

(Mis)Using Numbers in the Enron Story

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This article investigates the numeric construction, rhetorical moves, and metatheatre (defined as multiple stages for performing organization stories) pertaining to the widely publicized failure of Enron Corporation. The authors thus examine how statistics in financial reports and executive metatheatric presentations were used to persuade Wall Street experts to recommend Enron stock, when the writing was on the fourth wall. The authors' contribution to ethnostatistics is fourfold. First, they show that financial reports and discourse are a suitable and important topic for ethnostatistical analysis. Second, they extend ethnostatistics beyond how academic professionals tell stories with numbers, to how professional practitioners in organizations tell such stories. Third, they show the important role the rhetorical construction of financial performance measures played in the Enron failure. And fourth, they extend ethnostatistics by integrating ethnostatistics' third moment of rhetoric with theatrical theory to show the situated and staged nature of the rhetoric of quantification.

Keywords: *ethnostatistics; storytelling; Enron; metatheatre*

Ethnostatistics (Gephart, 1988) shows how academic professionals including researchers use statistics to make quantitative sense of social phenomena. Ethnostatistics is an application of Garfinkel's (1967) ethnomethodology to statistics. Ethnomethodology is a way to study members of a social group making sense of their surroundings, such as how patients are categorized by hospital staff and thus translated into admission statistics in hospitals. Although ethnostatistics has been used to study the use of statistics produced by academic professionals in academic writing, it has not been used to look at practitioner professionals' uses of numbers. We study the Enron case to understand how individuals and organizations made sense of financial data from one of the largest bankruptcies in U.S. history. For the year ending December 31, 2000, the Enron Corporation recognized sales in excess of \$100 billion, making it the 7th largest firm in total sales within the Standard and Poor's (S&P) 500 and the 52nd largest within the S&P 500 in terms of market value ("S&P 500," 2001). For the year ending December 31, 2001, the Enron Corporation was in bankruptcy, and the closing market price for Enron common stock was \$0.60 per share. This resulted in investor and creditor losses in the billions and a corresponding breakdown of confidence in the capital markets. The Enron actors created a rosy story using financial statement numbers to manage readers' impressions of their financial statement. The audience for this story included Wall Street analysts,

stockbrokers, regulators (such as the Securities and Exchange Commission [SEC]), and the financial press. In this article, we show how financial professionals and financial reporters, not academics, begin to interpret and make sense of the Enron story. Although numerous explanations of Enron's demise have been presented by researchers, none have used the ethnostatistical perspective to analyze the Enron debacle. We use this perspective and in so doing extend ethnostatistics with story method and theatre method in our look at Enron. In terms of story method, we recreate the story practitioners told through their financial documents. Theatre method is used to look at how Enron created and presented financial numbers on a Hollywood-style set, to misdirect spectators (analysts, regulators, investors) in an attempt to inflate the value of Enron stock. In prior work (Smith, Gardner, & Boje, 2004), we assessed Enron in terms of the first two moments of ethnostatistics: Level 1, which involves the production of statistics and consideration of where and how numbers originated, and Level 2, which examines the practices used to analyze the numbers. However, we did not examine the third level or moment of ethnostatistics: the rhetoric of interpreting numbers. In this article, we address the first two levels to provide a context for our detailed discussion of the role of storytelling and metatheatre in the rhetorical production and legitimation of financial performance measures used by Enron.

We make the following contributions to methods. First, we extend ethnostatistics from the academic world to the world of practitioners in organizations. We use the perspective to emphasize the important role of rhetorical strategies during the final stages of the Enron collapse, specifically from January 2001 to October 2001. Our article shows it is important to understand how organizations persuade analysts, investors, and others that the financial performance and overall financial health of the organization is strong. We explore how this persuasion was accomplished in the Enron case. Ethnostatistics thus allows us to examine the rhetoric used to embellish the numbers presented.

Second, we move beyond the ethnomethodological roots of ethnostatistics to examine the rhetorical perspective on quantification—the third moment of ethnostatistics. Third, we show how the ethnostatistical perspective can inform research on organizational theatre and story. Organization theatre studies have primarily looked at the dramaturgy theory of Kenneth Burke and Erving Goffman (see reviews by Boje, Luhman, & Cunliffe, 2003; Oswick, Keenoy, & Grant, 2001). In this literature, metatheatre has two meanings. First, for Turner (1985, p. 181), metatheatre is the communication about the communication process: spectators and actors reflecting on how actors do what they do on stage, “the ability to communicate about the communication process itself.” Second, Boje and Rosile (2003a, 2003b) define metatheatre as the multiple theatres on which a cast of characters perform stories for spectators (employees, investors, customers, and/or vendors). In short, metatheatre involves actors reflecting about their communication process, and it is the active enactment of story on multiple performance stages. Metatheatre is relevant to narrative and story inquiry methods. Organizations, besides telling stories written into texts such as annual reports, tell stories theatrically. We are particularly concerned where a metatheatre is created and temporarily staged so as to tell stories with numbers, where such staging clearly involves an effort to persuade investors and analysts about the veracity of particular financial measures and statistics. Using the concept of metatheatre, our analysis seeks to demonstrate the interplay of the storytelling and theatrics of Enron.

Enron put on its theatrical façade to misdirect and otherwise persuade investors, analysts, and regulators that the numbers and analyses used and reported were credible and reliable and that Enron is a sound investment.

Finally, we pose the question of why did the price of Enron's shares continue to grow, even at record-breaking prices, when the financial statements did not support inflated share prices? And we ask, further, how was Enron able to create and sustain their illusion of success? To answer this question, we reconstruct the Enron storytelling about its numbers from a review of archival documents from Enron and the financial press and previously published interviews with former Enron employees. We analyze how the financial community associated with the Enron stock made sense of the Enron story as it emerged. Our contribution, then, is to use ethnostatistics as a perspective and methodology to frame and explain how insiders and outsiders seemingly constructed their understanding of Enron. Given that Enron went from the seventh largest U.S. corporation in sales to a bankrupt shell in the span of 1 year, the Enron case is a serious business debacle. We posit that ethnostatistics, extended by theatre and story theory, can provide insights into the in situ sense making and interpretation of numbers that occurred at Enron and also in other corporate debacles. Ethnostatistics can potentially lead to a new understanding of the corporate financial illusion that was produced for mass consumption by Enron.

The next section discusses the methodology used in the article. We then discuss the numeric constructions, rhetorical moves, and aspects of metatheatre observed in the Enron case. We conclude by discussing implications our ideas have for ethnostatistical theory and methodology. Furthermore, we also address practical concerns and related implications regarding organizational financial disclosures when the numerical rhetoric obfuscates the numerical reality.

Methodological Approach

There are three moments in ethnostatistical analysis: constructing numbers, analyzing numbers, and rhetorical interpretation. Each moment takes a somewhat different perspective on statistical phenomena, and each requires a somewhat different type of data. The first level of ethnostatistics uses qualitative methods to study the naturally occurring activities in the situation of social scientists (and others) producing numbers. Second-level ethnostatistics investigates the adequacy of basic technical and practical assumptions made in statistical analyses (production of tables). And the third level of ethnostatistics looks at how statistics (including tables of numbers) are used to persuade, using rhetoric. Rhetoric is the art of persuasion through language (Gephart, 1988; McCloskey, 1985). This study explores the rhetoric of quantitative justification and thus in general is a qualitative study of quantitative metrics employed to persuade.

Documents used as data for this article include key financial disclosures from the Enron annual report for the years ending 2000, 1999, and 1998 and the first-quarter unaudited financial statements and Form 10-Q for the quarter ending March 31, 2001. In addition to this financial information, several scholarly works and media reports of Enron were also used to reveal the financial number story that Enron presented to the financial world in the first level of ethnostatistics (see section below). To examine the second level of

ethnostatistics composed by Enron's basic technical and practical assumptions related to profits reported, we examined their value-at-risk model developed by Vince Kaminski. For the third level of ethnostatistics, statistics as rhetoric, we examined business press interpretations of Enron's stock prices and financial health, documents from Enron U.S. congressional transcripts, and documents seized by the federal government.¹ In addition, accounts of Enron executives' staged theatric performances for the public (analysts and regulators) and for Enron employees were reviewed to allow us to explore Enron's metatheatre—how actors reflected on the meaning of their numbers and how the story was staged to misdirect the audience.

We then explain ethnostatistics and how we applied this methodology to the documents we analyzed. Our focus is not a complete empirical study; rather, we use this article to explore how one could address the three levels of ethnostatistics in a case such as Enron.

Number Social Construction

The first moment of ethnostatistics is an analysis of how numbers are created. Enron constructed financial numbers, statistical analyses, and interpretations to represent their company to employees, investors, regulators, and analysts. Although Enron claimed to have followed generally accepted accounting principles in the production of their financial statements, various disclosures were obfuscated and misleading through complex off-balance sheet transactions and scripted menageries that were staged for outsiders in producing financial disclosures that were not transparent. By constructing an illusion of strong financial health and future growth, the reality of financial sickness and decay was well hidden. Most firms recognize revenues earned from the selling-related activities in which they engage. Thus, earnings and related earnings per share are numerical representations relied on by those external to the firm as a measure of financial performance. Enron, however, took advantage of an unregulated energy derivatives market whereby it could abuse mark-to-market accounting to book revenues from simply adjusting the value of energy contracts in addition to revenues booked from sales. According to Bryce (2002), Enron could enter into a 15-year contract to buy 1 billion cubic feet of natural gas per year from a producer at a price of \$3 per thousand cubic feet; however, Enron could then later assume that in 15 years, natural gas would be selling for \$4 per thousand cubic feet. As a result of simply changing the assumption as to the projected future value of natural gas, Enron would then calculate the new value for the entire 15 years of the contract and using mark-to-market accounting (an adjustment process in which the investment portfolio is increased to the determined fair market value and the amount of the increase is then recognized as an unrealized gain revenue). The result would be to immediately record all the projected revenues from the deal on its books in the current period. If even more revenue was needed, Enron could go back to the same energy contract and raise its price assumptions to \$6 or even \$8 per thousand cubic feet, and because there were no benchmark prices that extend out that many years and no regulators to prevent Enron from making those assumptions, the company could instantly inflate its revenue figures as needed (Bryce, 2002). Those outside of Enron had to rely on the financial revenue figures manufactured by the Enron management. Inflated revenues can provide an illusion of financial

strength in the short run; however, fictitious sales do not generate real operating cash flows and eventually will lead to financial decay. According to Bryce, although Enron's financial statements were difficult to understand, the cash flow statements clearly showed problems of Enron burning through cash. Furthermore, of the 19 quarters that Jeff Skilling was either president or CEO of Enron, the company was cash flow positive from operations in only 6 of those quarters. As the illusion of financial strength began to falter, the inflated stock price began to fall. Consider the fact that the closing market price of Enron common stock on December 29, 2000, was \$83.125 per share. Within 6 short months, the stock had fallen to roughly \$48 per share as more and more analysts began to question the cash flows of Enron. By the end of June 2001, the cash flow from operations was a negative \$1.3 billion, and the company had to borrow \$1.97 billion just to keep the doors open. Interest expense paid during the first 6 months of 2001 amounted to \$426 million, or \$2.3 million per day. Moreover, in the same 6-month period, Enron's short-term debt more than doubled from \$1.67 billion to more than \$3.45 billion, and long-term debt went from \$8.55 billion to \$9.35 billion (Bryce, 2002). Then, in 6 more months, Enron was in bankruptcy, and the closing market price for Enron common stock on December 31, 2001, was a paltry \$0.60 per share. To better understand how Enron could manufacture such an illusion, a brief background is necessary.

In 1987, before off-the-balance partnerships were being generated at Enron, energy markets were undergoing deregulation. This was a time when the financial community had trouble understanding how the numbers in financial reports worked under the recent deregulation of the financial industry. It is perhaps the first instance of Enron manufacturing illusions with rhetorical flare. A gas bank is a metaphor, part of a way of concocting a story about how gas can be deposited from one part of the country and then withdrawn at a fixed price from some other region. The idea of a gas bank is storied and morphs into a trading floor concept.² The basic idea is that Enron would be an energy bank, an intermediary between buyers and sellers of natural gas, and would profit from the spread between the buying and selling price. In the gas bank, gas producers were considered depositors in a sort of commercial bank, and the consumers of energy were similar to borrowers. Enron pooled the deposits (i.e., the supply commitments) to fund long-term energy contracts (15 years or more) for the gas buyers (the borrowers). Jeffrey Skilling described Enron's gas bank strategy as "get in early, push to open markets, position ourselves to compete, and compete hard when the opening comes" (Kaminski & Martin, 2001). The gas bank would give Enron exclusive knowledge of price information from its gas depositors and its gas customers. According to Bryce (2002), shortly after the gas bank idea was launched, Enron Gas Marketing (a division of Enron) sold some \$800 million worth of gas in 1 week's time as the volume of gas Enron was selling soared. Within months of the gas bank launch, the company was selling 1.1 billion cubic feet of gas per day, and 2 years later, Enron had signed contracts with 35 producers and more than 50 gas customers, with daily sales volumes in excess of 1.5 billion cubic feet (Bryce, 2002).

The gas swap was a script fix to the gas bank scenario; as in a commercial bank model, the gas swap would be equivalent to a deposit guarantee system. In 1989, Enron executives came up with a gas swap strategy, to remedy failed negotiations between Enron and a Louisiana aluminum company. Enron could not physically transport gas from its own

facilities and make the Louisiana deal profitable (Kaminski & Martin, 2001). That gas swap strategy “called for the customer to buy gas locally, paying a floating price, and simultaneously purchase a swap from Enron in which Enron would pay the producer’s floating rates and the producer would pay Enron a fixed rate” (Kaminski & Martin, 2001, p. 44). In terms of the first moment of ethnostatistics, the gas swap was a way to repair the script of the gas bank scenario, with the assumption being made is that a gas bank is just like monetary deposits and withdrawals in a commercial bank, complete with deposit guarantees that prices stay fixed. As such, the metaphor is a way for energy sellers and energy buyers to construct their numbers.

In the early 1990s, and until Enron’s collapse, Andrew Fastow was the hero of the financial community. Our point is that Fastow, in the early going, was a highly celebrated risk manager. Even the *Journal of Corporate Finance*, a few months before the collapse, was singing Fastow’s praises:

If you ask an outsider what industry Enron is in they will say energy. If you ask an insider they will tell you that we are in the risk management business. We provide certainty of delivery and certainty of price. (Andrew Fastow, CFO, Enron Corp, cited in Kaminski & Martin, 2001, p. 44)

Fastow constructed Enron numbers by employing complex contingent equity issues that kept the related debt off the Enron balance sheet through the use of special purpose entities (SPEs; “Editorial,” 2002).³ According to Bryce (2002, p. 156),

Whitewing was among the boldest of Enron’s off-the-balance sheet deals. Formed as an Enron subsidiary in 1997, the company moved Whitewing off its books completely in 1999 when it sold half of the partnership. The company was set up to purchase billions of dollars of Enron’s overseas assets. Power plants, pipelines, and other underperforming assets were sold to Whitewing, which was backed by investment from a group of Wall Street investment banks. Whitewing was then to resell Enron’s assets on the open market. In return, Enron guaranteed that if the assets were sold at a loss, it would make up the shortfall with shares of its own common stock.

Thus, Fastow used the Whitewing SPE as a dumping ground for underperforming assets that he could “sell” to generate cash and revenues while keeping the related debt off the Enron balance sheet. The SPE could be used by Fastow to provide cash inflows from asset “sales” and thereby continue to improve the illusion of financial strength. In the event of any subsequent losses, Fastow could simply deliver shares of Enron stock to Whitewing to make up the shortfall as a contingent equity issue.

There were many admirers of Fastow. S&P’s director, Ron Barone, for example, credits Fastow with the ability to “think outside the box” because he kept credit ratings high while financing billions of assets (Banham, 1999). Fastow would become instrumental in the numerous off-the-balance-sheet SPE partnerships that would ultimately become an Achilles heel of Enron. By using SPEs, Enron seemed to have the best of both worlds. Enron could record revenues on its income statement but did not have to show any of the SPE-related debt on its balance sheet. Moreover, the credit rating services such as Moody’s or S&P rate the credit worthiness of a company in part based on the

ability to repay debt. As a result, Fastow was able to maintain a high credit rating, which lowered the cost of Enron's borrowing by keeping billions of dollars in debt off the Enron balance sheet (Bryce, 2002). Eventually, however, this short-term scheme could not be maintained.

Number Social Analysis

Included in the second moment of ethnostatistics is the methods in use for analyzing the assembled numbers and the related limitations of the numbers provided. The second moment of ethnostatistics is a qualitative analysis of the statistical methods being used to develop stories with numbers and an assessment of whether the assumptions behind them are being met. We next consider the methodology employed by Enron in its long-term energy commodity contracts and the related implications. The valuations ascribed to commodity contracts constantly change as the estimated future prices of those commodities change. As a result, the valuations are based on statistical models for predicting the future prices and the related risk of error. This is critical with respect to the second moment of ethnostatistics as the accepted value at risk (VaR) models used are inherently limited. Although a VaR model may be used to assess valuations 6 months or even 18 months from now, no model can predict the price of a commodity 20 years from now with any degree of accuracy.

Skilling and Fastow implemented an analysis of the numbers by using the market forward price curve method given Enron's exclusive knowledge of price information (from gas depositors and customers to its gas bank). A forward price curve (for a traded commodity) is simply a list of all the future or forward price rates for the commodity being traded. For example, the rate at which a trader can buy natural gas in 2 years sets the current price for the commodity contract, which is the 2-year forward rate. These forward curves are very important in commodity-derivative trading because they establish the current values of the commodity-derivative contracts. Accordingly, when all the available market information is used to establish the current values for these forward price curves, the commodity contracts are properly marked or valued.

The analysis methods used by Enron, however, also included the mismarking of forward curves. Enron traders selectively mismarked their forward curves, thus providing incorrect information on the curves. This was typically done to hide losses (Partnoy, 2002). The mismarking of price curves was a socially enacted method of number analysis used by Enron. Commodity traders were compensated based on the profits generated, so if traders could hide losses by mismarking forward curves, then they were likely to get a larger bonus as there were profits rather than losses being reported. These were the numbers Fastow, as CFO, and Skilling, as CEO, used to assess the performance of their energy traders. This kept them in line and was part of the method of risk management. In sum, given the unique position of Enron, certain commodity-derivative contracts were more amenable to mismarking, thereby resulting in fictitious profit reporting.

Certain derivative contracts were more susceptible to mismarking than others were (Partnoy, 2002). A trader, for example, would be unlikely to mismark contracts that were publicly traded, such as the natural gas contracts traded on the New York Mercantile

Exchange (NYMEX), because quotations for those contracts were publicly available; however, the NYMEX forward curve has a maturity of only 6 years. Because Enron created a market for long-term contracts that exceeded 6 years, a trader would be more likely to mismark a 10-year natural gas forward rate because no publicly available and thus verifiable forward price curve existed for this time period. Thus, Enron used these internally generated mis-marked price curves to artificially inflate its profits.

The three moments of ethnostatistics are interrelated. The numbers are created using the metaphor of a gas bank equivalent to a commercial bank (Level 1). In Level 2, the statistical method is not only unfathomable, but the assumptions of the statistical models are violated in their implementation. In the third level, the rhetoric of persuasion makes quantum leaps above statistics generated.

The integrity of capital markets depends on the accuracy of information provided to it by management. Accurate and timely information is an essential link between the firm and the environment in which it operates. According to Scott (1981), "open systems are capable of self-maintenance on the basis of throughput of resources from the environment . . . interaction with the environment is essential for open system functioning" (p. 89). However, open system theory does not address power differences. We can see how at Enron, management was the gatekeeper of the information and thus had perfect information, for example, on long-term forward price curves but only selectively provided this information content to the capital markets environment. The capital markets in turn should in theory recognize the existence of this information asymmetry. It is thus important to note that the numbers Enron disclosed were in fact manufactured by Enron management and could have been called into question by analysts. Enron was in the risk management business, and methods of statistical calculations for risk management were highly developed in the financial industry but unused by Enron.

Enron's 2000 annual report shows 95% of its revenues came from the "wholesale energy operations and services" (McLean, 2001, p. 123). This means that Enron had become a hedge fund trader in order to deliver future gas purchases to customers, requiring a complex asset-liability risk management system to manage its own liquidity (Kamiski & Martin, 2001). Enron was in a very unique position as the first gas bank trader and needed to manage 1,260 trading books (C. W. Thomas, 2002, p. 3). The long-term energy futures market was a relatively new and unregulated market that needed a way to track and disclose related trade values on the financial statements. In the next section, we examine the VaR model developed for Enron to analyze the value of the numbers they developed from hedge fund trading.

Enron's VaR Model

There is a second method of socially analyzing the numbers of Enron. The VaR model is an accepted procedure for estimating the probability of portfolio losses that exceed a specified proportion or amount of the portfolio based on a statistical analysis of historical price trends, correlations, and volatilities. In commodity options, volatility often relates to the underlying asset return from the present time until the expiration of the commodity option contract. Vince Kaminski was the head of Enron's Research Department who designed tools for the pricing of commodity options and hedging strategies as well as the

fixed price and derivative transactions for natural gas contracts. Kaminski is credited with developing a (VaR) model for Enron's portfolio to enable the daily fast-paced trading at Enron to work structurally.

Below, the six points of the VaR used at Enron are summarized from Kaminski and Martin, (2001, pp. 17-49).

1. Enron hired a chief risk officer (CRO) who reports directly to the firm's CEO and the board. The job of the CRO is to provide a systematic oversight of all corporate risk.
2. In each commodity market, the company has a unique source of price information. A single forward price curve is made daily for each commodity by the company's traders, and the CRO is responsible for validating those price curves. Outside verification is sought where possible to have a source of discipline.
3. Transactions are sorted into portfolios so products with similar risk are grouped together.
4. The books are repriced each night so that market fluctuation in market price is immediately transparent. Compared to traditional, historical cost-accounting methods, the value of the books are immediately represented on the firm's asset and liability sections of the financial statements, rather than when they are purchased and sold.
5. The quantitative models Enron developed assess both price and credit risk of its positions. The VaR assumes a 1-day holding period at a 95% confidence level. A set of predictive models designed for use in assessing the future credit risk of the company was developed by their exposure to the 8,000 counterparties involved with Enron.
6. The firm hedges deals originated by other units of the company or offers derivative instruments that are immediately hedged. Enron does not make bets on the future direction of market prices.

To begin with, the first point in the Enron VaR model is problematic. Using Kaminski's VaR model required strict internal procedures and adherence by both senior management and the board. Enron hired Richard Buy to play the role of the independent CRO. Whereas the duties of making investments were under Fastow and Skilling, the duties of managing risk were to be separate, requiring Buy to report to the board and the CEO. This separation of duties appears to have happened only on paper. According to former Enron attorney Jordan Mintz, Enron's risk evaluation method was compromised. Buy's risk group and Fastow's "dealmakers were constantly in conflict" (as cited in C. B. Thomas, Thottam, Rawe, & Wesskopf, 2002, p. 3). When Buy did challenge Fastow's deals, he ended up in "corporate Siberia" (Mintz, as cited in C. W. Thomas, 2002, p. 3). In congressional testimony, Mintz also claimed he was warned by Buy not to report concerns about Fastow's off-the-books partnerships to Skilling. Buy told Mintz that Jeff was very fond of Fastow—"don't go there" (Taub, 2002, p. 2). Sherron Watkins claimed in her congressional testimony that Buy rejected the opportunity to review her information on the Raptor partnerships: "he said, he'd rather not see it" (Watkins, as quoted in Schmidt, 2002, p. 5).

Unfortunately, the board of directors entrusted the top management officials and apparently abdicated the responsibility of its oversight mandate. The VaR model required the board's oversight of the CRO and the firm's total risk. The board, particularly the audit committee, did not understand VaR and did not fulfill its oversight duties regarding risk (Sperry, 2002). The audit committee, said Richard Buy, "don't know the details of (the) trading business, they don't know about value-at-risk" (quoted from a taped conversation

in late 1999 or early 2000, which was seized during the federal investigation of Enron, in Sperry, 2002, p. 2).

The second to fourth points of the VaR above discuss the creation of daily price curves, the CRO's responsibility for validating price curves, and the repricing of daily price curves so that market price fluctuations are completely transparent; however, "market price fluctuations" should imply an unbiased price change from publicly traded commodity contracts and derivatives. As we previously discussed, Enron's unique position as an exclusive market maker in commodity contracts with maturities exceeding 6 years provided an opportunity to mismark the prices. Partnoy (2002) noted that because Enron's commodity derivatives frequently had maturities ranging up to 29 years, there were not existing market prices to serve as a benchmark for repricing and thus required the use of professional judgment. In fact, Enron completed more than 5,000 weather-derivative deals with a notational value of more than \$4.5 billion, and many of those deals could not be valued without a healthy dose of professional judgment (Partnoy, 2002). Given a 29-year time frame and trying to essentially "predict" related weather patterns as well as all the other factors that affect the price of energy contracts, no meaningful prediction model could be used; accordingly, Partnoy sarcastically made reference to the use of professional judgment to benchmark "guesstimated" future energy prices in what was an unregulated market.

As mentioned above, strict internal discipline is required to accurately reflect the firm's total risk or "bets." Many internal policies relating to awareness and communication of risk and the review of adequate information by senior company officials must be adhered to on a regular basis. In addition to the lack of independence of Richard Buy and the board's lack of understanding of risk, Enron failed to use their internally generated guidelines to manage their total risk (Sperry, 2002). Enron had several detailed policies to manage risk through awareness, communication, and oversight from adequate information, explained in voluminous manuals. WorldNetDaily obtained a copy of Enron's *An Overview of Petroleum Industry Commodity-Based Financial Derivatives* in April 2002 (Sperry, 2002). According to Sperry (2002), Enron's manual contained several checklists addressing awareness: "Are senior management and Board members aware of the risks/rewards inherent in the financial activities?"; communication of risk, requiring "management level reports which effectively communicate risk"; and board knowledge, that is, the board should be "provided adequate information regarding the company's activities exposures, considering the significance and volatility of the exposure" (all quotes from Enron manual, quoted in Sperry, 2002, p. 2).

The fifth point of the VaR model above calls for the use of a 95% confidence interval to be used by Enron. According to Albrecht (2003), the 95% confidence interval used by Enron is very high. Given the volatility found in the energy markets due to factors such as seasonal dependence, unpredictable weather, supply and demand disequilibrium, and even geopolitical problems, Enron was overly optimistic in asserting that the risk model was accurate 95% of the time, and thereby, any risk associated with these volatile energy contracts was downplayed as minimal. In other words, Enron could effectively plan for 95% of all trading days and would be "surprised" only 5% of the time. As Partnoy (2002) noted, Enron said it relied on "the professional judgment of experienced business and risk managers" to assess worst-case scenarios, which apparently Enron ultimately encountered. Thus, only reporting high and low month-end values for its trading and with incentives to

smooth its profits and losses at month end, investors had no way of knowing just how much risk Enron was actually taking. Furthermore, the 95% confidence interval so critical to Enron's VaR model was further misleading by asserting that the model was viable 95% of the time for all related trading days (Partnoy, 2002).

A 95% confidence interval is a function of a distribution model that provides a reasonable measure of price given volatility. According to the head of Enron's risk management, volatility can be defined and estimated in a meaningful way only in the context of a specific stochastic process for the prices (price returns) and that the definition of volatility and measure should capture the key features of the energy markets, such as the seasonal dependence on the price level (Kaminski, Masson, & Chahal, 1998). Estimating the volatility within the energy markets is essential to any price or risk modeling; however, this volatility is extremely complex and thus not easy to predict from modeling. Further insight was set forth by Kaminski et al. (1998, p. 37):

As a matter of fact, there is growing evidence that the behaviour of market prices did not conform in many past periods to this standard assumption of financial economics. One especially troubling observation is that the empirical frequency of the occurrence of extreme outcomes is larger than the probability implied by theoretical models.

What is so insightful is that Vince Kaminski, the head of Enron's risk assessment, appears to concede the difficulty in accurately modeling volatility in the energy markets and, accordingly, should have realistically reassessed the validity of the 95% confidence interval used in the Enron VaR model.

Partnoy (2002) provides a very insightful example. Enron reported VaR for what it called its "commodity price" risk—including natural gas derivatives trading—of \$66 million, more than triple the 1999 value. Enron reported VaR for its equity trading of \$59 million, more than double the 1999 value. A VaR of \$66 million meant that based on historical averages, Enron could expect that on 5% of all trading days (on average, 12 business days during the year), its commodity derivatives trading operations alone would gain or lose \$66 million, a not trivial sum. In sum, given the ability to mismark the related price curves and to incorporate such a high confidence interval in the VaR model, Enron obfuscated the risk management methodology and thereby created an illusion of sustainable growth with controllable risk. The illusion served as the basis for quantifiable justification in revaluing its many energy contracts and thereby increase related valuations because, according to their VaR modeling, any associated risk was apparently considered and well under control. Again, the rhetoric of illusion was far removed from reality as the volatility inherent in estimating the energy markets was so complex that a 95% confidence interval was unrealistic.

Finally, in the sixth point of Enron's VaR model, Kaminski calls for deals to be immediately hedged or to offer derivative instruments that are immediately hedged but only for deals originated by other units of the company. Hedging activities are employed to reduce the downside risk of a decrease in the price of a security and can include short selling as well as employing the use of instruments such as put options. The implementation of immediate hedging activities controls for downside risk. Given the aforementioned illusion of controlled risk, employing immediate hedging actions on deals initiated by other units within Enron is contrary to actual controlled risk. Ethnostatistics illuminates created numbers used

as rhetoric for persuasion. Accordingly, if the risk management methodology Enron employed was realistic, there would not be a mandate requiring immediate hedging. The 95% confidence interval that Enron could use to predict future contracts with such precision should have allowed Enron to rationally analyze each deal to determine if any hedging action should be employed. Instead, the hedging activities were immediate, thereby reifying our assertion that the controlled risk was an illusion rather than a reality.

In sum, the VaR model used by Enron led to the overly optimistic assumptions related to the firm's investments. By creating an illusion of controlled risk, Enron could persuade skeptics that any potential risk was essentially controlled for and thus very minimal. As a result, all the assumptions incorporated into the related valuations were thus legitimized given the detailed VaR model Enron employed. Unfortunately, the illusion was more rhetoric than reality. In addition, the Enron VaR model was not even implemented or supervised properly by the board of directors and audit committee. Furthermore, it appears that Enron intentionally mislead spectators and concealed the high risk of their commodity-derivative contracts, which comprised a substantial percentage of their financial results. Enron's gains from derivatives were very substantial, more than \$16 billion from these activities in 3 years. To place this process of constructing and analyzing numbers in perspective, the gains Enron accrued from problematic use of the VaR were roughly comparable to the annual net revenue for all trading activities (including stocks, bonds, and derivatives) at the premier investment firm Goldman Sachs & Co. during the same period, a time in which Goldman Sachs first issued shares to the public. The key difference between Enron and Goldman Sachs is that Goldman Sachs seems to have disclosed information to investors about the volatility of its trading operations. In contrast, Enron officials claimed that it was not a trading firm and that derivatives were used for hedging purposes. As a result of this categorization, Enron's stock traded at much higher multiples of earnings than more candid trading-oriented firms.

Social Rhetorical Moves and the Theatrics of Firm Performance

Rhetoric is the third moment of ethnostatistics. In this section, we want to focus on the rhetorical use of story and theatrics (i.e., metatheatre) by Enron executives, managers, and many of its employees. Metatheatre is both the reflection of actors on the communications they are communicating to spectators and an occurrence of many kinds and places of theatre in an organization (Boje & Rosile, 2002; Turner, 1985).

The term *metatheatre* owes its origin to Victor Turner (1985). He used it to differentiate theatre in the day-to-day life of actors in social settings from the theatre that emerges in conflict situations. Boje and Rosile (2003b) used the term *metatheatre* somewhat differently: to describe the many performance stages, often simultaneous, such that people cannot be in every conference room, hallway meeting, phone call, or Web cast to see for themselves what is going on. Instead, people chase storylines and even characters from room to room and rely on stories told by others who have eyewitness accounts to share. There is anecdotal evidence that Enron is metatheatre in how it sets out to deceive using façade and illusion between one performance stage and another. Metatheatre operates at the first and third levels of ethnostatistics. At the first level, a simulated set of numbers is

projected on the screen as an element of metatheatre while secretaries pretend to be brokers entering numbers into their terminals. The third level is enacted during the interpretation that Ken Lay and Jeff Skilling give, narrating projections of future stock prices, interpreting the meaning of the faked statistics scrolling on the supersize monitor. We intend to preserve the conflict situation of social drama in Turner's use of metatheatre and the multiplicity of simultaneous stages and scripts in Boje and Rosile (2003b). This allows for a more process-oriented approach to theatrics of organization.

We are looking at the process of using theatre to persuade others that the constructed numbers reflect the "real" situation of the firm. For example, once each year from 1998 through 2001, an elaborate theatre stage was constructed on Enron's sixth floor to simulate a real trading floor:

According to former Enron employees, on the sixth floor of the company's downtown headquarters was a set, designed to trick analysts into believing business was booming . . . former employee Carol Elkin said that it was all an act, and that no trades were actually made there. The people on the phones were talking to each other.⁴

Enron's theatre was expensive, \$500 to set up each desk, more for phones in this stage-crafted spectacle, and more for the 36-inch flat panel screens and teleconference conference rooms. On this imitation Hollywood stage, the entire set was wired by computer technicians who fed fake statistics to the big screens. On the big day, several hundred employees, including secretaries, played their rehearsed character roles, pretending to be "energy services" traders doing megadeals. Jeffrey Skilling and Kenneth Lay played their starring role in the Enron *dramatis personae* to a target audience of invited Wall Street analysts, who cannot tell real from fake.

On October 18, 2001 (Thursday), the SEC phoned Enron to investigate the off-the-books partnerships included in the fiscal year 2000 financial statements. Specifically, the SEC asked for details about Fastow and LJM Cayman and LJM2 co-investment partnerships. The next day (Friday), Enron shares ended the day at \$26.05. By Monday (October 22), news about the SEC investigation had leaked in the financial wire services, causing shares of Enron Corp. to fall almost 21% (a drop of \$5.40 to close at \$20.65).

Meanwhile, Enron senior managers were not yet aware of the SEC inquiry. At 8:30 a.m. (October 22), Lay was performing his theatre with 200 of Enron's top-tier managers, in the Dogwood room, a stage on the third floor of Houston's downtown Hyatt (McLean & Elkind, 2004). Despite the SEC investigation, Lay was still supportive of Fastow. In the audience, the managers kept up with the action but read their handheld Blackberry messaging devices. As Lay spoke, the SEC investigation became known to the audience. As the audience erupted into questions, Lay tried to answer. Then, Vince Kaminski raised his hand. This is the same Kaminski who coauthored the article about Fastow (Kaminski & Martin, 2001). Several reporters have reconstructed the event from eyewitness accounts (McLean & Elkind, 2004, pp. 372-373):

Vince Kaminski, the respected and normally reserved head of research, raised his hand and told Lay, "I'm in the terrible position of having to disagree with you."

"It's okay, anybody can," Lay said, according to one account. He invited Kaminski, a Polish-born mathematics whiz and expert in risk management, to speak.

Kaminski stepped to the podium and accepted the microphone.

Enron should never have gotten involved in secret, high-risk deals with Fastow's private partnerships, he said. He had warned against that course back in June 1999.

"The Raptors were not only improper, it was terminally stupid," Kaminski said. "The only fighting chance we have is to come clean."

Lay looked stunned.

"Enough, Vince," Greg Whalley, who had to take over when Jeffrey K. Skilling resigned in August, interrupted, and he led Kaminski from the podium.

Tuesday, October 23, 2001, Lay huddled with a small group of advisers in a conference room adjoining his 50th-floor office suite. They were rehearsing "a carefully worded script" prepared by Enron's publicists and several executives (McLean & Elkind, 2004, pp. 372-373). Lay was to preside over a live Web cast chat with security analysts in an effort to quench the media firestorm about Fastow's role in LJM partnerships. The script "suggested that no one at Enron was responsible for the LJM partnerships. Failure it would seem, was an orphan" (Witt & Behr, 2002, p. A01).

With minutes to spare before the conference, Ronald T. Astin, a lawyer with Enron's outside law firm, Vinson & Elkins LLP, was asked to help fix the *script*. He rewrote it to say that it was Fastow who presented the LJM proposal to the board.

Fastow read Astin's changes and exploded, Astin later told investigators. Fastow yelled that Astin was wrong about who was responsible for LJM. "It was Skilling!" he shouted.

At 8:30 a.m. Houston time, financial analysts from Boston to San Francisco joined the conference by phone and Internet.

"There has been a lot of recent attention to transactions Enron previously entered into with LJM, a private equity partnership," Lay said, addressing LJM and Fastow head on. "Let me reiterate a couple of things. We clearly heard investor concerns earlier this year, and Andy Fastow, Enron's chief financial officer, ceased all affiliations with LJM."

Lay added that Fastow was doing "an outstanding job."

"We're very concerned the way Andy's *character* has been kind of loosely thrown about over the last few days in certain articles," Lay said. Fastow's role at LJM had been monitored rigorously so that Enron's interests would never be compromised, he said. (Witt & Behr, 2002, p. A01, emphasis added)

In the Enron metatheatre, as Ken Lay presided over his teleconference call scripted for damage control, Andersen accountants listened in, assembled as a virtual audience in another room. "The call did not go particularly well," Duncan, the Andersen partner in charge of the Enron audit, would later say. "There were many pointed questions asked that the company appeared to struggle to fully answer" (Witt & Behr, 2002, p. A01). Duncan held his own meeting following the conference call and told his audit team to get serious about complying with the Andersen document-retention policy. The Andersen document-retention policy stated that accountants needed retain only the final work papers supporting a client's audit, including the Enron audit. All other drafts, notes, and memos should be destroyed (Chase, 2003). The implication is that documents were being shredded to make it difficult for Andersen to be held accountable for any wrongdoing in preparation of audited financial statements. "Andersen had known for days that Enron could expect a SEC subpoena for its records, Duncan later testified. But none had arrived by that afternoon"

(Witt & Behr, 2002, p. A01). The audit team put in a call to Sharon Thibaut, who oversaw document shredding, to send empty trunks for them to pack documents they wanted shredded; they filled more than 18 trunks and another 30 boxes. Thibaut could not handle the volume in Andersen's shredders, so she called an outside vendor, Shred-it, whose company motto is, "Your secrets are safe with us" (Witt & Behr, 2002, p. A01).

Enron's metatheatrical performance is a network of stages, and Lay, a starring character, had to hurry along to another theatrical stage, a Hyatt ballroom where several thousand Enron employees were assembled as spectators. Lay began his performance in dramatic fashion (McLean & Elkind, 2004, p. 375):

"Just like America is under attack by terrorism," Lay said, "I think we are under attack."

"Many of you were a lot wealthier six to nine months ago, are now concerned about the college education for your kids, maybe the mortgage on your house, maybe your retirement, and for that I am incredibly sorry. But we are going to get it back." (McLean & Elkind, 2004, p. 375)

Unlike previous performances, the employees were no longer willing to suspend belief. They became critical of Lay's performance. Index cards were passed from the spectators to the podium.

Lay read a series of questions from the audience. Nerves were frayed. Decorum had vanished. One employee had written: "I would like to know if you are on crack? If so, that would explain a lot. If not, you may want to start because it's going to be a long time before we trust you again."

One Enron trader, Jim Schwieger, challenged Lay in the question and answer session:

"Why," he asked, "is chief financial officer Andrew Fastow sharing the stage—and gainfully employed—considering that he['s] just blown half a billion dollars mismanaging several Enron partnerships and earned \$30 million doing it?" (Witt & Behr, 2002, p. A01).

Lay reacted to the critical reviews. That same day (Tuesday, October 23, 2001), Lay took a \$4 million cash advance from Enron. In the next 3 days, he drew another \$19 million. But he repaid \$6 million by transferring stock he owned to Enron; this avoided the SEC insider trading reporting requirement. A board member later called this Lay's "ATM approach" (McLean & Elkind, 2004). The ATM approach was the device relevant to the third level of ethnostatistics: to make sure the interpretation of the numbers (stock sales), moving in and out, did not exceed a limit for reporting a stock trade by an executive.

Conclusion

In this article, we have adopted a critical postmodern perspective. Critical postmodern theory is the nexus of critical theory with postmodern theory (Alvesson & Deetz, 1996; Boje, Fitzgibbons, & Steingard, 1996, pp. 90-91). Critical theory is a theoretical approach developed by the Frankfurt school of German social thinkers. Critical theory researchers use quantitative and qualitative methods to look at power and dominance in society and organizations. Postmodern researchers use mostly qualitative research to look at how texts are produced, distributed, and consumed in popular culture; there is

much dispute on the occurrence or not of a postmodern turn or whether to focus on developing and applying a postmodern theory (Best & Kellner, 1997, 2001). Our preference is to develop a postmodern theory and method to use with critical theory's focus on power and rhetoric. In this article, we analyzed Enron documents, excerpts from congressional hearings, and various accounts from the business press to show the contradictions between the financial numbers Enron presented and the rhetoric used to convince the public, shareholders, employees, fund managers, and reporters that the financial numbers were "good." We explored the disparity between what numbers, as signs and symbols, are stated to represent and the inequalities they may represent in how power and knowledge are interrelated.

We think that theatre, and in particular metatheatre (its multiple stages), makes an important contribution to ethnostatistics. In the first moment of ethnostatistics, metatheatre was used to create bogus numbers, and in the third moment, it was used to do a song-and-dance routine to interpret the fictitious numbers scrolling across the screen in ways that would excite the investing imagination of the Wall Street analysts. The second moment of ethnostatistics was explored in the way that the risk methods violated assumptions in the models employed. Ethnostatistics makes an important contribution to organization theatre studies by showing that numbers and statistics, including financial performance measures, are an important and readily mystifiable part of organizational discourses.

Our article shows that the ways numbers and charts are interpreted can be quite theatrical. Thus, Gephart's (1988) ethnostatistics theory can be applied to understand organizational theatre and the discursive forms that organizations use to tell their numbers stories. Specifically, we have extended ethnostatistics beyond the study of academic professionals using statistics to include how nonacademic professionals in organizations compose, analyze, and sell their numbers.

We believe ethnostatistics and the metatheatre-based analysis of statistics offer a significant contribution to the research on management and accounting. Specifically, this study used ethnostatistics to illustrate how Enron puts on its façade and created a charade to persuade investors, analysts, and regulators that the numbers and analyses Enron had produced were credible and that Enron was a reliable and sound investment. Although there have been several approaches to theatre in management studies, we suggest that there need to be more studies of the processes by which theatre is used to persuade others that numbers are constructed and analyzed reliably and validly. Although Enron was not successful in the end in persuading others about the veracity of its financial measures, it was initially able to use the inherent persuasiveness of theatre to get spectators to willingly suspend disbelief about the numbers Enron produced.

Using Gephart's (1988) ethnostatistics, we have shown how the actors involved with Enron generated, analyzed, and interpreted financial statistics. All three elements of ethnostatistics show how Enron's senior management created, analyzed, and scripted the interpretation of their numbers to their advantage. We conclude that Enron management used metatheatre, a network of stages, to influence the interpretation of the firm's financial statements. Surprisingly, many outsiders and even Enron employees found it difficult to understand exactly how Enron made money. The company's mysterious success lent itself well to explaining its rose-colored future through performance. In short, metatheatre replaced transparency in financial reporting.

Notes

1. For Enron chronology, see <http://cbae.nmsu.edu/~dboje/enron/chronology.htm>. Also, see S. Prt. 107-70 (committee print) “The Role of the Board of Directors in Enron’s Collapse” and S. Prt. 107-75 (committee print) “Financial Oversight of Enron: The SEC and Private-Sector Watchdogs.”

2. According to Barnes, Barnett, and Schmitt (2002), “Like that of the first Gas Bank plan, the origin of Cactus is controversial: New York businessman Bernard Glatzer, who sued Enron over the issue, claims Enron took the idea from him.”

3. A special purpose entity (SPE) is merely a separate legal structure created by a firm to provide liquidity and/or obtain favorable external funding. Assets are isolated within the new entity, and securities issued by the entity are backed by those assets as collateral. Under prior generally accepted accounting principles rules, there was a 3% external equity ownership requirement, and if the firm creating the SPE did not have a controlling interest, then the SPE was treated as separate and therefore not combined in the consolidated financial statements of the firm. As a result, the liabilities of the SPE were not added to the total liabilities of the firm that created the SPE. An SPE can be structured as a partnership, trust, or corporation and usually has private rather than public equity holders. Also, the securities issued by the SPE may contain credit enhancements or guarantees that reduce risk to the purchasers of the SPE equity or creditors of the SPE. For example, assume Company A created Dump Ltd., an SPE partnership with Mr. Jones as a 5% general partner. Jones contributed \$5 to form the partnership, which then went and borrowed \$95 from the bank. In turn, Company A sells an asset worth \$30 to Dump Ltd. For \$100, which is well in excess of the current fair market value of the asset but guarantees that in the event that the asset subsequently declines in value, Company A will make Dump Ltd. whole by giving it Company A stock. Once the transaction is completed, Company A books a gain on sale and also has cash of \$100. At the same time, Dump Ltd. has acquired an asset with a cost basis of \$100 and a corresponding debt of \$95 with partner equity of \$5. Company A has essentially increased its cash balance and recognized revenues and does not include the \$95 liability on its books. Thus, the cash was increased and the debt was kept off the Company A balance sheet. Furthermore, because Company A does not have a controlling interest in Dump Ltd., the financial statements of Dump Ltd., which contain the \$95 liability, will not be consolidated with the Company A financial statements. Finally, if and when the asset Dump Ltd. acquired declines in value or is subsequently sold at a loss, the difference will be made up for by Company A’s delivering shares of its stock comparable to the amount of the loss as a contingent equity issue.

4. See Banerjee (2002). In another version, it is only 75 employees:

To impress a group of visiting Wall Street stock analysts, Enron executives once ordered about 75 employees, including secretaries, throughout its headquarters to come down to the trading floor to man phones and pretend they were making deals. It was a scene right out of *The Sting*—and it worked. The analysts left believing Enron couldn’t make deals fast enough. (Gaber, 2002)

A third source says only dozens of employees took part in the masquerade (Corn, 2002; “Report,” 2002).

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