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AN EXAMINATION OF THE USE OF IMPRESSION MANAGEMENT IN THE MANAGEMENT DISCUSSION AND ANALYSIS SECTION OF THE ANNUAL REPORT

A Thesis

Submitted to the Faculty

of

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ABSTRACT

Brandon, Christopher D. Ph.D., Purdue University, May, 2001. An Examination of the Use of Impression Management in the Management Discussion and Analysis Section of the Annual Report. Major Professor: Robert K. Eskew.

This research examines the use of impression management in MD&A disclosures. Publicly traded firms are required by the Securities and Exchange Commission (SEC) to publish annual reports to shareholders. The SEC mandates certain disclosures in these reports under item 303 of Regulation S-K, Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A). The firm may present the disclosures as it chooses as long as the presentation falls within MD&A guidelines; thus, firms could use various styles of disclosure, collectively referred to as impression management, to shape or frame users' interpretation of the financial results.

A sample of MD&A from firms reporting in the periods 1983 – 1985 and 1992 was chosen and grouped by firm size and direction of earnings change. Large firms with negative earnings changes were hypothesized to more frequently use impression management. Seven undergraduate accounting students used content analysis procedures to code MD&A on measures of MD&A size, amount of attribution usage, and style and direction of attribution. Analysis of the measures and codings indicate that firms with a negative earnings change use slightly more causal attributions than do other firms. For all firms, positive events are strongly attributed to actions by the firm, while negative events are only weakly attributed to sources outside the firm. There were few significant differences between the 1983 – 1985 and 1992 samples. Measurement error within the coding procedure itself and the effect of omitted and unmeasured variables may have affected the strength of the results.

CHAPTER 1 – INTRODUCTION

Publicly traded firms are required by the Securities and Exchange Commission (SEC) to publish annual audited financial statements and annual reports to shareholders. The Commission has stated that it "believes it is in the public interest that all security holders be provided with meaningful information regarding the business, management, operations and financial position of the issuer and that the annual report to security holders is the most suitable vehicle presently available for providing this information."[1] The SEC mandates certain disclosures in these reports under item 303 of Regulation S-K, *Management's Discussion and Analysis of Financial Condition and Results of Operations*, hereafter referred to as MD&A. MD&A serves in part as management's opportunity to present "its side of the story" regarding firm performance, financial position, and liquidity during the reporting period. The SEC also encourages firms to provide information regarding the firms' future prospects and "any forward-looking information supplied is expressly covered by the safe harbor rule for projections."[2] The firm is free to present the "story" in whatever way it chooses as long as the presentation falls within the SEC's MD&A guidelines. This raises the possibility that attempts could be made to shape or frame users' interpretation of the financial results through various styles of disclosure, collectively referred to as impression management. This research examines the use of impression management in MD&A disclosures.

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[1] Securities and Exchange Commission, Accounting Series Release No. 279, September 2, 1980. Also 17 CFR 229.303, April 1, 1987.
[2] Securities and Exchange Commission, 17 CFR 230.175, April 1, 1987.

Motivation

The Financial Accounting Standards Board's *Statement of Financial Accounting Concepts Number 1, Objectives of Financial Reporting By Business Enterprises* states the following regarding the use of management explanations and interpretations:

> "Management may communicate information to those outside an enterprise by means of financial reporting other than formal financial statements either because the information is required to be disclosed by authoritative pronouncement, regulatory rule, or custom or because management considers it useful to those outside the enterprise and discloses it voluntarily...[3]
>
> ...the usefulness of financial information as an aid to investors, creditors, and others in forming expectations about a business enterprise may be enhanced by management's explanations of the information. Management knows more about the enterprise and its affairs than investors, creditors, or other 'outsiders' and can often increase the usefulness of financial information by identifying certain transactions, other events, and circumstances that affect the enterprise and explaining their financial impact on it..."[4]

Thus, disclosures such as those presented in MD&A are intended to reduce information asymmetry that exists between managers and users of financial statement information.[5]

MD&A disclosures contain both mandatory and voluntary aspects – mandatory in that SEC regulations require MD&A disclosures, and voluntary in that the regulations do not specify the structure or detailed content of the disclosure. Thus, the firm has an opportunity to fashion disclosures in such a way that, if desired, a particular firm image could be presented. The general research issue raised here is whether managers have attempted to use MD&A disclosures as a means of influencing or altering financial statement users' interpretations and perceptions of firm and management performance.

Although management compiles the financial statements and prepares the footnotes, those particular documents do not present interpretation or analysis of the

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[3] *Statement of Financial Accounting Concepts No. 1, Objectives of Financial Reporting by Business Enterprises* (1992), Paragraph 7.
[4] Ibid., Paragraph 54.
[5] The generic term "users" is employed to represent all parties interested in a firm's disclosures.

results. Through the MD&A users can examine management's interpretations of and explanations for the results of the fiscal period, management's reasoning for taking or not taking certain actions, management's expectations for future firm performance, and the effect of that performance on future cash flows. Users interested in evaluating management performance and in making investment and regulatory decisions can use the qualitative information provided as inputs. For this information to be useful in evaluation and decision-making, management's interpretations and explanations must be accurate and sound, and consistent with the financial statement numbers. [6]

An attempt to manage the MD&A content may affect the relationship between the financial statement numbers and MD&A, as well as the predictive content of the disclosures. The annual report to shareholders has become a major corporate communications device, employing sophisticated visual and verbal images and interpretations of the firm, its products, and its financial performance. The portions of the annual report directly attested to by the firm's auditor are the financial statements and footnotes; all other portions are not attested to or formally reviewed.

Background on Management Discussion and Analysis

The MD&A is one element of the SEC's Integrated Disclosure System (IDS), which unifies the various disclosure requirements required by the 1933 Securities Act and the 1934 Securities Exchange Act (as amended over time).[7] Two regulations established by the SEC provide the basis for the IDS: Regulation S-X deals with the form and content of financial statement disclosures (i.e., quantitative disclosures) while Regulation S-K governs nonfinancial information (i.e., qualitative disclosures) required under the Acts.

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[6] One metaphor to describe the financial reporting in the annual report may be that of a three-legged stool: one leg consists of the numerical statements which result from actual measurements; another leg, the footnotes, which provide details about the measurement process; and the third leg is the MD&A, which provides what could be considered "environmental" information regarding the firm and its operations and relationships with various factor markets.

[7] Afterman (1995), pp. 36-38.

MD&A is an integral component of a set of financial and nonfinancial disclosures referred to as the Basic Information Package (BIP). The BIP consists of information that the SEC considers vital to investors and thus must be included in the principal 1933 and 1934 Acts filings (e.g., Form 10-K) as well as the annual report provided to shareholders.

The current structure of MD&A disclosure regulation is of relatively recent origin.[8] The requirement for firms to include MD&A disclosures was first adopted in 1968; however, most disclosures made between 1968 and 1980 appeared to be replications of financial statement numbers and tables of financial ratios, with little discussion or analysis. In 1980, the SEC adopted a framework which changed the emphasis to a narrative analysis of the financial statements as a whole, focusing on discussions of liquidity, capital resources, results of operations, and the future impact of known trends, demands, commitments, events or uncertainties that may affect operations. Other forward-looking disclosures were encouraged, but not required. Thus, MD&A was expected to have both forward-looking and backward-looking components. Management was given the discretion to discuss the results of operations in the manner best suited to their particular circumstances and in relation to their particular industries.[9]

In 1987 the SEC issued a Concept Release seeking comments from the financial community on the need to change MD&A regulations. The release was in response to the proposal by seven major accounting firms for changes in the rules, including a more focused discussion of business risks, and audit coverage of or direct auditor involvement with the MD&A disclosures.[10] The accounting firms felt that the requirements in place were too general to result in meaningful disclosures from reporting companies.[11] The SEC decided not to revise the rules then in force, and began a study in 1987 of current compliance with the existing MD&A standards.

The first phase of the SEC study examined the fiscal year 1987 MD&A disclosures of 218 companies in 12 industries, focusing on the disclosures made under the

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[8] Dieter and Sandifur (1989) provide an overview of MD&A regulations and discuss the SEC study in detail. Bagby, Kintzele, and Kintzele (1988) provide an extensive review of the legal and regulatory background regarding MD&A.
[9] Bagby, Kintzele, and Kintzele (1988), pp. 73-75.
[10] CPA Journal, 57(7), July 1987, p. 72.
[11] CPA Journal 56(8), August 1986, p. 5.

1980 reporting requirements. 206 of the 218 companies received comment letters from the SEC either requesting additional information, compliance with the rules when making future filings, or amendments of their 1987 filings. Of the 206 companies identified as having deficiencies in MD&A, 72 amended their 1987 filings. A second phase of the study reviewed 141 companies in another 12 industries; of these companies, 139 received comment letters and 53 of those companies amended their MD&A filings, half with significantly expanded MD&A reports.[12]

As a result of the study, in May 1989 the SEC issued Financial Reporting Release Number 36 (FRR 36) to clarify and explain the original intent of the MD&A requirements as well as to provide additional guidance on meeting those requirements. The interpretive guidance focused on areas identified by the study as being problematic, e.g., the disclosure of forward-looking information, the quality of the analysis of historical operating results, the discussion of liquidity and capital resources, and segment analysis. The SEC also provided a number of examples in the Release of what it considered to be proper disclosures.[13]

SEC Enforcement of MD&A Regulations

In a study of the financial and market effects of SEC enforcement actions, Feroz, Park and Pastena (1991) noted that one of the SEC's goals is to maintain the credibility of the disclosure system and prevent the erosion of accounting standards. Their research indicates that the market reacts negatively to the news of an SEC investigation of a particular firm. They found that management also faces consequences: more than 72% of firms consenting to SEC injunctions to cease violations of securities laws fired or forced the resignation of top managers, and 81% of target firms faced shareholder lawsuits.

The SEC has continued to pursue enforcement of MD&A regulations. There have been a number of cases involving large, well-known firms. One of the first well-

[12] Dieter and Sandefur (1989), p. 64.
[13] SEC, Financial Reporting Release No. 36, May 18, 1989; Herdmand and Neary (1989), pp. 11-13; Heymann (1989), pp. 70-73; Dieter and Sandefur (1989), p. 68.

publicized cases was that of Caterpillar, Inc. Caterpillar failed to disclose in its 1989 MD&A knowledge it had regarding the expected decline in the future profits of its Brazilian subsidiary CBSA and the impact this decline would have on the company as a whole. The decline was expected due to political and economic unrest in Brazil and the imminent election of a new president who was expected to implement economic policies that would adversely impact CBSA. This information had been disclosed to the company's Board of Directors two weeks before the 1989 10-K was filed, but was not discussed in the MD&A section of the 10-K. As expected, the new Brazilian President took office on March 15, 1990, and implemented policies that caused significant losses for the subsidiary. Caterpillar did not disclose until June 25, 1990, that CBSA had accounted for 23 percent of its 1989 net profits. The SEC asserted that Caterpillar failed to properly disclose CBSA's contribution to its overall earnings, and also failed to discuss the future likely impact of a known uncertainty (the possibility of adverse economic conditions in Brazil.)[14]

Another example of an SEC enforcement action concerning deficiencies in MD&A disclosures is the case against Sony Corporation.[15] Sony acquired Columbia Pictures and Guber-Peters Entertainment Company in 1989, and renamed the combined businesses Sony Pictures; Sony accrued $3.8 billion in goodwill from the acquisitions. Sony's internal projections forecasted five years of losses after goodwill amortization and financing costs, with expectations that Sony Pictures would become profitable in the long-term. Actual results for Sony Pictures revealed significant and increasing yearly losses. However, as results for Sony Pictures were combined with results for Sony Music and reported as Sony Entertainment Division, the extent of the losses was hidden – neither projected nor actual losses from Sony Pictures were disclosed. Also, the carrying value of the goodwill had become a matter of discussion between Sony's auditors and its management in both the United States and Japan.[16] On November 17, 1994, Sony announced that it was changing its method of accounting for goodwill and was writing off $2.7 billion in goodwill associated with the acquisition of Sony Pictures. Sony and the

[14] Seamons (1997), pp. 252-258.
[15] SEC, Accounting and Auditing Enforcement Release No. 1061, August 5, 1998.
[16] Stanford and Eprile (1999), p. 20.

general manager of its Capital Markets and Investor Relations Division were cited for inadequate disclosures regarding the effect on Sony Corporation of the losses by Sony Pictures, which by the close of Sony's fiscal year ended March 31, 1994, had contributed net losses of approximately $967 million. Sony also selectively noted positive developments in various SEC filings, but did not disclose the losses sustained by Sony Pictures.[17] In 1998, Sony was fined $1 million by the SEC, agreed to have its 1999 MD&A independently audited and to comply with FASB segment reporting rules, and designated its Chief Financial Officer as the corporate officer primarily responsible for Sony's compliance with the laws and regulations regarding public financial disclosures.[18]

SSAE 8 – MD&A Audits

In early 1997, the Auditing Standards Board (ASB) submitted an exposure draft of Statement on Standards for Attestation Engagements (SSAE) No. 8, Management's Discussion and Analysis. This document was the second exposure draft on auditing of MD&A disclosures; the first was issued in 1987 but was eventually deferred. Five of the then-Big Six accounting firms supported the 1998 adoption of SSAE 8 (Price Waterhouse did not.) SSAE 8 was adopted by the ASB in March 1998 and became effective on its release. The SEC's requirement in the Sony case for an MD&A audit has been cited as evidence of the SEC's recognition of the potential value of SSAE 8.[19] SSAE 8 permits, but does not require, auditors to examine or review MD&As.

An examination involves a level of investigation equal to that of an audit, and auditors may examine an MD&A if they have also audited the financial statements for at least the latest fiscal year referred to by the MD&A. Financial statements for prior accounting periods referred to in the MD&A must have been audited by the current auditor or predecessor auditors. The opinion presented must report whether (1) the MD&A presentation includes all elements required by SEC rules and regulations, (2) the

[17] SEC, Accounting and Auditing Release No. 1062, August 5, 1998.
[18] Stanford and Eprile (1999), p. 20.
[19] Butler and White (1998), p. 41.

historical financial information is accurately derived from the entity's financial statements, and (3) the underlying information, determinations, estimates and assumptions of the entity provide a reasonable basis for the MD&A disclosures.[20] A review report covers the same three topics, and presents findings in the form of negative assurances (i.e., nothing was found to indicate problems.) The requirements for having audited the financial statements applicable to an examination also apply to a review.

As SSAE 8 is relatively new, it is uncertain as to how frequently MD&A audits will occur. Questions of costs, timing, and control over the disclosures are issues of concern regarding SSAE 8. However, according to Butler and White (1998), inadequate MD&A disclosures are the third-most litigated topic under the securities laws. They reason that boards of directors, audit committees, and underwriters might thus benefit from an independent and expert external review of their MD&A disclosures, affording them additional legal protections under the securities laws.[21]

[20] Ibid., p. 49.
[21] Ibid., p. 45.

CHAPTER 2 - LITERATURE REVIEW

Given the recent history of MD&A disclosure and its nonfinancial content, there is not an extensive empirical research literature on this specific topic. There are a number of papers that focus on disclosures in the President's Letter to Shareholders (PLS) (usually found at the beginning of the annual report), which is usually shorter and less complex than MD&A. Within the annual report, the PLS is not often the focus of regulatory or auditing rules. Of the published research focusing on MD&A, most studies appear to either attempt to analyze the overall content of MD&A in relation to various financial variables or to determine the level of managerial compliance with MD&A regulations. A few papers have attempted to relate the information content of MD&A to firm performance. The focus in legal journals has been on the content of the SEC rules themselves, with a review of pertinent SEC actions regarding lack of compliance with the MD&A requirements.

Ingram and Frazier (1983) used a computerized content analysis technique called WORDS to examine the narrative content from the 1978 annual reports of 79 firms in the metal manufacturing and fabricating, oil, and chemical industries. The narrative content chosen as the research focus was the PLS. Firms were classified as low or high in terms of: return on investment (ROI). Ingram and Frazier hypothesized that high-ROI firms would attribute good performance to management actions, while low-ROI firms would attribute poor performance to external factors. The analysis confirmed this hypothesis; less profitable firms referred to external causes as the reason for their performance, while more profitable firms referred to management actions as the source of their performance.

Frazier, Ingram and Tennyson (1984) used the WORDS methodology to examine the management analysis data from the 1978 annual reports of 74 firms in the metal

mining and manufacturing, oil, and chemical industries. Their sample was initially partitioned by performance (positive or negative, based on earnings growth from t-1 to t), and then by control (whether the firm was controlled by management or by owner, owner control being defined as at least 10% of the voting stock being held by one investor). The specific program used by Frazier et al., WORDS, provided factor scores which were then used in a two-factor MANOVA using the partitions and their interaction as the independent variables. Their proposition was that manager controlled firms would be motivated to misrepresent narrative reports, relative to owner controlled firms.[22] The factor scores were also used in determining the predictive ability of the disclosures, using the sign of the cumulative annual residual for 1979 as the dependent variable.

Results of the MANOVA did not support the hypothesis of a misrepresentation effect by firms in either category of either independent variable. Frazier et al. concluded that the thematic content identified by WORDS was representative of disclosures normally found in annual reports.[23] They provide three possible explanations: one, the narratives concentrate on a few common areas across firms rather than on individual differences; two, poor performers may provide signals which emulate good performers' signals; or three, the disclosures are ex ante signals of performance rather than ex post signals. The test of the predictive usefulness of the WORDS factor scores indicated that the correct classifications rates were better than 70% for both performance groups at significance levels of 0.05.

Tennyson, Ingram and Dugan (1990) used the same computer methodology to examine the President's Letters and MD&A from firms that had filed for Chapter 10 or Chapter 11 bankruptcy. They hypothesized a systematic difference in narrative information content between firms approaching bankruptcy and those not approaching bankruptcy. They also hypothesized that the use of narrative disclosures in association with financial statement data (in this study, accounting ratios), would improve classification of firms into bankrupt and nonbankrupt firms. Data from 23 US bankrupt

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[22] Previous research has indicated that manager controlled firms choose accounting procedures and make accounting policy changes which are different from those made by owner controlled firms (Dhaliwal, Salamon and Smith (1982), Salamon and Smith (1979)).

[23] It should be noted that the sample year chosen for the study is prior to the SEC's revision of MD&A guidelines in 1980.

firms was matched with data from similar nonbankrupt firms, based on industry and size. Logistic regression was used to identify the association between the computerized analysis scores and the two firm categories, and to develop a classification model for identifying bankrupt firms using both those scores and the accounting ratios. The study determined that there was a positive relationship between the content of the narrative disclosures and measures of financial distress, and there appeared to be incremental information content in the narrative disclosures beyond that in the accounting ratios alone.

Studies that focused on the compliance issue include Bagby and Kintzele (1987) and Bagby, Kintzele and Kintzele (1988), who examined the legal history of the MD&A as well as the extent of segmented disclosure. The MD&A is considered by the SEC as the primary source of discretionary and qualitative disclosures in the Form 10-K and the annual report. The MD&A is intended to present a discussion of factors influencing the firm's past performance and its future prospects. Bagby et al. noted that as of their writing, there was no direct requirement for audit of the MD&A; however, auditors frequently review the information that is the basis for MD&A disclosures.[24] They also note that management's interpretations of business strategy, financial trends, or market performance are not as verifiable as the quantitative financial statements, and management may be able to ignore or hide its interpretations of performance.[25]

Bagby et al. examined 100 annual reports of publicly traded corporations for the fiscal or calendar year 1985 regarding the extent of disclosure on business segments. At that time businesses were given discretion as to the presence and the form of business segment disclosures in the MD&A. Twenty firms each were selected from five industry classifications and the financial section of the annual report was analyzed. The researchers determined that 70 firms voluntarily discussed segment information in the MD&A.

Schroeder and Gibson (1990) tested the readability of MD&A disclosures as compared with the financial statement footnotes and the President's Letter to

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[24] Bagby, Kintzele, and Kintzele (1988), p. 81.
[25] Ibid., p. 96.

Shareholders. The footnotes to the financial statements provide information about the primary financial statements and contain many required disclosures. Several previous studies have found the readability of those footnotes to be poor. Their sample consisted of the financial reports of 40 randomly selected members of the 1986 Fortune 500; the textual disclosures were tested for passive voice, word length, sentence length, and readability as determined by the Flesch index, a commonly used measure of assessing the educational level needed to comprehend a narrative with a single reading. Schroeder and Gibson found the MD&A and the PLS much less passive than the financial statement footnotes; however, they found no significant differences between the MD&A and the footnotes in terms of word length, sentence length, or readability level. They concluded that although SEC rules allowed for significant flexibility in the style and presentation of MD&A disclosures, management had not taken the opportunity to improve the financial reporting communications.

Hooks and Moon (1993) developed a classification scheme to measure and analyze management compliance with SEC regulations on MD&A. Their research was instigated by an SEC staff study of MD&A disclosure quality which indicated that many registrants' filings required comment letters from the SEC.[26] Hooks and Moon cite three areas of difficulty in studying MD&A quality. First, measuring the quality of the substantive disclosure in text is difficult. Second, the absence of a particular disclosure can be caused by different circumstances. For example, for a firm that experiences a particular event or transaction, the absence of a disclosure may indicate inadequate compliance; it may also indicate that the event has not yet occurred and thus disclosure is not necessary. Third, there may be a lack of generalizability due to industry differences, firm size, or other factors. In order to systematically study MD&A, Hooks and Moon developed a detailed classification scheme that can be used to identify specific disclosure items within an MD&A.

In order to test the classification scheme, Hooks and Moon examined the compliance behavior of 30 randomly selected firms with June 30 fiscal year ends over the period 1988 - 1990. Their analysis established that the firms appeared to have responded

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[26] See Dieter and Sandefur (1989).

to the interpretative guidance provided in FRR 36 by increasing their level of disclosure in the MD&A over the test period. This increase included an increased frequency of forward-looking items.

Epstein and Pava (1993, 1995) studied the readership and use of annual reports by individual shareholders. A replication and extension of Epstein (1973), they surveyed a random sample of individual shareholders of firms listed on the New York Stock Exchange or American Stock Exchange. Among the areas surveyed was the use of MD&A by individual investors. Epstein and Pava found that only 41.7% of the survey respondents thoroughly read the MD&A (as compared to 60.5% for the income statement and 59.5% for the balance sheet). Further, 34.4% found the MD&A only somewhat useful in making investment decisions. The MD&A was ranked lower in usefulness behind the income statement (57.0%), the balance sheet (57.1%), and the statement of cash flows (50.2%). The difficulty of understanding the MD&A was not a factor, as it was ranked by respondents no more difficult to read than the income statement (16.1% of respondents have difficulty with the MD&A versus 15.7% of respondents have difficulty with the income statement), and less difficult to read than the balance sheet and the statement of cash flows (28.1% and 28.5%, respectively, have difficulty).

Epstein and Pava attribute the low rank of the MD&A to a lack of credibility as 63.8% of respondents indicated that they believe MD&A should be audited. They also cite a perceived lack of usefulness for decision making; 87.7% of respondents indicated that they wanted more forward looking disclosures. Epstein and Pava concluded from their survey results that management is not using the MD&A to its fullest potential as a communications device to market participants in regards to both past and forward looking information, nor does management appear to use MD&A to preempt analysts' reports.

Collins, Davie, and Weetman (1993) examined the MD&A disclosure of 42 UK firms that filed MD&A with the US SEC as part of the filing requirements (Form 20-F) for foreign firms listed on a US stock exchange and trading in American Depositary Receipts. At the time of their paper, UK firms were not required to produce what was being proposed by the UK Accounting Standards Board as an "Operating and Financial

Review".[27] These MD&As were compared with a sample of MD&As from 42 US companies chosen from the *Times 1000* list. Collins et al. did not attempt to match the samples in terms of industry grouping as it was expected that industry-specific effects were not expected to be strong; the number of US firms chosen was set to match the number of UK firms chosen to provide a similar base set of information.

Content analysis was performed on the MD&A to identify relative content under the areas of financial position and performance, segment information, innovation and research and development, external and market information, and future-oriented information. The comparison looked for similarities and differences between US and UK practice and between industries. The results indicated that there were significant differences between UK and US firms in their disclosures. US firms spent proportionately more time discussing liquidity and capital resources than did UK firms. Analysis of the industry groupings showed significant differences between and within the groupings; Collins et al. inferred that companies produced reports tailored to their specific requirements rather than following a specified pattern for a given industry. This follows the SEC intent of allowing firms flexibility in the format of the MD&A.

Bryan (1997) assessed seven mandated disclosures contained in MD&A: information on selling price changes; information on sales volume changes; reasons other than sales for revenue changes; reasons for cost changes; assessment of the firm's future liquidity position; planned capital expenditures; and information on known trends affecting revenues, costs, and liquidity. The first four represent retrospective disclosures; the last three are prospective disclosures, requiring the firm to predict future results. Firms were chosen by decile ranking of raw stock returns; fifty firms were randomly chosen from each of deciles 1, 3, 5, 7, and 10. The 250 MD&As were analyzed for the required disclosures by two independent coders.

Bryan tested the association between MD&A disclosures and one-, two-, and three-period-ahead financial variables, and found that certain MD&A variables are associated with one-period-ahead changes in sales, earnings per share, and capital

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[27] Collins, Davie and Weetman (1993), pp. 126-127. Firms trading ADRs are not required by the SEC to produce financial statements that follow US Generally Accepted Accounting Principles (GAAP).

expenditures. However, longer-term associations were generally not significant. Bryan also analyzed the association of MD&A disclosures with financial analyst sales forecasts, and found a positive and significant association between certain MD&A variables and those forecasts.

In the area of impression management and corporate disclosures, a number of published papers (Bettman and Weitz, 1983; Staw, McKechnie, and Puffer, 1983; Salancik and Meindl, 1984; Kohut and Segars, 1992) have focused on the content of the President's Letter to Shareholders located in the annual report. A common thread running through these papers is testing for the use of self-serving causal attributions and the sources of those attributions - internally generated egocentric motives or external attempt to manage the impressions developed by outside constituencies (e.g., investors). In general, the results provide evidence that in the Letter to Shareholders, management systematically provides interpretations of actual results and presents explanations and/or justifications for financial results.

Bettman and Weitz (1983) examined the Letter to Shareholders for the causal reasoning used to explain corporate performance. Causal attributions could be provided by the organization as a way of explaining outcomes to a number of audiences both internal and external. Such attributions can be seen as self-enhancing (in the attributions of favorable outcomes to internal actions) or self-protecting (in the attributions of unfavorable outcomes to external causes.) Attributions as to the reasons for performance can also serve a self-presentational purpose, allowing the prospect of enhancing or protecting self-esteem or image.

The sample consisted of 181 annual reports published during 1972 and 1974. Bettman and Weitz theorized that reasons internal to the organization would be cited for favorable performance outcomes and reasons external to the organization would be noted for unfavorable outcomes.[28] Causal attributions were coded as to locus of causality (internal versus external), stability of the cause over time, and controllability of the cause by the organization. Expectations of performance were based on the history of past revenues. Their results indicated, in general, that firms tend to attribute favorable

[28] Bettman and Weitz (1983), p. 167.

outcomes to internal causes and unfavorable outcomes to external causes. They also noted that companies used more causal reasoning when their performance differed from expectations.

Staw, McKechnie and Puffer (1983) investigated justifications of organizational performance by testing Letters to Shareholders for self-serving attributions. They also attempted to determine whether self-serving attributions are motivated by egocentric motives (rationalizing actions and events internally) or by impression management (managing the impression of rationality to external publics). Staw et al. also investigated whether positive or negative news conveyed in the Letter induced the causal attribution to take on an enhancing form (attributing positive events to internal causes) or defensive form (attributing negative events to external causes).

The sample consisted of 81 1977 Fortune 500 firms, 49 of whom had experienced at least a 50 percent increase in earnings per share and 32 of whom had experienced at least a 50 percent decrease in earnings per share. Their results indicated that the specific type of news presented in the Letter was an important determinant of causal attribution, and that negative causal events were more likely to be attributed to external causes. Organizational performance, though, was not found to be as important a determinant of causal attribution. Staw et al. noted that an impression management mechanism fit well with the results in their study, and that there was strong evidence that both high and low performing firms emphasize positive events. Significant correlation was found between evidence of managerial enhancement of the letter and subsequent share price increases.

Salancik and Meindl (1984) also examined the Letter to Shareholders, taking a different view than Bettman and Weitz and Staw et al.: rather than following a psychological explanation, the authors assert that the attributions made by management may instead serve a political purpose in reassuring constituents that management has the ability to account for and the ability to efficiently control the organization's affairs. Management is held answerable by various interest groups (e.g., shareholders, creditors, and employees) for the organization's activities and outcomes, and those groups may hold management accountable and withdraw their support, even in the situation where management cannot control the factors affecting those outcomes. Thus, management of

unstable firms will attempt to manipulate causal attributions to provide the impression of managerial competence and control.

The sample consisted of 18 U.S. corporations, with annual reports and financial data collected over 18 years of each firm's history (1961 to 1978). Salancik and Meindl used each firm's performance stability (defined as the tendency to high or low variation on three performance measures) to classify the sample firms as stable or unstable. They hypothesize that firms will take credit for positive outcomes and accept blame for unstable negative outcomes. The overall results of their analysis indicate strong tendencies for management to accept credit for positive outcomes and to attribute negative effects to environmental causes. They note that unstable firms made more attributions to internal causes for negative outcomes and fewer external attributions to external causes than did stable firms.

Kohut and Segars (1992) examined the content of president's letters from high and low performing firms (as defined by return on equity) to determine any patterns in the firms' communications strategy. They considered the PLS as a downward communication to shareholders regarding past operating results and future growth and profit prospects for the firm, and thus may be used as a method for presenting good or bad news in differing ways. The top and bottom 25 firms from the 1989 Fortune 500 as sorted by return on equity were selected as the sample for study. The PLS were independently coded on a sentence-by-sentence basis as they represent complete thoughts, and coding was based on each sentence's dominant theme and on the basis of past or future reference regarding that particular theme.

Six recurring themes were found (environmental factors; growth; operating philosophy; product/market mix; unfavorable financial reference; favorable financial reference.) In analyses of word count, number of sentences, syllables per word, and words per sentence, only word count was significantly higher in high ROE firms than in low ROE firms. High ROE PLS addressed past themes significantly more frequently than low ROE PLS, and addressed the themes of past product/market mix and past favorable financial references significantly more frequently as well. Low ROE PLS addressed the themes of past unfavorable financial references and future operating philosophy

significantly more frequently than high ROE PLS. Irrespective of theme, high ROE PLS made significantly more references to the past than did low ROE PLS; there was no significant difference between groups in future references regardless of theme.

In a study of 60 annual reports from 1988, Subramanian, Insley, and Blackwell (1993) examined the readability of the PLS in relation to firm performance, performance being defined as an increase or decrease in net income from 1987 to 1988. Firms were selected from NYSE-traded firms listed in the Qfile, a comprehensive index of annual reports from US corporations, and divided into good and bad performance groups based on change in income. Samples from the PLS were analyzed using a computerized style analysis program.[29] Subramanian et al. hypothesized that there was no difference in the readability, strength (strength of delivery of message), descriptiveness (use of modifiers), and jargon (special vocabulary) levels between the two groups. Analysis of the results indicated that there was a significant difference between good and bad performers in readability and strength; PLS from good performers were measured as more readable and stronger than those from bad performers.

Kaplan, Pourciau, and Reckers (1990) experimentally examined the effects of manipulating the President's Letter and information from an external stock advisory service. Kaplan et al. defined impression management as the use of communication strategies to influence others' perception of a firm's image or identity. In a behavioral role-playing situation, subjects were presented with financial information (income statement, balance sheet, and selected financial ratios) from a hypothetical firm which was experiencing declining financial performance. Subjects also received background information on the company and its products. As independent variables, four different president's letter conditions with respect to content and style of letters to shareholders (excuse, justification, change, and none) and two different stock advisory service reports (above average expectations on short-term price appreciation and long-term safety, and below average expectations on short-term price appreciation and long-term safety) were

[29] The program used is RightWriter, which according to Subramanian et al. (1993, p. 53) "uses advanced artificial intelligence to analyze documents."

used. Dependent variables were subject responses to questions regarding (1) evaluation of the future expectations of firm performance, (2) a proxy decision to support management, (3) an investment decision to hold shares, and (4) an investment decision to buy shares.

Multivariate analysis indicated that both the president's letter and stock advisory service manipulations had significant main effects (significance of F test, 0.0018 and 0.0307, respectively) on all variables; a significant interaction effect was absent (0.2857). Significant effects were also found with each of the four dependent variables. Kaplan et al. conclude that the President's Letter provided additional useful information for investor decisions. The effects of the letter were found to be independent of the stock advisory service reports except in the decision to buy additional shares and the presence of the change treatment. The excuse treatment was found to be the least effective impression management strategy in affecting subject choice on the proxy and hold decisions.

Impression management strategies are one aspect of what Gibbins, Richardson, and Waterhouse (1990) describe in a study of the disclosure practices of 18 Canadian firms as "disclosure management." Use of the term disclosure management within this research refers to the inclusion of causal reasoning (which include attributions, excuses, justifications, and projections) intended to induce or change interpretations and impressions developed by the user in reaction to the audited financial statements. This definition precludes direct misstatement in retrospective disclosures regarding audited financial statement numbers as it is assumed that such attempts to mislead would be detectable by at least moderately sophisticated users.[30] It does not preclude interpretations or justifications of those audited financial statement numbers.

Gibbins et al. discuss the various ways firms engage in disclosure management. Among the several disclosure output components that firms attempt to manage are the content of the information itself, the timing of disclosure release, and the interpretation of disclosures. Gibbins et al. theorize that one preference for managing disclosures developed by managers in opportunistic firms is "a propensity to seek firm-specific advantage in how disclosures are made and interpreted", taking

[30] For example, one could not disclose that "sales for 19XX decreased 2%" when an cursory examination of the audited financial statements showed a decrease of 10%.

"active stances in which disclosures are seen as opportunities to reap specific benefits by managing the disclosure process."[31] The attempt to manage interpretation of disclosures can be either *ex ante* or *ex post*. Ex ante attempts include management analyses associated with financial releases, and attempts to manage the visibility of disclosures (e.g., featuring good new prominently, while de-emphasizing bad news). Ex post management is utilized to alter third-party interpretations of already released financial information.[32] In another part of the same study, Gibbins et al. classified the type of disclosure made in shareholders' letters from 11 sample firms and noted that 61 percent of the particular disclosures made involved some form of disclosure management through positive or negative shading and explicit causal attribution. They also noted that opportunistic firms appear to use more disclosure management techniques than do ritualistic firms, which exhibit "largely passive, even rote adherence to perceived disclosure norms and does so using routinized, bureaucratic procedures."[33]

Jamal, Johnson and Berryman (1995) conducted an experiment to determine whether or not auditors could detect an attempt to use framing to mask the existence of a financial statement fraud. A frame is an attempt to alter how a task (e.g., an audit, or the interpretation of a financial statement) is perceived and acted upon by an individual. The way information is presented may influence how it is interpreted. Auditors are required to maintain an attitude of professional skepticism in order to avoid being influenced by management's attempt to frame a disclosure situation. Jamal et al. maintain that fraud detection involves two steps: first, detecting and rejecting management's misleading frame(s), and second, detecting the actual fraud located in the numerical financial statements.

Two cases were developed for the study: one from the medical products industry, and the other from the paper products industry. This procedure provided the researchers with cases having different levels of fraud risk, as the paper products industry was considered to have a lower fraud risk than the medical products industry.

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[31] Gibbins, Richardson, and Waterhouse (1990), p. 130.
[32] Ibid., p. 129.
[33] Ibid., p. 130.

The cases were then manipulated so that each industry would have one case with strong cues as to the existence of misstatements and one case with weaker cues regarding misstatement. 24 experienced audit partners from nine US national public accounting firms performed the task of concurrent partner review on each of the four cases. Process data was collected during performance of the task. Results indicated that depending on how a given auditor developed hypotheses regarding the source of inconsistencies affected whether or not the frame and/or the misstatement was detected. Seven of the auditors were able to detect both the frame and the misstatement, four were able to detect the overall frame but not the fraud in all four cases, and thirteen of the auditors were unable to detect either the frame or the fraud in the financial statements.

A number of research studies using the quantitative information provided by financial statements suggest that management has the opportunity to "smooth" or influence the direction of reported income numbers through the use of discretionary accounting method choices (Hagerman and Zmijewski, 1979; Zmijewski and Hagerman, 1981; Dhaliwal, Salamon and Smith, 1982; Healy, 1985; DeFond and Park, 1997). Other researchers have shown that both qualitative and quantitative disclosures have information content for users (McNichols and Manegold, 1983; Hoskins, Hughes and Ricks, 1986; Thompson, Olsen and Dietrich, 1987; Cready and Mynatt, 1991).

The cited works examining the Letter to Shareholders as presented in the annual report form a large part of the theoretical and methodological basis for this dissertation. Gibbins et al. and Kaplan et al. provide further support for an examination of the other disclosures in the annual report. This current research extends that examination specifically to the Management Discussion and Analysis.

CHAPTER 3 - RESEARCH HYPOTHESES

The concepts, hypotheses, and methodologies presented in the papers by Bettman and Weitz (1983), Staw, McKechnie and Puffer (1983), Salancik and Meindl (1984), Gibbins, Richardson, and Waterhouse (1990), and Kaplan, Pourciau, and Reckers (1990) are central to this research process. The hypotheses expounded in those papers have been adapted for application to MD&A and the tests of impression management within MD&A disclosures.

This work expands on and extends the past work cited above in a number of areas. First, this research focuses on MD&A rather than the President's Letter to Shareholders (PLS). The PLS is more global, is less defined by rules and regulations, and is not as closely tied to the financial statements. If in a decision making situation the reader discounts some or all of the information contained in the PLS due to a perception that the PLS may be intentionally biased, then MD&A might be expected to have more prior credibility than the PLS, due to MD&A's association with SEC mandates and regulations. If so, then MD&A might then be a more attractive location for the use of impression management.

In comparison to past work on the MD&A (e.g., Ingram and Frazier (1983), Frazier, Ingram and Tennyson (1984)), this research adds firm size as an explicit variable, considering whether or not prior public information about a firm as proxied by firm size has a bearing on the amount of impression management used. Another difference can be found in the sample of firms used in this research. We compare a sample of firms from a period after the establishment of the 1980 regulations but prior to the 1989 SEC release clarifying MD&A requirements (i.e., 1983 – 1985) with a sample of firms chosen from a period after the 1989 release (i.e., 1992). If the SEC release did lead to more disclosure as

desired by the SEC, there may also be an effect on the amount of impression management used in the MD&A. This research also attempts to develop a model for predicting impression management use. Finally, most prior research on the MD&A itself used computerized content analysis programs to isolate themes within the MD&A. This research preserves the context and content of the MD&A document by using MD&A as it was provided by the individual firms in their annual reports.

A theory central to the research cited above and to this research is that of impression management, also referred to as self-presentation. Kaplan et al. define impression management as the strategies used by people to influence and control the evaluations that others make of their behavior, and to have a desired image or identity attached to them.[34] Impression management strategies are often identified as self-serving, as their intent is to improve the actor's status in evaluations made by others. Within organizational research the theory was originally applied to examining interactions among individuals within organizations, focusing on areas such as personnel selection and performance evaluations. Employees were found to act to form a particular image in the evaluator's mind – e.g., managing their reputations and images within the company and enhancing their perceived value to the firm, or mitigating the effects of the evaluation of undesired behavior.

The theory has been extended to consider as well the actions of organizations, that are directed by individuals (e.g., managers) who affiliate themselves with and take actions on behalf of those organizations (e.g., informational disclosures). Organizations have relationships with various publics (e.g. shareholders, regulators, creditors), and organizations seek to be positively evaluated by those publics, to be considered good investment prospects or good stewards of shareholder investments as evidenced by competent performance. In order to establish those images, organizations present (disclose) required facts (e.g., financial statements) but also provide the framework for analysis through additional associated informational disclosures as needed. A number of reasons can be proposed for a desire for positive evaluations – for example, to preserve or enhance organizational access to resources, or, in the case of negative occurrences such

[34] Kaplan et al. (1990), p. 64

as environmental problems or findings of criminal acts by the managers of the organization, to avoid political costs such as enhanced regulatory oversight or possible fines and restrictions on company actions. Gibbons et al. interviewed corporate insiders and outsiders involved in the construction of financial disclosures and noted that the interviewees perceived an asymmetric payoff for disclosure, in that they perceived more negative than positive consequences for disclosure, and perceived stronger consequences from the disclosure or nondisclosure of negative events than for that of positive events.[35] These responses indicate a concern over external evaluations of the firm which are based on the firm's own disclosures. [36]

One method of exploring impression management use is to examine the causal attributions made by a firm in its MD&A. Bettman and Weitz (1983) define a causal attribution as a phrase or sentence in which some performance outcome (i.e., profit, or sales) is linked with a causative reason for that outcome.[37] In a similar analysis, Staw et al. (1983) define what they refer to as a "causal event" as any explanation of results that noted how performance had been or would be caused by previous actions or circumstances.[38] These attributions relate the cause and the outcome by a causal connective or a connective phrase such as "caused by", "because", "due to", "led to", "as a result of", "if...then", "attributable to", and so on. The causative reason for the outcome can be attributed by the writer to either actions taken by the firm (internal attribution), or to actions taken by others or events in the environment (external attribution). This research follows the path of previous studies and uses causal attributions as a measure of impression management.

The direction of earnings change is expected to impact the use of impression management; a firm with a negative earnings change would be expected to show a higher

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[35] Gibbons et al. (1990), pp. 130 – 131.

[36] Russ (1991, p. 220) suggests that agency theory may also be involved in managers' presentation of information in ways that protect their interests or enhance their reputations.

[37] The unit of disclosure as defined in this research could be more than one sentence in length, e.g., "Sales are expected to increase by 5%. This increase will be a result of our increased investment in sales force training." A brief review of a small sample of MD&A texts reveals that this pattern is not infrequent; in some instances, an entire paragraph is devoted to one disclosure.

[38] Staw et al. (1983), p. 587.

use of use impression management than a firm with a positive earnings change. If a firm has proportionately more negative information disclosures to make in its MD & A, more impression management will be needed in order to maintain the perception of management control. Management has an incentive to manipulate disclosures in order to secure scarce resources (e.g., investment capital, proxy votes), to affect the level of their compensation, or to justify previous actions. If managers wish to maintain their positions and compensation, they need the support of stockholders. One tactic management can use to secure stockholder support is to persuade those stockholders that management is in fact capable in spite of bad news. This persuasion can be accomplished by the selective release of information or presentation of interpretations of information already public. Herring (1990) notes that "...top-level managers...are now very sophisticated in communications skills. Top management...exerts a great deal of control over their reports, aware of the influence they now have."[39] Management of poorly performing firms with negative results to present will engage in more frequent impression management in order to secure external resources and retain investor support; in order to retain control of their firms, managements of such firms would need to provide evidence that they are of higher ability and skill than suggested by the financial results.

Firm size is also expected to affect the level of impression management use. If other public information is available regarding a firm, less weight can be placed on any one source of information used in investor decision-making; conversely, if there are few sources of public information regarding a firm, results reported in those few sources will be major factors in user decision-making. Larger firms tend to have other sources of information about them present in the public domain (e.g., media coverage); they also tend to have a larger financial analyst following.[40] A larger pool of public information could make it more likely that in the event of negative earnings news, a large firm would require more frequent use of impression management than would a smaller firm with negative earnings news. Smaller firms generally have been shown to have few or no analysts following them, and few or no collateral information sources. Smaller firms have

[39] Herring (1990), p. 16.
[40] Bhushan (1989).

also been shown to have fewer news items printed regarding them.[41] It may be necessary for the larger firm to "overcome" both the negative earnings news and the associated analyst and media coverage of such news by using a higher level of impression management to influence investor perceptions of the firm.

The hypotheses for this study are as follows:

Hypothesis 1: The highest frequency of causal attribution use is associated with firms having a negative earnings change and large firm size, followed by firms having a negative earnings change and small firm size. Large and small firms with a positive earnings change will not significantly differ from each other in causal attribution use.

Hypothesis 2: For all firms, the proportion of causal attributions associated with internal causes relative to external causes will be greater when the causal event is positive rather than negative. Negative earnings change firms and large firms will have a larger proportion of external causes associated with negative events than will positive earnings change firms and small firms.

[41] Grant (1980); Atiase (1985).

CHAPTER 4 – METHODOLOGY AND HYPOTHESIS TESTING

Sample Firm Screening and Selection

This study involved firms issuing annual reports with fiscal years ending in 1983, 1984, and 1985, as there were few substantive SEC releases regarding the content of MD&A issued during that period. An additional comparison group was selected from firms issuing annual reports during 1992 in order to attempt an assessment of the effect of the 1989 Financial Reporting Release Number 36 on MD&A reporting. The 1991 Compustat database was used to determine the initial sample of firms for each year of the 1983 - 1985 sample, based on size classification. The 1992 Compustat database was used for the 1992 sample. Large (small) firms were defined as those firms with net sales and net assets in the 90th (25th) quartile of all firms listed on Compustat. Firms between the 25th and 90th percentiles were deleted from the sample file. Firms were then randomly selected and the Disclosure Incorporated and Q-Data microfiche files of annual reports were searched to locate the firm's annual report for the specific year and to determine if the firm was listed on the New York Stock Exchange (NYSE) or American Stock Exchange (AMEX). If the annual report could not be located or the firm was not listed on NYSE or AMEX, the firm was dropped from the sample.

The sample firms in this research were categorized according to firm size as large or small firms and were further categorized according to the direction of earnings change from the prior report year to the current report year as belonging to two types of firms: positive earnings change or negative earnings change firms. Firm size was chosen as a classification variable as previous research has indicated there is a different amount of publicly available information depending on the size of the firm (e.g., Grant, 1980; Atiase, 1985, 1987). In general, larger firms have more publicly available information

relative to small firms.[42] Earnings change provides a partition on the basis of the direction of the financial success of the firm in the current period. The volume and direction of news items regarding a firm can be used as a measure of already public information. Firms can also have varying levels of both positive and negative news items.

Earnings changes for the firm were calculated from the annual report's income statement. Positive earnings change (negative earnings change) firms were defined as those showing a positive (negative) earnings change from year t-1 to year t, where year t is the current report year. The firm was assigned to one of the four classification groups based on size (large or small) and earnings change (negative or positive); firms were selected until each group was filled. Each group contains 10 firms from each year of the sample period, or 40 firms. Selection was made until there were 40 firms in each of the four groups, consisting of 120 firm-years of data from the 1983 - 1985 sample, and 40 firm-years of data from the 1992 sample. Appendix A lists the firms in the final sample, with the year of report and group assignment.

Data Acquisition and Coding Procedures

The central challenge in this type of research is the analysis of qualitative information. One method commonly used is that of content analysis. Although it is used to investigate qualitative data, content analysis often involves the use of frequencies, correlations and/or percentages, and thus incorporates both qualitative and quantitative methodologies.[43] The use of content analysis procedures allows the context of the MD&A disclosure to be preserved and allows a focus on direct causal attributions. It is necessary to distinguish instances of causal attribution in order to determine the extent of the use of impression management techniques. Causal attribution links the outcome of an event with a specific cause for that event. The coding procedure utilized here is a

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[42] All large firms in the study were listed on the New York Stock Exchange, while most of the small firms were listed on the American Stock Exchange. Appendix A lists the firms and the exchange the firms traded on.

[43] Lewin (1979), p. 252.

combination of methods and variables employed by Bettman and Weitz (1983), Staw et al. (1983), Salancik and Meindl (1984), and Kaplan et al. (1990). The methodology for the actual coding done in this research is closely related to that used by Staw et al. An MD&A checklist developed by Hooks and Moon (1991) was provided to coders as an aid to their classification of disclosures in the samples.

The unit of analysis in the content analysis is an individual instance of disclosure in the MD&A text that fit the definition of a direct causal attribution. A direct causal attribution provides an unambiguous and clear relationship between asserted cause and effect. For example, "A decrease in government spending on military aircraft led to a decrease in the profit of our jet engine division" provides a direct causal link between the asserted cause (decreased government spending on military aircraft) and the outcome (decreased profit for the jet engine division). Implicit causal statements were not coded, as they are more open to ambiguity in coding than are direct causal statements.[44] The cause and effect of each disclosure were required to be in close proximity, and those statements which link two outcomes were not used, as they do not directly present a cause for either outcome.

A coding manual (reproduced in Appendix B) listing definitions of variables, examples of usage, and the coders' procedures served as a guideline for the coding process. The process involved the analysis of each direct causal attribution in each MD&A document on the following variables: locus of causality, time orientation, direction of cause, direction of outcome, use of strategy in causal attribution, and MD&A topic area. Coders also marked the beginning and the end of each direct causal attribution statement in order to allow for the measurement of attribution usage, and they consecutively numbered the specific cause-outcome attribution pairs in each direct causal statement. Total MD&A word count (TSIZ) was measured for each sample firm. Included in the coding procedures were instructions for coders to mark the beginning and the end of the direct causal attribution in the MD&A document to allow measurement of

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[44] Bettman and Weitz (1983), p. 172-173; Salancik and Meindl (1984), p. 245. Staw et al. (1983) define implicit causal statements as those statements describing particular events but not explicitly linking specific causes to the year's performance. For this research, the relationship between causal events and financial statement results must be directly stated.

the word count associated with direct causal attributions in a given MD&A (CSIZ). Coders also indicated the number of direct causal attributions made per direct causal statement in the MD&A. It is possible for one direct causal statement to contain more than one direct causal attribution; for instance, the statement "Sales increased because of the introduction of new products and our aggressive marketing efforts" contains two direct causal attributions in one direct causal statement. A total count of those individual attributions per MD&A (TCA) and a count of statements containing direct causal attributions per MD&A was made (DCS).

Locus of causality indicated the source of cause: the actions of the company itself (internal locus), or industry or environmental actions and/or events (external locus). Time orientation of the attribution indicates whether the attribution referred to past events or future prospects. Direction of the cause referred to the favorableness or unfavorableness of the event causing the outcome (i.e., positive or negative). The direction of the outcome was also measured, as it is possible that a negative (positive) cause may be associated with a positive (negative) outcome. The strategy variable attempts to elicit the type of strategy perceived in any given causal attribution. In an excuse strategy, a firm denies responsibility for the negative consequences of an action by emphasizing the negative impact of uncontrollable factors. In a justification strategy, a firm acknowledges responsibility, but asserts that the positive and possibly unobserved consequences resulting from an action outweigh the negative effects. A change strategy would emphasize that actions are being taken to correct deficiencies and "plot a new course" for the company.[45] A given causal attribution might also have no discernible strategy behind its structure. The five major MD&A topic areas as defined in the Hooks and Moon checklist[46] are also included (liquidity, capital resources, results of operations, future trends, other) to measure concentration of disclosure by category.

A review of the MD&A texts collected indicated that there is significant variance in the physical volume of the MD&A between large and small firms, with larger firms generally having longer MD&A texts. Therefore, any measure of disclosure management

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[45] Kaplan et al. (1990), p. 70.
[46] Hooks and Moon (1991), pp. 96-97.

usage will have to take the relationship between causal attribution text volume and the total volume of the MD&A text into account. This difference is addressed by determining the approximate number of words in each full MD&A text. MD&A volume was estimated by first taking a sample of every 10th line until 15 lines from the text were examined for words per line, and averaging the word counts from those 15 lines to calculate an estimated words per line. Then the length of the MD&A text in lines were counted. The product of the two numbers (i.e., average words per line times lines in length) should provide a reasonable estimate of the total MD&A volume in words.[47]

The coders were seven upper-level undergraduate accounting students who had completed al least the intermediate accounting and introductory finance courses at Purdue University and who were blind to the study's hypotheses. The students served as proxies for moderately sophisticated users of financial information. A small number of coders was used in order to gain more control over the coding process and allow for the coders to gain sufficient expertise in the coding process. Demographic data was secured from each coder. Each coder was paid proportionally based on the number of MD&A documents coded.

The first session involved training the coders on the coding procedure and acclimating them to the use of the variables. When a coder had reached an 80% agreement with the expected codings on a short test MD&A, he or she was then given a set of MD&A documents from firms in the study, a set of coding sheets on which to record the coding, and a copy of the coding instructions to refer to as needed. Each MD&A was coded twice, each time by a different coder. Each coder reviewed the MD&A text for causal attributions. The coders did not have access to the audited financial statements for the sample firms or to any information regarding firm size or earnings change group membership. The coders also did not have access to the coding done by others. The names of the firms were also disguised as much as possible to prevent any bias due to company like or dislike. As each causal attribution was located the coder scored the attribution based on the variables defined above. The coder also

[47] As the 1992 MD & A texts were available in computer document form, it is possible to obtain exact word counts for that portion of the sample.

physically marked the beginning and end of the unit of disclosure on the MD&A, so that the relative length of causal attributions within an MD&A text can be calculated. An attempt was made to equalize the amount of work done by each coder through the use of the size measure described above, so that, over the coding sessions, each coder would do approximately the same amount of work. Due to the variation of individual schedules and ability to participate in the research, that balance was not always achieved.

An analysis of the correlation of the codings made by the designated Coder 1 and Coder 2 was performed on the aggregate proportions of the following binary data variables: locus, time, cause, effect, and strategy.[48] Three measures of causal attributions were also tested. The intercorrelations were calculated for all years combined and for each year separately, using both Pearson product-moment correlation and Spearman rho. The results are summarized in Tables 1 through 4.

A review of the intercoder correlations across all years combined (Tables 1 and 2) indicated similar results under Pearson or Spearman correlations. Correlations range from a high of .883 (Pearson, $p < .001$) for the number of direct causal statements, to a low of .052 (Spearman, $p < .514$) for the strategy variable. This result is most likely a result of the coders being presented the raw texts of the MD&A with no researcher editing or preselection of causal statements. The coders themselves identified the causal statements to be evaluated. This methodology was followed in order to maintain a more naturalistic environment in the coding and in the coders' perceptions of the causal attributions. These factors indicate that the coder variable should be included in any further analysis (e.g., logistic regression analysis) as a control variable. The locus, time, cause, and effect variables have statistically significant intercoder correlations, although the magnitude of the correlations are lower than would be expected in a more controlled situation. Other possible causes for the lower intercoder correlations include coder fatigue and lack of retention of the coding training. A number of the MD&A documents were relatively long and involved more technical than expository writing, which could have lead to coder inattention and distraction as they worked on the documents. Also, the coders performed

[48] The aggregate numbers were used as there are unequal numbers of codings for each MD&A.

their task as their schedules allowed; the time lags created by conflicts between time available for coding and the coders' personal and academic schedules may have interfered with their remembering how they were to code the causal attributions.

Tables 3 and 4 continue the intercoder correlation analysis by evaluating the agreement across individual years. Again, the largest and most stable correlation across the years appears to be in the measurements relating to the causal attributions, indicating significant agreement between coders regarding the quantity of causal attributions in the MD&A documents. The weakest correlations are in the time and strategy variables. The locus, cause and effect variables were statistically significant across the years, and as in the overall analysis, the magnitude of the correlations were less than would be expected in a situation where the attributions were more controlled. These results indicate the existence of considerable measurement error in some of the variables. Caution is therefore warranted in interpreting the results of the coding procedures.

Hypothesis Testing

The type of data involved in this research requires careful consideration in the selection of statistical procedures used. As this research does not involve experimental procedure, we wish to look for relationships rather than strict causality. Given the qualitative and categorical nature of the coded variables, the logistic regression procedure was chosen for use in the analysis of the categorical data.[49] Logistic regression analysis is well-suited for the analysis of binary dependent variables and requires fewer assumptions about the structure of the data compared to other procedures (i.e., it does not require normal distribution of errors, multivariate normality of the independent variables, and equal variance-covariance matrices.) The logistic regression methodology generates predicted values that can be interpreted as the probabilities of an event occurring. Parameters are estimated using a maximum-likelihood method and an iterative algorithm for parameter estimation.

[49] SPSS Regression Models 10.0 (1999), pp. 36-37.

One of the concerns in statistical analysis is whether or not the tested data meet the requirements for the use of a given statistical method, either parametric or nonparametric. For example, both ordinary least squares regression and analysis of variance require that errors be normally distributed, with constant variance. Use of such techniques in the analysis of categorical data is not appropriate, and may lead to misleading results. A preliminary analysis of the MD&A firm-level data (size and number of attributions) using the Kolmogorov-Smirnov one-sample test indicates an issue with nonnormality of data in the variables. These results may limit the interpretation of the results of some parametric procedures. Therefore, it is prudent to consider a conservative approach, using nonparametric statistical procedures for the analysis of such data. In this case, the combination of the Kruskal-Wallis W and Mann-Whitney U procedures are useful nonparametric analogues to the parametric t test and analysis of variance. The Kruskal-Wallis one-way analysis of variance by ranks is used to determine if k independent samples are from the same population. The Mann-Whitney test is used to test whether two independent groups have been drawn from the same population and is considered one of the most powerful of the nonparametric tests.[50]

The testing of Hypotheses 1 and 2 begins with descriptive measures examining the number and distribution of codings across coders and across firm size and earnings change. These measures are followed by between-groups analyses of the measures of firm MD&A size (TSIZ), frequency of causal attribution measures (TCA, DCS, and CSIZ), and a normalized causal word count measure (CSIZ/TSIZ). Next, two-way contingency table analysis (crosstabulation) of the individual categorical codings is done in order to investigate associations between the coded variables. These tests provide a chi-square measure which indicates the existence of a significant relationship between two variables. As the dependent variable in the analysis is a categorical variable, logistic regression (SPSS Binary Logistic Regression procedure) is used for the next step in the analysis. Logistic regression constructs and tests a predicted probability model based on the independent variables entered into the model. The SPSS procedure provides regression coefficients with tests of coefficient significance, goodness of fit measures, a

[50] Siegel and Castellan (1988), pp. 128-129.

table of odds ratios, and measures comparing predicted values generated by the model with actual results. Both locus and strategy are used as dependent variables in separate analyses; locus has often been used as a dependent variable in impression management research. Finally, an analysis of the relationship between the direction of the causal event (measured as positive or negative cause) and the attribution associated with the event (internal or external locus) is performed. All procedures described are performed on both samples (1983 – 1985 and 1992), and the results from each sample are compared to determine any differences in the results between the sample periods.

Table 1. Intercoder correlations, all years combined, Pearson.

Proportion	*r*	*p*
Locus	.425	.000
Time	.177	.026
Cause	.486	.000
Effect	.684	.000
Strategy	.074	.351
Total causal attributions	.857	.000
Direct causal statements	.883	.000
Causal word count	.833	.000

Table 2. Intercoder correlations, all years combined, Spearman

Proportion	*r*	*p*
Locus	.440	.000
Time	.243	.002
Cause	.489	.000
Effect	.647	.000
Strategy	.052	.514
Total causal attributions	.838	.000
Direct causal statements	.836	.000
Causal word count	.832	.000

Table 3. Intercoder correlations, by data year, Pearson.

	1983		1984		1985		1992	
Proportion	r	p	r	p	r	p	r	p
Locus	.725	.000	.391	.013	.457	.000	.552	.000
Time	.160	.325	.235	.144	.573	.000	.206	.201
Cause	.612	.000	.667	.000	.448	.004	.364	.021
Effect	.745	.000	.620	.000	.645	.000	.803	.000
Strategy	.108	.506	.217	.180	-.155	.341	.031	.851
Total causal attributions	.768	.000	.909	.000	.884	.000	.897	.000
Direct causal statements	.746	.000	.925	.000	.883	.000	.910	.000
Causal word count	.755	.000	.938	.000	.865	.000	.872	.000

Table 4. Intercoder correlations, by data year, Spearman

	1983		1984		1985		1992	
	r	p	r	p	r	p	r	p
Locus	.762	.000	.408	.009	.398	.011	.564	.000
Time	.064	.693	.366	.020	.720	.000	.120	.461
Cause	.475	.002	.581	.000	.453	.003	.527	.000
Effect	.631	.000	.626	.000	.595	.000	.746	.000
Strategy	.183	.259	.244	.129	-.222	.169	.008	.961
Total causal attributions	.808	.000	.912	.000	.711	.000	.890	.000
Direct causal statements	.790	.000	.928	.000	.689	.000	.888	.000
Causal word count	.828	.000	.913	.000	.765	.000	.870	.000

CHAPTER 5 – RESULTS

Descriptive Measures on Data Sets

Table 5 presents the results of descriptive measures performed on the 7,007 total codings collected in this research and on the MD&A size and causal attributions data. Panel A of Table 5 examines the raw number of codings performed by each coder in each data year. There are significant differences between the number of codings by coder in each year, with a noticeable increase in the number of codings from the 1983 – 1985 period (an average of 732 for coder 1 and 827 for coder 2) to the 1992 codings. These differences in coding may have contributed to the significance of the coder variable in the logistic regressions. Panel B of Table 5 examines the codings by coder and year classified into large and small firm size and positive and negative earnings change, respectively. As expected, the number of codings for large firms exceeded the number of codings for small firms, with a substantial increase seen in the codings for 1992 large firms as compared to the number of codings for 1983 – 1985 large firms. The number of codings for negative earnings change firms generally exceeded the number of codings for positive earnings change firms across all years and coders; in 1992 there is a substantial increase in the number of codings for negative earnings change firms as compared to the 1983 – 1985 period.

Panel C of Table 5 presents descriptive statistics concerning total MD&A size (TSIZ) and the causal attribution variables total number of causal attributions in an MD&A document (TCA), total number of direct causal statements in an MD&A document (DCS), the number of words in an MD&A document used in causal attribution (CSIZ), and the ratio of causal attribution word usage to total MD&A size (CSIZ/TSIZ). The analysis is presented by classification (large or small firm, and positive or negative

earnings change) and year. Large firms in the both the 1983 – 1985 and 1992 periods had, on average, higher levels of all the above variables than did small firms, except for the ratio CSIZ/TSIZ, in which small firms had a higher average ratio compared to large firms. The analysis also indicates that for large firms, the 1983 – 1985 averages for all variables except the ratio are noticeably smaller than the 1992 values. This may indicate the occurrence of some event which caused firms to increase their levels of disclosure; one possibility is that FRR 36 may have had an impact on disclosure levels, in that firms in the 1992 sample had access to more explicit guidance on what disclosures to make than did firms reporting prior to the release of FRR 36.

Negative earnings change firms in both the 1983 – 1985 and 1992 samples had, on average, higher levels of all five attribution variables than did positive earnings change firms of the same respective period. The values for 1992 are also larger than the 1983 – 1985 average values, and the ranges between the positive earnings change firms' values and the negative earnings change firms' values are greater than the ranges in the 1983 – 1985 period on the same variables. These results provide some indication that firms reporting negative results use somewhat more attribution in their disclosures than do firms reporting positive results. The increase in the 1992 values again may be connected to some event which lead to expanded MD&A disclosure in 1992 as compared to the 1983 – 1985 period.

Normality Tests on MD&A Attribution Data

As the use of parametric statistical tests requires the variables to be normally distributed, One-Sample Kolmogorov-Smirnov tests were conducted on the causal attribution variables (Table 6). The results of the tests under the null hypothesis that the variable is normally distributed indicated significant departures from normality. These results indicate that nonparametric tests such as the Kruskal-Wallis W and Mann-Whitney U tests would be more appropriate choices than parametric ANOVA for any analyses of the causal attribution data.

Tests on MD&A Size and Causal Attributions

The first analysis was performed on the total size variable TSIZ in order to determine if there were significant differences in the total size of the MD&A documents between groups. Large firms would be expected to have larger MD&As; however, we also want to determine if the direction of earnings change also has an effect on MD&A size. The nonparametric Kruskal-Wallis W test was performed to determine the existence of group differences based on firm size and earnings change; the nonparametric Mann-Whitney U test was performed as a follow-up test to investigate the specific differences between pairs of groups if overall group differences were discovered by the W test. This methodology approximates the parametric ANOVA procedure, which is not used here due to the nonnormality of the data. The difference in mean ranks from the U test are also presented in order to provide a relative and simple measure of effect size.

Table 7 presents the results of the W test on TSIZ for all years combined, and the results of the U test on group pairs. The W test indicates that there are strongly significant differences in the total MD&A size between groups, part of which might be expected due to the differences in firm size. The U test was then performed on the comparison pairs (LN, SN, LP, SP) to attempt to locate the source of the differences. Pairs holding earnings changes constant and differing in firm size (LN-SN and LP-SP) did not have significantly different mean ranks. Of the significant pairs, the LN-SP pair had the largest difference in mean ranks (31.16), followed by the SN-SP (28.72), LN-LP (24.72), and SN-LP (20.16) groups, respectively. These results imply that the total MD&A size of large (small) firms reporting negative earnings changes is significantly larger than the total MD&A size of large (small) firms reporting positive earnings changes. Thus, there appears to be a relationship between the direction of the earnings change and the amount of disclosure made by a firm, as defined by MD&A total size.

Tables 8 through 11 examine the variables measuring the levels of causal content identified by each coder: the total number of direct causal attributions in an MD&A

document (TCA); the number of direct causal statements in an MD&A document (DCS); and the count of the number of words in an MD&A document used in making direct causal attributions (CSIZ). The same methodology used to analyze total MD&A size is used in this analysis, except that given the unequal number of codings per MD&A between coders, this and other analyses are first conducted on each coder's results, and the areas of agreement between the coders are then examined. Also, each year's data is examined separately.

Table 8 reports the results of the W test on each of the three variables for each coder and for each data year. Significant differences are indicated between groups on all three variables for both coders in all years except for 1985, which does not show any significant results for either coder on any of the three variables. Tables 9 through 11 provide the results of the Mann-Whitney U tests performed on the 1983, 1984, and 1992 data for each coder and variable to isolate which groups show significant differences. The difference in mean ranks between each two-group pair is presented as a measure of the direction of the relationship and as a simple measurement of the effect size. If the sign of the difference is positive (negative), then the mean rank of group 1 is larger (smaller) than that of group 2. All the significant results in Tables 9 through 11 had positive differences of varying magnitudes.

Table 9 presents the Mann-Whitney analysis done on the total number of direct causal attributions (TCA) in each MD&A document. In the 1983 data, both coders showed significant differences in the LN-SP and SN-SP pairs; coder 2 also showed significant differences in the LN-SN, LN-LP, and SN-LP pairs. For the 1984 data, both coders found significant differences in the LN-LP and LN-SP pairs; neither coder found any other pair significant. For the 1992 data, both coders found significant differences in the LN-LP, LN-SP, and SN-SP pairs; coder 2 also showed a significant difference in the SN-LP pair. Considering only the results on which the coders agreed, this suggests that the total number of direct causal attributions is significantly larger in negative earnings change firms than in positive earnings change firms. There is some indication that within large firms, TCA is larger for negative earnings firms. These findings provide some support for Hypothesis 1, and imply that large firms with negative earnings news may

perceive a need to present more direct causal explanations in order to offset negative impressions users form about the firm, based on their interpretations of its reported financial results.

Table 10 presents the Mann-Whitney U on the total number of direct causal statements (DCS) in each MD&A document. For 1983, both coders agreed on significant differences in the LN-SP and SN-SP pairs; coder 2 also showed significant differences in the LN-SN, LN-LP, and SN-LP pairs. For the 1984 data, both coders agreed on significant differences in the LN-SN, LN-LP, and LN-SP pairs, with no other significant differences in any other pair for either coder. For the 1992 data, both coders agreed on significant differences in the LN-LP, LN-SP, and SN-SP pairs, with no other significant differences in any other pair for either coder. Considering only the results on which the coders agreed, the number of direct causal statements appears to be significantly higher for negative earnings change firms, with some indication that large negative earnings change firms have more direct causal statements than large positive earnings change firms. This is consistent with the results in Table 9, indicating more explanatory statements are used by firms with negative earnings news, and that large firms differ across earnings change direction.

The Mann-Whitney analysis on total causal word count in the MD&A document (CSIZ) is summarized in Table 11. For 1983, both coders agreed on a significant difference in the LN-SP pair; coder 2 also showed significant differences in the LN-SN, LN-LP, and SN-LP pairs. For 1984, both coders agreed on significant differences in the LN-SN, LN-LP, and LN-SP pairs, with no other significant differences in any other pair for either coder. For 1992, both coders agreed on significant differences in the LN-LP, LN-SP, and SN-SP pairs; coder 2 also showed a significant difference in the LN-SN pair. Considering only the results on which the coders agreed, it appears that the word count associated with direct causal attributions is greater for negative earnings change firms as compared to positive earnings change firms. There is also some indication that large firms with negative earnings changes have a higher word count devoted to direct causal attribution than do large positive earnings change firms. Again, this is consistent with the results in Tables 9 and 10.

Due to the possibility of a size effect influencing the results of the analysis of CSIZ, CSIZ was normalized by taking the ratio of the causal attribution word count to the total MD&A word count (CSIZ/TSIZ). This ratio was then subjected to the same testing procedure used for the other attribution measures. The Kruskal-Wallis W is reported in Table 12, and the Mann-Whitney U in Table 13. The results of the W test indicate that the only year with significant results common to both coders was 1985. This test indicates that, in terms of the percentage of total MD&A text used in attributions, there are no consistent significant differences between groups. Follow-up testing using the Mann-Whitney U test on the 1983, 1984, and 1992 samples yields inconsistent results across those samples. In the 1983 sample, the coders agreed on a significant difference only in the SN-LP and SN-SP pairs; the negative difference in mean ranks indicates that the SN ratio was less than the LP or SP ratios. For the 1984 and 1992 samples, there was no agreement between coders on any group pair. In the 1985 sample, there was agreement on the LN-LP, LN-SP, SN-LP, and SN-LP pairs; again, the difference in mean ranks was negative, indicating a greater effect for the second member for each group pair. In terms of the concentration of causal attribution in an MD&A document, these results imply that, in 1985, positive earnings change firms had a higher percentage of MD&A text used in causal attributions. One possible source of this reversal in concentration as compared to previous results may be the amount of indirect causal attribution in the MD&A documents. The focus of this research was on direct causal attributions as they are less ambiguous and can be readily located; indirect causal attributions were not coded as the linkages between cause and attribution in those statements are usually ambiguous and harder to define. It is possible that firms needing to release negative news use more indirect attributions in disclosing that news, in order to diffuse the effect of the news on user expectations. If the indirect disclosures require more text, such disclosures may "dilute" the CSIZ/TSIZ ratio by inflating TSIZ.

In summary, there is some support for Hypothesis 1, in that negative earnings change firms appear to use higher levels of causal attribution than do positive earnings change firms. Large negative earnings change firms also appear to use a higher level of causal attribution than do large positive earnings change firms. These two findings may

indicate that large firms with negative news may consider it beneficial to provide users with detailed explanations about the source of firm performance.

Tests on Categorical Data: Two-way Contingency Table Analysis

The next set of tests were performed on the individual categorical codings; there are a combined 7,007 records of observations made by both coders over all firms and years. One method of assessing the association between two categorical variables is to perform a two-way contingency table analysis (crosstabulation) using the SPSS Crosstabs procedure. The crosstabulations were done as a preliminary analysis to examine the general relationships between the categorical variables, and preceded the modeling of the relationships through the use of logistic regression. The Crosstabs procedure computes a Pearson chi-square statistic which can be used to assess whether or not two variables are independent of each other. The null hypothesis of the test is that the specified row and column variables are independent of each other; a significance level of .05 or less would imply that there is a relationship between the two variables.

Table 14 summarizes the crosstabulation results for locus versus all other categorical variables presented in Tables 15 through 20, and Table 21 summarizes the crosstabulation results for strategy versus all other variables presented in Tables 22 through 27. The locus variable was chosen for investigation as it has been used as the dependent variable in previous impression management research; also, the coder intercorrelation for locus was significant over all years and the locus variable may prove a useful adjunct to the strategy variable in the assessment of impression management in the MD&A. All tables report results by data year and coder, with additional combinations of data years also being assessed (1983 – 1984, 1983 – 1985).

The results summarized in Table 14 indicate that over time, there is a continued significant association between the locus variable and the cause, effect, and topic variables. Firm size and locus have a somewhat weaker relationship over time, and the relationship between locus and earnings change, and locus and strategy, is weak at best.

The locus and time variables show no significant association; an examination of the time crosstabulations indicates that most causal attributions were coded as having a past focus, with comparatively few attributions coded as having a future focus. In the combined-year crosstabulations, only firm size, cause, effect, and topic are consistently significantly associated with the locus variable.

The results summarized in Table 21 indicate that over time, there is a continued significant association between the strategy variable and the effect variable, with a somewhat weaker association with the earnings change variable. The associations between strategy and locus, time, or cause are not stable over time. In the multiple-year crosstabulations, only firm size, effect, and year are continually associated with strategy. It should be noted in Table 24 that there is a possible problem with 1985 Coder 2 coding of the strategy variable in that only one of the 771 attributions coded is coded as "strategy". An examination of all remaining coder and year combinations reveals no occurrence of this extreme relationship within a variable. Any analysis which involves use of the strategy variable and codings from 1985 may therefore be problematic and should be interpreted with caution.

Tests on Categorical Data: Logistic Regression Analysis

Logistic regression analysis was performed on the categorical codings with locus and strategy each separately analyzed as the dependent variable. The other categorical variables (firm size, earnings change, time, cause, effect, and topic) were used as independent investigational variables. The coder is included as an independent control variable in all models due to the apparent influence of the coder seen in the intercoder correlations and the crosstabulation results. The year variable is also included as a control variable in all multi-year models to detect any influence of the calendar year on the results. Models with varying combinations of independent variables were calculated using the SPSS Binary Logistic Regression procedure and are reported in Tables 28, 29, and 30 (using locus as dependent variable) and Tables 31, 32, and 33 (using strategy as

dependent variable.) The models are repeated for each data set; in each Table, Model 15 is a full model which uses all variables; variables that are significant in the full model are used to form the reported final model.

Each variable-related cell of the tables reports three numbers: the regression coefficient for that variable in the specific model; the Wald statistic for that regression coefficient; and Exp(B), the effect of a unit change in the variable on the odds ratio. The Wald statistic has a chi-square distribution and is used for significance testing of the regression coefficient. A regression coefficient with an Exp(B) value of 1 would indicate that a unit change in that variable would not significantly increase or decrease the odds of the dependent variable occurring. A significant regression coefficient with an Exp(B) of less than 1 would indicate a decreased odds of the dependent variable outcome occurring, while a significant regression coefficient with an Exp(B) of greater than 1 would indicate an increased odds of the dependent variable outcome occurring. The tables also report the model chi-square and the Nagelkerke R^2 statistic for each model. The model chi-square indicates the improvement in the fit of the model by entering that model's variable(s) into the analysis as compared to a constant-only model. The Nagelkerke R^2 is an approximation to the R^2 statistic used in ordinary least squares regression, and is used as a measure of model goodness of fit.[51]

The (0,1) indicator codings for the categorical variables were set to model the expected relationships for the probability of each dependent variable occurring. The estimated probability of the occurrence of the dependent variable is calculated as

$$\frac{1}{1+e^{-Z}}$$

where Z is calculated from the logistic regression coefficients.[52] For locus as dependent variable, the expected model is as follows:

$$Z(LO) = a + b_1(FS) + b_2(EC) + b_3(CA) + b_4(EF) + b_5(ST),$$

where

LO = external locus,
FS = large firm size,
EC = negative earnings change,

[51] SPSS Regression Models 10.0 (1999), p. 45-46.
[52] Ibid., pp. 40-41.

CA = negative cause,
EF = negative effect,
ST = use of strategy.

For strategy as dependent variable, the expected model is as follows:

$$Z(ST) = a + b_1(FS) + b_2(EC) + b_3(CA) + b_4(EF) + b_5(LO),$$

where

ST = use of strategy,
FS = large firm size,
EC = negative earnings change,
CA = negative cause,
EF = negative effect,
LO = external locus.

The models in Table 28 are based on combined data from the 1983 – 1984 data years, with external locus of causality as the dependent variable. Strategy, time, and year were not significant in any model tested. The coder variable was significant to $p < .05$ in all models, but the coefficient was small in most models except for Models 14, 15, and the final model when the topic variable entered the model. Firm size was significant to $p < .01$ in all models; earnings change was significant to $p < .05$ in only two models (2 and 10) and was not significant in the full or final models. Cause was significant to $p < .01$ in all models the variable appeared in; effect was significant in a few models (5, 6, 7, and 12), but was not significant in the full or final models. This is not unexpected as cause and effect are highly correlated variables. The strong significance of the topic variable was unexpected; the model chi-square and the Nagelkerke R^2 for Model 14 were the larger than any other individual model. The final model for the logistic regression on the 1983 – 1984 data with external locus as dependent variable is as follows:

$$Z(LO) = .363 + .384(FS) + 1.136(CA) - 3.570(T1) - 3.547(T2) - 2.315(T3) + 1.074(T4) - 1.562(CO),$$

where

LO = external locus,
FS = large firm size,
CA = negative cause,
T1,...,T4 = topic 1,..., topic 4,
CO = coder 1.

The Nagelkerke R^2 for this model is .291, with cause having the largest effect (3.113) on the odds ratio, Exp(B), followed by topic four (2.926) and firm size (1.468). These

findings provide support for the firm size effect proposed in Hypothesis 1. The significance of negative cause as a variable supports the Hypothesis 2 prediction of the influence of the direction of the disclosure.

Table 29 presents the same set of models constructed for Table 28; the data on which the models are based are the codings on 1992 MD&As. The time variable does not reach significance in any model presented. The coefficients for firm size, earnings change, and cause all reach significance of $p < .01$ in those models which include any of those variables. Effect was only significant in Model 5, and not significant in any other model which included it. Strategy did not become significant in any model until Model 15 and the final model. Again, the coder variable was significant in all models, with the magnitude of the coefficients being slightly higher than in the 1983 – 1984 results until the final model. The topic variable was also very strongly significant in this data set as in the 1983 – 1984 data. The final model for the logistic regression on the 1992 data with external locus as dependent variable is as follows:

$$Z(LO) = -.664 + 1.344(FS) + .580(EC) + .830(CA) - .450(ST) - 2.777(T1) - 2.670(T2) - 1.624(T3) - 1.594(T4) - .644(CO),$$

where

LO = external locus,
FS = large firm size,
EC = negative earnings change,
CA = negative cause,
ST = use of strategy,
T1....,T4 = topic 1,..., topic 4,
CO = coder 1.

The Nagelkerke R^2 for this model is .254, slightly lower than the result for 1983 – 1984. The largest effect on the odds ratio in the 1992 data was found in topic four (4.930), followed by firm size (3.834), cause (2.293), and earnings change (1.785). As in the 1983 – 1984 results, some support for both hypotheses can be seen in the 1992 final model.

A review of the 1983 – 1985 results (Table 30) indicates results similar to those of 1983 – 1984; the effect variable was significant to $p < .05$ in the full model only. The regression coefficients for the coder variable were somewhat higher in the 1983 – 1985 models than in the 1983 – 1984 or 1992 models. The year variable did not become

significant until the topic variable was added. The final model is as follows:

$$Z(LO) = .914 + .310(FS) + 1.316(CA) - .295(EF) - 3.494(T1) - 3.048(T2) - 2.019(T3) + 1.217(T4) - 1.349(CO) - .688(Y1) - .749(Y2),$$

where

LO = external locus,
FS = large firm size,
CA = negative cause,
EF = negative effect,
T1,...,T4 = topic 1,..., topic 4,
CO = coder 1,
Y1 = 1983,
Y2 = 1984.

This final model had a Nagelkerke R^2 of .254, compared to 1983 -1984 value of .291. The values of Exp(B) in the final model are similar to those found in the respective variables in the final model for 1983 – 1984.

Comparing Tables 28 and 29 1983 – 1984 and 1992 results, it appears that in both periods a reasonable model for estimating the probability of an external locus would include a large firm size, a negative cause, and knowledge of the topic area of the disclosure. A negative earnings change was significant only in the 1992 model, and its effect was not as strong compared to the other variables in the proposed model. The analysis of the 1983 – 1985 data is in agreement with the 1983 – 1984 analysis; the additional year of data did not significantly affect those results. From these tests, Hypotheses 1 and 2 would appear to have empirical support. However, it should be noted that the measures of goodness of model fit indicate that the models as developed explain only approximately 25% to 30% of the "variation" in the logistic regression model. The low explanatory power may be due to the previously discussed possibility of measurement errors, or could be due to the omission of another variable or variables which would provide a more powerful model.

Table 31 is based on combined data from the 1983 and 1984 data years, with use of a strategy as the dependent variable. Earnings change, locus, and topic showed no significant results in any model. Cause was only significant in the model using it as a single variable. Firm size, effect, and time were significant to $p < .01$ in all models where each was a variable. Coder was significant to $p < .01$ in all models except Model 14; the

regression coefficient and the Exp(B) were small in all instances. The year variable was significant at $p < .01$ across all models, with a negative coefficient. The final model is as follows:

$$Z(ST) = -.395 + .558(FS) + .630(EF) - 1.150(TI) + .286(CO) - .607(Y1),$$

where

ST = use of strategy,
FS = large firm size,
EF = negative effect,
TI = past time orientation,
Y1 = 1983,
CO = coder 1.

The Nagelkerke R^2 for this model was low, at a value of .076. The research hypotheses again find some support in these results, but at a lower strength than in the tests with locus as the dependent variable.

Table 32 presents the same set of models constructed for Table 31; the data on which the models are based are the 1992 MD&As codings. Firm size and cause were marginally significant in only one model each; time was insignificant in all models using it as a variable. Locus was not significant until Model 15. Earnings change was significant in all models using it; however, the level of significance for earnings change decreased in larger models, especially in those where effect was also a variable. Effect was strongly significant to $p < .01$ in all models using it. Topic one, topic two, and topic three were all significant to $p < .01$, and coder was strongly significant across all models, with a large regression coefficient and Exp(B). The final model for 1992 is as follows:

$$Z(ST) = -1.781 + .269(EC) + 1.396(EF) - .364(LO) - 1.114(T1) - 1.044(T2) - .951(T3) + 1.134(CO),$$

where

ST = use of strategy,
EC = negative earnings change,
EF = negative effect,
LO = external locus,
T1....,T3 = topic 1,..., topic 3,
CO = coder 1.

The Nagelkerke R^2 for this model was .272. The results on the 1992 data indicate a stronger support for the research hypotheses than the 1983 – 1984 results. It should be

noted that a negative earnings change was significant in the 1992 final models for both dependent variables.

Table 33 is based on similar models using the 1983 – 1985 coding data. Locus was insignificant in all models using strategy as the dependent variable. Firm size and effect were strongly significant to $p < .01$ in all models. Earnings change was significant to $p < .01$; however, the regression coefficients and the Exp(B) for earnings change are relatively small in the models. Cause was significant only in the model where it was the only investigational variable. Time was strongly significant in its models, with a negative regression coefficient and moderately large Exp(B). The first three topic variables remained significant; the coder and year variables also remained strongly significant, with larger coefficients compared to the 1983 – 1984 analysis. The final model for the 1983 – 1985 data is as follows:

$$Z(ST) = -2.229 + .674(FS) + .210(EC) + .653(EF) - 1.263(TI) + .409(T1) + .476(T2) + .304(T3) + .957(CO) + .531(Y1) + 1.168(Y2),$$

where

ST = use of a strategy,
FS = large firm size,
EC = negative earnings change,
EF = negative effect,
TI = past time orientation,
T1,..., T4 = topic 1,..., topic 4,
CO = coder 1,
Y1 = 1983,
Y2 = 1984.

The Nagelkerke R^2 for this model was .137, slightly larger than the statistic for the 1983 – 1984 data.

A review of the Table 31, 32 and 33 logistic regression results indicates that the strategy variable does not perform as well as the locus variable in the predictive models for the use of impression management attributions. A comparison of the 1983 – 1984 and 1992 final models indicates that a negative effect is the only investigational variable common to both time periods; the control variables coder and year are also significant in these models. This result follows attribution logic, because whether a strategy is chosen and used would be dependent on the positive or negative sign of the consequences of an

action (i.e., the effect) referenced in the attribution rather than the cause of the effect. A review of the 1983 – 1985 analysis reveals results similar to the 1983 – 1984 model, with the addition of earnings change as a significant variable.

Proportion Tests on Attributions

Tables 34 and 35 present by year the proportions of the direction of cause associated with the attribution of the source of the cause, as measured by locus, and as classified by firm size (Table 34) and earnings change (Table 35). The cells of primary interest are those in which a positive cause is associated with an internal locus, indicating the firm is presented as the source of the positive event, and those in which a negative cause is associated with an external locus, indicating an attribution of the negative event to sources outside the firm. In Table 34, classified by firm size, for both large and small firms in the 1983 – 1985 sample, the majority of positive causes were attributed to an internal locus. The minimum percentage of such attributions was 74.1% (Coder 2, large firm size, 1985), the maximum was 93.7% (Coder 1, small firm size, 1984), and the average across all positive/internal cells in the 1983 – 1985 sample was 84.1%. In the 1992 sample, the average positive/internal attribution was 78.8%, with a maximum of 87% and a minimum of 68.1%. In the 1983 – 1985 sample this effect was slightly higher in small firms as compared to large firms, while in the 1992 sample the spread between large and small firms' positive/internal cells was on average larger than in the 1983 – 1985 sample. These results indicate a strong tendency for firms to attribute positive causes to actions taken by the firm. Such attributions would be useful in shaping the expectations and beliefs of users that management has the ability to act in the best interests of the firm.

A review of the negative/external cells in Table 34 indicates that the firms in these samples do not tend to attribute negative causes to external locus; the highest level of external attribution in the 1983 – 1985 sample is 56.8% (Coder 2, large firm size, 1985), the lowest is 13.9% (Coder 1, small firm size, 1985), and the average across all such cells is 33.9%. The maximum in the 1992 sample was 54.4% (Coder 2, large firm size), the

minimum was 17.5% (Coders 1 and 2, small firm size), and the average across all 1992 negative/external cells was 34.8%. Large firms do appear to have a higher percentage of negative causes attributed to external locus than do small firms; however, it appears that for both firm sizes, negative causes are more likely to be attributed to internal sources than external sources. This effect may be a result of the close association between the financial statements and MD&A which would allow an observer to verify at least some of the sources as internal or external, and would thus discourage some attribution attempts. The effect may also be due to the simple reporting of what actually happened to the firm in a given year. Firms may also emphasize positive associations in order to influence the overall evaluation of the firm's performance rather than attempting to affect individual evaluations of particular disclosures. The emphasis on positive actions by the firm may serve to counteract or offset required negative disclosures.

Table 35 presents similar findings for the classification by earnings change. Again, the majority of positive causes are associated with an internal locus; in the 1983 – 1985 sample, a minimum of 74% and a maximum of 91.4% of positive causes are attributed internally, with an average across all positive/internal cells of 84%. In the 1992 sample, a minimum of 66.9% and a maximum of 86.7% of positive causes are attributed internally. For negative/external pairs in 1983 – 1985, the minimum was 17.8% and the maximum was 57%, with an average of 35.7%. In the 1992 sample, the minimum attribution to external locus was 31.5%, and the maximum was 51%. Negative earnings change firms had slightly higher percentages of external attribution of negative cause as compared to positive earnings change firms, but the differences are relatively small. As with firm size, it appears that both positive and negative earnings change firms are more willing to ascribe good events to the actions of the firm than to blame bad events on sources external to the firm. In summary, it appears that the first part of Hypothesis 2 involving the association of positive cause and internal attribution is well-supported across coders and years. The second part of Hypothesis 2 involving the association of negative cause and external attribution is weakly and inconsistently supported across some coders and years.

Table 5. Descriptive measures on data sets.

A. Number of codings by coder and year

Year	Coder 1	Coder 2
1983	736	904
1984	630	806
1985	831	771
1992	1092	1237

B. Number of codings classified into firm size and earnings change, by coder and year

		Coder 1				Coder 2			
		1983	1984	1985	1992	1983	1984	1985	1992
Firm Size	Large	458	403	505	740	606	542	462	934
	Small	278	227	326	352	298	264	309	303
	difference	180	176	179	388	308	278	153	631
Earnings Change	Positive	338	265	392	443	368	356	347	469
	Negative	398	365	439	649	536	450	424	768
	difference	60	100	47	206	168	94	77	299

C. Descriptive statistics on MD&A size and causal attributions data, by classification and year.

Descriptive Statistics: firm size = large, year = 1983.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	725	3060	1756.35	586.28
TCA	40	8	67	26.60	13.15
DCS	40	4	38	15.98	7.37
CSIZ	40	128	1225	507.85	253.38
CSIZ/TSIZ	40	.075	.636	.29723	.12438

Descriptive Statistics: firm size = large, year = 1984.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	576	5076	2059.05	1157.92
TCA	40	4	83	23.63	15.58
DCS	40	1	63	16.15	11.33
CSIZ	40	54	2299	574.40	423.68
CSIZ/TSIZ	40	.094	.500	.26442	.10385

Table 5, continued.

Descriptive Statistics: firm size = large, year = 1985.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	704	5890	2307.65	1519.27
TCA	40	4	69	24.17	16.84
DCS	40	2	42	15.63	11.07
CSIZ	40	142	2200	561.85	438.75
CSIZ/TSIZ	40	.055	.450	.26069	.10641

Descriptive Statistics: firm size = large, year = 1992.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	1198	7092	3405.85	1763.35
TCA	40	8	102	41.85	23.35
DCS	40	4	70	26.10	15.83
CSIZ	40	131	1649	768.22	393.03
CSIZ/TSIZ	40	.109	.527	.24067	.10513

Descriptive Statistics: firm size = small, year = 1983.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	189	1925	888.85	410.11
TCA	40	5	32	14.40	6.73
DCS	40	2	20	9.17	4.44
CSIZ	40	102	729	311.10	154.09
CSIZ/TSIZ	40	.111	.853	.37848	.15835

Descriptive Statistics: firm size = small, year = 1984.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	222	2600	888.25	618.12
TCA	40	2	37	12.28	8.03
DCS	40	2	28	8.55	5.07
CSIZ	40	69	1018	278.67	198.06
CSIZ/TSIZ	40	.135	.707	.34143	.15952

Descriptive Statistics: firm size = small, year = 1985.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	331	2512	994.15	574.24
TCA	40	6	41	15.88	7.33
DCS	40	4	25	10.93	5.65
CSIZ	40	116	1104	388.45	201.66
CSIZ/TSIZ	40	.174	.768	.42136	.13552

Table 5, continued.

Descriptive Statistics: firm size = small, year = 1992.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	714	4192	1630.80	754.21
TCA	40	1	54	16.37	10.45
DCS	40	1	35	11.15	6.99
CSIZ	40	14	856	365.13	204.82
CSIZ/TSIZ	40	.020	.442	.22342	.10076

Descriptive Statistics: earnings change = negative, year = 1983.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	585	3060	1470.35	688.77
TCA	40	6	67	23.35	13.79
DCS	40	3	38	14.53	7.78
CSIZ	40	146	1225	487.65	257.76
CSIZ/TSIZ	40	.095	.636	.34699	.11957

Descriptive Statistics: earnings change = negative, year = 1984.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	222	5076	1692.85	1385.20
TCA	40	3	83	20.38	15.83
DCS	40	1	63	14.50	11.76
CSIZ	40	69	2299	524.63	444.23
CSIZ/TSIZ	40	.102	.707	.34757	.15970

Descriptive Statistics: earnings change = negative, year = 1985.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	521	5292	1696.90	1286.23
TCA	40	8	56	21.58	12.50
DCS	40	4	40	14.33	8.91
CSIZ	40	180	1298	499.75	290.55
CSIZ/TSIZ	40	.111	.768	.35738	.15485

Descriptive Statistics: earnings change = negative, year = 1992.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	751	7092	2650.00	1539.38
TCA	40	6	102	35.43	25.49
DCS	40	3	70	22.95	17.43
CSIZ	40	78	1649	682.43	399.26
CSIZ/TSIZ	40	.075	.527	.26885	.10340

Table 5, continued.

Descriptive Statistics: earnings change = positive, year = 1983.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	189	2340	1174.85	615.35
TCA	40	5	50	17.65	9.37
DCS	40	2	25	10.63	5.42
CSIZ	40	102	778	331.30	169.76
CSIZ/TSIZ	40	.075	.853	.32872	.17164

Descriptive Statistics: earnings change = positive, year = 1984.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	432	2600	1254.45	639.10
TCA	40	2	48	15.52	10.52
DCS	40	2	28	10.20	5.98
CSIZ	40	54	896	328.45	215.65
CSIZ/TSIZ	40	.094	.500	.25829	.09839

Descriptive Statistics: earnings change = positive, year = 1985.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	331	5890	1604.90	1365.27
TCA	40	4	69	18.47	14.54
DCS	40	2	42	12.23	9.17
CSIZ	40	116	2200	450.55	403.63
CSIZ/TSIZ	40	.055	.584	.32467	.13565

Descriptive Statistics: earnings change = positive, year = 1992.

	N	Minimum	Maximum	Mean	Std. Deviation
MDA word count	40	714	6871	2386.65	1699.64
TCA	40	1	71	22.80	15.98
DCS	40	1	36	14.30	8.47
CSIZ	40	14	1370	450.92	304.74
CSIZ/TSIZ	40	.020	.357	.19524	.0888

Table 6. Normality tests on MD&A variables, by coder.
Null hypothesis = variable is normally distributed.

Tests of Normality by Kolmogorov-Smirnov Statistic

	coder	K-S statistic[a]	df	Sig.
MDA word count (TSIZ)	coder 1	.152	160	.000
	coder 2	.152	160	.000
Total causal attributions (TCA)	coder 1	.158	160	.000
	coder 2	.152	160	.000
Direct causal statements (DCS)	coder 1	.157	160	.000
	coder 2	.165	160	.000
Causal word count (CSIZ)	coder 1	.131	160	.000
	coder 2	.152	160	.000
CSIZ/TSIZ	coder 1	.083	160	.009
	coder 2	.069	160	.062

This is a lower bound of the true significance
[a] Lilliefors Significance Correction

Table 7. Kruskal-Wallis W on total MD&A size with Mann-Whitney U on groups.

Total size	Chi Square	53.644
	Df	3
	Significance	.000

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Difference in Mean Ranks
LN vs SN	690.000	-1.058	.290	5.5
LN vs LP	305.500	-4.758	.000	24.72
LN vs SP	177.000	-5.995	.000	31.16
SN vs LP	397.000	-3.878	.000	20.16
SN vs SP	225.500	-5.528	.000	28.72
LP vs SP	674.000	-1.212	.225	6.3

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 8. Kruskal-Wallis W on total number of causal attributions (TCA), total number of direct causal statements (DCS), and total word count used for causal attributions (CSIZ).

Coder 1		Year			
		1983	1984	1985	1992
TCA	Chi Square	8.337	9.691	3.187	13.885
	Df	3	3	3	3
	Significance	.040	.021	.364	.003
DCS	Chi Square	7.808	11.398	2.017	11.778
	Df	3	3	3	3
	Significance	.050	.010	.569	.008
CSIZ	Chi Square	8.443	10.092	2.861	13.926
	Df	3	3	3	3
	Significance	.038	.018	.414	.003

Coder 2		Year			
		1983	1984	1985	1992
TCA	Chi Square	22.170	9.337	4.520	21.827
	Df	3	3	3	3
	Significance	.000	.025	.211	.000
DCS	Chi Square	19.174	10.394	3.261	19.450
	Df	3	3	3	3
	Significance	.000	.016	.353	.000
CSIZ	Chi Square	19.169	11.606	2.965	20.629
	Df	3	3	3	3
	Significance	.000	.009	.397	.000

Table 9. Mann-Whitney U on total number of causal attributions in MD&A (TCA), by coder and year.

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
Coder 1, 1983					
LN vs SN	43.500	-.492	.622	.631	1.3
LN vs LP	30.000	-1.514	.130	.143	4.0
LN vs SP*	18.500	-2.386	.017	.015	6.3
SN vs LP	33.500	-1.254	.210	.218	3.3
SN vs SP*	18.500	-2.388	.017	.015	6.3
LP vs SP	37.500	-.947	.343	.353	2.5
Coder 2, 1983					
LN vs SN*	20.000	-2.269	.023	.023	6.0
LN vs LP**	4.500	-3.442	.001	.000	9.1
LN vs SP**	3.000	-3.557	.000	.000	9.4
SN vs LP*	24.000	-1.970	.049	.052	5.2
SN vs SP**	8.500	-3.145	.002	.001	8.3
LP vs SP	36.000	-1.063	.288	.315	2.8
Coder 1, 1984					
LN vs SN	25.000	-1.892	.058	.063	5.0
LN vs LP*	16.000	-2.573	.010	.009	6.8
LN vs SP*	17.000	-2.498	.012	.011	6.3
SN vs LP	35.000	-1.136	.256	.280	3.0
SN vs SP	35.000	-1.136	.256	.280	3.0
LP vs SP	47.500	-.190	.849	.853	-0.5
Coder 2, 1984					
LN vs SN	31.500	-1.402	.161	.165	3.7
LN vs LP**	13.000	-2.799	.005	.004	7.4
LN vs SP*	19.000	-2.348	.019	.019	6.2
SN vs LP	31.500	-1.401	.161	.165	3.7
SN vs SP	37.500	-.947	.344	.353	2.5
LP vs SP	46.000	-.303	.762	.796	-0.8

* significant to $p < .05$; **significant to $p < .01$

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 9, continued.

Coder 1, 1992

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	28.500	-1.626	.104	.105	4.3
LN vs LP*	16.500	-2.535	.011	.009	6.7
LN vs SP**	11.500	-2.914	.004	.002	7.7
SN vs LP	26.000	-1.818	.069	.075	4.8
SN vs SP**	15.500	-2.611	.009	.007	6.9
LP vs SP	45.000	-.379	.705	.739	1.0
Coder 2, 1992					
LN vs SN	27.000	-1.740	.082	.089	4.6
LN vs LP**	5.500	-3.366	.001	.000	8.9
LN vs SP**	.000	-3.782	.000	.000	10.0
SN vs LP*	23.500	-2.005	.045	.043	5.3
SN vs SP**	12.000	-2.875	.004	.003	7.6
LP vs SP	30.000	-1.516	.129	.143	4.0

* significant to $p < .05$; **significant to $p < .01$

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 10. Mann-Whitney U on total number of direct causal statements in MD&A (DCS), by coder and year.

Coder 1, 1983

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	38.500	-.872	.383	.393	2.3
LN vs LP	25.000	-1.896	.058	.063	5.0
LN vs SP**	15.500	-2.622	.009	.007	6.9
SN vs LP	38.500	-.877	.380	.393	2.3
SN vs SP	28.000	-1.669	.095	.105	4.4
LP vs SP	40.500	-.722	.470	.481	1.9

Coder 2, 1983

LN vs SN*	20.500	-2.259	.024	.023	5.9
LN vs LP**	9.000	-3.118	.002	.001	8.2
LN vs SP**	1.000	-3.718	.000	.000	9.8
SN vs LP	30.000	-1.518	.129	.143	4.0
SN vs SP*	16.000	-2.587	.010	.009	6.8
LP vs SP	33.500	-1.252	.211	.218	3.3

Coder 1, 1984

LN vs SN*	18.500	-2.385	.017	.015	6.3
LN vs LP**	13.000	-2.804	.005	.004	7.4
LN vs SP**	15.500	-2.615	.009	.007	6.9
SN vs LP	35.500	-1.101	.271	.280	2.9
SN vs SP	41.000	-.683	.495	.496	1.8
LP vs SP	41.500	-.646	.518	.529	-2.0

Coder 2, 1984

LN vs SN*	23.500	-2.009	.045	.043	5.3
LN vs LP**	11.500	-2.914	.004	.002	7.7
LN vs SP*	19.000	-2.346	.019	.019	6.2
SN vs LP	33.500	-1.250	.211	.218	3.3
SN vs SP	40.000	-.758	.448	.481	2.0
LP vs SP	44.000	-.455	.649	.684	-1.2

* significant to $p < .05$; **significant to $p < .01$

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 10, continued.

Coder 1, 1992

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	30.000	-1.514	.130	.143	4.0
LN vs LP*	17.500	-2.463	.014	.011	6.5
LN vs SP**	14.500	-2.690	.007	.005	7.1
SN vs LP	28.500	-1.630	.103	.105	4.3
SN vs SP*	19.500	-2.309	.021	.019	6.1
LP vs SP	49.500	-.038	.970	.971	0.1

Coder 2, 1992

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	30.000	-1.516	.130	.143	4.0
LN vs LP**	7.000	-3.254	.001	.000	8.6
LN vs SP**	.500	-3.746	.000	.000	9.9
SN vs LP	25.500	-1.856	.063	.063	4.9
SN vs SP**	15.000	-2.653	.008	.007	7.0
LP vs SP	39.000	-.834	.404	.436	2.2

* significant to $p < .05$; **significant to $p < .01$

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 11. Mann-Whitney U on total causal attribution word count (CSIZ), by coder and year.

Coder 1, 1983

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	32.000	-1.361	.174	.190	3.6
LN vs LP	31.000	-1.436	.151	.165	3.8
LN vs SP**	15.000	-2.647	.008	.007	7.0
SN vs LP	45.500	-.340	.734	.739	0.9
SN vs SP	26.500	-1.778	.075	.075	4.7
LP vs SP	29.500	-1.551	.121	.123	4.1

Coder 2, 1983

LN vs SN*	20.000	-2.268	.023	.023	6.0
LN vs LP**	11.000	-2.948	.003	.002	7.8
LN vs SP**	4.000	-3.477	.001	.000	9.2
SN vs LP	34.000	-1.209	.226	.247	3.2
SN vs SP**	15.000	-2.646	.008	.007	7.0
LP vs SP*	22.500	-2.080	.038	.035	5.5

Coder 1, 1984

LN vs SN*	22.000	-2.117	.034	.035	5.6
LN vs LP*	16.000	-2.570	.010	.009	6.8
LN vs SP**	14.000	-2.721	.007	.005	7.0
SN vs LP	38.500	-.870	.384	.393	2.3
SN vs SP	41.000	-.680	.496	.529	1.8
LP vs SP	46.000	-.302	.762	.796	-0.8

Coder 2, 1984

LN vs SN*	23.000	-2.041	.041	.043	5.4
LN vs LP**	13.000	-2.797	.005	.004	7.4
LN vs SP**	13.000	-2.797	.005	.004	7.4
SN vs LP	35.000	-1.134	.257	.280	3.0
SN vs SP	33.000	-1.285	.199	.218	3.4
LP vs SP	48.000	-.151	.880	.912	0.4

* significant to $p < .05$; **significant to $p < .01$

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 11, continued.

Coder 1, 1992

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	40.000	-.756	.450	.481	2.0
LN vs LP*	24.000	-1.965	.049	.052	5.2
LN vs SP**	10.000	-3.024	.002	.002	8.0
SN vs LP	31.000	-1.436	.151	.165	3.8
SN vs SP**	13.000	-2.797	.005	.004	7.4
LP vs SP*	23.000	-2.041	.041	.043	5.4
Coder 2, 1992					
LN vs SN*	22.000	-2.117	.034	.035	5.6
LN vs LP**	7.000	-3.250	.001	.000	8.6
LN vs SP**	.000	-3.780	.000	.000	10.0
SN vs LP	28.000	-1.664	.096	.105	4.4
SN vs SP**	15.000	-2.647	.008	.007	7.0
LP vs SP	33.000	-1.285	.199	.218	3.4

* significant to $p < .05$; **significant to $p < .01$

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 12. Kruskal-Wallis W on ratio of total word count used for causal attributions to total MD&A size (CSIZ/TSIZ).

Coder 1		Year			
		1983	1984	1985	1992
Ratio	Chi Square	6.051	6.341	10.747	4.324
	Df	3	3	3	3
	Significance	.109	.096	.013	.228

Coder 2		Year			
		1983	1984	1985	1992
Ratio	Chi Square	7.512	6.526	14.371	7.939
	Df	3	3	3	3
	Significance	.057	.089	.002	.047

Table 13. Mann-Whitney U on ratio of CSIZ to TSIZ, by coder and year.

Coder 1, 1983

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	33.000	-1.285	.199	.218	3.4
LN vs LP	45.000	-.378	.705	.739	-1.0
LN vs SP	35.000	-1.134	.257	.280	-3.0
SN vs LP*	21.000	-2.192	.028	.029	-5.8
SN vs SP*	24.000	-1.965	.049	.052	-5.2
LP vs SP	42.000	-.605	.545	.579	-1.6

Coder 2, 1983

LN vs SN*	19.000	-2.343	.019	.019	6.6
LN vs LP	43.000	-.529	.597	.631	1.4
LN vs SP	48.000	-.151	.880	.912	-0.4
SN vs LP*	24.000	-1.965	.049	.052	-5.2
SN vs SP*	22.000	-2.117	.034	.035	-5.6
LP vs SP	39.000	-.832	.406	.436	-2.2

Coder 1, 1984

LN vs SN	35.000	-1.134	.257	.280	3.0
LN vs LP	25.000	-1.890	.059	.063	-5.0
LN vs SP	44.000	-.454	.650	.684	-1.2
SN vs LP*	22.000	-2.117	.034	.035	-5.6
SN vs SP	33.000	-1.285	.199	.218	-3.4
LP vs SP	34.000	-1.209	.226	.247	3.2

Coder 2, 1984

LN vs SN	34.000	-1.209	.226	.247	3.2
LN vs LP	34.000	-1.209	.226	.247	-3.2
LN vs SP*	22.000	-2.117	.034	.035	5.6
SN vs LP	27.000	-1.739	.082	.089	-4.6
SN vs SP	47.000	-.227	.821	.853	-0.6
LP vs SP	26.000	-1.815	.070	.075	4.8

* significant to $p < .05$; **significant to $p < .01$

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 13, continued.

Coder 1, 1985

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	42.000	-.605	.545	.579	1.6
LN vs LP*	24.000	-1.965	.049	.052	-5.2
LN vs SP*	20.000	-2.268	.023	.023	-6.0
SN vs LP*	22.000	-2.117	.034	.035	-5.6
SN vs SP**	14.000	-2.721	.007	.005	-7.2
LP vs SP	44.000	-.454	.650	.684	1.2
Coder 2, 1985					
LN vs SN	47.000	-.227	.821	.853	0.6
LN vs LP**	12.000	-2.873	.004	.003	-7.6
LN vs SP*	19.000	-2.343	.019	.019	-6.2
SN vs LP**	12.000	-2.873	.004	.003	-7.6
SN vs SP*	19.00	-2.343	.019	.019	-6.2
LP vs SP	40.000	-.756	.450	.481	2.0

Coder 1, 1992

Group	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)	Exact Sig. (1-tailed)	Difference in Mean Ranks
LN vs SN	33.000	-1.285	.199	.218	3.4
LN vs LP	39.000	-.832	.406	.436	-2.2
LN vs SP	45.000	-.378	.705	.739	1.0
SN vs LP*	20.000	-2.268	.023	.023	-6.0
SN vs SP	45.000	-.378	.705	.739	-1.0
LP vs SP	37.000	-.983	.326	.353	2.6
Coder 2, 1992					
LN vs SN**	16.000	-2.570	.010	.090	6.8
LN vs LP	27.000	-1.739	.082	.089	4.6
LN vs SP*	21.000	-2.192	.028	.029	5.8
SN vs LP	39.000	-.832	.406	.436	-2.2
SN vs SP	47.000	-.227	.821	.853	0.6
LP vs SP	41.000	-.680	.496	.529	1.8

* significant to $p < .05$; **significant to $p < .01$

LN = Large firm size, negative earnings change
SN = Small firm size, negative earnings change
LP = Large firm size, positive earnings change
SP = Small firm size, positive earnings change

Table 14. Summary Table: Significant Crosstabulations by year and coder for locus.

Year	Coder	Firm size	Earnings change	Time	Cause	Effect	Strategy	Topic	
1983	1	x	-	-	x	x	-	x	
	2	x	x	-	x	x	-	x	
1984	1	x	-	-	x	x	-	x	
	2	-	-	-	x	x	-	x	
1985	1	x	-	-	x	x	x	x	
	2	-	-	-	x	x	-	x	
1992	1	x	x	-	x	x	x	x	
	2	x	x	-	x	x	x	x	Year
1983 -1984	1	x	-	-	x	x	-	x	x
	2	x	-	-	x	x	-	x	-
1983 -1985	1	x	-	-	x	x	x	x	x
	2	x	-	-	x	x	x	x	x

x = significant chi-square, $p < .05$. Detailed results in Tables 15 through 20.

Table 15. Crosstabulation of locus versus all other categorical variables, 1983.

		Coder 1			Coder 2		
		Locus			Locus		
		Internal	External	Sig.	Internal	External	Sig.
Firm Size	Large	322	136	.002	414	192	.000
	Small	224	54		258	40	
Earnings change	Positive	253	85	.703	298	70	.000
	Negative	293	105		374	162	
Time	Past	534	187	.603	635	217	.588
	Future	12	3		37	15	
Cause	Positive	287	54	.000	422	69	.000
	Negative	259	136		250	163	
Effect	Positive	252	53	.000	355	72	.000
	Negative	294	137		317	160	
Strategy	Yes	115	52	.074	162	50	.428
	No	431	138		510	182	
Topic	1	38	2	.000	46	4	.000
	2	35	3		40	3	
	3	376	10		550	173	
	4	0	12		9	14	
	5	97	163		27	38	
Year	1983	546	190	-	672	232	-

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 16. Crosstabulation of locus versus all other categorical variables, 1984.

		Coder 1			Coder 2		
		Locus			Locus		
		Internal	External	Sig.	Internal	External	Sig.
Firm Size	Large	314	89	.004	400	142	.317
	Small	198	29		186	78	
Earnings change	Positive	223	42	.114	252	104	.277
	Negative	289	76		334	116	
Time	Past	498	113	.389	564	213	.697
	Future	14	5		22	7	
Cause	Positive	315	39	.000	364	82	.000
	Negative	197	79		222	138	
Effect	Positive	299	46	.000	329	91	.000
	Negative	213	72		257	129	
Strategy	Yes	202	49	.678	169	61	.755
	No	310	69		417	159	
Topic	1	23	2	.000	47	2	.000
	2	33	0		47	3	
	3	267	5		486	212	
	4	5	24		1	2	
	5	184	87		5	1	
Year	1984	518	118	-	586	220	-

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 17. Crosstabulation of locus versus all other categorical variables, 1985.

		Coder 1			Coder 2		
		Locus			Locus		
		Internal	External	Sig.	Internal	External	Sig.
Firm Size	Large	411	94	.005	290	172	.357
	Small	289	37		204	105	
Earnings change	Positive	337	55	.195	226	121	.580
	Negative	363	76		268	156	
Time	Past	695	131	.332	488	272	.507
	Future	5	0		6	5	
Cause	Positive	389	51	.000	365	125	.000
	Negative	311	80		129	152	
Effect	Positive	348	52	.035	251	115	.013
	Negative	352	79		243	162	
Strategy	Yes	202	53	.008	1	0	.454
	No	498	78		493	277	
Topic	1	37	0	.000	22	3	.000
	2	52	3		84	18	
	3	603	115		366	228	
	4	0	1		0	4	
	5	8	12		22	24	
Year	1985	700	131	-	494	2777	-

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 18. Crosstabulation of locus versus all other categorical variables, 1983 – 1984.

		Coder 1			Coder 2		
		Locus			Locus		
		Internal	External	Sig.	Internal	External	Sig.
Firm Size	Large	636	225	.000	814	334	.000
	Small	422	83		444	118	
Earnings change	Positive	476	127	.243	550	174	.054
	Negative	582	181		708	278	
Time	Past	1032	300	.890	1199	430	.879
	Future	26	8		59	22	
Cause	Positive	602	93	.000	786	151	.000
	Negative	456	215		472	301	
Effect	Positive	551	99	.000	684	163	.000
	Negative	507	209		574	289	
Strategy	Yes	317	101	.343	331	111	.465
	No	741	207		927	341	
Topic	1	61	4	.000	93	6	.000
	2	68	3		87	6	
	3	643	15		1036	385	
	4	5	36		10	16	
	5	281	250		32	39	
Year	1983	546	190	.002	672	232	.445
	1984	512	118		586	220	

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 19. Crosstabulation of locus versus all other categorical variables, 1983 – 1985.

		Coder 1			Coder 2		
		Locus			Locus		
		Internal	External	Sig.	Internal	External	Sig.
Firm Size	Large	1047	319	.000	1104	506	.000
	Small	711	120		648	223	
Earnings change	Positive	813	182	.071	776	295	.083
	Negative	945	257		976	434	
Time	Past	1727	431	.933	1687	702	.994
	Future	31	8		65	27	
Cause	Positive	991	144	.000	1151	276	.000
	Negative	767	295		601	453	
Effect	Positive	899	151	.000	935	278	.000
	Negative	859	288		817	451	
Strategy	Yes	519	154	.024	332	111	.027
	No	1239	285		1420	618	
Topic	1	98	4	.000	115	9	.000
	2	120	6		171	24	
	3	1246	130		1402	613	
	4	5	37		10	20	
	5	289	262		54	63	
Year	1983	546	190	.000	672	232	.000
	1984	512	118		586	220	
	1985	700	131		494	277	

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 20. Crosstabulation of locus versus all other categorical variables, 1992.

		Coder 1			Coder 2		
		Locus			Locus		
		internal	External	Sig.	Internal	External	Sig.
Firm Size	Large	471	269	.000	539	395	.000
	Small	298	54		253	50	
Earnings change	Positive	345	98	.000	348	121	.000
	Negative	424	225		444	324	
Time	Past	747	311	.458	781	443	.120
	Future	22	12		11	2	
Cause	Positive	446	120	.000	464	183	.000
	Negative	323	203		328	262	
Effect	Positive	372	111	.000	390	175	.001
	Negative	397	212		402	270	
Strategy	Yes	302	166	.000	133	48	.004
	No	467	157		659	397	
Topic	1	46	6	.000	60	9	.000
	2	44	5		59	14	
	3	440	54		664	421	
	4	7	16		0	0	
	5	232	242		9	1	
Year	1992	769	323	-	792	445	-

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 21. Summary Table: Significant Crosstabulations by year and coder for strategy.

Year	Coder	Firm size	Earnings change	Locus	Time	Cause	Effect	Topic	
1983	1	x	x	-	-	x	x	x	
	2	x	x	-	x	-	x	x	
1984	1	x	x	-	-	x	x	-	
	2	-	x	-	x	-	x	x	
1985	1	x	x	x	-	x	x	-	
	2	-	-	-	-	-	-	x	
1992	1	-	x	x	-	x	x	x	
	2	-	-	x	-	-	x	-	Year
1983 -1984	1	x	x	-	-	x	x	-	x
	2	x	-	-	-	-	x	x	x
1983 -1985	1	x	x	x	-	x	x	-	x
	2	x	-	x	x	-	x	x	x

x = significant chi-square, $p < .05$. Detailed results in Tables 22 through 27.

Table 22. Crosstabulation of strategy versus all other categorical variables, 1983.

		Coder 1			Coder 2		
		Strategy			Strategy		
		Yes	No	Sig.	Yes	No	Sig.
Firm Size	Large	130	328	.000	161	445	.002
	Small	37	241		51	247	
Earnings change	Positive	60	278	.003	74	294	.049
	Negative	107	291		138	398	
Locus	Internal	115	431	.074	162	510	.428
	External	52	138		50	182	
Time	Past	163	558	.710	188	664	.000
	Future	4	11		24	28	
Cause	Positive	58	283	.001	118	373	.653
	Negative	109	286		94	319	
Effect	Positive	45	260	.000	82	345	.004
	Negative	122	309		130	347	
Topic	1	7	33	.007	13	37	.000
	2	3	35		20	23	
	3	78	308		157	566	
	4	2	10		11	12	
	5	77	183		11	54	
Year	1983	167	569	-	212	692	-

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 23. Crosstabulation of strategy versus all other categorical variables, 1984.

		Coder 1			Coder 2		
		Strategy			Strategy		
		Yes	No	Sig.	Yes	No	Sig.
Firm Size	Large	178	225	.003	159	383	.471
	Small	73	154		71	193	
Earnings change	Positive	93	172	.038	124	232	.000
	Negative	158	207		106	344	
Locus	Internal	202	310	.678	169	417	.755
	External	49	69		61	159	
Time	Past	241	370	.248	213	564	.000
	Future	10	9		17	12	
Cause	Positive	107	247	.000	121	325	.325
	Negative	144	132		109	251	
Effect	Positive	115	230	.000	100	320	.002
	Negative	136	149		130	256	
Topic	1	9	16	.237	23	26	.001
	2	15	18		23	27	
	3	114	158		183	515	
	4	6	23		1	2	
	5	107	164		0	6	
Year	1984	251	379	-	230	576	-

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 24. Crosstabulation of strategy versus all other categorical variables, 1985.

		Coder 1			Coder 2		
		Strategy			Strategy		
		Yes	No	Sig.	Yes	No	Sig.
Firm Size	Large	192	313	.000	0	462	.221
	Small	63	263		1	308	
Earnings change	Positive	91	301	.000	0	347	.365
	Negative	164	275		1	423	
Locus	Internal	202	498	.008	1	493	.454
	External	53	78		0	277	
Time	Past	252	574	.154	1	759	.904
	Future	3	2		0	11	
Cause	Positive	114	326	.002	0	490	.186
	Negative	141	250		1	280	
Effect	Positive	88	312	.000	0	366	.341
	Negative	167	264		1	404	
Topic	1	9	28	.501	1	24	.000
	2	19	36		0	102	
	3	220	498		0	594	
	4	1	0		0	4	
	5	6	14		0	46	
Year	1985	255	576	-	1	770	

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 25. Crosstabulation of strategy versus all other categorical variables, 1983 – 1984.

		Coder 1			Coder 2		
		Strategy			Strategy		
		Yes	No	Sig.	Yes	No	Sig.
Firm Size	Large	308	553	.000	320	828	.006
	Small	110	395		122	440	
Earnings change	Positive	153	450	.000	198	526	.225
	Negative	265	498		244	742	
Locus	Internal	317	741	.343	331	927	.465
	External	101	207		111	341	
Time	Past	404	928	.175	401	1228	.000
	Future	14	20		41	40	
Cause	Positive	165	530	.000	239	698	.723
	Negative	253	418		203	570	
Effect	Positive	160	490	.000	182	665	.000
	Negative	258	458		260	603	
Topic	1	16	49	.058	36	63	.000
	2	18	53		43	50	
	3	192	466		340	1081	
	4	8	33		12	14	
	5	184	347		11	60	
Year	1983	167	569	.000	212	692	.017
	1984	251	379		230	576	

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 26. Crosstabulation of strategy versus all other categorical variables, 1983 – 1985.

		Coder 1			Coder 2		
		Strategy			Strategy		
		Yes	No	Sig.	Yes	No	Sig.
Firm Size	Large	500	866	.000	320	1290	.000
	Small	173	658		123	748	
Earnings change	Positive	244	751	.000	198	873	.474
	Negative	429	773		245	1165	
Locus	Internal	519	1239	.024	332	1420	.027
	External	154	285		111	618	
Time	Past	656	1502	.077	402	1987	.000
	Future	17	22		41	51	
Cause	Positive	279	856	.000	239	1188	.094
	Negative	394	668		204	850	
Effect	Positive	248	802	.000	182	1031	.000
	Negative	425	722		261	1007	
Topic	1	25	77	.102	37	87	.000
	2	37	89		43	152	
	3	412	964		340	1675	
	4	9	33		12	18	
	5	190	361		11	106	
Year	1983	167	569	.000	212	692	.000
	1984	251	379		230	576	
	1985	255	576		1	770	

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 27. Crosstabulation of strategy versus all other categorical variables, 1992.

		Coder 1			Coder 2		
		Strategy			Strategy		
		Yes	No	Sig.	Yes	No	Sig.
Firm Size	Large	332	408	.052	131	803	.289
	Small	136	216		50	253	
Earnings change	Positive	145	298	.000	63	406	.351
	Negative	323	326		118	650	
Locus	Internal	302	467	.000	133	659	.004
	External	166	157		48	397	
Time	Past	453	605	.880	1044	180	.477
	Future	15	19		12	1	
Cause	Positive	133	433	.000	91	556	.554
	Negative	335	191		90	500	
Effect	Positive	96	387	.000	55	510	.000
	Negative	372	237		126	546	
Topic	1	16	36	.000	8	61	.251
	2	21	28		7	66	
	3	150	344		166	919	
	4	11	12		0	0	
	5	270	204		0	10	
Year	1992	468	624	-	181	1056	-

Significance for Pearson Chi-square
Null hypothesis: row and column variables are independent

Topic 1: Liquidity
Topic 2: Capital resources
Topic 3: Results of operations
Topic 4: Future trends
Topic 5: Other

Table 28. Logistic regression results, dependent variable = locus, 1983 – 1984 data.

	Model 1	Model 2	Model 3	Model 4
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.441** 212.554 / .237	-1.199** 186.582 / .301	-1.528** 192.941 / .217	-1.67** 349.954 / .189
Firm size	.501** 29.072 / 1.651		.491** 27.731 / 1.633	
Earnings change		.189* 4.924 / 1.208	.160 3.497 / 1.174	
Cause				1.162** 170.92 / 3.197
Coder	-.194* 5.166 / .824	-.209* 6.024 / .812	-.191* 4.998 / .826	-.272** 9.632 / .762
1983	.126 2.217 / 1.134	.120 2.033 / 1.128	.127 2.240 / 1.135	.072 .697 / 1.075
Model Chi-Square (df)	38.554 (3)	13.207 (3)	42.069 (4)	190.331 (3)
Nagelkerke R^2	.019	.006	.02	.089

*significant at $p < .05$
** significant at $p < .01$

Table 28. Logistic regression results, dependent variable = locus, 1983 – 1984 data, continued.

	Model 5	Model 6	Model 7	Model 8
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.483** 290.224 / .227	-1.624** 322.436 / .197	-2.040** 269.632 / .130	-1.096** 200.917 / .334
Firm size			.521** 29.479 / 1.684	
Earnings change			.074 .689 / 1.077	
Cause		1.446** 94.664 / 4.246	1.435** 91.38 / 4.198	
Effect	.777** 79.067 / 2.175	-.360* 5.867 / .698	-.334* 4.937 / .716	
Strategy				.023 .062 / 1.024
Coder	-.232** 7.292 / .793	-.276** 9.915 / .759	-.256 8.400 / .774	-.213* 6.274 / .808
1983	.059 .473 / 1.061	.087 .990 / 1.090	.088 1.008 / 1.092	.123 2.110 / 1.131
Model Chi-Square (df)	90.330 (3)	196.350 (4)	228.504 (6)	8.313 (3)
Nagelkerke R^2	.043	.092	.106	.004

*significant at $p < .05$
** significant at $p < .01$

Table 28. Logistic regression results, dependent variable = locus, 1983 – 1984 data, continued.

	Model 9	Model 10	Model 11	Model 12
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.434** 199.722 / .238	-1.204** 170.861 / .300	-1.521** 184.109 / .219	-2.020** 259.152 / .133
Firm size	.504** 29.114 / 1.655		.494** 27.836 / 1.639	.534** 30.572 / 1.706
Earnings change		.189* 4.896 / 1.208	.161 3.535 / 1.175	.075 .718 / 1.078
Cause				1.432** 90.743 / 4.187
Effect				-.319* 4.466 / .727
Strategy	-.029 .093 / .971	.017 .034 / 1.018	-.034 .131 / .966	-.121 1.496 / .886
Coder	-.192* 5.063 / .825	-.209* 6.056 / .811	-.189* 4.874 / .828	-.246** 7.729 / .782
1983	.123 2.095 / 1.131	.122 2.066 / 1.129	.123 2.103 / 1.131	.074 .697 / 1.077
Model Chi-Square (df)	36.648 (4)	13.241 (4)	42.201 (5)	230.011 (7)
Nagelkerke R^2	.019	.006	.020	.107

*significant at $p < .05$
** significant at $p < .01$

Table 28. Logistic regression results, dependent variable = locus, 1983 – 1984 data, continued.

	Model 13	Model 14	Model 15	Final Model
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.053** 22.955 / .349	1.246** 58.747 / 3.476	.071 .046 / 1.074	.363* 3.924 / 1.438
Firm size			.390** 14.169 / 1.477	.384** 14.025 / 1.468
Earnings change			-.043 .200 / .958	
Cause			1.368** 64.880 / 3.962	1.136** 136.92 / 3.113
Effect			-.273 2.548 / .761	
Time	-.037 .029 / .964		.387 1.806 / 1.472	
Strategy			-.137 1.564 / .872	
Topic 1		-3.636** 103.724 / .026	-3.568** 96.630 / .028	-3.570** 97.471 / .028
Topic 2		-3.700** 99.099 / .025	-3.525** 88.073 / .029	-3.547** 89.555 / .029
Topic 3		-2.391** 254.597 / .092	-2.338** 228.419 / .096	-2.315** 228.245 / .099
Topic 4		1.055** 11.153 / 2.873	1.137** 11.857 / 3.117	1.074** 10.872 / 2.926
Coder	-.211* 6.153 / .810	-1.539** 119.303 / .215	-1.578** 116.786 / .206	-1.562** 117.054 / .210
1983	.120 2.044 / 1.128	.093 1.031 / 1.098	.041 .188 /1.042	
Model Chi-Square (df)	8.280 (3)	512.033 (6)	676.541 (12)	669.363 (7)
Nagelkerke R^2	.004	.228	.293	.291

*significant at $p < .05$
** significant at $p < .01$

Table 29. Logistic regression results, dependent variable = locus, 1992 data.

	Model 1	Model 2	Model 3	Model 4
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.553** 178.231 / .212	-1.021** 136.045 / .360	-2.033** 221.777 / .131	-.964** 156.861 / .382
Firm size	1.230** 108.063 / 3.420		1.252** 109.62 / 3.496	
Earnings change		.689** 52.635 / 1.992	.718** 54.462 / 2.051	
Cause				.768** 72.620 / 2.157
Coder	-.220* 5.779 / .803	-.280** 9.677 / .756	-.210* 5.141 / .811	-.304** 11.325 / .738
Model Chi-Square (df)	137.061 (2)	65.530 (2)	193.705 (3)	84.956 (2)
Nagelkerke R^2	.08	.039	.111	.05

*significant at $p < .05$
** significant at $p < .01$

Table 29. Logistic regression results, dependent variable = locus, 1992 data, continued.

	Model 5	Model 6	Model 7	Model 8
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-.846** 113.862 / .429	-.920** 129.781 / .398	-2.438** 256.518 / .087	-.593** 93.762 / .552
Firm size			1.343** 120.98 / 3.831	
Earnings change			.675** 45.597 / 1.963	
Cause		.950** 45.119 / 2.585	1.044** 49.999 / 2.841	
Effect	.481** 28.307 / 1.618	-.241 2.836 / .786	-.291 3.789 / .747	
Strategy				.114 1.197 / .892
Coder	-.301** 11.347 / .740	-.302** 11.114 / .740	-.221* 5.475 / .802	-.324** 11.867 / .724
Model Chi-Square (df)	39.523 (2)	87.842 (3)	275.740 (5)	11.961 (2)
Nagelkerke R^2	.023	.052	.155	.007

*significant at $p < .05$
** significant at $p < .01$

Table 29. Logistic regression results, dependent variable = locus, 1992 data, continued.

	Model 9	Model 10	Model 11	Model 12
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.566** 178.403 / .209	-1.025** 135.368 / .359	-2.033** 221.390 / .131	-2.466** 257.234 / .087
Firm size	1.228** 107.798 / 3.415		1.251** 109.73 / 3.495	1.348** 122.61 / 3.848
Earnings change		.686** 51.661 / 1.985	.717** 53.700 / 2.048	.685** 46.655 / 1.984
Cause				1.046** 50.036 / 2.845
Effect				-.257 2.867 / .773
Strategy	.098 .844 / .906	.038 .132 / 1.039	.014 .017 / .986	-.157 1.874 / 1.170
Coder	-.249* 6.601 / .780	-.291** 9.342 / .747	-.214* 4.742 / .807	-.171 2.868 / .843
Model Chi-Square (df)	137.903 (3)	65.662 (3)	193.772 (4)	277.597 (6)
Nagelkerke R^2	.08	.039	.111	.156

*significant at $p < .05$
** significant at $p < .01$

Table 29. Logistic regression results, dependent variable = locus, 1992 data, continued.

	Model 13	Model 14	Model 15	Final Model
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-.651* 4.002 / .521	1.351** 68.167 / 3.859	-1.262** 8.288 / .283	-.664** 7.674 / .525
Firm size			1.334** 109.63 / 3.796	1.344** 111.65 / 3.834
Earnings change			.601** 32.581 / 1.823	.580** 30.726 / 1.785
Cause			.999** 41.428 / 2.715	.830** 66.510 / 2.293
Effect			-.223 1.959 / .800	
Time	.076 .055 / 1.079		.668 3.091 / 1.950	
Strategy			-.427** 11.277 / 1.532	-.450** 13.049 / .638
Topic 1		-2.881** 83.994 / .056	-2.881** 74.323 / .060	-2.777** 73.071 / .062
Topic 2		-2.639** 81.709 / .071	-2.670** 76.687 / .069	-2.670** 77.101 / .069
Topic 3		-1.853** 144.586 / .157	-1.637** 99.491 / .195	-1.624** 98.442 / .197
Topic 4		.843 3.326 / 2.323	1.771** 11.716 / 5.876	1.595** 9.818 / 4.930
Coder	-.289** 10.539 / .749	-1.367** 98.632 / .255	-1.075** 55.455 / .341	-.644** 7.674 / .525
Model Chi-Square (df)	10.823 (2)	245.536 (5)	474.389 (11)	469.038 (9)
Nagelkerke R^2	.006	.139	.256	.254

*significant at $p < .05$
** significant at $p < .01$

Table 30. Logistic regression results, dependent variable = locus, 1983 – 1985 data.

	Model 1	Model 2	Model 3	Model 4
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.084** 176.11 / .338	-.919** 144.070 / .399	-1.177** 169.711 / .308	-1.290** 288.25 / .275
Firm size	.415** 31.79 / 1.514		.412** 31.385 / 1.51	
Earnings change		.174* 6.359 / 1.190	.169* 5.937 / 1.184	
Cause				1.085** 230.95 / 2.958
Coder	-.511** 53.863 / .60	-.514** 54.814 / .598	-.508** 53.122 / .602	-.617** 73.839 / .540
1983	-.041 .258 / .959	-.028 .115 / .973	-.047 .335 / .954	-.113 1.818 / .893
1984	-.170* 3.945 / .843	-.151 3.141 / .860	-.176* 4.218 / .838	-.197* 5.032 / .821
Model Chi-Square (df)	91.645 (4)	65.320 (4)	97.611 (4)	301.183 (4)
Nagelkerke R^2	.029	.021	.031	.092

*significant at $p < .05$
** significant at $p < .01$

Table 30. Logistic regression results, dependent variable = locus, 1983 – 1985 data, continued.

	Model 5	Model 6	Model 7	Model 8
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.175** 227.337 / .309	-1.218** 236.553 / .296	-1.541** 233.449 / .214	-.824** 155.335 / .439
Firm size			.427** 31.892 / 1.533	
Earnings change			.089 1.551 / 1.093	
Cause		1.341** 150.20 / 3.823	1.335** 146.99 / 3.801	
Effect	.643** 84.215 / 1.902	-.345** 9.927 / .708	-.336** 9.266 / .714	
Strategy				.030 .130 / .718
Coder	-.533** 57.860 / .587	-.626** 75.675 / .535	-.618** 73.206 / .539	-.521** 54.809 / .594
1983	-.041 .246 / .960	-.119 2.008 / .888	-.142 2.848 / .867	-.025 .095 / .975
1984	-.116 1.805 / .891	-.217* 6.075 / .805	-.243** 7.485 / .785	-.153 3.093 / .858
Model Chi-Square (df)	145.393 (4)	311.353 (5)	346.029 (7)	59.060 (4)
Nagelkerke R^2	.045	.095	.106	.019

*significant at $p < .05$
** significant at $p < .01$

Table 30. Logistic regression results, dependent variable = locus, 1983 – 1985 data, continued.

	Model 9	Model 10	Model 11	Model 12
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.084** 175.944 / .338	-.920** 143.858 / .398	-1.177** 169.729 / .308	-1.548** 234.495 / .213
Firm size	.416** 31.740 / 1.517		.415** 31.477 / 1.515	.439** 33.236 / 1.552
Earnings change		.173* 6.290 / 1.189	.170* 6.015 / 1.185	.093 1.677 / 1.097
Cause				1.335** 146.622 / 3.80
Effect				-.325** 8.617 / .722
Strategy	-.021 .064 / .979	.021 .061 / .1.021	-.032 .142 / .969	-.115 1.753 / .891
Coder	-.508** 51.622 / .602	-.517** 53.825 / .596	-.503** 50.509 / .604	-.599** 66.509 / .549
1983	-.039 .230 / .961	-.030 .132 / .971	-.044 .290 / .957	-.132 2.450 / .876
1984	-.166 3.633 / .847	-.155 3.193 / .856	-.170 3.812 / .843	-.220* 5.933 / .803
Model Chi-Square (df)	91.708 (5)	65.381 (5)	97.753 (6)	347.795 (8)
Nagelkerke R^2	.029	.021	.031	.106

*significant at $p < .05$
** significant at $p < .01$

Table 30. Logistic regression results, dependent variable = locus, 1983 – 1985 data, continued.

	Model 13	Model 14	Model 15	Final Model
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-.805** 14.781 / .447	1.523** 115.47 / 4.585	.462 2.370 / 1.587	.914** 31.965 / 2.494
Firm size			.309** 14.717 / 1.362	.310** 15.092 / 1.364
Earnings change			.001 .000 / 1.001	
Cause			1.315** 122.54 / 3.726	1.316** 122.41 / 3.727
Effect			-.301* 6.359 / .740	-.295* 6.185 / .744
Time	-.017 .007 / .983		.475 3.141 / 1.609	
Strategy			-.008 .007 / .992	
Topic 1		-3.491** 130.359 / .030	-3.492** 126.809 / .030	-3.494** 127.242 / .030
Topic 2		-3.185** 198.896 / .041	-3.043** 176.049 / .048	-3.048** 177.238 / .047
Topic 3		-2.028** 331.266 / .132	-2.032** 307.373 / .131	-2.019** 306.685 / .133
Topic 4		1.221** 15.557 / 3.392	1.304** 16.230 / 3.686	1.217** 14.540 / 3.378
Coder	-.517** 55.273 / .596	-1.235** 195.753 / .291	-1.359** 208.049 / .257	-1.349** 215.664 / .259
1983	-.023 .078 / .978	-.549** 35.376 / .578	-.679** 49.103 / .507	-.688** 51.052 / .503
1984	-.147 2.972 / .863	-.649** 46.659 / .523	-.742** 54.491 / .476	-.749** 57.691 / .473
Model Chi-Square (df)	58.937 (4)	646.499 (7)	883.286 (13)	879.866 (10)
Nagelkerke R^2	.019	.191	.255	.254

*significant at $p < .05$
** significant at $p < .01$

Table 31. Logistic regression results, dependent variable = strategy, 1983 – 1984 data.

	Model 1	Model 2	Model 3	Model 4
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.149** 151.686 / .317	-.876** 111.869 / .417	-1.205** 135.525 / .300	-.957** 153.762 / .384
Firm size	.507** 32.263 / 1.660		.499** 31.115 / 1.647	
Earnings change		.139 2.858 / 1.149	.106 1.638 / 1.112	
Cause				.364** 19.923 / 1.439
Coder	.266** 10.585 / 1.305	.246** 9.151 / 1.279	.268** 10.771 / 1.307	.233** 8.171 / 1.262
1983	-.521** 40.857 / .594	-.521** 41.178 / .594	-.521** 40.776 / .594	-.543** 44.226 / .581
Model Chi-Square (df)	83.439 (3)	52.839 (3)	85.081 (4)	69.969 (3)
Nagelkerke R^2	.039	.025	.039	.032

*significant at $p < .05$
** significant at $p < .01$

Table 31. Logistic regression results, dependent variable = strategy, 1983 – 1984 data, continued.

	Model 5	Model 6	Model 7	Model 8
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.066** 45.008 / .344	-1.055 172.494 / .348	-1.474** 170.795 / .229	-.802** 126.033 / .449
Firm size			.545** 36.205 / 1.725	
Earnings change			.053 .402 / 1.055	
Cause		-.159 1.538 / .853	-.201 2.400 / .818	
Effect	.557** 45.008 / 1.745	.681** 27.463 / 1.975	.738** 31.396 / 2.092	
Locus				.026 .074 / 1.026
Coder	.240** 8.599 / 1.271	.244** 8.864 / 1.276	.268** 10.565 / 1.308	.245** 9.062 / 1.277
1983	-.578** 49.228 / .561	-.581** 49.712 / .559	-.589** 50.316 / .555	-.521** 41.200 / .594
Model Chi-Square (df)	95.815 (3)	97.352 (4)	136.180 (6)	50.045 (3)
Nagelkerke R^2	.044	.045	.062	.023

*significant at $p < .05$
** significant at $p < .01$

Table 31. Logistic regression results, dependent variable = strategy, 1983 – 1984 data, continued.

	Model 9	Model 10	Model 11	Model 12
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.144** 144.793 / .319	-.881** 105.399 / .415	-1.200** 130.932 / .301	-1.463** 166.758 / .232
Firm size	.509** 32.262 / 1.664		.501** 31.165 / 1.651	.556*** 37.261 / 1.744
Earnings change		.138 2.829 / 1.148	.107 1.662 / 1.113	.055 .425 / .887
Cause				-.168 1.631 / .845
Effect				.731** 30.821 / 2.076
Locus	-.023 .059 / .977	.020 .045 / 1.020	-.027 .084 / .973	-.120 1.460 / .887
Coder	.265** 10.489 / 1.303	.247** 9.192 / 1.280	.267** 10.602 / 1.305	.263** 10.094 / 1.300
1983	-.521** 40.690 / .594	-.521** 41.221 / .594	-.520** 40.581 / .594	-.586** 49.776 / .557
Model Chi-Square (df)	83.499 (4)	52.885 (4)	85.165 (5)	137.651 (7)
Nagelkerke R^2	.039	.025	.039	.063

*significant at $p < .05$
** significant at $p < .01$

Table 31. Logistic regression results, dependent variable = strategy, 1983 – 1984 data, continued.

	Model 13	Model 14	Model 15	Final Model
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	.143 .528 / 1.153	-.608** 23.126 / .544	-.267 1.169 / .765	-.395 3.596 / .673
Firm size			.579** 39.427 / 1.783	.558** 37.686 / 1.747
Earnings change			.053 .397 / 1.055	
Cause			-.187 1.994 / .829	
Effect			.783** 34.730 / 2.188	.630** 55.112 / 1.877
Locus			-.123 1.307 / .884	
Time	-.986** 25.759 / .373		-1.139** 31.479 / .320	-1.150** 33.846 / .316
Topic 1		.051 .067 / 1.052	.011 .003 / 1.011	
Topic 2		.263 1.924 / 1.301	.271 1.807 / 1.311	
Topic 3		-.249* 4.789 / .779	-.189 2.369 / .828	
Topic 4		-.091 .102 / .913	-.362 1.511 / .696	
Coder	.270** 10.924 / 1.310	.157 2.947 / 1.170	.236* 6.051 / 1.266	.296** 12.636 / 1.344
1983	-.533** 42.724 / .587	-.519** 40.718 / .595	-.607** 52.404 / .545	-.607** 52.716 / .545
Model Chi-Square (df)	74.701 (3)	63.234 (6)	180.177 (12)	165.719 (5)
Nagelkerke R^2	.035	.029	.082	.076

*significant at $p < .05$
** significant at $p < .01$

Table 32. Logistic regression results, dependent variable = strategy, 1992 data.

	Model 1	Model 2	Model 3	Model 4
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.844** 254.175 / .158	-2.105** 376.453 / .122	-2.181** 255.378 / .113	-2.401** 504.511 / .091
Firm size	.107 .971 / 1.112		.101 .860 / 1.106	
Earnings change		.515** 25.040 / 1.674	.514** 24.934 / 1.672	
Cause				1.110** 116.92 / 3.033
Coder	1.484** 213.868 / 4.412	1.506** 218.21 / 4.510	1.514** 218.70 / 4.547	1.557** 221.07 / 4.735
Model Chi-Square (df)	235.703 (2)	260.447 (2)	261.312 (3)	358.224 (2)
Nagelkerke R^2	.139	.153	.153	.205

*significant at $p < .05$
** significant at $p < .01$

Table 32. Logistic regression results, dependent variable = strategy, 1992 data, continued.

	Model 5	Model 6	Model 7	Model 8
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-2.734** 521.120 / .065	-2.747** 521.128 / .064	-3.111 350.827 / .045	
Firm size			.218 3.649 / 1.243	
Earnings change			.330** 9.299 / 1.391	
Cause		.186 1.597 / 1.205	.181 1.497 / 1.198	
Effect	1.457** 171.200 / 4.292	1.317** 70.397 / 3.731	1.293** 66.953 / 3.644	
Locus				.114 1.197 / 1.121
Coder	1.588** 222.918 / 4.894	1.590** 223.14 / 4.903	1.623** 227.82 / 5.066	1.484** 214.11 / 4.409
Model Chi-Square (df)	428.179 (2)	429.779 (3)	443.142 (5)	235.919 (2)
Nagelkerke R^2	.242	.243	.250	.139

*significant at $p < .05$
** significant at $p < .01$

Table 32. Logistic regression results, dependent variable = strategy, 1992 data, continued.

	Model 9	Model 10	Model 11	Model 12
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.863** 250.372 / .155	-2.116** 353.443 / .120	-2.183** 254.151 / .113	-3.111** 349.801 / .045
Firm size	.085 .585 / 1.089		.097 .752 / 1.102	.267* 5.117 / 1.306
Earnings change		.510** 24.044 / 1.665	.512** 24.202 / 1.669	.352** 10.406 / 1.422
Cause				.222 2.190 / 1.248
Effect				1.285** 66.028 / 3.613
Locus	.096 .806 / 1.100	.039 .133 / 1.039	.017 .024 / 1.017	-.190 2.690 / .827
Coder	1.489** 214.411 / 4.435	1.509** 217.84 / 4.522	1.515** 218.35 / 4.550	1.617** 225.96 / 5.037
Model Chi-Square (df)	236.507 (3)	260.580 (3)	261.335 (4)	445.852 (6)
Nagelkerke R^2	.139	.153	.153	.251

*significant at $p < .05$
** significant at $p < .01$

Table 32. Logistic regression results, dependent variable = strategy, 1992 data, continued.

	Model 13	Model 14	Model 15	Final Model
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.812** 30.143 / .163	-.768** 26.976 / .464	-2.280** 30.825 / .102	-1.781** 71.818 / .169
Firm size			.230 3.658 / 1.259	
Earnings change			.279* 6.297 / 1.321	.269* 5.896 / 1.309
Cause			.176 1.365 / 1.193	
Effect			1.291** 65.550 / 3.635	1.396** 149.85 / 4.038
Locus			-.444** 12.541 / .641	-.364** 9.200 / .695
Time	.049 .023 / 1.050		.307 .750 / 1.360	
Topic 1		-1.144** 20.196 / .318	-1.122** 16.838 / .326	-1.114** 16.724 / .328
Topic 2		-.920** 14.162 / .398	-1.059** 16.121 / .347	-1.044** 15.896 / .352
Topic 3		-1.004** 60.740 / .367	-.934** 41.387 / .393	-.951** 43.569 / .388
Topic 4		-.340 .633 / .712	-.022 .002 / .978	
Coder	1.477** 212.637 / 4.378	1.021** 74.679 / 2.777	1.160** 82.153 / 3.194	1.134** 79.600 / 3.109
Model Chi-Square (df)	234.749 (2)	301.539 (5)	493.242 (11)	487.499 (8)
Nagelkerke R^2	.138	.175	.275	.272

*significant at $p < .05$
** significant at $p < .01$

Table 33. Logistic regression results, dependent variable = strategy, 1983 – 1985 data.

	Model 1	Model 2	Model 3	Model 4
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-2.537** 622.628 / .079	-2.265** 585.202 / .104	-2.671** 589.812 / .069	-2.304** 649.610 / .100
Firm size	.612** 61.418 / 1.845		.607** 60.223 / 1.835	
Earnings Change		.254** 12.482 / 1.289	.242** 11.202 / 1.274	
Cause				.415** 34.139 / 1.514
Coder	.815** 127.208 / 2.259	.793** 122.32 / 2.210	.822** 128.84 / 2.275	.772** 115.19 / 2.163
1983	.510** 30.816 / 1.665	.518** 32.176 / 1.678	.503** 29.924 / 1.653	.497** 29.403 / 1.644
1984	1.052** 134.856 / 2.865	1.059** 138.30 / 2.884	1.044** 132.41 / 2.842	1.066** 139.16 / 2.903
Model Chi-Square (df)	316.967 (4)	265.091 (4)	328.252 (5)	286.755 (4)
Nagelkerke R^2	.098	.083	.102	.089

*significant at $p < .05$
** significant at $p < .01$

Table 33. Logistic regression results, dependent variable = strategy, 1983 – 1985 data, continued.

	Model 5	Model 6	Model 7	Model 8
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-2.464** 664.515 / .085	-2.464** 664.348 / .085	-3.016** 626.231 / .049	-2.124** 604.964 / .120
Firm size			.641** 65.689 / 1.898	
Earnings change			.189* 6.640 / 1.208	
Cause		-.062 .335 / .940	-.101 .885 / .904	
Effect	.595** 67.103 / 1.813	.642** 35.054 / 1.899	.683** 38.586 / 1.980	
Locus				.017 .042 / 1.017
Coder	.794** 121.251 / 2.213	.798** 121.46 / 2.221	.834** 129.57 / 2.302	.788** 120.17 / 2.199
1983	.508** 30.581 / 1.661	.511** 30.861 / 1.667	.493** 28.202 / 1.637	.523** 32.874 / 1.687
1984	1.114** 149.979 / 3.046	1.118** 150.05 / 3.059	1.107** 144.25 / 3.026	1.064** 139.99 / 2.898
Model Chi-Square (df)	321.196 (4)	321.531 (5)	398.419 (7)	252.539 (4)
Nagelkerke R^2	.100	.100	.122	.079

*significant at $p < .05$
** significant at $p < .01$

Table 33. Logistic regression results, dependent variable = strategy, 1983 – 1985 data continued.

	Model 9	Model 10	Model 11	Model 12
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-2.529** 597.08 / .080	-2.266** 554.909 / .104	-2.661** 570.370 / .07	-2.996** 610.455 / .050
Firm size	.615** 61.594 / 1.850		.611** 60.541 / 1.842	.652** 67.503 / 1.920
Earnings change		.254** 12.448 / 1.289	.244** 11.322 / 1.276	.191** 6.785 / 1.210
Cause				-.066 .362 / .936
Effect				.675** 37.715 / 1.963
Locus	-.038 .210 / .962	.007 .007 / 1.007	-.048 .330 / .953	-.145 2.753 / .865
Coder	.812** 125.269 / 2.252	.793** 121.37 / 2.211	.818** 126.68 / 2.266	.821** 124.19 / 2.273
1983	.511** 30.913 / 1.67	.518** 32.146 / 1.678	.504** 30.051 / 1.655	.495** 28.451 / 1.641
1984	1.052** 134.658 / 2.863	1.059** 138.31 / 2.884	1.044** 132.13 / 2.840	1.105** 143.32 / 3.019
Model Chi-Square (df)	317.177 (5)	265.098 (5)	328.583 (6)	401.201 (8)
Nagelkerke R^2	.098	.083	.102	.123

*significant at $p < .05$
** significant at $p < .01$

Table 33. Logistic regression results, dependent variable = strategy, 1983 – 1985 data, continued.

	Model 13	Model 14	Model 15	Final Model
Variable	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)	Coefficient/ Wald / Exp(B)
Constant	-1.117** 31.835 / .327	-2.238** 259.945 / .097	-2.205** 76.229 / .110	-2.229** 81.204 / .108
Firm size			.678** 71.471 / 1.969	.674** 71.157 / 1.962
Earnings change			.210** 8.126 / 1.234	.210** 8.069 / 1.233
Cause			-.067 .365 / .936	
Effect			.707** 40.683 / 2.027	.653** 76.343 / 1.922
Locus			-.032 .116 / .968	
Time	-1.034** 30.561 / .355		-1.262** 42.073 / .283	-1.263** 42.137 / .283
Topic 1		.337 3.534 / 1.401	.386* 4.075 / 1.471	.409* 4.859 / 1.505
Topic 2		.381* 5.269 / 1.464	.450* 6.465 / 1.568	.476** 7.771 / 1.609
Topic 3		.164 2.417 / 1.178	.287* 6.430 / 1.333	.304** 7.891 / 1.355
Topic 4		.102 .128 / 1.107	-.261 .812 / .770	
Coder	.815** 127.597 / 2.260	.836** 118.73 / 2.307	.953** 136.17 / 2.594	.957** 145.09 / 2.604
1983	.491** 28.653 / 1.634	.567** 36.085 / 1.763	.530** 29.887 / 1.700	.531** 30.088 / 1.700
1984	1.044** 133.719 / 2.840	1.110** 140.53 / 3.033	1.168** 145.13 / 3.217	1.168** 147.27 / 3.217
Model Chi-Square (df)	281.325 (4)	259.291 (7)	450.000 (13)	449.430 (11)
Nagelkerke R^2	.088	.081	.138	.137

*significant at $p < .05$
** significant at $p < .01$

Table 34. Crosstabulation and percentages, cause and locus, by firm size and year.

1983			Coder 1 Locus		Coder 2 Locus	
Firm Size	Cause		internal	external	internal	external
Large	positive	Count	180	32	265	56
		% within cause	84.9%	15.1%	82.6%	17.4%
	negative	Count	142	104	149	136
		% within cause	57.7%	42.3%	52.3%	47.7%
Small	positive	Count	107	22	157	13
		% within cause	82.9%	17.1%	92.4%	7.6%
	negative	Count	117	32	101	27
		% within cause	78.5%	21.5%	78.9%	21.1%

1984			Coder 1 Locus		Coder 2 Locus	
Firm Size	Cause		internal	external	internal	external
Large	positive	Count	197	31	259	50
		% within cause	86.4%	13.6%	83.8%	16.2%
	negative	Count	117	58	141	92
		% within cause	66.9%	33.1%	60.5%	39.5%
Small	positive	Count	118	8	105	32
		% within cause	93.7%	6.3%	76.6%	23.4%
	negative	Count	80	21	81	46
		% within cause	79.2%	20.8%	63.8%	36.2%

Table 34, continued.

1985			Coder 1 Locus		Coder 2 Locus	
Firm Size	Cause		internal	external	internal	external
Large	positive	Count	230	35	217	76
		% within cause	86.8%	13.2%	74.1%	25.9%
	negative	Count	181	59	73	96
		% within cause	75.4%	24.6%	43.2%	56.8%
Small	positive	Count	159	16	148	49
		% within cause	90.9%	9.1%	75.1%	24.9%
	negative	Count	130	21	56	56
		% within cause	86.1%	13.9%	50.0%	50.0%

1992			Coder 1 Locus		Coder 2 Locus	
Firm Size	Cause		internal	external	internal	external
Large	positive	Count	299	98	343	161
		% within cause	75.3%	24.7%	68.1%	31.9%
	negative	Count	172	171	196	234
		% within cause	50.1%	49.9%	45.6%	54.4%
Small	positive	Count	147	22	121	22
		% within cause	87.0%	13.0%	84.6%	15.4%
	negative	Count	151	32	132	28
		% within cause	82.5%	17.5%	82.5%	17.5%

Table 35. Crosstabulation and percentages, cause and locus, by earnings change and year.

1983

Earnings Change	Cause		Coder 1 Locus internal	Coder 1 Locus external	Coder 2 Locus internal	Coder 2 Locus external
Positive	positive	Count	144	30	204	21
		% within cause	82.8%	17.2%	90.7%	9.3%
	negative	Count	109	55	94	49
		% within cause	66.5%	33.5%	65.7%	34.3%
Negative	positive	Count	143	24	218	48
		% within cause	85.6%	14.4%	82.0%	18.0%
	negative	Count	150	81	156	114
		% within cause	64.9%	35.1%	57.8%	42.2%

1984

Earnings Change	Cause		Coder 1 Locus internal	Coder 1 Locus external	Coder 2 Locus internal	Coder 2 Locus external
Positive	positive	Count	149	14	163	44
		% within cause	91.4%	8.6%	78.7%	21.3%
	negative	Count	74	28	89	60
		% within cause	72.5%	27.5%	59.7%	40.3%
Negative	positive	Count	166	25	201	38
		% within cause	86.9%	13.1%	84.1%	15.9%
	negative	Count	123	51	133	78
		% within cause	70.7%	29.3%	63.0%	37.0%

Table 35, continued.

1985

Earnings Change	Cause		Coder 1 Locus internal	Coder 1 Locus external	Coder 2 Locus internal	Coder 2 Locus external
Positive	positive	Count	198	25	180	60
		% within cause	88.8%	11.2%	75.0%	25.0%
	negative	Count	139	30	46	61
		% within cause	82.2%	17.8%	43.0%	57.0%
Negative	positive	Count	191	26	185	65
		% within cause	88.0%	12.0%	74.0%	26.0%
	negative	Count	172	50	83	91
		% within cause	77.5%	22.5%	47.7%	52.3%

1992

Earnings Change	Cause		Coder 1 Locus internal	Coder 1 Locus external	Coder 2 Locus internal	Coder 2 Locus external
Positive	positive	Count	235	36	211	58
		% within cause	86.7%	13.3%	78.4%	21.6%
	negative	Count	110	62	137	63
		% within cause	64.0%	36.0%	68.5%	31.5%
Negative	positive	Count	211	84	253	125
		% within cause	71.5%	28.5%	66.9%	33.1%
	negative	Count	213	141	191	199
		% within cause	60.2%	39.8%	49.0%	51.0%

CHAPTER 6 – CONCLUSIONS, LIMITATIONS, AND EXTENSIONS

From the results of the empirical testing, it appears that there are differences in the total word size of the sample MD&As which are related to the direction of the firm's earnings change from year t-1 to year t; specifically, negative earnings change firms have significantly larger MD&As compared to positive earnings change firms. Also, the number of direct causal attributions, which highlight specific causes and effects of particular disclosures, and the proportion of MD&A devoted to direct causal attributions are both higher in negative earnings change firms than in positive earnings change firms. Firm size, however, does not appear to have a strong influence on these measures. This seems to indicate that negative earning change firms perceive a need to provide more explanations about the results of the firm's operations and status than do positive earnings change firms.

Two variables associated with the use of impression management were investigated: an external locus of attribution and a perceived use of impression management strategy. Crosstabulation results indicated a significant relationship between locus and the direction of cause of an attribution, as well as a significant relationship between locus and the direction of effect of an attribution. The crosstabulations on the strategy variable indicated a significant relationship between strategy and the effect variable. The results on the relationship of firm size and earnings change varied between coders, which introduces some uncertainty into the interpretation of these results.

Following the crosstabulation analysis, logistic regression was used to form and test predictive models for the probability of impression management use. Locus and strategy were used as dependent variables in separate models. The final model for locus, based on 1983 – 84 data, indicated that large firm size and negative cause were the

investigational variables with the strongest effect on the probability of the use of a external locus in an MD&A disclosure. The 1992 locus model added negative earnings change as a significant variable, but at a lower coefficient than either size or cause. Both locus models achieved reasonable fit as measured by Nagelkerke R^2 (.291 and .254, respectively) and improvement in chi-square over intercept-only models. The final strategy model based on 1983 – 84 data indicated that large firm size, negative effect, and past time orientation had the most consistent effect on the probability of strategy use; in contrast, the 1992 final model established negative earnings change, negative effect, and external locus as having significant effects on the probability of strategy use. The fit of the strategy models was not as strong as the locus models; the Nagelkerke R^2 for the final 1983 – 84 strategy model was .076, compared to .254 for the 1992 model.

The results of the logistic regression provide some support for the hypothesized use of impression management in the MD&A as presented in Hypotheses 1 and 2; negative cause and negative effect were significant in the models and did appear to affect the probability that impression management as defined by external locus and use of strategy was perceived by the coders. However, that support is not strong or consistent. The locus variable provided a more stable result over time than did the strategy variable.

An examination of the proportions of positive and negative causal events associated with internal and external attributions, respectively, indicates that firms emphasize the association of positive cause and internal locus of control, but de-emphasize the association of negative cause and external locus of control.

There does not appear to be a significant difference between the 1983 – 1985 and the 1992 firms on most of the measures in this study, except in the area of MD&A size, which is larger for 1992 firms. There is a possibility that under the more explicit guidance of FRR 36, firms may have increased their level of disclosure; this possibility does not preclude other events or general economic conditions as contributors to this effect.

In terms of limitations of the research, the existence of measurement error in the variables reduces the strength of the results. In almost all logistic regression models the coder control variable was significant. This is not unexpected, since the coders were allowed to independently evaluate the individual MD&A texts in their entirety in an

attempt to preserve the context of the MD&A disclosures as they were originally presented. However, this may have weakened the models' ability to discriminate and affected the predictive ability of the models. It may also be that firms use impression management in MD&A in a selective manner, that there may be a threshold of materiality which would increase the probability of the use of impression management, and the methodology chosen for this research would not detect that selective use. Another limitation to the conclusions above is that this research is essentially associative and relies on prediction models based on past data; this does not imply causality and could change, if based on a different set of firms.

Another limitation to consider is that the effect of indirect causal attributions was not included in this research; if negative disclosures are made indirectly in order to de-emphasize their impact, then the methodology followed in this research would not detect those disclosures. Finally, a significant amount of information regarding the firm is released in the quarterly statements required of publicly traded firms, and it may be that management composes MD&A with its view more towards the firm's fourth quarter results rather than the yearly results, which users can partially forecast using the prior quarterly results. This research methodology did not take that possibility into consideration; however, it could be an avenue for future research activity.

One alternative path for this type of research would be to look at a time series of MD&As, choosing a sample of firms based on firm size and earning change, and evaluating their MD&As over time to determine impression management use. This would control for firm-specific styles of disclosure which may introduce additional variance into the model. Another extension would provide one set of coders with the financial statements as well as the MD&A, to determine if the additional information has an effect on the perception of impression management use. A third extension of this research could investigate the use of MD&A in users' predictions of a firm's future performance, in comparison with third-party evaluations such as analyst forecasts.

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APPENDICES

Appendix A. Sample Firms, 1983 – 1985 and 1992

Firm - 1983	Group	Firm - 1984	Group
Archer Daniels Midland[1]	LN	Atlantic Richfield Co[1]	LN
Ashland Oil[1]	LN	Federated Department Stores[1]	LN
Avon Products[1]	LN	Fluor Corp[1]	LN
CPC International[1]	LN	Kerr-McGee Corp[1]	LN
Digital Equipment[1]	LN	LTV Corp[1]	LN
Goodyear Tire and Rubber[1]	LN	Mobil Corp[1]	LN
McDermott International[1]	LN	Pepsico Inc[1]	LN
Merrill Lynch and Co[1]	LN	Philip Morris Inc[1]	LN
Norfolk Southern[1]	LN	Ralston Purina Co[1]	LN
Panhandle Eastern Co[1]	LN	Xerox Corp[1]	LN
American Brands[1]	LP	AT&T[1]	LP
Anheuser-Busch[1]	LP	Bristol Myers Co[1]	LP
Boeing[1]	LP	Great Atlantic and Pacific Tea Co[1]	LP
E.I. DuPont du Nemours and Co[1]	LP	Honeywell Inc[1]	LP
Eli Lilly[1]	LP	Kroger Co[1]	LP
J.C. Penney[1]	LP	Litton Industries[1]	LP
McDonnell Douglas[1]	LP	Phillips Petroleum Co[1]	LP
Minnesota Mining and Manufacturing[1]	LP	Procter and Gamble[1]	LP
Ralston Purina[1]	LP	Sears Roebuck and Co[1]	LP
Standard Oil (Amoco)[1]	LP	Texas Instruments Inc[1]	LP
Acton Corp[2]	SN	American Realty Trust[2]	SN
Littlefield Adams and Co[2]	SN	Andal Corp[2]	SN
McRae Industries[2]	SN	Dataram Corp[2]	SN
Pay-Fone Systems[2]	SN	International Power Machines[2]	SN
Porta Systems Inc[2]	SN	Littlefield Adams and Co[2]	SN
Presidio Oil[2]	SN	Pay-Fone Systems Inc[2]	SN
Selas Corporation of America[2]	SN	Semtech[2]	SN
SFM Corp[2]	SN	Servotronics[2]	SN
Speed-O-Print[2]	SN	Trans-Lux Corp[2]	SN
TII Industries[2]	SN	University Patents[2]	SN
Christiana Companies Inc[1]	SP	Calprop Corp[2]	SP
Decorator Industries[2]	SP	Espey Manufacturing and Electric[2]	SP
Eastgroup Properties[2]	SP	General Microwave[2]	SP
Federal Realty Investment Trust[2]	SP	Michael Baker Corp[2]	SP
Health-Mor[2]	SP	SFM Corp[2]	SP
Helionetics[2]	SP	Tejon Ranch Co[2]	SP
Killearn Properties[2]	SP	Tridex Corp[2]	SP
Scope Industries[2]	SP	United Medical Corp[2]	SP
Servotronics Inc[2]	SP	Vermont Research[2]	SP
Wilshire Oil (TX)[1]	SP	Vicon Industries[2]	SP

1= listed on NYSE, 2 = listed on AMEX

LN = large firm size, negative earnings change
LP = large firm size, positive earnings change
SN = small firm size, negative earnings change
SP = small firm size, positive earnings change

Firm - 1985	Group	Firm - 1992	Group
Dana Corp[1]	LN	Alcan Aluminum[1]	LN
Delta Air Lines[1]	LN	AMR Corp[1]	LN
Eastman Kodak[1]	LN	Bristol Myers Squibb[1]	LN
General Motors[1]	LN	Eli Lilly[1]	LN
Hewlett-Packard[1]	LN	International Business Machines[1]	LN
K Mart Corp[1]	LN	Kroger Corp[1]	LN
Minnesota Mining and Manufacturing[1]	LN	Mobil Corp[1]	LN
Sears Roebuck and Co[1]	LN	UAL Corp[1]	LN
TRW Inc[1]	LN	USX Corp[1]	LN
UAL Inc[1]	LN	Von's Companies Inc[1]	LN
Bristol Myers[1]	LP	Albertson's Inc[1]	LP
Chevron Corp[1]	LP	American Home Products[1]	LP
Chrysler Corp[1]	LP	Capital Cities/ABC[1]	LP
Conagra[1]	LP	Chevron[1]	LP
Federated Department Stores[1]	LP	Chrysler Corporation[1]	LP
Litton Industries[1]	LP	General Electric Corp[1]	LP
Loews Corporation[1]	LP	McKesson Corp[1]	LP
May Department Stores[1]	LP	Pfizer[1]	LP
Textron Inc[1]	LP	Sysco Corp[1]	LP
Xerox Corp[1]	LP	Unocal[1]	LP
Andrea Radio Corp[2]	SN	Belmac Corp[2]	SN
BowlAmerica[2]	SN	Caspen Oil[2]	SN
Chicago Rivet and Machine Co[2]	SN	CST Entertainment Imaging Inc[2]	SN
Health-Chem Corp[2]	SN	Helionetics[2]	SN
International Power Machines[2]	SN	Medco Research[2]	SN
Kenwin Shops[2]	SN	Molecular Biosystems[1]	SN
Lynch Corp[2]	SN	Mott's Holdings[2]	SN
Matec Corp[2]	SN	Organogenesis[2]	SN
Pico Products[2]	SN	Patrick Petroleum[1]	SN
Publicker Industries[1]	SN	U S Bioscience[2]	SN
American Science and Engineering[2]	SP	Advanced Photonix Inc[2]	SP
Bethlehem Corp[2]	SP	American Annuity Group[1]	SP
Cognitronics[2]	SP	Arrhythmia Research Technology Inc[2]	SP
Craig Corp[1]	SP	Computrac[2]	SP
Hipotronics[2]	SP	Daxor Corp[2]	SP
HMG Property Investors[2]	SP	Diversified Communications Inc[2]	SP
Kleer-Vu Industries[2]	SP	Gull Laboratories[2]	SP
Lazare Kaplan International[2]	SP	MSR Exploration Ltd[2]	SP
Ohio Art Co[2]	SP	Noise Com Inc[2]	SP
Presidio Oil Corp[2]	SP	Struthers Industries Inc[2]	SP

1= listed on NYSE, 2 = listed on AMEX

LN = large firm size, negative earnings change
LP = large firm size, positive earnings change
SN = small firm size, negative earnings change
SP = small firm size, positive earnings change

Appendix B. Instructions to Coders

Thank you for your participation in this project. Please read the following instructions carefully.

You should find a quiet and well-lit location where you can work comfortably and without interruption. Please work individually and without reference to any other books or documents beyond those supplied by us. Each numbered folder should have one document stapled to the inside back of the folder. There should also be one questionnaire clipped to the inside front of the folder.

As you read the document, look for phrases or sentences which directly link a specific outcome for the firm (e.g., an increase in sales, or a decrease in net income) with one or more causes for that outcome. We will refer to these as **cause-effect disclosures**. (The words "effect" and "outcome" are equivalent terms in this research.) Such disclosures can be often be identified by the use of words/phrases such as "due to", "because of", "as a result of", "are attributed to" (such words and phrases are referred to as **"causal connectives"**).

Read through the document carefully, and locate all instances where you find cause-effect disclosures. Highlight the entire cause-effect disclosure, and number each disclosure sequentially (e.g., 1, 2, 3, etc). Each cause-effect disclosure should then be coded on the following dimensions using the supplied coding sheets:

- **Locus of causality:** What is the source of the cause? Identify whether results occur due to: corporate actions, policies, products, structure or decision making (Com); industry trends, competition or demand (Ind); or environmental events such as general economic conditions, regulation, or government policies (Env).
- **Time orientation:** Does the disclosure refer to the past (Pas) or to the future (Fut)?
- **Direction of the cause:** Is the cause a favorable (Pos) or unfavorable (Neg) event?
- **Direction of the effect:** Is the effect favorable (Pos) or unfavorable (Neg) for the firm?
- **Strategy:** What type of disclosure is the company making? There are three strategies we will look for: (1) an excuse strategy, where a firm denies the responsibility for a negative consequence for an action (Exc); (2) a justification strategy, where a firm accepts responsibility for an action but states that the positive consequences resulting from an action outweigh the negative effects (Jus); (3) a change strategy, indicating that actions are being taken to correct deficiencies and "plot a new course" for the company (Chg). There may also be no strategy discernable in the sentence (None).
- **Topic area:** Identify the topic area the disclosure refers to: liquidity (Liq), capital resources (CapR), results of operations (Ops), future trends (Trnds), or other (Oth). If you are uncertain to what category to assign a disclosure to, refer to the attached list which describes the SEC requirements.

The coding box appears as follows:

DISC #	LOCUS	TIME	CAUSE	EFFECT	STRATEGY
	Com Ind Env	Pas Fut	Pos Neg	Pos Neg	Exc Jus Cha None

TOPIC AREA

Liq	CapR	Ops	Trnds	Oth

On each of the dimensions, circle your evaluation of the disclosure.

The outcome and cause are generally in close proximity to each other. Typically, cause-effect disclosures are contained in one or two sentences. If a disclosure includes more than one cause for an outcome, each cause should be coded separately. To do so, use the same disclosure number, and code each cause in a different scoring box. For example, the disclosure "Net income increased 10% in 19XX. This result is due to aggressive marketing of the firm's products and favorable prices for raw materials" presents one effect (increase in net income) and two causes (aggressive marketing and favorable raw materials pricing). The scoring of this disclosure would appear as follows:

DISC #	LOCUS	TIME	CAUSE	EFFECT	STRATEGY
1	(Com) Ind Env	(Pas) Fut	(Pos) Neg	(Pos) Neg	Exc Jus Cha (None)

TOPIC AREA

Liq	CapR	(Ops)	Trnds	Oth

DISC #	LOCUS	TIME	CAUSE	EFFECT	STRATEGY
2	Com Ind (Env)	(Pas) Fut	(Pos) Neg	(Pos) Neg	Exc Jus Cha (None)

TOPIC AREA

Liq	CapR	(Ops)	Trnds	Oth

Disregard all pictures, graphs, charts and/or tables. Also, ignore any information regarding quarterly data or stock prices. Most of these items have already been removed or covered. Examine only the text portion of the documents. Disregard any reference in the document to additional information not present in the folder. Do not take the company name into account in making your judgments.

After you have located and scored all cause-effect sentences in a document, please complete the questionnaire clipped to the inside front of the folder. Please make sure that your rater code and page numbers are on the scoring sheets and the questionnaire. Then clip all scoring sheets used and the questionnaire to the inside front of the folder, and cross out the folder number listed on the tab with a single line. This will let me know that

the document inside has been read and evaluated.

Examples of cause-effect sentences are as follows:

- "This net income was a historical high for the mine, and *was due to* higher prices on the free market where all production was sold."

- "The firm continues to maintain its program for new product design. Such a program is costly, however, and this cost *is reflected in* the modest profits."

- "These favorable results were achieved *despite* unfavorable economic conditions in most of the companies outside the U.S. and a strike in the U.S. which tied up production for 45 days."

The following are <u>not</u> direct cause-effect disclosures:

- "Sales increased by 10%, and net income increased by 2%." - this implies a connection, but does not make a direct connection between the two items.

- "The deficit caused the government to raise taxes." - again, this statement implies something, but it is uncertain *what* is implied.

- "The company continued to maintain its sales in spite of a significant drop in industry demand." - no cause for the maintenance in sales is given.

Notes:

- One possible search strategy is to skim the document, looking for and marking the location of causal connectives, and then returning to the beginning for a more careful inspection of the document.
- Future-oriented cause and effect disclosures should also be coded.
- The cause and effect may not always be located in the same sentence. Highlight all sentences related to the particular cause-effect disclosure
- The same cause may be cited for more than one effect. Each effect is to be treated as a separate disclosure and coded.
- Also, one effect may have more than one cause. Each cause should be treated as a separate disclosure and coded.

VITA

VITA

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Education

1987 - 2001	Ph.D. Program, Krannert Graduate School of Management, Purdue University. Degree granted May 2001. Major: Accounting. Minors: Organizational Behavior, Research Methods.
1983 - 1986	B.S., Purdue University. Major: Accounting.
1973 - 1977	B.A., Purdue University. Major: Psychology.

Teaching Interests

Financial accounting (introductory, intermediate, advanced), managerial accounting (introductory, intermediate), computers in accounting.

Research Interests

Financial accounting and reporting; corporate disclosure policies and their effects; decision making in accounting.

Dissertation Research

The research employs content analysis to examine the Management Discussion and Analysis (MD & A) section of annual financial reports for evidence of impression management use. Descriptive statistics, nonparametric tests, and logistic regression are used in the data analysis. Results indicate a tendency for firms to attribute positively coded events to actions taken by the firm.

Teaching and Employment Experience

Lecturer in Accounting, Indiana University Purdue Columbus, Fall 1995 to present.

Local Computer Support Provider, Indiana University Purdue University Columbus, January 1998 to present.

Classes taught included Basic Accounting Skills, Introduction to Financial Accounting, Introduction to Managerial Accounting, Intermediate Financial Accounting I and II, Cost Accounting, Introduction to Business Administration, Business Communications, and Personal Finance. Coordinate and review activities of adjunct faculty teaching Business courses. Review and select Business course textbooks. Provide academic advising for Business students and non-Business students interested in Business field. Campus service includes participation on faculty committees (e.g., Academic Council, Technology Advisory Panel, Safety Review Task Force) and in Student Services activities (e.g., New Student Orientation, Open House).

Local Computer Support Provider position involves the following duties: Preparing, configuring, installing, maintaining, and repairing campus workstation hardware (e.g., personal computers and components, printers, scanners) and software (e.g., Microsoft operating systems, Microsoft office products, Microsoft and Netscape web browsers, SPSS, network communications, and anti-virus software) in faculty and staff offices, computer labs, and other computing clusters. Consulting with faculty and staff regarding computer procedures and software specifics. One-on-one consultation with faculty, staff and students for training and help desk issues. General local area network (LAN) and server administration (Windows NT 4.0), including, but not limited to, user account creation and maintenance, establishing shared directories, maintaining tape backups, configuring workstations for LAN access, installation of network hubs, construction and testing of network patch cables. Research on purchasing computer-related items (software, hardware), selection of product and vendor, receipt and verification of orders. Self-instruction on computer and technology issues and information via self-directed reading and research. Assist Manager of Information Technology as needed. Services provided to IUPU Columbus and Purdue School of Technology at Columbus faculty, staff, and students.

Graduate Instructor, Purdue University, West Lafayette, Indiana

Intermediate Financial Accounting I and II

Prepared lectures and in-class teaching materials; conducted lecture sessions and office hours; developed and graded quiz and examination questions; developed syllabi with course coordinator; computed exam and final grading scales. Taught one section of Intermediate I in Fall 1992 (52 students), Spring 1993 (45 students), and Spring 1994 (33 students), and two sections of Intermediate II in Spring 1995 (30 students per section).

Introductory Financial Accounting

Prepared lectures and in-class teaching materials; conducted lecture sessions and office hours; developed and graded quiz and examination questions; developed syllabi with course coordinator; computed exam and final grading scales. Team-

taught course in Fall 1992 (three sections, 300 students per section); taught two sections in Fall 1994 (400 students per section); coordinated and taught course in Summers 1993 and 1994 (one section, 120 students per section).

Introductory Managerial Accounting
Prepared lectures and in-class teaching materials: conducted lecture sessions and office hours; developed and graded quiz and examination questions. Taught one or two sections per semester while performing administrative duties as described below; coordinated two sections during summer session, and taught one. (6/87 - 8/88, 6/89 - 8/89, 6/91 - 8/91, 6/92- 8/92)

Administrative Assistant, Introductory Managerial Accounting, Purdue University
Supervised graduate student instructors (Master's and Doctoral level) in multiple-section course; coordinated construction of examinations and developed examination procedures; developed course syllabi; maintained computerized database of student score records; handled student inquiries and concerns regarding course policies; computed exam and final grading scales for approval by course coordinator. (8/87 - 5/88, 8/90 - 5/92)

Research Assistant, Purdue University
Performed research tasks as assigned by faculty members. Tasks included computer programming, database searches (Compustat and CRSP), database maintenance, and library research.

Disability Claims Examiner, State of Indiana, Indianapolis, Indiana
Determined claimant eligibility for Social Security Disability benefits. (1/79 - 8/83)

Undergraduate Teaching Assistant, Purdue University
Taught in help lab for introductory financial accounting course. (8/86 - 5/87)