified, standard, audit report serves as a guarantee of the viability of the corporation and its future. In this case, it might be argued, the novice anchors on the auditor’s reputation and fails to pursue other information that may reside in the financial statements. With respect to Figure 1, then, it is as if the novice focuses on one distal variable and allows its value to outweigh the cue information provided by the others! The impact of these others on other criterion variables then gets ignored!

Field dependence or independence. This describes the extent to which an individual can separate a logically distinct element (figure) from the background surrounding it. It has also been characterized as one’s ability to identify the central issue (Nelson and Tan, 2005). Pincus (1990), for example, found that auditors with greater field independence were more likely to disagree with the client’s stated inventory figures. With respect to our concern, then, it is likely that the expert is more likely to disentangle the meaning of the audit report from the background of the financial statements with which the report is associated. The novice user, in contrast, is more likely to be more field dependent since the novice doesn’t have the cognitive skills to understand the distinct roles of the audit reports and statements. Thus, in terms of Figure 1, the novice is less likely to understand the distal variables clearly since he/she cannot separate any one from the others present.

Summary and conclusions

This topic is important because the role of training on judgment (the going concern task in this paper) is pivotal in decision making. As mentioned above, this is particularly relevant in the presence of a move to principles-based rather than rule-based accounting systems. In particular, we provide a theoretical model to address the issue: does expertise enhance the quality of judgment? In real life, the problem-solving process starts with an individual making a mental representation of a problem. Based on this representation, an individual then develops a strategy with respect to the issuance of the going concern modified report. This is our focus. We selected this because the going concern decision is influenced by many factors including financial distress, bad news items, good news items and the auditor’s personal relationship with the client, with the latter being a partial function of client tenure with the auditor. In certain cases, the going concern decision is routine (i.e. the level of financial distress or a major lawsuit against the company which has a high probability of succeeding clearly indicates the company is going to fail). In other cases, they may be more complex (i.e. financial distress ratios are not conclusive and many other factors have to be considered). The differences between novices and experts with respect to the going concern decision are not significant in the presence of a less complex or more routine situation. Both parties use heuristics in the same way. However, in a more complex situation, novices may rely more on heuristics relative to experts, with the difference in decision making being significant.

Theoretically, we show through the framework of the Brunswick Lens Model (1955), adapted to clarify its relevance to our concerns that heuristic biases result in novices

falling into the trap of misinterpreting and misperceiving certain types of information. In particular, novices (as compared to experts) are influenced by:

- *Representativeness* (i.e. less able to deal with an event that has a low probability of occurrence).
- *Availability* (conclude, in the presence of red flags that likelihood of firm failure is strong, whereas experienced auditors would factor in mitigating events prior to making a decision).
- *Anchoring* (i.e. be stuck on an “anchor” when weighting criteria, and hence be less flexible in making adjustments which an experienced auditor may be more amenable to).

In addition, as we note, going concern decision-making is also a function of ability, memory matching, selective perception, “illusory correlation” affect heuristics, field dependence/independence and halo effects. In the case of halo effects, novices may be more amenable to issuing an unmodified report for large firms with a strong reputation, whereas experienced auditors may not succumb to the effect.

This paper has implications for the training of auditors, especially novices. Current training and education adopts traditional, textbook and theory oriented approaches. However, studies show that this approach may not reduce the chasm between novices and experienced auditors with respect to the going concern decision (Lehmann and Norman, 2006). The going concern task is difficult since, as Lehmann and Norman note, it involves a focused evaluation of large amounts of information to concisely “diagnose” financial health, and requires auditors to continue to gather information until they are convinced that sufficient evidence exists to issue a going concern report. We show, using traditional behavioral theory, that novices could be affected by a number of heuristics to which experienced auditors may not succumb. This has implications for training. An understanding that heuristics and biases such as the halo effect could influence judgment in going concern evaluation can aid in developing training practices based on case studies and also aid in the development of expert systems that facilitate training. In particular, in order to reduce the chasm, novices need to comprehend the importance of the following:

- The identification of important domain-related information and the ability to perceive meaningful patterns in data.
- The need to spend more time analyzing problems at a deeper level prior to attempting a solution.
- The willingness to withhold judgment until all feasible relevant knowledge has been gathered.
- Ability to organize knowledge.
- Willingness to countenance information that contradicts one’s personal beliefs.
- Ability to filter information and to package and encapsulate details.

Novices, like their more experienced counterparts, also need self-knowledge with respect to where their abilities fundamentally lie. Without that understanding, the individuals are even more likely to be subject to the characteristic overconfidence that afflicts much of decision-making.

This paper addresses a key gap in extant literature on expert versus novice judgment in auditing. Previous literature did not address many cognitive factors that may importantly impact auditing-related decisions. Our study, therefore, usefully expands on this literature to suggest fruitful field for further research. We have made suggestions above with respect to additional ways of training audit practitioners to develop not only book expertise, but expertise effective in the field, not the classroom. Even so, research is needed to understand whether our suggestions above, drawn from non-auditing literatures, are the best way to proceed within the auditing arena. Even if our suggestions are preferable, it is necessary to understand what constitutes an effective training tool within the auditing domain.

Beyond training tools, it is also important to understand how to structure jobs in the field in order to draw the auditor's attention to important features of the environment. In this vein, during the 1980s, there was much research into the ways that different auditing firms structured the work of their auditors (Cushing and Loebbecke, 1986). For example, some firms (Arthur Andersen among them) used highly mechanistic approaches to structuring the auditor's work. The highly mechanistic approach involved heavy use of audit checklists, detailed procedures manuals, requirements for documentation, etc. In contrast to the highly mechanistic approach was the more judgment-oriented approach usually attributed to PriceWaterhouse. In this approach, professional judgment was prized and the auditor was given a great deal of leeway in deciding, for example, how much evidence was enough. Aside from the kind of institutional, cultural, incentive-system factors that may influence auditor judgment (Kleinman and Palmon, 2001), it is important to understand how effective these tools are at drawing the auditor's attention to normatively important facets of the environment, and away from distracting factors.

Certainly we believe that it is important to develop more sophisticated ways of detecting the influence of extraneous factors on auditor judgment. Are there ways to force audit decision-makers to seek and use information in a non-biased way? Above, we recommended the use of techniques to get the auditor to think through presenting situations more open-mindedly, and more thoroughly than may be the case. Are those effective methods within the auditing domain, and especially with regard to a decision that involves as many somewhat amorphous factors of interest as the going concern decision? That is an empirical question, one, we believe, that it is important to answer. Further, are there ways to immunize the audit firm decision-makers from the pressures of presenting audit situations, as well as the wider client load that the audit firm decision-makers must bear? While the CEOs of the major auditing firms recommend the following ("Serving global capital markets and the global economy: a view from the CEOs of the international audit networks" November, 2006, Global Public Policy Symposium, 2006, p. 2):

The auditing profession needs to develop the talent and expertise to deliver consistent, high-quality audit services in the coming environment, both through hiring of outstanding individuals and the training of auditors in new auditing techniques. We suspect that the problem lies in the words talent and expertise. That is why understanding how to make book expertise into an effective force in the field is important.

In this paper we provide a theoretical framework to show how this can be attained. We believe, furthermore, that our model contains important new insights into the judgment process in auditing. There are limitations to this, as any study.

For example, we present a comprehensive theoretical framework for understanding judgment failures in an auditing area where the rules are relatively unstructured. Just how well does our argument pertain to much more structured decisions? Further, while there is a very strong argument for the training tools that the literature suggests, it is important as well to test their impact in practice. In sum, therefore, we believe that we have provided fruitful avenues for further exploration, but avenues that ultimately require empirical as well as theoretical exploration to advance the field.

Notes

1. Interestingly, James Quigley, the CEO of Deloitte and Touche noted that a departure from rules-based auditing may subject the auditing profession to greater litigation risk since it will be more difficult to document the auditor's adherence to auditing standards if a "check-the-box" system is not used. He argued for the creation of a "framework for actions that a preparer [company] or auditor can take – a layer of guidance that would sit on top of a set of principles-based standards." He did not specify the contents of this guidance but we believe that it is reasonable to infer that procedures would be recommended that would help avert judgment errors (Grant, 2007).
2. This was not the intended objective of Hodge's (2001) study. The objective related to examining effectiveness of understanding and analyzing hyperlinking information with financial statements. He found that MBA students were as effective as financial analysts.
3. The issue of the relative judgments of experienced (sophisticated) investors versus non-sophisticated investors takes on especial importance given the findings of Lundberg and Nagle (1999). Lundquist and Nagle examined the going concern judgments of audit firm personnel and MBA students. Their intent was to examine the effects of post-decision bolstering and justification once the experimental and control groups were (were not) given outcome information. Both groups were provided with information, stripped of identifying information, on firms that subsequently went bankrupt. The MBA students were about twice as likely to indicate that a going concern opinion should be issued as were the audit firm personnel. The importance of this study lies in both its unaccountable results and the fact that it is a rarity. We were unable to locate other studies that examined the effect of cognitive heuristics on the issuance of audit opinions. The Lundberg and Nagle study was published in a non-accounting journal. No such studies were found in accounting journals.

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