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**Of Mode of Reasoning and Context: Danish Evidence of Accounting Student's  
Moral Reasoning Abilities in Resolving Ethical Dilemmas Related to Fraud**

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## **Abstract**

The differing nature of engagement and work assignments continuously exposes auditors to varied ethical dilemmas. These dilemmas may be, contextually, grey areas for which there may be no official guidelines. To resolve these situations, auditors either undertake prescriptive or deliberative reasoning. The purpose of this study is three-fold, using Kohlberg's theory of cognitive moral development; this study aims to examine the effect of mode of reasoning on ethical decision-making. Secondly, this study presents the respondents with two ethical contexts in auditing viz. fraud and mundane. The aim is to examine the effect of facing ethical dilemmas arising out of detection of fraud, on the ethical decision-making ability of students. The impetus behind this is to observe the preparedness of accounting students in dealing with issues related to fraud. Finally, this study aims to examine the interaction affects between mode of reasoning and context of dilemmas. The respondents are one hundred forty graduate accounting students from three universities in Denmark. The results suggest that mode of reasoning and context of dilemmas significantly affect ethical decision-making. While previous studies were focused on ethical decision making ability of Danish auditors', this study closes the loop by presenting an accounting students perspective. By providing an understanding of the complex issues involved in ethical decision-making, this study also serves strategically in strengthening ethics education.

**Key Words:** Prescriptive Reasoning, Deliberative reasoning, Context of dilemmas

## **Introduction**

The basic premise of auditing is to give an independent opinion on the financial statements of a business to its real owners. Gaa (1993) states that, to achieve a high level of professional judgment auditors not only have to exhibit technical expertise but also sound moral reasoning. For auditors to exhibit sound moral reasoning, they need to adhere to the fundamental principles of ethical behavior in the auditing profession viz. integrity, objectivity, professional competence, due care and independence (Jones et al, 2003). Owing to the dynamic and differing nature of engagements and work assignments auditor's continuously face different ethical dilemmas. Francis (1990) states that unlike technical judgment, moral judgment encompasses multiple viewpoints and at times has no single right answer. Moreover, for some of these moral dilemmas there may be no clear guidelines. Previous literature suggests that the code of ethics appear to reduce the ethical ambiguity and assist the auditor's in recognizing ethical issues explicitly stated in the code of ethics (Douglas et al, 2001; Dreike and Moeckel, 1995; Claypool et al, 1990). However, Douglas et al (2001) suggest that the code also limit the auditors' perceptions of what is and what is not ethical, as identification of ethical issues not explicitly covered by the code are less likely. In such situations, training in ethics assumes an important role; this training could be either on the job or in an academic setting.

Recent literature points to a myopic and audit centric view of ethics education that does not help in resolving ethical dilemmas of other contexts (Fleming et al, 2009). However, the ethics education should also take into account different contexts within the audit profession. Gibbins (2001) suggests that auditing judgment research could incorporate five illustrative groups of contexts viz. interpersonal settings, economic incentives, significance of risk, institutional factors and task characteristics. In this study, we examine ethical dilemmas arising out of two-task characteristic contexts viz. detection of fraud and general procedural situations. SAS 99 issued by the American Institute of Certified Public Accountants (AICPA) emphasizes the fraud detection role of auditors and ISA 240 issued by the International Federation of Accountants (IFAC). This emphasis is a result of the infamous accounting scandals and the subsequent enactment of the Sarbanes-Oxley act (SOX). SAS 99 requires that auditors gather additional evidence to determine, if a material fraud has occurred or likely to occur, its effect on the financial statements and the subsequent audit report while ISA 240 asks the auditors to obtain reasonable assurance. This study aims to bring out the difference of ethical perception between a fraud scenario and a general scenario. Fraud

includes theft or misappropriation of company assets by employees or fraudulent financial reporting. The fraud scenario used in this study only looks at fraudulent financial reporting. The aim of this study is to examine the effect of facing ethical dilemmas of varied contexts and the moral reasoning used to resolve these dilemmas, on the ethical decision making ability of accounting students. Finally, drawing on the expectation setup for the hypothesis 3, this study aims to examine the interaction effects between mode of reasoning and context of dilemmas.

Louwers et al (1997) suggest that within accounting ethical decision-making literature, Kohlberg's (1969) cognitive moral development theory examines ethical judgment extensively. While this theory explains the philosophy behind moral development of individuals, scales like Rest's (1979) Defining Issues test (DIT) measures their ethical reasoning ability. Jones et al. (2003) state that within accounting ethics literature, researchers have used quantified reasoning ability score (P-score) extensively as a proxy for studying ethical judgment. Trevino (1986) uses the DIT to examine the situational-individual variables. Other researchers use the DIT to examine various demographic characteristics (Fleming et al, 2009), mode of reasoning (Thorne, 2001; Ge and Thomas, 2007 and Fleming et al, 2010) and national culture (Ponemon and Gabhart, 1993; Tsui, 1996; Hill et al, 1998; Tsui and Windsor, 2001; Dellaportas, 2004 and Fleming et al, 2009). The basic premise of all these studies was to examine auditor's inclination to provide fair judgments i.e. the higher the P-score, the more highly developed is the respondent's ethical reasoning ability. Within Denmark, the Warming-Rasmussen and Windsor (2003) study was the only such study to examine auditors' moral reasoning abilities. They report that the mean P-score of Danish auditors was 35.48 and up to 34% of the one hundred seventy four respondents scored at the post-conventional level thereby categorized as high moral reasoning ability group<sup>1</sup>.

This study adds another dimension in understanding ethical reasoning ability of auditors' from Denmark by examining the ethical judgment of Danish accounting students. This paper looks to build on the Warming-Rasmussen and Windsor (2003) study and extend it by using an audit specific DIT based instrument and by examining two important variables viz. mode of reasoning and the context of dilemmas. Initial results suggest that mode of reasoning and context; have a clear and significant effect on ethical reasoning ability of accounting students.

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<sup>1</sup> Based on the P-scores, Rest had identified 3 levels of moral reasoning viz. pre-conventional, conventional and post-conventional. For the purpose of categorization respondents with scores lesser than 27 are said to be in the pre-conventional level between 27 and 42 in the conventional group and anyone above 42 in the post-conventional level.

The mean P-score for the accounting students was 36.41; this is marginally higher than the mean P-scores for Danish auditors from the study on Danish auditors. This comparison neither supports nor contradicts the uncertainty in accounting ethics literature over who makes better ethical decision, the auditors or the accounting students? However, this statement would be very superficial in the view of different layers to the two independent variables included in this study. We take up an in-depth analysis of the demographic variable i.e. experience and another observed variable i.e. the consensus outcome of discussions in a follow up paper.

Decision-making is a very important, pervasive and central aspect of auditing. Jones (1991) defines ethical decisions as any decision that is legally and morally acceptable to the larger community. Thorne and Hartwick (2001) define morality as an individual's perception of what is good or right. Although there is a difference between moral actions and moral reasoning, in the context of this paper, we consider them the same. Rest (1986) suggests that, moral reasoning process consists of two aspects viz. prescriptive reasoning and deliberative reasoning. The objective of prescriptive reasoning is to resolve moral dilemmas in an ideal way whereas deliberative reasoning explains what would actually be done to resolve moral dilemmas. Thorne and Hartwick posit that, an individual would consider the most ideal and moral solutions during the prescriptive reasoning process, but would consider other non-moral values along with moral values while reasoning deliberatively. Although accounting students may not be exposed to deliberative reasoning from an auditing perspective, it is essential to examine their preparedness in dealing with situations where they may have to consider non-moral values during ethical decision-making. Hence, this study aims to examine the effect of moral reasoning on accounting student's ethical decision-making ability.

Hill et al, (1998) suggest that, auditors who resolve ethical dilemmas regularly formulate better ethical decisions than those who do not resolve ethical dilemmas regularly. In addition to this, Fleming et al (2009) found that accounting students exhibited higher deliberative moral reasoning scores while resolving an ethical dilemma in an audit context than in corporate accounting context. While this finding shows support to the effect of context of dilemmas on ethical decision-making, we argue that accounting students do not face ethical dilemmas on a regular basis. Grounded in this argument, we define context based on ethical intensity it evokes while making ethical decisions. In this study, we have examined a dilemma involving a fraud case and another dilemma involving a mundane case based in an audit setting. The motivation behind this approach comes from audit practice and literature.

From an audit practice perspective, we argue that accounting students are akin to junior auditors. Generally, junior auditors are not expected to make any important decisions. The decisions they could have to make may be low in ethical intensity and may generally involve a procedural dilemma, for example under reporting of the budget.

Hogan et al (2008) cite that awareness about fraud has heightened and so has the auditor's role in detecting fraud. Loebbecke et al (1989) in their survey of audit partners observe that, weak internal controls and dominated management decisions are the conditions that increase the opportunity of fraud. Literature also cites a connection between moral development and detection of fraud. Bernardi (1994) found that audit managers with high level of moral development outperform seniors in fraud detection. In our study, we build a fraud case based on moral development and dilemmas arising out of detection of fraud. An audit engagement is dynamic and fraud detection although is important, constitutes only a part of the audit process. As stated earlier, auditors would also have to make decisions on dilemmas that arise from technical and procedural aspects. In an academic setting, accounting students may not face the same pressures as the auditors in an audit setting would. We therefore examine the preparedness of accounting students in facing a fraud dilemma while also being exposed to a procedural or mundane dilemma.

The remainder of this paper is organized as follows. The next section provides a review of the extant literature and formulates the hypothesis for mode of reasoning and ethical decision-making in a fraud context. The following section provides demographic data about the participants; outlines the research method and explains the experimental manipulations. The following section presents the results and presents a comparison of the results from our study with the Warming- Rasmussen and Windsor (2003) study in the Danish context. The final section concludes the paper with a discussion of results, their implications and the limitations of the study.

## **Background and Hypothesis Development**

### **Mode of Moral Reasoning**

Fraedrich et al, (1994) state that cognitive moral development illustrates the progressive development of moral judgment in individuals through six stages that differ in the nature of reasoning used to answer moral dilemmas. This nature of reasoning comprises of the individual's perception of rules, principles, obligations and expectations. It also reflects the

type of moral philosophy these individuals implicitly call upon. However, Jones and Ryan (1997) report that in this ethical decision making process, there is a disparity between what an individual concludes is right to do in a given situation and what the individual actually does. This contention differentiates moral reasoning into prescriptive reasoning and deliberative reasoning (Thorne, 2001). The use of cognitive moral reasoning in Accounting can be attributed to the works of Piaget (1932) and later on the works of Kohlberg (1969, 1979) and it was developed further by Rest (1986) who developed the DIT to measure an individuals' level of moral development. Cognition is termed as, "what is known by an individual in a subjective sense" (Chen and Olson, 1989), and it contains both the ethical and moral aspects within it. Morality is an individual's definition of what is good or bad. DeGeorge (1993) states that, ethics is a systematic attempt to make sense of an individual's social and moral experience, in such a way, as to determine the rules that govern human conduct, the values worth pursuing and the character traits deserving development in life. Consistent with the literature, we consider the terms ethical and moral to be the considered the same in this study.

As previously stated, Rest (1986) developed the Defining Issues Test and uses a case study technique to assess the moral reasoning levels of the subjects. The DIT presents the subjects with certain Ethical Dilemmas (three-cases or six-cases), each case consists of twelve statements representing different stages of moral development, the subjects then choose the ethical arguments they consider as important. Rest (1986) further states that, subjects choose arguments that correspond to their personal level of moral development. The DIT then measures these arguments based on the percentage of the preferred arguments that are at the highest (principled) level of reasoning and this measure i.e. the P-score. In other words, the higher the P-score the higher is the level of moral reasoning in an individual. Kohlberg categorizes every individual is into three levels of moral development, which are divided into two stages each. Table 1 presents the six different stages.

The stages one and two i.e. the pre-conventional level, individuals exhibit the least P-score. Stages 3 and 4 make up the conventional level, in this stage justice receives precedence. Stages 5 and 6 consist of the post-conventional level and epitomize the highest level of ethical decision-making ability. Rest (1986) suggests that, the P-score depends on the relative importance that a subject gives to items representing stages 5 and 6 i.e. principled moral thinking. In a typical three-case DIT, the score ranges from 0 to 95 and represents the simple sum of scores from stages 5 and 6, which are then converted to a percentage. A higher score indicates higher moral judgment development. Rest (1979, p 46) suggests that, "all major

modern moral philosophers are stage 6. Hence, a higher P-score represents the degree to which an individual's thinking is like that of moral philosophers.

**Table 1: Six Stages of Cognitive Moral Development**

<b>Stage<sup>a</sup></b>	<b>Central Concept</b>
Stage 1	The morality of obedience: "Do what you are told."
Stage 2	The morality of instrumental egoism and simple exchange: "Let's make a deal."
Stage 3	The morality of interpersonal concordance: "Be considerate, nice, and kind and you'll get along with people."
Stage 4	The morality of law and duty to the social order: "Everyone in society is obligated and protected by law."
Stage 5	The morality of societal consensus: "You are obligated by whatever arrangements are agreed to by due process procedures."
Stage 6	The morality of non-arbitrary social cooperation: "How rational and impartial people would organize cooperation is moral."

<sup>a</sup> Adapted from Development in Judging Moral Issues, by James R. Rest, chapter 2, p22.

Furthermore, Rest (1986) suggests that, education has a positive effect over ethical judgment capability of individuals. Literature substantiates this contention; students consistently possess higher DIT scores than audit professionals (Armstrong, 1987; Ponemon and Gabhart, 1993; Thorne et al, 2003; Mintchick and Farmer; 2008 and Fleming et al, 2009). The reason for this could be that, students are not exposed to pressures and threats hence their core beliefs and values are not as often tested as with audit professionals. In an auditing context, Ponemon and Gabhart (1993), Shaub (1994) and Thorne et al (2003) found that work experience has a negative effect on the ethical judgment of auditors. This finding suggests that accounting students would have better ethical decision making ability than the auditor's, the result show from this study shows that students have a higher P-score, but only marginally.

As seen earlier, moral reasoning consists of prescriptive and deliberative reasoning. Thorne (2000) suggests that, in an accounting context, prescriptive reasoning deals with formulation



of professional judgment for an ideal resolution of the ethical dilemma, while deliberative reasoning deals with the intention to exercise professional judgment to resolve an ethical dilemma. In the accounting ethics literature, only few studies have examined mode of reasoning. Thorne and Hartwick (2001) suggest that auditors' exhibit higher moral reasoning scores after prescriptive discussion with their peers and lower reasoning scores after deliberative discussions. Fleming et al (2009) studied deliberative moral reasoning of accounting students from a contextual perspective. They found that students had higher deliberative reasoning scores for audit context than a corporate accounting context. Ge and Thomas (2007) compare deliberative reasoning scores of Canadian accounting students to that of Chinese students, their findings show that the Canadian students scored higher than the Chinese students did. Although it is clear from the Thorne and Hartwick (2001) study that prescriptive discussions are more important, the focus has been on deliberative reasoning. We address this gap in our study by comparing the prescriptive scores with the deliberative reasoning scores. Based on the results of the Thorne and Hartwick (2001) we hypothesize that:

H1: The accounting students' level of prescriptive reasoning would be higher than their level of deliberative reasoning.

### **Context of dilemmas**

This study also examines another independent variable viz. context of dilemmas. We operationalize this variable in the experiment by presenting the participants with two contextually different cases viz. a fraud case and a mundane case. Additionally, as we have based the instrument on the three-case DIT, it is possible to vary the context of cases within the same instrument. The manipulation in our experiment occurs on two levels, one where the context varies within the same instrument and two where the participants respond to a fraud case first or the mundane case first. The use of two different versions of the DIT, the traditional moral dilemma based DIT (Rest, 1979) and Thorne's (2000) audit-specific accounting ethical dilemma instrument (AEDI) proves the value of examining context of dilemmas. The use of two different versions of the DIT shows that, contextually ethical decision-making within accounting is different from ethical decision making within other professions and within daily life. Even within accounting, there can be contexts of differing nature. For instance, Fleming et al (2009) examine moral reasoning abilities of students

within an audit context and a corporate accounting context. As previously stated, the dynamic and differing nature of auditor engagement exposes auditors to different ethical dilemmas continuously. Because of which, accounting educators must put in place dynamic training in ethics, to expose accounting students to ethical dilemmas of different contexts. The results from Harris and Sutton (1995) support this argument. While comparing differences in ethical values across different ethical scenarios viz. fraud, coercive power, influence dealing, self-interest and deceit; they find significant difference in responses between these five scenarios.

The above arguments point towards varying underlying ethical intensity within different ethical dilemmas, we name this contextual ethical intensity. While the philosophy behind the independent variable, context of dilemmas, is to examine the effect of varying contextual ethical intensity on moral reasoning abilities of accounting students, the main aim behind choosing this independent variable is to examine the ability of accounting students to respond to ethical dilemmas dealing with fraud. The importance given to financial fraud stems from its centrality to accounting (Somers, 2001). SAS 99 and ISA 240 define fraud as an intentional act that results in a material misstatement in the financial statements that can be caused either by fraudulent financial reporting or from misappropriation of assets. Low et al, (2008) suggest that, the common feature when a corporate fraud or an accounting scandal occurs is irregularity in financial reporting. Hence, the fraud case in our instrument reflects an ethical dilemma arising out of an attempt at fraudulent financial reporting. Furthermore, literature points to situations where dealing with a fraud scenario leads to differences in ethical decision-making. For instance, Stanga and Turpen (1991) while examining ethical judgment of accounting majors involving five ethical cases, report that in cases involving financial reporting only 20 percent of the respondents agreed that they would assist in misstating the financial statements. Harris and Sutton (1995) report that, out of the five earlier mentioned ethical scenarios; the fraud scenario evoked the strongest ethical value.

Low et al (2008) report from their findings that majority of accounting students were unprepared to act unethically while facing scenarios involving misstatement of financial statements. They also suggest that there is pressure on accountants to show the financial statements in the best possible light. Also, Ponemon and Gabhart (1990) report that auditors scoring low on the DIT are more likely to violate independence rules and that existence of penalty or likelihood of losing the job has a stronger effect on independence judgments than the likelihood of hurting others. We consider and include these three elements in the fraud case. Furthermore, Bernardi (1991) reports that experience, ethical reasoning and a

configuration of experience and ethical reasoning influence an individual's ability to detect questionable accounting entries. While the importance of training in fraud is evident, it is not always that auditors face dilemmas arising out of fraud. Auditors also face situations which evoke procedural or mundane dilemmas i.e. Dilemmas which are low in contextual ethical intensity. Hence, we hypothesize that:

H2: Accounting students moral reasoning ability would be higher while facing a fraud dilemma than a mundane dilemma.

As seen earlier, Fleming et al (2009) observed that accounting student's deliberative moral reasoning scores were higher while facing an audit context. However, we have to view this result from a general perspective as an audit context can contain several sub-contexts, for an instance: fraud. The literature on ethical decision-making in scenarios involving fraud, point towards a stronger response. Thorne and Hartwick (2001) report that prescriptive discussions evoke higher moral reasoning score. With the aim of examining the interaction effect between mode of reasoning and context of dilemmas we hypothesize that:

H3: Accounting student's prescriptive moral reasoning ability while responding to a fraud case would be higher than when responding to a mundane case.

## **Method**

### **Participants**

One hundred and eighty graduate accounting students from three universities in Denmark participated in this study. This resulted in 140 complete and valid responses. The responses of forty participants were excluded from the analysis because they were either incomplete or failed the consistency and internal validity tests. The participants consisted of eighty-two accounting students with audit work experience and sixty-eight students who either were novices or had less than one year of work experience in an audit firm. The overall average work-experience was 3.6 years. As can be seen from the table below, the participants consisted of seventy-eight males and sixty-two females; the mean age of the participants was 26.9.

**Table 2: Demographic Data**

<b>General Descriptives</b>			
<b>Variable</b>	<b>N</b>	<b>Mean<sup>a</sup></b>	<b>Std.Dev</b>
Age	140	26.9	4.3
Auditing Work Experience	82	4.96	3.7
Novices/Less than One Year Work Experience	58	0.06	0.02
Years of Audit + Other Work Experience	140	5.9	5.5
Male	78	27.3	4.8
Female	62	26.6	3.7

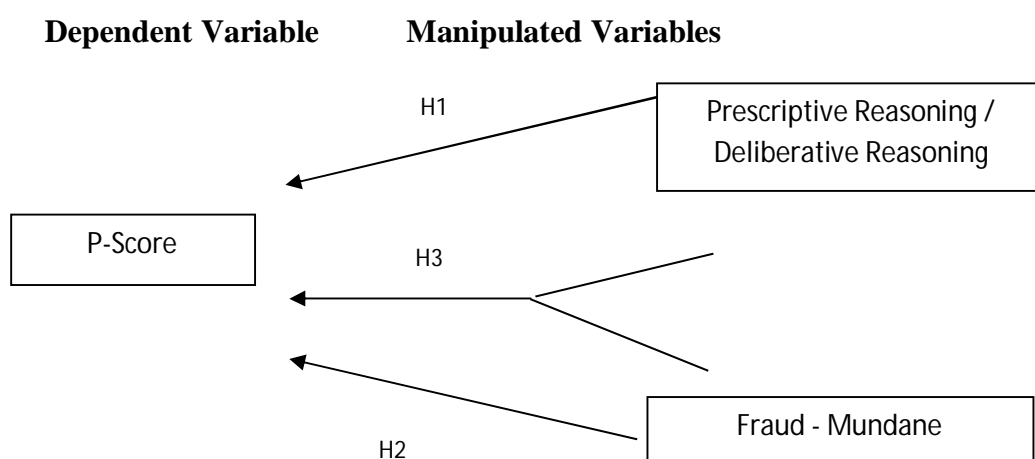
### **Instrument and Experiment Design**

This study adopts a between subjects experimental design that varies the mode of reasoning by making the participants to think either prescriptively or deliberatively. This study adopts a within subjects design where the context of dilemmas was varied by asking the participants to respond to one fraud case and two mundane cases. One group of participants received an instrument where they had to answer the fraud case first followed by the two mundane cases; the other group answered the two mundane cases first followed by the fraud case. For the last hypothesis that tests the interaction between context of dilemmas and moral reasoning, the study adopts a mixed factorial design. The instrument adopts the framework of a three case DIT (Rest, 1986) and builds on the Thorne's (2000) accounting ethical dilemma instrument (AEDI). We have drawn up these three cases keeping in view the two contexts of audit dilemmas. We achieve the manipulation for context of dilemmas by distinguishing between the fraud and the mundane audit cases. The two mundane dilemmas deal with issues related to ignoring an error and modifying negative comments about internal control. The fraud dilemma deals with a situation where in a fraud is detected within the company that is being audited and the engagement partner has to decide what to do, as his decision would have a bearing on the company's going concern. The manipulation for mode of reasoning stands accomplished through the wording of the query for subjects about their assessment of the dilemma. The instrument operationalizes the prescriptive mode of reasoning is by asking the participants are asked to respond to the mode of reasoning by either asking them to decide, what should be done ideally? The instrument operationalizes the deliberative mode of reasoning by asking the participants what would be actually done, if this were to occur in

their audit firm. We have constructed these cases keeping in view the interactions in between hierarchies of an audit team.

Figure 1 depicts the variables used in this experiment at the operational level. The central idea of this experiment is to examine the effect of various factors ethical decision-making abilities of accounting students. Thorne and Hartwick (2001) state that, the P-scores from the defining issues test act as a proxy for ethical judgment within judgment and decision making. In our study, the dependent variable at the conceptual level is ethical decision making ability and we use the P-scores from DIT as a proxy in the operational level. The independent variables examined in this study are mode of reasoning and context of dilemmas. At the conceptual level, mode of reasoning consists of prescriptive and deliberative reasoning. At the operational level, we segregate the instrument into two versions. One version asks the participants to respond ideally i.e. prescriptively and the other asks the participants to decide what would actually be done i.e. deliberative reasoning. At the conceptual level, the cases vary in context in order to examine context. In the operational level, we have drawn up one case that deals with a fraud scenario and two cases with rather mundane scenarios. The subjects receive the fraud case first then followed by the two mundane cases (FMM) or the two mundane cases first then followed by the fraud case (MMF). However, while examining the context, we compare the P-scores of the fraud case with the other two mundane cases of individual participants.

**Figure 1: Overview of the operational level of the experiment**



We conducted a pilot study, using tax auditors and students from universities in Aarhus and Florida. While we find the general research design (figure 2) to be robust, the feedback from

the pilot study helped in re-organizing and strengthening the instrument. The instrument consists of four parts; part one provides the general instructions and an example on how to respond to the individual cases. Part 2 introduces the audit firm, the background and the characters. Part 3 consists of the three cases, here the participants respond to a case first and then make a decision, and they provide answers to twelve statements that they might have thought while making their decisions. The participants are asked to rate these twelve statements and finally they are asked to rank the top four of these twelve statements. At the end of the experiment, the participants fill out certain demographic data and answer certain debriefing questions. The distribution of the instrument was random. The appendix provides an example of the prescriptive version of the instrument.

## **Results**

### **Hypothesis Testing**

We present the mean P-scores for the mode of reasoning and context of dilemmas in panel A of table 3. The mean P-score for prescriptive reasoning are higher than the mean P-score for deliberative reasoning. We do not provide the mean P-scores for interaction between deliberative reasoning and context of dilemmas, as H3 only examines the interaction between prescriptive reasoning and a fraud case. This finding underlines the importance of thinking ideally and without the influence of non-moral elements. Hypothesis 1 stated that the P-scores for prescriptive reasoning would be higher than that of deliberative reasoning. The ANOVA results presented in panel B indicate that moral reasoning scores while engaging in prescriptive reasoning (mean = 38.02) are significantly higher than when participants engaged in deliberative reasoning (mean = 34.84;  $F = 4.65$ ;  $p = 0.033$ ). This result rejects the null hypothesis and provides support for hypothesis 1. This result is consistent with the findings of Thorne and Hartwick (2001); thereby providing support to the claim that mode of reasoning does have an impact on moral reasoning ability of accounting students.

**Table 3: Descriptive Statistics and ANOVA results**

**Panel A: Descriptive Statistics**

Variable		N	Mean
Prescriptive		69	38.02
Deliberative		71	34.84
Fraud		140	10.14
Mundane		140	13.13
Prescriptive-Fraud	FMM	35	11.33
	MMF	34	10.78
Prescriptive-Mundane	FMM	35	14.10
	MMF	34	12.84

**Panel B: ANOVA<sup>d</sup> results**

Variable	Hypothesis	Model	Sum of Squares	Df	Mean Square	F	p-value (two-tailed)
Mode of reasoning	H1	Regression	354.58	1	354.58	4.65	0.033 <sup>a</sup>
		Residual	10512.92	138	76.18		
		Total	10867.50	139			

<sup>d</sup> Dependent Variable: DIT Score

**Panel C: Within subjects Repeated Measure (Wilk's Lambda) for H2 and H3**

Variable	Instrument	Hypothesis	Value	F	Hypothesis Difference	Error Diff	Sig	Partial ETA
Context of Dilemmas	FMM	H2	0.897	7.573	1,00	66,00	0,008	0,103
	MMF	H2	0.853	12.377	1,00	72,00	0.001	0.147
Context X Reasoning	FMM	H3	0.998	0.154	1,00	71,00	0.695	0.002
	MMF	H3	0.991	7.585	1,00	65,00	0.449	0.009

As observed from the above tables, the mean P score for participants responding to a fraud<sup>2</sup> case is lower than the mean P score for a mundane case and shows a significant relationship for context of dilemmas within both the sets of participants. Although this result does not support H2, this results when taken in perspective of the findings reported by Bernardi (1991). Here Bernardi reports that, experience and ethical reasoning influence the ability of individuals to detect questionable entries in the financial statements. This finding highlights the ability of accounting students in dealing with dilemmas related to fraud. This finding also underlines the importance of a hands-on, practical and diverse training in ethics, which considers context of dilemmas as well. Hypothesis 2 stated that the moral reasoning scores while facing a fraud case would be higher than when facing a mundane case. The ANOVA results performed for context of dilemmas displayed in panel c show a highly significant relation between context of dilemmas and moral reasoning ability. This provides support to the hypothesis that the context of dilemmas has a considerable effect over moral reasoning abilities of Danish accounting students.

Hypothesis 3 examines the interaction effects between mode of reasoning and context of dilemmas. As seen with hypothesis 1 and 2, students using prescriptive reasoning and students facing a fraud case first, had greater P-scores than did students using deliberative reasoning and mundane cases. Hypothesis 3 combines both these variables and examines their interaction effects. The ANOVA results presented in from Panel C do not support the claim that prescriptive reasoning scores would be higher while answering a fraud case than the mundane cases. This lack of interaction effects between these two independent variables could be because of the presence of order effects.

## **Subsequent Analysis and Robustness Check**

### **Order Effects**

In order to ascertain the presence of order effects, we present a case wise break-up of the mean p-scores for the interacting variables Table 4. From the below mentioned values it is clear that the mean p-scores of students using prescriptive reasoning while responding to a fraud case is higher than the mean p-scores of students using deliberative reasoning while

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<sup>2</sup> The fraud case here represents the group of students who answered the fraud case first, followed by the two mundane cases. The mundane case represents the group of students who faced the two mundane cases first.



responding to a fraud case. Similar result occurs when students use prescriptive reasoning while facing a mundane case.

In addition, the results seem to show both recency and primacy effects. The mean p-score of accounting students facing a fraud case first seems to be increasing from case A through to case C, thereby suggesting a recency effect. While the p-scores of students facing the mundane case first, are seen to be decreasing. This implied a primacy effect as participants are placing emphasis on the information processed early in the sequence. We performed an ANOVA test first with the p-scores of case A as a dependent variable with mode of reasoning and context of dilemmas as independent variables. The next block had the P-scores from case B as dependent variable and we included the P-scores from case A as an independent variable along with the two original independent variables. In the third block, P-scores from case C become the dependent variable and we added the P-scores from case B to the three independent variables used in the earlier block. The results were significant for case A and C, while for case B we found no significant relation. These results carry considerable importance as they show that prescriptive reasoning is more important than deliberative reasoning. Surprisingly in the extant literature, there have been very few studies focusing on auditors or accounting student's prescriptive reasoning.

**Table 4: Mean P-scores and Case-wise ANOVA results showing Order Effects**

Case	Prescriptive		Deliberative		F	p-values
	FMM	MMF	FMM	MMF		
Combined	39.52	36.47	36.14	33.33	4.39	0.014
Case A	11.33	13.53	9.74	13.73	7.74	0.006
Case B	11.24	12.16	11.84	10.91	1.25	0.27
Case C	16.95	11.11	14.56	8.67	32.98	0.000

#### **Comparison with the Warming-Rasmussen and Windsor (2000) study**

We compared the mean P-scores from this study to the p-scores from the Warming-Rasmussen and Windsor (2003) study. As stated earlier, the P-scores of the accounting students were marginally higher than the P-scores of Danish auditors' from the other study. The overall mean P-score was 36.41; this is consistent with extant literature. Table 5 shows the analysis of results from both the studies. Rest (1986) divides the P-scores into three levels

viz. scores below 27 belong to the pre-conventional group, and scores in between 27 and 42 make up the conventional group, while the scores above 42 belong to the post-conventional group. The comparison shows that accounting students had higher scores in the pre-conventional group whereas lower scores in the post-conventional group.

The P-scores observed in our study are consistent with the literature, Shaub (1994) reported a P-score of 39.7 for auditing students who have not had an ethics course, and Fleming et al (2009) reported a P-score of 34.37 for accounting students from USA. The difference between the results of our study and the Warming-Rasmussen and Windsor (2003) study lies in the distribution of participants in the three levels. Almost 50% of the students belong to the conventional group; this might suggest that students view justice and fairness as the hallmarks of ethical behavior. However, these differences in the P-scores of both the studies might be due to the use of different versions of the DIT.

**Table 5: Comparison of DIT P Scores**

			<b>Pre- Conventional Group</b>	<b>Conventional Group</b>	<b>Post- Conventional Group</b>
<b>This Study</b>	<b>Average P-score</b>	36.41	24.6	34.93	46.98
	<b>Std. Dev</b>	8.84	3.01	3.64	4.42
	<b>N</b>	n=140	n=29	n=69	n=42
	<b>% of N</b>		20.7%	49.3%	30%
<b>Warming- Rasmussen &amp; Windsor (2003)<sup>a</sup></b>	<b>P-score</b>	35.48 <sup>b</sup>	19.95	34.90	52.82
	<b>% of N</b>		37%	29%	34%

<sup>a</sup>The respondents were auditors from international audit firms in Denmark.

<sup>b</sup>The instrument used was a three story ethical context DIT.

## **Discussion**

This study has examined the effect of mode of reasoning, context of dilemma and their possible interaction effects on the moral reasoning ability of accounting students. We examined the interaction effects to understand the mitigating explanations for the expected

relationship between prescriptive mode of reasoning and the fraud context of dilemma. Using a three-case audit-specific and contextually diverse DIT based instrument, we measure accounting student's moral reasoning ability against three independent variables. The experiment produced three key findings. Firstly, we found that prescriptive reasoning produced better moral reasoning scores than deliberative reasoning. These findings were consistent with the results from the Thorne and Hartwick (2001) study. This finding gives further strength to the claim that different types of discussion will have very different effects on accounting student's moral decisions. Moreover, these findings show that what should ideally be done, may not always be actually done. The policy implication of this study for accounting education is that ethics training must be diverse and practical. Shaub (1994) suggests that ethics education makes a difference in the moral reasoning ability of auditors and accounting students. The aim of ethics education must be to improve and maintain accounting students' moral decision-making abilities. Hence, students are encouraged students to think ideally, while giving them exposure to the actualities of the profession. Ethics training must create awareness among students to the possibility that there might be a difference between what they think should ideally be and what is actually done. Ponemon (1992) recommends that there is a need to create awareness among students about their duties and responsibilities to the society, in order to disassociate any self-interest.

The second finding of this study highlighted the effect of context on moral reasoning ability of accounting students. We found that student's scores were lower in the fraud case. These findings not only provide support for the concept of contextual ethical intensity but also show that accounting students are inadequately prepared to face ethical dilemmas of high contextual ethical intensity. Previous studies on context, focused on the context either being audit specific or based in corporate accounting (Fleming et al, 2009). The findings from our study imply that contexts are diverse, and hence ethical training needs to be diverse as well. Radtke (2004) suggests that ethics educators should use multiple short scenarios from different accounting contexts to broaden students' exposure to diverse ethical issues. However, the findings from our study suggest that ethical training must not only involve dealing with contexts from different technical topics but also those with varied ethical intensity. These audit specific or corporate accounting specific contexts should indeed form the background for ethics training, but these would be very general backgrounds. As the uncertainty and unpredictability within these contexts increases, the formal control mechanisms become less effective and hence there needs to be flexibility and adaptability in

influencing auditors' behavior (Caldwell and O'Reilly, 1995). The accounting students not only need training to deal with an ethical dilemma from a technical perspective but also from an ethical perspective.

The third and final key finding from this study shows the absence of interaction effects between mode of reasoning and context of dilemmas. While we hypothesized that moral reasoning scores would be high when accounting students reason prescriptively while responding to a fraud case, the results did not support this contention. This result implies that ethical dilemmas can be diverse and complex and that accounting students are inadequately prepared to such complexity in ethical decision-making. Gaa (1993) suggests that auditors' have dynamic and differing nature of engagements and work assignments because of which they continuously face different ethical dilemmas. The results from our study strengthen this position and mirror the rich and dynamic nature of auditor ethical decision making. Accounting students' do not necessarily face these diverse situations on a regular basis, unless they have had prior work experience in an audit firm. Hence, it becomes necessary for ethics educators to incorporate a wide range of ethical dilemmas in ethics training and expose the students to these dilemmas on a regular basis. LaSalle (1997) suggests that generally ethical decisions are often individual decisions. However, Gibbins and Mason (1988) suggest that auditors generally make professional judgment following a discussion of contentious issues with other auditors. The presence of order effects also points to the effect on accounting students not just by the context of dilemmas but also by the decisions taken while dealing with those diverse dilemmas. One of the future research ideas would be to examine the effect of consensus in ethical decision-making.

The findings presented in this study are a subject to two caveats. The first caveat concerns the use of DIT as a psychometric instrument to examine moral reasoning. Firstly, the DIT is a time consuming and complex instrument. Although we used a three-case DIT, some of the participants found certain statements to be somewhat difficult to understand and ran a risk of responding to the case without much thought. Secondly, the DIT has drawn criticism regarding its gender bias. The second caveat concerns the setting of the experiment. Culturally Denmark ranks high on Hofstede's cultural dimensions, this equates to a highly ethical society. Hence, we cannot generalize the findings of our study to accounting students from other countries.

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