Establishment of GAAS: Impact of an Auditing Fraud

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This empirical paper reports on the results of a study conducted with undergraduate accounting students. The study focused on measuring student awareness of the McKesson & Robbins fraud (1924-1937). Within this paper, a detailed history of the fraud is provided to illustrate the fraud's impact on the modern accounting profession, particularly as it leads to the establishment of the Generally Accepted Auditing Standards (GAAS). Results of the study suggest that current undergraduate accounting students have little or no knowledge of this influential fraud.

INTRODUCTION

In the past few decades, accounting scandals have made headlines in nearly every form of news media. From Bernie Madoff to the bankruptcies of Enron and WorldCom, these scandals have created a large public outcry for action. Investors want assurance that they will be protected from corporate fraud. The aftermath of Enron saw the creation of the Sarbanes-Oxley Act (2002) and the establishment of the Public Company Accounting Oversight Board (PCAOB) (Baker, 2006). Many people blamed the string of corporate transgressions on audit failures, such as Arthur Andersen's failures with Enron. However, this was not the first time a lapse in auditing standards and procedures allowed a major corporation to commit fraud.

Yet, many decades before the scandals of Enron and WorldCom, there occurred an "impactful" fraud with McKesson & Robbins Inc. This fraud could be considered impactful from the standpoint of its effect on auditing standards. This was the first time the accounting profession had come under public scrutiny and government criticism (Barr, 1987). It seems as though the elaborate and detailed fraud at McKesson & Robbins Inc. has been lost through the passage of time. Inside and outside of the classroom extra emphasis is being placed on the more recent scandals because their effects are still being felt today. The fraud at McKesson lasted for 13 years before its discovery in 1937 created a series of events that profoundly impacted the accounting profession at the time (Baxter, 1999). The lack of knowledge of the

fraud at McKesson & Robbins Inc. prevents a full understanding of how the accounting profession has evolved through the years.

This paper examines how much knowledge current accounting students have about an event that forever changed their future profession. Accounting students are held responsible for knowing the rules, concepts, and proper methods of their chosen profession, but there is a whole other side to accounting. The reasons why certain standards and procedures are in place are lost on many students. To address these issues, this study employed a survey of accounting students at various points in their accounting curriculum to determine their current level of knowledge. The questions were delivered in a special format to gauge whether or not survey respondents really knew about the fraud at McKesson & Robbins Inc.

Background: Literature Review

Serial fraudster Philip Musica was already an experienced fraud architect before he organized one of the most influential frauds to date. Musica was convicted of fraud twice by the time he was thirty years old (Clikeman, 2003). His first conviction came in 1909 when he was caught altering shipping invoices and bills of lading to avoid paying the full duty tax on the imported goods sold by A. Musica & Son. Musica was arrested a second time when he used forged invoices from his human hair business to steal over $600,000 from 22 banks (Thompson, 1953). After the fraud convictions it became time for Musica to reinvent himself and leave his criminal record in the past.

In 1919, Philip Musica took the alias Frank D. Costa and founded Adelphi Pharmaceutical (Clikeman, 2003). Prohibition had just been ratified as the 18th amendment, but some companies were granted alcohol permits by the U.S. government so they could produce certain goods such as hair tonics and medicines. Costa (Musica) was able to obtain a federal permit for 5,000 gallons of alcohol per month. He used the alcohol to produce products, which he then sold to bootleggers. The bootleggers were easily able to separate the alcohol from the product using a still and then cutting the mixture with water. The prosperous business lasted only a few years due to conflicts between Costa and his various business partners forced Costa to inform the U.S. Treasury Department's Alcohol Tax Unit of Adelphi's underground business (Thompson, 1953). Yet another failed business only led Musica to create an even bigger scheme.

In 1923, Philip Musica became F. Donald Coster MD, PhD and founded Girard & Co (Thompson, 1953). In an effort to add legitimacy and build a reputation to exploit in the future, Coster (Musica) hired Price Waterhouse & Co as auditors. At the time Price Waterhouse & Co was widely regarded as the best accounting firm in the U.S. Top management once referred to them as "the blue ribbon firm in America" (Baker, 2006). Musica was a smart and observant man who probably had the talent to make money in legitimate businesses if he was willing to be patient. However, he was looking to make money fast. Coster observed the Price Waterhouse auditors and noticed that they did not confirm accounts receivable or physically inspect inventory (Thompson 102). In fact, auditors did little more than accept the numbers handed to them by the company's managers.

Between 1924 and 1926 Coster completed the purchase of McKesson & Robbins Inc., a well-known 90 year-old pharmaceutical company, for $1 million cash (Baxter, 1999). The hiring of the best accountants in the country and the acquisition of a highly reputable name is clear indicator that Coster wanted to be viewed as a bona fide businessman. Operating a legitimate business was something Musica and his three brothers knew little about. Coster (Musica) employed his three brothers who assumed various aliases to help him create and maintain his elaborate fraud. George Vernard operated W.W. Smith & Co where he used seven different typewriters and many different types of stationary to write purchase orders from fictitious companies. Robert Dietrich forged shipping documents to give the appearance that inventory was delivered to those companies. George Dietrich was the McKesson & Robbins treasurer and he transferred money among several banks to simulate cash payments and receipts. The four brothers split a .75 percent commission McKesson & Robbins Inc. paid to W.W. Smith & Co (Clikeman, 2003). To an outsider everything appeared to be legal. All of the paperwork required to perpetrate the fraud was equivalent to the amount used by 85 companies (Lodge, 1987).

Discovery

In 1937, McKesson & Robbins Inc. along many other businesses experienced a business recession. The board of directors wanted to halt the growing debt problem by converting $4 million ($49.1 million today) into cash (Baxter, 1999). This posed quite a problem to Coster (Musica) because the crude drugs inventory only existed on paper. Coster's only option was to pump in the cash himself and decrease inventory. This was the option of last resort for Coster. Instead he tried to convince Julian Thompson, the company's comptroller, to take out a $3 million loan, but before this could occur, Thompson had to attest to the financial statements of McKesson & Robbins Inc. (Thompson, 1953). Thompson discovered that $21 million ($258 million today) of crude drugs reportedly held in Canada was completely uninsured (Thompson, 1953). The discovery only raised Thompson's suspicions even further and eventually led to him finding the fraud.

Julian Thompson went to the New York Stock Exchange in 1938 to inform them of the fraud. The NYSE suspended all trading of McKesson & Robbins shares. Within the crude drug division, which was where the fraud was confined to, there was a total of $19 million ($233 million today) in fake assets (Lodge, 1987). There was $10 million ($123 million today) in nonexistent inventory and another $9 million ($110 million today) in phony accounts receivable (Baker, 2006). In total, 20% of McKesson & Robbins' $86,556,270 ($1.06 billion today) total assets were a lie ("Business: New Accounting, 1939). For over a decade Coster was able to conjure up an entire division of the company while keeping his true intentions hidden from everyone.

McKesson & Robbins Inc. was successful when other companies were not. A fact that led prominent republicans to ask Coster (Musica) to consider running for them in the 1940 Presidential election (Baxter, 1999). Musica committed suicide in 1938 before he could be arrested. The lie had gone on for so long that he was even buried with F. Donald Coster engraved on his headstone. In total he stole $2.9 million ($35.6 million today), but very little was ever recovered since most of the money was used to pay off former associates who knew him as Philip Musica (Thompson, 1953). There were many factors that allowed a fraud of this size, which had never been seen before, occur for such a long time.

External Causes

A fraud of this magnitude would be hard to execute if others did not step out of the way. Price Waterhouse's yearly audits never interfered with the fraud but gave outsiders the impression that McKesson & Robbins was an upstanding organization. However, the audit was full of so many holes that the fraud slipped right through one of them. Price Waterhouse did not conduct detailed checks of cash transactions and spent most of their time reviewing the balance sheet while never physically inspecting inventory amounts reported by management. In addition, McKesson & Robbins management forced Price Waterhouse to cut down on the amount of work done (Baxter, 1999). The auditors failed to question management about certain records and why their work was being constricted.

The auditors never questioned why there were often large year-end purchases of inventory, nor did they notice that shipping dates for goods traveling from Canada to New York did not allow for enough shipping time (Baxter, 1999). Had the goods actually been shipped it would have taken longer than what the records showed. Coster based his fraud on his experience with auditors, which is why the auditors just accepted the fact that $9 million of accounts receivable, the same amount that was discovered as phony, was always in order and always collected in full. Furthermore, there were never any sales returns for damaged goods, or bad debts due to uncollectible accounts (Baxter, 1999.) As stated previously, the fraud was confined to only the crude drugs division of McKesson & Robbins Inc. It apparently never seemed odd to the auditors that while other divisions struggled, crude drugs always reported a profit (Thompson, 1953). To the casual observer everything was in order all the time, which would lead some to suspect that operations were too good to be true.

Price Waterhouse's auditors made little effort to understand the crude drug business (Baxter, 1999). An auditor in any era will have difficulty conducting an audit without first learning about the client's business operations. Probably the most important fact with regards to the fraud is about the audit procedures. The fraud occurred while Price Waterhouse's auditors followed the generally accepted audit

procedures (Baker, 2006). One would think that audit procedures were instituted to prevent and catch fraud, but at that point in time the profession was still evolving and this was not the case. From 1923 to 1937, Price Waterhouse accepted fraudulent records for accounts receivable and inventory in the crude drugs division (Doron, 2009).

Fraud Aftermath

The fraud placed the entire accounting profession in the general public's crosshairs. As with Enron, the public lumped all accountants in with those whom they believed let the fraud at McKesson & Robbins occur. Further investigation revealed there was more to the case than originally thought.

Prior to the fraud's discovery, the outgoing American Institute of Accountants (AIA) President, Robert Montgomery, stated that the accounting profession in 1937 did not need to institute changes and strive to improve. In his final speech, Montgomery stated, "…I ask the profession to stand still. I do not want it to change" (Doron, 2009). Accountants felt their profession was in good shape and right where it needed to be, a fact supported by the AIA's response after the fraud was discovered. The AIA believed the fraud was very unlikely to occur again (Rodgers, Rodney, Dillar, and Yuthas, 2005).

The SEC began its formal investigation on February 20, 1939. It interviewed twelve expert witnesses from public accounting to determine generally accepted auditing procedures when the fraud occurred. Based on the testimony of the accounting professionals, the SEC determined that auditors were not required to confirm accounts receivable or physically inspect inventory (Edwards, 1956). The ruling directed some of the blame away from the auditors since they did not fail to follow procedure. After gathering 4,587 pages of testimony and 3,000 pages of exhibits, the SEC agreed and officially stated that Price Waterhouse did follow the accepted procedures mandatory for auditors at the time the audits were conducted (Lodge, 1987). However, the SEC also believed that the overstatement of assets would have been discovered through independent confirmation (Edwards, 1956). Even though the auditors were cleared of wrongdoing on a technicality, they still could have done more. In their report, the SEC said Price Waterhouse "failed to employ a degree of vigilance, inquisitiveness, and analysis of the evidence available that is necessary" (Baxter, 1999).

Of course the aforementioned failure needed to be dealt with and measures needed to be put in place to help ensure there would never be a sequel. The new audit procedures included confirmation of receivables, physical inventory inspection, greater review of internal controls, and more responsibility for auditors and management.

Each of the changes forced auditors to ask management more questions and be more vigilant when conducting audits. The changes were introduced in May 1939, which was just six months after the SEC had concluded its investigation (Doron, 2009). In the summer of 1939 the AIA selected a Committee on Auditing Procedures (CAP) and their first Statement on Auditing Procedure (SAP), *Extensions of Auditing Procedure,* made it mandatory to observe inventory and confirm accounts receivable (Clikeman, 2003).

The committee issued more statements, but it became apparent that a set of standards was needed to create a framework on auditing procedure. After the SEC started to require auditors to mention compliance with generally accepted audit standards in their reports, the AICPA issued a brochure in 1947 entitled, "Tentative Statement of Auditing Standards—Their Generally Accepted Significance and Scope" (AICPA, 2010). The brochure led to the creation of Generally Accepted Auditing Standards (GAAS). GAAS was the end result of a chain of events that were set in motion by the discovery of the fraud at McKesson & Robbins Inc.

Price Waterhouse had a different opinion about the new statements on auditing procedure. They had taken a defensive posture since the fraud was disclosed because many people still felt they deserved to be blamed. Price Waterhouse thought the new procedures were a result of hindsight. Furthermore, they believed that they should not be faulted for choosing to only follow the mandatory accounting procedures while disregarding additional, recommended procedures (Niemeier, 2007).

During the course of the investigation, Price Waterhouse supported their actions with the argument that they followed the required procedures and that the management at McKesson & Robbins Inc. gave

instructions that limited the scope of the audit. Throughout the entire ordeal this was the auditors' main defense to their critics. Although the main victims of the fraud were stakeholders and stockholders, the auditors also claimed to be victims of the fraud (Edwards, 1956). There may be some basis to this argument since Coster (Musica) was able to fool everyone. In the end, Price Waterhouse did not accept any liability for the fraud nor did they accept guilt by negligence (Edwards, 1956). Critics argue that their actions speak to the contrary.

Price Waterhouse returned $522,402.29 ($6.41 million today) in audit fees to McKesson & Robbins Inc. (Edwards, 1956). Although the refund was never intended to be a sign of guilt, the refund seemed reasonable since Price Waterhouse failed to recognize some noticeable inconsistencies and never pursued management for further questioning. It is possible the fraud may have been uncovered sooner if the auditors employed more vigilance. Whether this is the case is impossible to ascertain and must be left to speculation. Many smaller accounting firms confirmed accounts receivable and inventory when conducting their audits unlike Price Waterhouse, which never followed these recommended procedures (Doron, 2009). The accounting profession had to learn its lesson first before deciding to implement real changes.

The New McKesson & Robbins Inc.

As one might suspect, Price Waterhouse & Co were let go as auditors of McKesson & Robbins Inc. William J. Wardall, the McKesson & Robbins estate trustee, hired S.D. Liesdorf & Co to be the new auditors ("Business: New Accounting", 1939). Wardall was clearly trying to create distance between the new look McKesson & Robbins and its recent past. The reorganization of McKesson & Robbins Inc. was completed in 1942. It was once again a privately owned company (Baxter, 1999). The guidance by Wardall and the fact that the fraud was limited to only one division of the company allowed McKesson & Robbins Inc. to continue as a viable pharmaceutical company.

Today McKesson & Robbins Inc. is known simply as McKesson and is traded on the New York Stock Exchange under the symbol (MCK). Their current auditors are Deloitte. According to the McKesson corporate website, in 2010 they posted their highest profit in the last five years with an income of $1.263 billion and earnings per share of $4.70 per share (*mckesson.com,* 2011). McKesson specializes in selling drugs, healthcare products, surgical supplies, medical equipment, and pharmacy management software to hospitals and physician offices. McKesson's corporate history fails to mention the fraud along with the time period during which F. Donald Coster (Philip Musica) was at the helm. The fraud may be a dark chapter in the company's history, but its ramifications are having long lasting effects.

THEORETICAL GROUNDING IN THE FRAUD TRIANGLE

Overview of the Fraud Triangle

Donald Cressey, a sociologist and criminologist, created the fraud triangle after conducting interviews with nearly 200 convicted embezzlers during the 1940s (Wells, 2001). After analyzing the responses the embezzlers provided as to why they took money in the first place, Cressey was able to pinpoint what he saw as the main reasons for committing fraud. Pressure to satisfy financial obligations led individuals to commit fraud in order to obtain the necessary funds (Wells, 2001). Two additional elements, classified as opportunity and rationalization, came later to form the triangle. Opportunity is defined as the chance to commit fraud and then conceal the crime. Rationalization is defined as the ability to justify the fraud as not being a crime (Wells). In others words, it is when the perpetrator is able to provide justification for committing the fraud.

McKesson & Robbins Fraud

It was not until nearly 40 years after the discovery of the fraud at McKesson & Robbins that auditors were required to formulate a plan for detecting fraud. In 1976, Statement on Auditing Standards (SAS) 16 was issued and stated that auditors need a plan for searching for items that might affect the financial statements (Kranacher and Stern, 2009). It became imperative for auditors to understand each element of

the fraud triangle and thus be able to recognize their potential existence within the organization they are auditing. Consideration of fraud in a company's financial statements was an afterthought until the scandal at Enron occurred and Auditing Standards Board (ASB) was forced to react. In 2002, SAS 99: Consideration of Fraud in Financial Statements was issued (Kranacher and Stern, 2009). Not only must auditors create a plan for detecting fraud, but they must also assess the risk that fraud is occurring or will occur in the future by applying the fraud triangle and other training initiatives.

The McKesson & Robbins fraud occurred prior to the inception of both the fraud triangle and the pronouncements issued by the Auditing Standards Board mentioned above. After applying the fraud triangle it was discovered that all three elements were present throughout the fraud. Philip Musica put pressure upon himself to find a way to live a life better than that of his parents who were Italian immigrants. His parents made their way to the slums of New York City, but Musica, after spending time at the docks, saw how the other half lived (Thompson, 1953). Musica had a strong desire to achieve wealth quickly and making money the honest way took too long for him (Thompson, 1953). He developed a taste for high living early on in life (Baxter, 1999). Musica felt pressure to achieve his preferred status in life and chose the fast, but illegal path to achieving status in New York society.

As mentioned earlier, Musica made several attempts at utilizing fraud in get rich quick schemes, but each time he was apprehended fairly quickly. The opportunity to commit another fraud was created by a lack of proper accounting procedures. Posing now as F. Donald Coster, Musica noticed that his auditors, Price Waterhouse & Co, did not confirm accounts receivable or physically inspect inventory (Thompson, 1953). The absence of these procedures created an opportunity that Musica seized. The willing help he received from his brothers to conceal the crime, and the lack of questioning by investors on why his company was always successful when others were not, helped the fraud sustain itself.

Philip Musica is the only person who knows why he defrauded so many for so long. His exact justification is subject to speculation. Based on research presented in the fraud area, a possible of list of reasons can be inferred. Musica was a novice accountant so he may have thought that his actions were unimportant since the auditors did not check inventory and accounts receivable. A more plausible explanation would be that the fraud was committed to attain what Musica felt life owed him. He had rough childhood and probably felt he was due some compensation for this hardship. The fraud was then maintained for so long to protect his new image, the company, and more importantly to ensure that Musica had enough funds to pay off former criminal associates who were blackmailing him. The exact rationalization used for this fraud disappeared with its mastermind when he took his own life.

METHODOLOGY

The first objective of this study was to construct a detailed history of the McKesson & Robbins fraud. This was completed through a literature review and application of the fraud triangle. The second objective of this study was to develop and validate an instrument that measures awareness of the fraud among university level accounting students. For this study awareness was defined as knowledge of facts that distinguish the McKesson & Robbins fraud from others. There are specific facts that quickly differentiate this fraud case from others and would, if known, indicate some level of knowledge.

The process of constructing the proper instrument followed an approach adapted from Benson and Clark (1982), Shinde (2009), and Spector (1979). The flowchart methodology was used to create and validate the survey instrument utilized to measure student awareness of the McKesson & Robbins fraud.

Phase I – Statement of Purpose and Literature Review

In Step 1 of Phase I, a statement of purpose for the study must be formulated. The purpose of this study is to determine the level of knowledge accounting students have about the landmark fraud at McKesson & Robbins Inc. This accomplished in the introduction.

In Step 2 of Phase I, a theoretical grounding is required. An exhaustive literature review was conducted and this led to the retroactive application of the fraud triangle. The fraud was analyzed using a concept created nearly a decade after its discovery.

Phase II-Qualitative Evaluation

Actual construction of the survey instrument occurs during phase II. Initial drafts of the instrument were based on information gathered from the literature review. The key or most important facts of the fraud were included in the instrument. Expert panel one removed initial items that were determined to be unnecessary.

Certain questions were characterized as being overly complex for the nature of this study. The wording of questions was simplified to an eighth grade reading level and the length of question reduced to a single line. A question that referred to the audit topic of scope limitation was removed completely after consulting with expert panel 1. Scope limitation of an audit is a technical concept that survey respondents may not be familiar with due to their level of accounting education. General knowledge of the fraud was still measureable without the inclusion of this question.

Further refining consisted of transforming some questions into positive or negative questions. A negative question is one where the statement is false and disagreeing with it would indicate knowledge. A positive question is one where the statement is true and agreeing with it would indicate knowledge. A mix of negative and positive questions was included with the clear intent of detecting true knowledge while reducing the effect guessing would have on the results. A question on the link between the McKesson & Robbins fraud and the creation of the generally accepted auditing standards (GAAS) was changed to include the term "indirectly" after further research revealed the inclusion that this term would increase it content validity. The last content adjustment dealt with the anchors of the last question that measures overall knowledge. Anchors with adjectives that reflected no knowledge and complete knowledge were not decided upon until after several revisions.

Expert Panel two was consulted to determine grammar and sentence structure validity for each question. The panel comprised of fifteen 15 undergraduates who are not majoring in accounting. In addition, none of the panel members have ever taken an auditing course. The survey was administered to this panel to ascertain the level of clarity of each item of the survey instrument. In total, fourteen responses were used to gauge clarity. One response was thrown out because it was evident that this panel member was trying to respond to the survey items rather than indicate his or her level of perceived clarity.

TABLE 1
DEMOGRAPHICS OF EXPERT PANEL TWO

Class Status		Field of Study		Average Age
Freshman	1	Business-Non Accounting	3	20.57
Sophomore	4	Corporate Communications	3	
Junior	7	Health	3	
Senior	2	Family Consumer Science	2	
Total	14	Hospitality Management	2	
		Athletic Training	1	
		Total	14	

The recommendations made by Expert Panel Two led to several additional modifications being made to the survey instrument. Question five was simplified further after five of the fourteen respondents indicated the question was only somewhat understandable. Six respondents found question nine to be not understandable or somewhat understandable. However, no changes were made to this item as it appeared panel members were trying to answer the question rather than indicate its level of clarity to them.

Question six was the most scrutinized. Hours were spent trying to rephrase and simplify it. The question could not be removed due to its level of importance for the study. It is a critical part of the survey because it refers to the key distinguishing fact of this fraud. Although Price Waterhouse & Co followed standard audit procedures; these audit procedures were inadequate as they allowed the fraud to

continue and indirectly led to the creation of GAAS. It was this component of the fraud that had most profound impact on the accounting profession. After the final revision, 57% of expert panel two members felt the question six was completely understandable.

Phase III-Quantitative Evaluation

The final survey instrument was piloted in one undergraduate accounting class at a medium sized Midwestern university. Financial Accounting Theory II is a required course for the accounting major at this university. This sample selected was a convenience sample. The purpose was to gather input from a sample of students that in general reflected the target respondents of the survey. In total 28 responses were gathered with a response rate of 100%.

Phase IV-Validating the Instrument

This step involved final administration of the survey instrument to accounting students. According to Spector (1979) and Nunally (1978), ten responses per item are needed in order to develop a valid instrument. This was achieved through the final administration.

Initial Pool of Items

A through literature review of academic journals, mainstream literature, academic speeches, and papers written by university professors, was conducted to generate the initial pool of items. In total twelve items were included in the initial pool. After a review performed by expert panel one, which was comprised of individuals from academia, the item pool was reduced to nine questions. These nine items were used for the pilot study and later for the final administration. The review by expert panel two merely determined how to structure each item question so that it would be easy for each study participant to provide a response without requiring a significant amounts of time.

Content Validity

Content coverage and content relevance combine to create content validity (Messick, 1980). The literature review provided enough items to give strength to the study. Reducing the total number of items from twelve to nine after consulting with the first expert panel provided content relevance. These steps ensured that content coverage and relevance were achieved.

External Validity

External validity is the extent to which the results generated by the study's sample can be extended to the population. For this study the population is comprised of all university level accounting students in the United States. Even though the sample used was not randomly selected, the researcher can find no reason to believe that the results generated from the population of students at other universities in the U.S. would be different from those presented in this study. The findings of this study should be generalizable to the greater population. Therefore, external validity is expected to be quite high.

Common Method Biases

A potential problem with any survey research is common method biases that can create variances. Variance that is created by the measurement method employed is problematic for research (Podaskoff, MacKenzie, Lee, and Podaskoff, 2003). Based on the context of this study, two steps were taken to reduce common method biases.

First, the final order of the items on the validated instrument was randomized to reduce bias towards the questions. After the removal of three items from the initial instrument, the nine remaining were merely renumbered to reflect that there were only nine items. The initial twelve items were randomized and thus the final nine were left as such. When respondents attach importance to a question based on its position in the order of questions it is called a context effect (Podaskoff, MacKenzie, Lee, and Podaskoff, 2003). As mentioned earlier, item six is the critical point in the survey instrument, but it has been presented as having no more importance than any other item. Item nine's position is logical, but it is

based mainly on the fact that it was last one added since it was not formed from information retrieved from the literature review. Question order does not weigh as heavily on this instrument as it may on others since every question is measuring a single construct, student awareness.

Secondly, to lessen social desirability bias as a potential source of common method bias, anonymity of respondents was maintained. Social desirability bias occurs when respondents want to portray themselves positively, or in the case of this study, to appear to possess more knowledge about the fraud than they actually do. Anonymous responses can reduce the effect of this bias on research (Nunally, 1978). Since the respondents understand that their name will not be paired with their responses, there is less incentive to exaggerate their knowledge. There is no written documentation of consent required and the identities of the respondents are unknown. Anonymity mitigates the effect social desirability bias can have on this research.

Methodology Summary

Utilizing a literature review, feedback from academicians, and feedback from students, the initial twelve-item survey instrument was reduced to nine. Removal of items was based on the goal of producing a simple and effective survey. Steps were taken to ensure that it was suitable for its target audience and to reduce sources of potential biases. The instrument is presented in Appendix one.

Results

The survey instrument was presented to 61 accounting students at Eastern Illinois University with a response rate of 100%. All students were enrolled in upper level, required, undergraduate accounting courses. This was a selected, convenience sample.

Reliability was measured using Cronbach's alpha. Cronbach's alpha for the final administration totaled .916 (Table 2A).

TABLE 2

A. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.916	.908	9

B. Item Statistics

	Mean	Std. Deviation	N
Pharma	3.0000	1.57056	61
Auditor	3.2787	1.77136	61
CEO	3.0000	1.48324	61
Year	2.8689	1.39613	61
Assets	3.4262	1.57543	61
Procedures	3.4262	1.56481	61
Exist	3.2459	1.19242	61
GAAS	2.9344	1.38887	61
Knowledge	1.2951	.71518	61

C. Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	2.942	1.295	3.426	2.131	2.646	.425	9
Item Variances	2.061	.511	3.138	2.626	6.135	.564	9

D. Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Pharma	23.4754	75.820	.781	.782	.900
Auditor	23.1967	77.361	.615	.592	.915
CEO	23.4754	74.887	.879	.848	.893
Year	23.6066	78.209	.789	.798	.900
Assets	23.0492	75.448	.794	.788	.900
Procedures	23.0492	75.248	.809	.856	.898
Exist	23.2295	81.780	.763	.846	.904
GAAS	23.5410	80.186	.705	.642	.906
Knowledge	25.1803	97.184	.139	.384	.931

E. Reliability Statistics

Cronbach's Alpha	Part 1 Value	.900
	N of Items	5[a]
	Part 2 Value	.755
	N of Items	4[b]
	Total N of Items	9
Correlation Between Forms		**.821**
Spearman-Brown Coefficient	Equal Length	**.902**
	Unequal Length	**.903**
Guttman Split-Half Coefficient		**.831**

a. The items are: Pharma, Auditor, CEO, Year, Assets
b. The items are: Procedures, Exist, GASS, Knowledge

Item Removal

The standard procedure is to remove any item that would increase the Cronbach's alpha (Spector, 1979). Table 2D indicates that if item nine, Knowledge, is removed then the reliability would increase from .916 to .931. However, the instrument is already very reliable at .916. More importantly, the removal of item nine would result in the elimination of a second key component of the study. Since item nine provides a specific measure that is valued for this study, it was not removed.

Reliability of the administration was confirmed by the Guttman split-half coefficient (Table 2F). The nine items were divided into two groups with one containing five items and the other four items. Group A had a reliability of .900 and Group B had a reliability of .755. Both of these numbers indicate a good level of reliability with Group A being the best. The level of reliability provided by Cronbach's alpha is supported by the split-half coefficient.

Factor Analysis

The nine-item survey instrument was subject to additional validation through the use of factor analysis. Principal Component Analysis (PCA) with a Varimax rotation (Kaiser Normalization) was used to determine the number of factors. The results revealed that there are two determining factors present. Total variance explained was 61.45% (Table 3B).

TABLE 3

A. COMMUNALITIES

Variable	Initial	Extraction
Pharma	1.000	.735
Auditor	1.000	.490
CEO	1.000	.830
Year	1.000	.811
Assets	1.000	.835
Procedures	1.000	.788
Exist	1.000	.750
GAAS	1.000	.625
Knowledge	1.000	.908

Extraction Method: Principal Component Analysis.

B. TOTAL VARIANCE EXPLAINED

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.530	61.447	61.447	5.530	61.447	61.447	5.321	59.124	59.124
2	1.241	13.788	75.235	1.241	13.788	75.235	1.450	16.111	75.235
3	.786	8.739	83.974						
4	.544	6.039	90.013						
5	.304	3.378	93.391						
6	.246	2.737	96.128						
7	.158	1.757	97.885						
8	.125	1.394	99.279						
9	.065	.721	100.000						

Extraction Method: Principal Component Analysis.

C. ROTATED COMPONENT MATRIX[a]

	Component	
	1	2
Year	**.898**	-.071
Exist	**.865**	-.039
CEO	**.864**	.289
Pharma	**.857**	-.004
Procedures	**.791**	.403
GAAS	**.784**	.100
Assets	**.745**	.529
Auditor	**.698**	.047
Knowledge	-.051	**.951**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Scree Plot

The Scree Plot also suggests that there are two underlying factors for student awareness. Factor analysis confirms these findings in the rotated component matrix where the items that are included in each factor have been highlighted in their respective columns (Table 3C). The eigenvalues in Table 3B indicate that only two components have a value greater than one. Components are only considered a factor if their eigenvalues are greater than one.

Perceptual Map

A two-dimensional perceptual map is employed since only two factors were found. Responses recorded from the survey instrument allow the perceptual map to plot the dimensionality of the construct. Although two dimensions are easy to interpret, additional dimensions were not required according to the results from the factor analysis. The perceptual map displays two distinct clusters/factors, which confirms the interpretation from both the scree plot and factor analysis. There were no outliers displayed on the map.

There are two underlying factors of student awareness of the McKesson & Robbins fraud. This was verified by factor analysis, scree plot, and perceptual mapping. The first factor is micro-knowledge or specific facts about the fraud that distinguishes it from other frauds. Micro-knowledge includes: Year, Exist, CEO, Pharma, Procedures, GAAS, Assets, and Auditor. The second factor is macro-knowledge or an overall awareness that the fraud occurred. Macro-knowledge includes one factor, knowledge.

DISCUSSION

Upon final administration of the survey instrument 61 responses were recorded at a response rate of 100%. The final instrument was validated with the nine items remaining after the qualitative evaluation. Review of both the scree plot and perceptual map revealed that further removal of items was unnecessary. Statistical testing of the instruments reliability revealed item nine should be removed. Through factor analysis it was discovered that if item nine was removed, then an entire underlying factor would have been eliminated. It was illogical to drop a factor that explains student awareness.

The results indicate that accounting students possess little or no awareness/knowledge of the McKesson & Robbins fraud (Table 2B). Item nine had an average of 1.29, which indicates the level of overall knowledge of the fraud is nearly nonexistent. Choosing number one for that specific item is an indicator of no knowledge. Items one through eight dealt with facts exclusive to this fraud. An average near three, or just above three for the remaining eight items indicate that most of the respondents possessed almost no awareness of the facts of this fraud. Since none of the mean responses on the first eight items were very low, suggesting a high level of disagreement, or very high, suggesting a high level of agreement, the respondents were mostly neutral, signifying that they did not know enough to pick a more definite answer.

CONCLUSION

The goal of this study was to determine student awareness about a landmark fraud case that led to eventual changes that still profoundly affect the modern auditing profession. The study was limited to accounting students who are enrolled in classes required for completion of their accounting major.

Limitations

The study had a narrow focus and a small sample size that was derived from selected and convenience sampling. It is unclear how representative the sample is of the entire population. The results would be more representative if the sample size was expanded to include more accounting students from other universities in Illinois and other states. Time and resource constraints also limited the scope of the study.

Contributions

A potential new area of study is measuring student awareness of events that affect their projected future profession. The focus of this specific study is very narrow since it is concerned with a single fraud case. The analysis incorporates the fraud triangle, even though this concept was developed after the discovery of the fraud. The extensive literature review made it clear that the fraud triangle was applicable given the context of this specific fraud.

It is now known that current accountings students have no knowledge of the McKesson & Robbins fraud. Both the age of the fraud and the emphasis on more recent fraud cases in the classroom are considered potential causes for the lack of knowledge. The results indicate that students need to increase their knowledge about specific fraud cases in order to better identify red flags. Their ability should increase as they analyze more frauds from both the past and present. A better understanding of the many different ways fraud is committed should enhance the learning process.

Fraud education needs to be increased whether it is through the creation of an entire class devoted to fraud case studies or more emphasis on fraud in auditing courses or accounting systems courses. Case studies should devote a fair amount of time on studying older fraud cases. Experience with a wide array of fraud cases will allow students to better comprehend how and where fraud can occur.

Student awareness of the McKesson & Robbins fraud was measured by a reliable and validated survey instrument. The sample was confined to students who attend a medium sized university in the Midwest and the focus was confined to a single fraud case from 1937. Results of the study indicate an overall lack of knowledge about the fraud. The experiences and expertise of each respondent was not measured beyond their class status. Lack of knowledge could be a result of the age of the fraud case and more emphasis on recent frauds, such as the one at Enron. Experience suggests that the McKesson & Robbins fraud is considerably less important when compared to the Enron fraud in current accounting curriculum.

Further research needs to be conducted to attain a large sample that is representative of university level accounting students in the United States. Additional studies are needed to determine if some form of accounting history education is a potential solution for teaching future accounting professionals the reasoning behind certain accounting standards. At the moment, it is unclear if the modification of existing curriculums will produce more competent accounting professionals.

REFERENCES

"ACCOUNTING: After McKesson's." *Time* 22 May 1939. Print.

AICPA. "Auditing, Attestation, and Quality Control Standards Setting Activities: Operating Policies." *aicpa.org* 2010: 1-19. Web. 21 February 2011.

Baker, Richard L. and William E. Bealing Jr. "The Sarbanes Oxley Act: Have We Seen It All Before?" *Journal of Business & Economic Studies* 12.2 (2006): 1-10. Print.

Barr, Andrew and Irving J. Galpeer. "McKesson & Robbins.' *Journal of Accountancy* 163.5 (1987): 159-161. Print.

Baxter, W.T. "McKesson & Robbins: a milestone in auditing." *Accounting, Business, & Financial History* 9.2 (1999): 157-174. Print.

"Business: New Accounting." *Time* 24 July 1939. Print.

Clikeman, Paul M. "The Greatest Frauds of the (Last) Century." *University of Richmond*. (2003): 1-7. Print.

Doron, Michael E. "I Ask the Profession to Stand Still: The Evolution of American.

Public Accountancy, 1927-62."*Eastern Washington University*. 20 Aug 2009: 1-48. Print.

Edwards, James Don. "Public Accounting in the United States from 1928 to 1951." *The Business History Review* 30.4 (1956): 444-471. Print.

"Events That Shaped a Century." *Journal of Accountancy*. 200.4 (October 2005): 89-90.

Kranacher, Mary-Jo and Lorraine Stern. "Enhancing Fraud Detection Through Education." *The CPA Journal Online* 2009. Web. 22 March 11.

Lodge, Arthur. "Thanks, I Needed That I Think." *Journal of Accountancy* 164.3 (1987): 14. Print.

McKesson.com. McKesson Corporation. Web. 26 January 2011.

Niemeier, Charles D. "Independent Oversight of the Auditing Profession: Lessons from U.S. History." German Public Auditors Congress. Berlin, Germany. 8 November 2007.

Nunnally, J. *Psychometric Theory*, 2nd Edition. McGraw-Hill, New York, 1978.

Podsakoff, P., MacKenzie, S., Lee, J., & Podsakoff, N. (2003). "Common method biases in behavioral research: a critical review of the literature and recommended remedies". *The Journal of Applied Psychology* (2003): 88, 879-903

Rodgers, Rodney K., Jesse Dillar, and Kristi Yuthas. "The Accounting Profession: Substantive Change and/or Image Management." *Journal of Business Ethics* 58.3 (2005): 159-176. Print.

Securities and Exchange Commission (1940). *In the matter of McKesson and Robbins Inc., Washington D.C*; reprinted New York: Garland, 1982.

"The McKesson & Robbins Case." Editorial. *The Journal of Accountancy* 67.2 (1939). Print.

Thompson, Craig. "America's Boldest Swindler." *Saturday Evening Post* 28 February 1953. Print.

Wells, Joseph T. "Why Employees Commit Fraud, It's Either Greed or Need." *Association of Certified Fraud Examiners* 2001. Web. 22 March 2011.