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THE RHETORIC OF TECHNOLOGICAL FLAWS:
INTEL'S PENTIUM™ PROCESSOR

THESIS

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of
MASTER OF SCIENCE

By

Judith Poitras Burns, B.S.

Denton, Texas

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This study analyzes the apologies presented by Intel Corporation as a response to the Pentium™ microprocessor controversy. Dr. Andrew Grove's November 27, 1994, Internet posting to the comp.sys.intel usegroup and Intel's December 20, 1994, press release are analyzed using the methods of genre criticism. Further, a situational analysis is presented of the exigence and the audience. The exigence is represented by the relationship of society to technology while the audience is Internet users. This analysis attempts to demonstrate how situational factors constrain discourse related to technological flaws.

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CHAPTER 1

INTRODUCTION

In October 1994, a Lynchburg (VA) College mathematician posted an important message to the Internet's comp.sys.intel usegroup. Dr. Thomas Nicely had encountered a flaw, a "reduced precision in the ninth digit to the right of the decimal point," in the Intel Pentium™ microprocessor (Jarrett 2). What followed in the usegroup was an increasingly vehement series of on-line exchanges in which participants expressed their feelings concerning the flaw and how they felt Intel should respond to the problem.

Confident that the heated conflict on the Internet was resolvable through an explanation of their position concerning the flaw, Dr. Andrew Grove, chief executive officer of Intel, communicated with the news group directly. Although the 59-year-old Hungarian immigrant is a recognized expert in semiconductor processes and is much admired in the "high-tech" community, competence and respect in the industry proved of little value to the Internet usegroup, who failed to accept his explanation (Clark A3).

In mid-November, the issue escalated when the popular press turned its attention to the flaw in stories on Cable News Network and in *The Wall Street Journal*. The news of the flaw and Intel's response quickly appeared in most

daily newspapers and became the subject of jokes around the country. A competitor joined the fray when IBM posted a message to the Internet usegroup announcing it would stop shipments of computers using the Intel Pentium™ processor.

Three weeks later on Tuesday, December 20, Intel released a statement to the press that it had changed its policy and would now provide a new Pentium™ microprocessor to anyone requesting one (Jarrett 7). The company took a \$475,000,000 charge against 1994 earnings and replaced approximately 100,000 microprocessors (Intel 29). Dr. Grove's Internet posting was unprecedented in corporate rhetoric.

The potential of the Internet as a force in changing corporate policy and as an arena for rhetoric appears to be growing. To better understand and evaluate potential areas for research arising from the Pentium™ microprocessor controversy, a review of literature is presented in the following section of this chapter. The review serves the purpose of clarifying where research opportunities exist in this area.

Review of Literature

Research in four broad areas is essential to determining research opportunities in this area. They are:

1. Genre criticism as rhetorical method

2. The Genre of Apologia
3. Corporate apologetic discourse
4. Society's relationship with technology and computers

Genre Criticism

The works in genre criticism fall into two broad areas. The first area concentrates on the theoretical development of genres themselves, while the second group applies the critical technique to various bodies of discourse.

In the first group is Campbell and Jamieson's 1978 book *Form and Genre: Shaping Rhetorical Action*. Their introduction to the book presents a framework for genre criticism and includes examples of genre criticism. The definition of genre which Campbell and Jamieson offer as "a constellation of substantive, situational, and stylist elements" is particularly useful (10). This work also adds the important caveat that generic classification is justified only by the critical illumination it produces.

One theoretical framework for generic criticism has been proposed by Harrell and Linkugel, who present a systematic scheme of classification techniques in their classic study, "On Rhetorical Genre: An Organizing Perspective." This theoretical framework, like Campbell and Jamieson, is based on the earlier work of Bitzer and the rhetorical situation. Harrell and Linkugel cite numerous studies that classify discourse, from Aristotle's occasions for

speaking to the genre of the modern critics which include, among others, the genre of polarization, diatribe, quests and apologia (262).

Robert Rowland presents constructs based on a situational approach which diagrams the convergence of exigencies, purposes and societal limitations to form what he terms “perceived strategic constraints” (135). His emphasis is on clarifying the rhetor’s purpose as a means to understanding the response to a rhetorical situation.

While genre criticism has been applied in scores of situations, it is a method not without some weaknesses, as suggested by Campbell and Jamieson. Most scholars have drawn attention to the shortcomings of the method. Conley, Fisher and Patton, in particular, have pointed out a variety of problems with genre criticism. The concern expressed in these studies, and most important to this study, is that genre criticism frequently fails to go beyond classification to provide either theoretical or practical enlightenment concerning the rhetoric being analyzed.

Apologia

In the area of political apologia, numerous journal articles exist concerning the verbal art of self-defense. In their benchmark study of apologia discourse, Ware and Linkugel delineate the parameters of apologetic discourse and define the strategies used in such rhetoric. They list seven notable studies of

apologetic rhetoric including Jackson, Rosenfield, Linkugel and Razak, Aly, Butler, and Ling.

Kruse's 1981 work builds on Harrell and Linkugel's theoretical base to establish generic parameters for apologetic discourse. She provides the useful insight that "apologia might be presented as an autobiography, a press release, a pamphlet, a play or a novel" (282). While her study clarifies that apologia transcend spoken address, Kruse does not include any discourse outside the political arena or any rhetoric by entities other than individuals. Furthermore, Kruse adds an approach to non-denial apologia which focuses on the rhetor's motivational states.

Downey's examination of the evolution of the genre of apologia offers a broad overview of both the theory of generic discourse and the practice of rhetorical criticism of apologia. The study provides more examples of the scope of apologetic discourse and outlines how the parameters of the genre have changed from the classical period to modern times. She presents an analysis of the problems inherent in Campbell and Jamieson's situational approach to genre and Rowland's alternative (although still situational) approach. Her emphasis, however, is also on individual political discourse.

An alternative approach is that of the speech set of *kategoria* and apologia. This more inclusive method, most clearly defined in Halford Ross Ryan's work, incorporates the accusations (the *kategoria*) in an effort to better

understand the nature of the response (the apology). His anthology of cases using the speech set demonstrates the method's application . Ryan provides a definition of *kategoria* as "an affirmation concerned with giving birth to an image" (*Kategoria* 256). Further, Ryan offers a definition of *apologia* as "a purification, concerned with correcting an image" (*Kategoria* 256). He sees the act of accusation and defense joined together and argues that they must be considered as a unified whole. Ryan has applied the concept to the *kategoria* of British Prime Minister Stanley Baldwin and the abdication address of Edward VIII (*Baldwin* 126).

While the construct of the speech set has been applied in a number of instances of political rhetoric, the technique has not been applied to corporate discourse except for Dionisopoulos and Vibbert's case study (*Oratorical* 241-251).

Corporate Apologia

A small body of work does exist in the area of corporate apologia. In addition to Dionisopoulos and Vibbert's case study already mentioned, these authors have produced one paper on corporate apologia. This research is twelve years old, however and may no longer represent an accurate description of the nature of corporate apologia. Ice presents a conference paper on the parameters of corporate apologia representing more recent thoughts.

Clopton, in one of the first analyses of corporate apologia involving the computer industry, demonstrates that Microsoft used the standard strategies of

the genre. She fails, however, to provide any understanding of the constraints or their impact on such discourse.

William Benoit and a variety of co-authors offer a number of articles related to corporate apologetic cases framed in his concept of image restoration discourse. While these studies add the concept of mortification to Ware and Linkugel's framework of apologia, they provide little insight and exemplify the "cookie-cutter approach." Benoit incorporates Kenneth Burke's idea of "the kill" in his genre of image restoration discourse but the resulting criticism has not been very insightful. The Burkean concept of mortification has been used by a number of authors including Brummett's which is most useful for this study.

Although Kruse has indicated that it is inappropriate to apply apologia to corporate persona, Schultz and Seeger conclude that corporate apologia cannot be "entirely differentiated from apologia which centers on an individual's reputation or character (59)". Any difference, they feel, is one of degree rather than of kind. While some authors have taken approaches other than genre criticism to corporate self-defense discourse (Foss, Sellnow), the genre method has yet to be applied in sufficient instances of corporate self-defense to provide insight into its efficacy.

Technology and Rhetoric of the Internet

Numerous scholars have focused their attention on the role of technology and its relationship to society. They tend to divide along pro-technology and anti-technology views points. Not surprisingly the anti-technologists, such as Mumford and Hill, paint dark pictures of society subjugated by its creations. Among the pro-technology writers, Agassi, Dudek and Florman offer a brighter picture of how society relates to technology.

Few scholars in communications, however, have turned their attention to the rhetoric of technology. One exception, related to technology, is Farrell and Goodnight's 1981 study of the root metaphors used in the rhetoric concerning the Three Mile Island disaster, which provide insights on how technology constrains discourse. Christine Miller analyzes the rhetoric surrounding the decision to launch the space shuttle Challenger. Her purpose is to provide enlightenment concerning our assumptions about science and technology. While her study provides helpful insights, the analysis is not of apologetic discourse but rather of problem solving and decision-making before the Challenger explosion.

The number of studies of society's relationship with computers, and particularly personal computers, is growing (see Carey, Easterbrook, Joeges, Jones, Negroponte, Sinclair, and Turkle, for example). In particular, Stahl provides an analysis of the metaphors of magic and religion used in describing

computer technology in the popular press. Turkle's ethnographic study provides detailed information on how individuals and computer relate.

In the area of Internet, a variety of scholarly and popular approaches are taken. Among the scholarly works, such as Downes, Baym, Herring, and North, there are the beginnings of analysis by communication scholars of Internet-based rhetoric, communication styles and the effects of computer-mediated communication. Daniel M. Downes' study of cyberspace rhetoric, for example, is directed at the political nature of Internet discourse.

Popular approaches have also been taken such as those offered by Aycock and Buchignani, Chapman, and Stoll. While Aycock and Buchignani examine a specific series of Internet exchanges that resulted in violence at a university, the popular approaches are exemplified by Chapman's brief work. While it provides a useful summary of the nature of Internet discourse, it lacks empirical data to support the author's statements, as its placement in a popular periodical might suggest.

This literature review attempts to show that there are areas that deserve the rhetorical critic's attention but which have been neglected by scholars in the field. First, there is a notable lack of genre criticism applied to corporate discourse. Second, there is a dearth of criticism concerning corporate discourse, particularly self-defense rhetoric. Third, little analysis has been undertaken concerning the constraints technology places on discourse. Fourth, the Internet

is only beginning to receive attention from rhetorical critics. Further research in each of these areas may provide insight into the Intel Pentium™ microprocessor controversy.

Statement of the Problem

Since the early studies of rhetoric, scholars of rhetorical criticism have called for new critical forms to resolve the inadequacies of methods currently available. Although one factor spurring the call for new methods was the perceived inadequacies of existing methods, a more fundamental reason for crafting new approaches to rhetorical criticism has been the continuously evolving nature of rhetoric itself. The changing nature of the world because of technology, particularly computer technology, calls for new critical constructs.

One significant change to rhetoric in contemporary society has been the development and growth of the Internet. The Internet, established in 1969 with the activation of ARCANET by the US Department of Defense, has shown tremendous expansion in recent years outside the academic and defense communities. Cynthia Bournellis, in a recent article in *Internet World*, says that the Internet has grown from 38 million users in 1994 to 56 million users in 1995. Further, she predicts 200 million Internet users before the turn of the century. The volumes of discourse being produced on the Internet has been untapped by rhetorical critics.

Rhetorical criticism, particularly in the area of the apologia genre, faces the danger of turning away from its need to be, as Edwin Black described it, “a force in society” that serves to educate (5-8). The genre of apologia has become mired in cookie cutter analysis that fails to move beyond taxonomizing to critical evaluation of discourse. Scant attention has been made to the rhetoric of technological flaws or the apologia relating to them.

Further, as Cheney has stated, “the critical assessment of corporate rhetoric is a notable lacuna in contemporary rhetorical criticism” (169). As American society becomes more closely tied to corporate society, the rhetorical critic must examine corporate rhetoric as closely as that in the public sphere.

In an effort to address these problems, this study will attempt to answer the following questions:

- To what extent may the parameters of the genre of apologia be useful in understanding of corporate discourse? If they may not be applied as currently theorized, in what way would the genre of apologia need to change to accommodate corporate discourse?
- How might the concept of victim be effectively incorporated into the genre of apologia, particularly corporate or technological apologia?
- In what ways does the nature of Internet discourse impact apologia delivered via that medium?

- What unique arguments or discourse does technology present which would effect how apologia function when centered on technological issues?

Scope of the Study

This study will review the rhetoric surrounding the flaw discovered in Intel Corporation's Pentium™ microprocessor. Dr. Andrew Grove's posting to the comp.sys.intel usegroup of November 27, 1994 will be analyzed together with Intel's press release of December 20, 1994.

Material drawn from *The Dallas Morning News* and *The Wall Street Journal* will be used to provide information on the kategoria arising from the Internet usegroup. This material will be used, in addition, to provide a detailed chronology of the controversy from its inception to its resolution. This study will not attempt to analyze the discourse that appeared in the popular and trade press or television news programming.

Methodology

This study examines Intel's discourse concerning the Pentium™ microprocessor. This study examines the rhetoric of Grove's November 27, 1994 message to the Internet and Intel Corporation's December 20, 1994 press release. These texts are assessed from a rhetorical perspective, using general critical

methodology, to evaluate how they meet the standards of apologetic discourse as defined by Ware and Linkugel.

Second, this study provides a chronological overview of the Intel Pentium™ microprocessor controversy.

Third, the apologia are analyzed to determine if the concept of victim can provide greater understanding of apologetic discourse in this environment.

Fourth, the texts are analyzed in light of the situational constraints imposed by society's relationship with technology, particularly computer technology.

Finally, a judgment is made concerning the effect of apologetic discourse in light of Internet discourse. Constraints placed by technological discourse or by the medium are discussed.

Significance of the Study

This study has importance in a number of areas. First, the concept of rhetorical criticism has been constantly evolving to respond to new conditions. New critical forms must arise with the growing importance of business, technology and Internet rhetoric. This study contributes to that evolution.

Second, this study attempts to go beyond taxonomizing to critical evaluation. The interest in finding only classification "without the necessity of penetration into the substance" of the discourse (Patton 5) and genre criticism's

tendency “to describe or to classify” without evaluation (Fisher 294) are serious flaws that must be corrected. This study provides critical insight.

Third, while Sharon Downey has argued that contemporary apologia is characterized by the “absence of tangible consequences” (55), the consequences of failed apologia in corporate discourse are identifiable, immense in magnitude and cause irreparable damage. Intel was forced to show a \$475,000,000 charge against earnings. Exxon was forced to pay a \$12 billion settlement resulting from the Valdez oil spill. Dow Chemical faces multi-million dollar lawsuits for a product it does not manufacture. Clearly in corporate rhetoric, the consequences of failed apology are very tangible. This study offers possible means by which corporate rhetors may judge the potential success of apologia, particularly for technological flaws.

Fourth, society’s growing dependence on computer technology and the potential for serious flaws in that technology present the possibility for increasing need for effective, strategic apologetic discourse. This study addresses how such flaws may be addressed in an effective manner.

Finally, in an atmosphere similar to fifth century BC Greece where “anyone who wished could speak” (Kennedy vii), the Internet is a forum for “unfettered distribution of and access to information” (Downes 4). The Internet’s potential impact on both corporate and political rhetoric may be a profound one -- one that must be understood. The rapid growth of Internet use

makes it a powerful potential forum. This study attempts to provide greater understanding of the Internet's role, particularly as a potential forum for apologia.

Plan of Reporting

Chapter Two offers a chronology of the Pentium controversy and includes needed background information on computer technology and the Internet. Chapter 3 addresses the methods used in genre criticism and describes the problems that confront genre criticism, particularly the genre of apologia. In addition, Chapter 3 includes the generic analysis of the texts and demonstrates how the concept of victim (mortification and scapegoating) may be applied to apologetic discourse. Chapter 4 offers an overview of how society has come to view technology and most recently computer technology. Following that overview, an analysis of how Intel was constrained by society's views is provided. Chapter 5 offers conclusions as well as proposals for future research in corporate rhetoric, apologia and the Internet.

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CHAPTER 2

THE PENTIUM™ MICROPROCESSOR CONTROVERSY

Intel Corporation was particularly proud of its latest microprocessor, the Pentium™, when it introduced the chip in March of 1993. The computer chip, which contained 3,100,000 transistors and could perform 112,000,000 calculations per second, was five times faster than any microprocessor then available (Reuters 4D). Intel was confident in its preeminent role, since its founding in 1968, as the developer of cutting-edge computer technology. Intel technology according to a company publication was “destined to be part of every nook and cranny in our lives” (*Celebrating* 3). Nineteen months later, Intel had become the butt of jokes on national television when its vaunted microprocessor (which had cost \$5 billion to develop) seemed in the eyes of the public to be unable to perform simple arithmetic.

This chapter reviews the events that led from Intel’s triumphant Pentium™ microprocessor's introduction in March of 1993 to the controversy of the late fall and early winter of 1994 when the chip’s and Intel’s integrity were questioned -- events which resulted in Intel’s apology and product recall. The narrative is drawn primarily from documents provided to the author by Intel

Intel Corporation and from newspaper articles in *The Dallas Morning News* and *The Wall Street Journal*.

Intel's Pentium™ Microprocessor And Its Flaw

Since introducing the world's first microprocessor, the 4004, Intel had led the computer industry in developing the increasingly powerful microprocessor chips which are the heart of personal computers and workstations. Providing virtually all the computer's computational power, microprocessors begin as complex engineering designs which are transformed from large paper plans, through photomasks, onto materials such as silicon, sapphire, aluminum and gallium arsenide. In a multi-stage process of masking, etching, and the application of heat and pressure, a complex array of transistors is applied to the silicon base and interconnected (Freedman 77). Despite rigorous quality control testing, a photomask may contain logic and/or design errors. These errors are routinely corrected with revised photomasks that are used to produce the next version, or "stepping," of the microprocessor (Grove).

In the ensuing months following the introduction of the complex and powerful Pentium™, approximately two dozen manufacturers, including IBM, NCR, Advance Design Research, Compaq, Dell, AST Research, and Zenith Data Systems, announced their plans to market computer systems which incorporated the Pentium™ chip (Associated, *Pentium* 5D). Unbeknownst to these

manufacturers, the microprocessor was flawed. During the design of the Pentium™ microprocessor five out of 1000 required entries in the design of the mathematics floating point unit had inadvertently been left out (Jarrett 1). While performing routine tests in May 1994, Intel became aware of the error.

Additional technical evaluation by company engineers determined the extent of the problem. After a month of testing, Intel judged the error to be insignificant. The test results indicated that, statistically, a user performing 1000 floating point operations daily would encounter the problem once every 27,000 years (Jarrett, 2). Intel decided to change the photomasks to fix the error in the next stepping of the microprocessor, but also chose not to issue an errata sheet advising computer manufacturers of the defect (Jarrett 2).

The Flaw Revealed

The flaw did not remain undisclosed for long. On October 30, Dr. Thomas Nicely, who was running mathematics programs around the clock on Pentium™ processor-based computers, posted a message to the comp.sys.intel Internet usegroup advising that after four months of “frustrating recalculations” he had determined that a mathematical error he had encountered was produced by the Intel microprocessor (Takahashi 4D).

The comp.sys.intel usegroup was part of the Internet called Usenet (Ziegler and Sandberg B1). This component of the Internet linked about

3,000,000 users spanning five continents and carried approximately 27,000 messages daily in 1993 (Baym 138). The basic component of the Usenet is an individual posting to a usegroup. One copy of the message is stored in a file in order that any user may read it. Although similar in format to an e-mail message, usegroup postings are public rather than private. Usegroups operate as open forums largely for discussion of special-interest topics (Rheingold 118).

The comp.sys.intel usegroup was begun in 1987 by a group of Intel customers so that they could discuss new products, technical specifications and engage in what was called “high-tech gossip” (Ziegler and Sandberg B1). The usegroup’s influence was large inside the technical community and discussion was very active and frequently vitriolic. Approximately 130,000 visitors logged into comp.sys.intel each month although typically only a few hundred messages were posted each week (Ziegler and Sandberg B1).

Dr. Nicely’s usegroup report of the flaw became the subject of a November 7 article in *Electrical Engineering Times*, a trade journal (Clark, *Some* B4+) and one week later *Electronic News*, another trade journal, published a similar article (Jarrett 3). On November 16, Intel President Andrew Grove addressed an Intel-sponsored press conference at Comdex, North America’s largest annual computer trade show. Even though 175 reporters attended the event, no one asked about the microprocessor flaw (Jarrett 3).

While the reaction in the mass media remained limited, the comp.sys.intel Internet usegroup continued to argue about the impact of the error as well as Intel's lack of disclosure. Messages flooded the electronic forum. The usegroup, which normally received a few hundred messages a week, quickly grew to thousands of postings each day (Copilevitz 11F). Many posted messages expressing anger at Intel's failure to disclose the defect when it was first discovered, some accusing Intel of "engineering a Watergate-style cover-up" (Takahashi 4D). Other postings to the usegroup included criticism of the media for failing to draw the general public's attention to what this technical group felt was an important problem (Copilevitz 11F).

The growing Internet controversy came to the attention of the general public on November 22 when Cable News Network carried the story. *The Wall Street Journal* followed with an article based on CNN coverage (Jarrett, 3). Just before the CNN story was broadcast, Intel contacted its largest customers, including IBM, to inform them of the Cable News Network story and the flaw in the microprocessor (Ziegler B6).

Intel Responds To The Usegroup

Reaction to the media coverage was reflected on November 25 in a sharp 2% drop in Intel stock prices which fell \$1.25 (Associated, *Intel* 2F). Intel's top executives met that weekend, Thanksgiving weekend, to determine how to

address the controversy while it was still largely limited to an Internet discussion and before further damage could be exacted on the stock market. At a meeting on Sunday, November 27, Dr. Grove decided to compose and post a message to the comp.sys.intel usegroup (Jarrett 3).

The fourteen-paragraph posted message began, "This is Andy Grove, president of Intel." He acknowledged that he had read some of the postings to the usegroup and stated he was "sorry for the anxiety created" by the floating point defect. Then he asked if he could give his perspective on "what has happened here." In the next paragraphs, Grove outlined Intel's "array of tests, validation, and verification" processes and explained the procedure whereby any errors uncovered in testing would be eliminated in the next stepping. He argued that "no microprocessor is ever perfect; they just come closer to perfection with each stepping."

The following paragraphs provided Grove's account of the history of the controversy, which he characterized as a "hubbub." Grove minimized the problem saying that Intel had encountered "thornier problems" and "we breathed a sigh of relief" when its engineers determined the extent of the problem. Further, he pointed out that the error was "likely to occur at a frequency of the order of once in nine billion random floating point divides." While he had earlier complimented the usegroup participants for the work they

had devoted to the on-line discussion, he pointed out that the microprocessor had “encountered no significant problems in the user community.”

Next, he outlined Intel’s replacement policy for individual’s “engaged in work involving heavy duty scientific/floating point calculations.” While he did not know what the “precise rules on this” would be, he wrote that special toll-free 800 number lines were available where “technically trained Intel person(s)” would “resolve their problem. . . including, if necessary, by replacing their chips with new ones.”

The closing paragraphs of the posting included an apology for being “so long-winded” and “for the situation” while the last sentence acknowledged that Grove would continue to monitor the usegroup. He ended with a final plea: “forgive me if I can’t answer each of you individually” (Grove).

While one newspaper reporter characterized Grove’s move as “unprecedented” (Copilevitz 11F), the comp.sys.intel usegroup continued to express their ire with comments like “Are you guys in some kind of denial or what? (Ziegler, *Chip A1*)”, as well as encouraging each other that they needed “to post more strategies for increasing the pressure on Intel” (Ziegler and Sandberg B1). Others questioned whether the message was genuine, stating, “I no more believe that this came from Intel’s CEO than I would believe that Bill Clinton would post to alt.politics” (Clark B6).

IBM Joins The Controversy

The situation was complicated further on December 12 when IBM executives announced that the company would halt shipments of Pentium™ microprocessor-based personal computers and would replace the microprocessors in the 100,000 computers it had already shipped. IBM justified its action in a message posted to the comp.sys.intel usegroup and in a press release in which it stated that the flaw could happen as often as every twenty seven days, not every 27,000 years as Intel had argued (Goldstein 1A).

While industry analysts pointed out that IBM was using “fear, uncertainty and doubt” to protect market share for its competitor PowerPC chip and spokespersons for other manufacturers and retailers expressed confidence in the product, the IBM announcement had a major impact (Goldstein 1A). That day, December 12, the stock market reacted so severely that trading in Intel's stock was temporarily halted (Ziegler and Clark A1).

The story of the flaw then became a major topic in the mass media. The day after the IBM announcement, *The Dallas Morning News* carried two lengthy stories, one on its front page and another in the Business Section. *The Wall Street Journal* published seven stories on the situation, totaling over six thousand words, in the four days after the announcement.

Intel immediately responded to the IBM announcement by initiating a technical information campaign in which the company attempted to demonstrate to the engineering community that the flaw was indeed unimportant to the average user. A component of the campaign was a 30-page paper that explained the origin of the mathematical errors and suggested that other computer problems “pose a far higher risk of errors than the Pentium flaw” (Stipp B6). Dr. Nicely, by then working as an Intel consultant to assist in reaching technical users, characterized IBM’s testing results as “almost ludicrous” (Jarrett 6).

Intel’s technical report failed to quiet the continuing controversy which escalated further as a California stockholders’ group filed suit accusing Intel of withholding information about the problem (Clark, *Intel* A3). By December 16, government entered the dispute when the attorneys general of four states (Connecticut, California, Michigan and Illinois) individually notified Intel that the company might have violated consumer protection and unfair-trade-practice laws (Schmitt B8).

By early December, the comp.sys.intel usegroup had become divided between those who continued to pillory Intel and those who voiced concern that, like the trial of O. J. Simpson, the group had become too focused on an unimportant issue. One individual posting a message stated, “Dare I say the bandwidth used to discuss this Pentium ‘bug’ approaches that of the OJ murder

trial and like 98% of Americans who don't really care, we are sick of hearing about it" (Copilevitz 11F).

Interest outside the usegroup, however, remained high. The mass media continued to cover the story while trade publications and financial analysts began reporting that corporate customers were deferring purchases. To add the final insult, David Letterman included a Pentium™ joke in his nightly monologue (Jarrett 6).

Intel Changes Its Policy

One week after the IBM announcement, Intel, confronted by growing mass media attention and pressure from computer makers, came to the decision that "facts alone wouldn't carry the day" (Jarrett 7). After the stock market closed on December 19, Intel prepared a new no-questions asked chip return policy and, on December 20, issued a press release detailing the decision (Jarrett 7). The press release included an apology for the previous Intel policy which "to some people . . . seemed arrogant and uncaring." It explained that "while almost no one will ever encounter the flaw, the company will nevertheless replace the processor upon request with an updated version that does not have the flaw."

The following Wednesday, December 21, the company ran full-page advertisements in *USA Today*, *The Wall Street Journal* and *The New York Times* reiterating Intel's contention that the defect, while it had caused "concerns" for

Pentium™ users, was “what Intel continues to believe is technically an extremely minor problem” (Castaneda 1D). The stock market reaction was swift with Intel shares rising by \$3.4375 that day (Getler C1).

The Dallas Morning News published a largely positive response although the controversy was described as a “chipwreck” (Castaneda 1D). Similarly, *The Wall Street Journal* first pointed out that the Intel was eating “humble pie,” before being positive concerning Intel’s apology and change in return policy (Carlton and Yoder B1).

Two days later, IBM announced that its Pentium™-based computer shipment computers would resume (“IBM” *Dallas Morning News* 3D). On the comp.sys.intel usegroup, messages posted by individuals congratulated the group for its work in the controversy. “Congratulations, on being the driving force in bringing Intel to finally do the right thing” and “Bravo and well done,” were two such messages (Ziegler and Sandberg B1).

Despite the weeks of negative publicity and the jokes, Christmas shoppers continued to purchase Pentium™ computers. Intel was pleased to report in its summary of the events surrounding the controversy that “the buying public proved to be less concerned about the floating point flaw than the news media” (Jarrett 8). Surprisingly, Pentium™ computers set new sales records throughout the period (Jarrett 8). The bad news for Intel was that their fourth-quarter profits

fell 37% as a consequence of a \$475,000,000 charge against earnings taken to cover the cost of the microprocessors replacement program (Intel 30).

Four months later *The Wall Street Journal* reported that, of the 5,500,000 defective Pentium™ microprocessors sold, less than 10% had been returned although another 1,500,000 chips remained in Intel warehouses earmarked for destruction (Hill B1). At that time, Tom Waldrop of Intel's Corporate Communications Department insisted that only two individuals -- scientists involved in higher level mathematical work -- had ever encountered the floating point error in "real-life instances."

There is a legend told in the computer industry that the term "bug," referring to a defect found in the hardware or software of a computer, is based on the discovery of a real insect that was causing trouble inside a room-size early generation computer. Fifty years after the development of the first computers, the microprocessors have become the size of a fifty cent piece while the "bugs," at least in Intel's case, have grown to gigantic proportions.

In the next chapter, Intel's apologies are analyzed within the framework of generic criticism. Generic parameters and constraints are analyzed together with situation constraints. The analysis attempts to demonstrate how Intel's apologies fit the genre or failed to meet generic requirements.

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CHAPTER 3

GENRE CRITICISM: INTEL COMMUNICATIONS AND APOLOGIA

Robert Rowland writes that Aristotle established a tradition in which there is value in finding the “proper category for describing and evaluating a given work” (128). That tradition has become the study of rhetorical genre, an endeavor that serves to enlighten both rhetor and audience. This chapter follows in that tradition, outlining the philosophical constructs of generic criticism including apologia, describing the methods of generic criticism, and, finally, applying those methods to Intel’s Internet posting and press release. The ultimate objective is to determine the extent to which those texts conform to the genre of apologia.

Philosophical Constructs

Genre

There is a broad base of works that together form the philosophical constructs of genre. Edwin Black and Lloyd Bitzer, in key contributions, establish the foundation of genre criticism by proposing the rhetoric arises from situational factors. Karlyn Campbell, Kathleen Jamieson, Jackson Harrell, Wil Linkugel and Robert Rowland contribute situational approaches to genre

that expand the construct as it applies to rhetorical studies. Thomas Conley and John Patton, while questioning the reliability of the construct of genre, offer opportunities for rhetorical critics to improve generic techniques.

Black and Bitzer establish the situational basis for generic analysis. Black, for example, defines the philosophical foundations for genre by stating that:

there is a limited number of situations in which a rhetor can find himself. . . ; there is a limited number of ways in which a rhetor can and will respond rhetorically to any given situation. . . ; the recurrence of any given situational type . . . will provide the critic with information on the rhetorical responses available in that situation (133-134)

Similarly, Bitzer defines the situation as:

. . . a natural context of persons, events, objects, relations, and an exigence which strongly invites utterance; this invited utterance participates naturally in the situation, is in many instances necessary to the completion of situational activity, and by means of its participation with situation obtains its meaning and its rhetorical character (3).

Rhetors, then, will respond to a situation in much the same way as rhetors have responded to similar situations in the past. An individual responding to a death feels constrained by the situation to deliver a eulogy. That eulogy will be

similar in style and content to speeches given at previous funerals. Since the eulogy serves a specific function at a funeral in memorializing the dead, the purpose of the speech constrains the rhetor and one will not attempt, for example, to deliver a commencement address. As a consequence, recurrent forms or classes of rhetoric develop. These recurrent forms are termed rhetorical genres. These four components of discourse (its substance and style, the situation, the function or purpose the rhetoric serves) are key to generic analysis and criticism.

The question remains, however, how the critic can determine what constitutes a genre and the components of each genre. Campbell and Jamieson offer two methods, inductive and deductive (22). In the first method, a classifier of rhetoric may use an inductive approach wherein individual rhetorical texts are analyzed to determine if there is a commonality among them. For example, speeches at gas station openings might be analyzed to determine if there are aspects, unrelated to other ceremonial occasions, which would make gas station opening speeches unique. In the second method, a classifier of rhetoric may use a deductive approach. Here, a genre is assumed to exist and standards necessary to meet genre requirements established. Texts are then analyzed against this standard to see if they are consistent with the genre. For example, a critic would assume that gas station opening rhetoric is a unique genre with

specific components. Examples of gas station opening rhetoric are then analyzed and judged against the predetermined standard for such addresses.

Harrell and Linkugel propose four classificatory schemes for discourse: de facto, structural, motivational, and archetypal (264). In the de facto classification, the organizing component is what Harrell and Linkugel call “the common-sense perception” that certain events or speeches belong together (264). The second form of classification, structural, proposes that the language used in the text is constrained by some pre-existing pattern (268). The motivational classification relies on the “motive state of the rhetor” to provide the organizing principle while the fourth, the archetypal classification, is based on appeals to images that the audience may hold (264).

Harrell and Linkugel place emphasis on the motivational genres of discourse, arguing that “a clear function. . . [of a rhetor] . . . is to achieve substantive goals which the rhetor has designated as important” (271). In their approach, the rhetor’s goals are analyzed to determine the means through which the rhetor achieves those goals while still responding to situational requirements.

Rowland, too, outlines two approaches toward genre. The first he refers to as the ontological/empirical perspective while the second is the interpretive/heuristic approach (129-130). The ontological/empirical approach uses the subject matter or the recurring situation as its basis (132). The

interpretive/heuristic approach is, according to Rowland, a form of metaphorical analysis. He recommends that the ontological/empirical approach (which is the approach of the scholars previously discussed) be reserved for the study of genre within communication studies (132).

Rowland is critical of the constructs inherent in the ontological/empirical approach, however, stating that “a situational approach to genre is not universally applicable, even in well-defined situations” (133). He provides an antidote to the problems of the situational approach that includes consideration of three forces: perceived needs or exigencies, purposes and “societal limitations on appropriate rhetorical responses” (134).

Apologia

The philosophical constructs of genre have been applied to a number of types of discourse. Of those, the genre of apologia has been the most thoroughly studied (Brock, Scott and Chesebro 289). B. L. Ware and Wil Linkugel provide the basic overview of the genre of apologia and their work is elaborated on by scholars such as Sharon Downey and Noreen Kruse.

Ware and Linkugel outline a schema of discourse spoken by individuals in self-defense that offers unique factors, or “hypothetical variables which in various combinations account for . . . kind(s) of human behavior” (274). Based on Robert P. Abelson’s research on resolution of belief dilemmas in individuals,

Ware and Linkugel identify four factors inherent in apologia: denial, bolstering, differentiation, and transcendence.

Denial is “the simple disavowal by the speaker of any participation, relationship to, or positive sentiment toward whatever it is that repeals the audience” (276). In denial the rhetor attempts not to distort the realities of the audience or to conflict with their beliefs while repudiating any transgression. A denial must, therefore, be believable within the real world of the audience. In addition to stating that there is no involvement in the questioned act, denial may also consist of explaining that the act was not intended to cause harm.

Bolstering is the attempt by the rhetor to align their actions with some purpose that the audience identifies with or perceives favorably (277). Speakers attempt to align themselves with an existing “fact, sentiment, object, or relationship” of which the audience is already aware.

The third factor of Ware and Linkugel’s schema of self-defense, differentiation, uses the strategies of denial and bolstering to place some existing “fact, sentiment, object or relationship” into some larger context so that the audience may view the questioned act with a new perspective (277).

The final factor, transcendence, changes an existing perspective of the audience to provide them with a new meaning from an event.

Ware and Linkugel expand their construct of apologia by incorporating four postures that speakers assume when defending their characters: absolution,

vindication, explanation, justification (282). These postures form subgenres in Ware and Linkugel's schema.

Noreen Kruse offers a similar schema for apologia but also proposes a subgenre of non-denial apologia that is couched in the motive states of the speaker. These states, based on A. H. Maslow's hierarchy of needs, are defined by Kruse as: Survival Responses, Social Responses, and Self-Actualized Responses (13-14). At the survival level, an individual in a non-denial apology wishes to demonstrate that "some aspects of his security or safety have been threatened (14)." For example, an individual threatened with the loss of a job because of a perceived misdeed will offer non-denial apology at the survival level which attempts to reorder perceptions of the events so that the job remains safe. The individual speaking at the social response level has a need to "restore or regain affection, status, mastery, prestige, or esteem (14)". In instances of this type, the individual attempts to link a non-denial apology to a social group that is held in high regard by the audience. Finally, the self-actualized level involves the rhetor attempting to maintain a self-image consistent with personal values (14). The individual responding at the self-actualized level offers an apology that satisfies the inner ethical or moral needs of the rhetor.

Downey's contribution to understanding the rhetoric of apologia is to view the evolution of the genre through various historical periods. Using "Campbell and Jamieson's criteria . . . of substance, style, situation and

function," Downey demonstrates that apologia has moved from a posture of vindication in the Classical Age of the ancient Greeks, to justification in the Medieval period, to explanation in the modern era, and finally, to absolution in the current age (47-57). Each stance is based on situational factors present at the time of the apology. The function of apologia is different in each situation; self-exoneration was the function in the Classical Age, self-absolution in the Medieval, self-sacrifice in the modern era, and self-service in the current age. While the apologist in the Classical Age, for example, could argue in a judicial arena for acquittal of charges, in the Medieval situation the individual faced the constraint of having already been sentenced. Since there was no opportunity for acquittal the apologist was merely engaging in a form of self-absolution by justifying actions.

Problems with Genre Criticism

All of these schemata for the analysis of generic discourse, apologia, and its subgenres have inherent problems that have been pointed out by the writers themselves as well as others. The most frequently cited shortcoming is that "generic analysis may proceed for its own sake, rather than for the critical illumination it is capable of producing" (Rowland 129). Conley states that "the critical fixation on genre identity may, in fact, obfuscate more than it illuminates" (71). He points out that genre criticism can work to decontextualize a text, making the work appear to be more a part of a genre than an individual

event (59). What becomes important, Conley argues, is the class or category rather than the individual components and the situational constraints from which the rhetoric arises and such an approach clouds rather than illuminates (71). This may be particularly true of the genre of apologia where critics may be tempted to wave a magic wand, find Ware and Linkugel's components of apologetic discourse, and believe that they have completed their analysis. Thus the critic reduces a complex event into a single component of a large abstraction and fails to provide any critical insight.

Further, Conley finds fault with Ware and Linkugel's factors and postures of apologia and its subgenres. His analysis of the speeches on which Ware and Linkugel offer their schema demonstrates that no single stance dominates in apologia. Conley particularly points out that the speeches that they analyze can be seen to use other strategies beside the ones that they are quick to see. (62-63). For example, while Ware and Linkugel see only transcendence in Clarence Darrow's "They Tried to Get Me," Conley sees both denial and transcendence.

Since the purpose of conducting generic criticism is to offer what Campbell and Jamieson refer to as "critical illumination" (23), the challenge in genre criticism then becomes one of going beyond the classification of texts to gain critical insight that can provide understanding of the rhetoric. Such a reading of text would provide the opportunity to demonstrate how well the rhetor met, or failed to meet, the circumstances of their unique rhetorical

situation. The criticism also provides a way for a rhetor to determine their effectiveness in meeting the situational challenges they face. Genres form benchmarks against which the effectiveness of discourse may be measured. Genre criticism then serves to educate rhetors as well as society.

Rhetorical critics should constantly look for ways in which genre may be reconfigured in light of changing times or changing situations. As Downey and Ryan have demonstrated, genres evolve in response to the nature of accusations. Different times and the changing complexity of our world, in part due to technological change, call forth new situational constraints and require new ways of examining discourse. One aspect of that evolution is examined as evidenced in the Intel Internet apology.

The Method Applied

The analysis of Intel's apologetic discourse concerning the Pentium™ processor will use the techniques of generic criticism. Using the deductive approach, the texts will be analyzed using the schema offered by Ware and Linkugel. In applying that deductive approach, this criticism will determine how Intel's apologetic discourse aligned with the standards for the genre. Further, the criticism will demonstrate how generic analysis may serve its intended purposes of education through criticism of success or failure of the rhetor. Additionally, the analysis will demonstrate whether or not the

parameters of apologia must be revised to encompass the changing situation, particularly in the field of corporate rhetoric.

This analysis will first deal with Dr. Andrew Grove's November 27, 1994 Internet message and then Intel's subsequent December 20 press release.

Internet Message

There can be no question that Grove's Internet message was intended as an apology. After two sentences introducing himself and his purpose, he states, "I am truly sorry for the anxiety created among you by our floating point issue." Additionally Grove, toward the end of the posting, states "please accept my apologies for the situation." The strategies used in the posting, however, are not limited to one factor or combination of two factors as described by Ware and Linkugel for apologia. The message uses all the strategies inherent to apologia.

To answer the accusation that Intel was being secretive about the microprocessor flaw or its operations, Grove offers a strategy of denial. He points out that the company worked with computer manufacturers (OEM manufacturers), adding, "We held [delayed] the introduction of the chip several months in order to give them more time to check out the chip and their systems." Further, Intel "worked extensively with many software companies to this end as well." Moreover, once the flaw was discovered, Grove points out, "we started a

separate project, including mathematicians and scientists. . . to examine the nature of the problem and its impact.”

One important component of denial that should be noted at this point is the concept that any denial must be consistent with the audience's beliefs. One belief of the Internet audience, many of whom are themselves mathematicians, scientists, and engineers, is that this group is capable of solving the technical problems faced by industry. By stating that Intel is using these skills, Grove is attempting to place Intel's denial within the realm of beliefs acceptable to the audience.

With regard to accusations that Intel was negligent in manufacturing a microprocessor that was flawed, Grove offers a number of rhetorical strategies. Grove resorts to denial again when he states, “not that the chip was perfect; no chip ever is.” Furthermore, he states “after almost 25 years in the microprocessor business, I have come to the conclusion that no microprocessor is ever perfect; they just come closer to perfection with each stepping.” Grove is answering the accusation of negligence by denying that any company meets that standard of perfection. There is, however, no link between this denial and audience beliefs in perfection.

To bolster Intel's position, Grove cites the history of extensive testing for the microprocessor to have the audience, many of whom participate in similar testing, feel a similarity between what they do and what Intel engaged in before

and after the release of the microprocessor. For example, Intel conducted, Grove says, “the most extensive testing program we at Intel have ever embarked on.”

The Internet audience would see a similarity between that testing and the extensive testing they might conduct in their own work situations as positive.

Grove attempts to bolster by aligning Intel with this favorable view of extensive testing.

Grove uses differentiation in his discussion of the likelihood of the Pentium™ flaw occurring, pointing out that the “floating point problem would be swamped by other known computer failure mechanisms.” “Swamped” is an interesting word choice for Grove since it connotes saturation. By attempting to show that the average user is confronted by so many other hardware and software problems every day, Grove endeavors to show that the Pentium™ flaw is diluted in the flood of failures of other computer components. The “once in nine billion” nature of the flaw makes it, for Grove, far less reprehensible than the other difficulties that face the average computer user. As intensive computer users, the Internet audience was likely to have encountered problems where components, whether a monitor, printer, keyboard or integrated circuit board, failed to operate as expected. They could, therefore, see that the likelihood of the Pentium™ causing them problems was much less certain and relatively trivial in comparison with other problems that might stop a computer from operating altogether.

Grove's message exhibits transcendence by attempting to position Intel, through the description of Dr. Nicely's work and the original detection of the flaw, as an integral component of the complex group working to achieve better, more complex computers. For example, Grove points out that "Prof. Nicely was attempting to show that Pentium™-based computers can do the jobs of big time supercomputers in numbers analyses." Since supercomputers were exceedingly expensive and very powerful devices, many of the Internet users would look favorably upon the notion that Intel was attempting to bring the power and versatility of supercomputers through the relatively inexpensive Pentium™ microprocessor. Grove attempts to make the flaw a necessary component of progress toward that goal.

Grove uses all the strategies available in apologia to present Intel's case in his Internet posting. Furthermore, he uses a number of the postures which Ware and Linkugel have identified. Absolution, vindication, explanation and justification are all apparent in the analysis of the posting.

Absolution is attempted in two ways. First, Grove points out that Intel "encountered no significant problems in the user community" and "we were puzzled as to why neither we nor anyone else had encountered this earlier." To signify that the flaw is not a problem at all, Grove states, "This explained why nobody -- not us, not our OEM customers, not the software vendors we worked with and not the many individual users -- had run into it." The company will fix

the problem in the next stepping, Grove states, "along with whatever else we were correcting in that next stepping." The argument being made by Grove is that Intel cannot be considered guilty for a problem that no one had encountered and of which no one was aware.

Grove's strategies for vindication are demonstrated in his portrayal of himself and the Pentium™ processor as above the norm and, as a consequence, above the standards that might be set by the Internet audience. Few individuals in the computer industry can match Grove's or Intel's history in the business and this is brought to the audience's attention. Grove states, "after almost 25 years in the microprocessor business, I have come . . . " He terms the debate a "hubbub," lowering it from what the participants might consider a scholarly discussion to a confused mass of noise. The microprocessor is positioned above the normal as well. The unusual complexity of the Pentium™ is noted as "three times as complex as the 486" that preceded it. Grove positions himself and Intel as leaders who should not be held accountable for what appears to be, in Grove's opinion, a minor flaw.

Grove's attempts at explanation rest on his discussion, in the message's fifth paragraph, of how microprocessor flaws are corrected and the clarification of how individuals with work "involving heavy duty scientific/floating point calculations" would have their problems resolved. He adds, too, that the

company will “stand behind these chips for the life of your computer.” The goal is to have the audience understand Intel’s position and be unable to criticize it.

In justification, the rhetor seeks approval for his actions. Grove goes beyond seeking approval, however, and assumes that it has already taken place. Believing that individuals will accept his problem-solving offer of limited exchanges for specific users, he comments that it will take some time to work through the requests. He does not question that they will accept the solution and asks only “for your patience here.”

This analysis of Grove’s Internet posting has demonstrated that all the available techniques of apologia were deployed. Intel’s press release will now be analyzed.

December 20 Press Release

The most obvious difference between the November 27 Internet posting and the December 20 press release is the voice of the messages. The Internet posting is a personal message from “Andy Grove”, written in the first person, singular case. The voice of the press release is the corporate persona “Intel”, written in the third person. There is another, more subtle difference in the two messages. Rather than continue what one might term a ‘shotgun’ approach to apology in which a variety of strategies are used, Intel’s press release, relies on denial and differentiation and, thus, has an absolute posture. Ware and

Linkugel write that in the absolutive posture the accused, while denying any wrong, will attempt to save a reputation by adhering to a higher goal.

Although the user community on the Internet has come to view the Pentium™ flaw as a critical problem, Intel continues in the press release to deny the seriousness of the situation, referring to the error as “subtle” and one that “almost no one will ever encounter.” In a quotation from Grove, the flaw is called “an extremely minor technical problem.” Even while explaining how the process of exchanging chips will work, Grove, again points out that, “We were motivated by a belief that replacement is simply unnecessary for most people.”

Grove points out, however, that Intel has changed its policy, now offering full exchanges, for two reasons. First, the previous policy “seemed arrogant and uncaring.” More importantly for the purpose of this analysis, Grove states that the change is due to the fact that Intel wishes to leave “no doubt that we stand behind this product.” Furthermore, Grove points out that “our OEM customers and the retail channel have been very supportive during this difficult period” and that the change in policy is being made “to support them and their customers.” The attempt is made to show that the actions are now motivated for a greater good -- to stand behind the product and its distributors.

Another important component of the press release is Intel’s announcement that it “will take a reserve against fourth quarter earnings to cover costs associated with the replacement program.” As a consequence, the

audience for this message is aware that Intel will suffer a material loss for its perceived arrogance.

Critical Analysis

In addition to changing strategies when they found their first inadequate or ineffective, Intel altered strategies in recognition that the accusations had changed. When challenged by charges of secrecy and negligence, Intel responded with an unsuccessful apology that took a variety of stances. Subsequent charges of arrogance and lack of concern were met with a targeted apology that more closely met the generic parameters as set forth by Ware and Linkugel. That second policy effectively silenced the debate. While the reasons for the success or failure of the messages will be reviewed in more detail in Chapter 4, a brief summary of differences will be provided as part of this critical analysis.

First, the two apologies employ different persona. As mentioned previously, the Internet message is a personal message from "Andy Grove, president of Intel." There is heavy emphasis on the personal pronoun. For example, Grove discusses "my perspective" and offers "my apologies." While there are some references to "we" and "we at Intel," more frequently the first person is used such as "I have come to the conclusion," or "I understand from press reports."

On the other hand, the December 20 press release is phrased with the decentralized and corporate persona “Intel”. It begins with the phrase, “Intel today said” and includes many instances of third person forms such as “the company.” While it quotes from Grove, the press release never refers to him in any personal way. Rather the press release uses “our policy” or “we were motivated” to indicate that Grove is speaking on behalf of an organization and not as an individual.

This shift in persona presents difficulties for rhetorical criticism. The critic must ask who are “we”? Who, exactly, is sorry now? In the Internet message was it the combative, stubborn company president? In the press release, is only the faceless corporation speaking? While the individual speaking in self-defense is central to apologia, corporate rhetoric decenters that very individual (Cheney 167).

Additional difficulties are caused by the normal function of corporate rhetoric. While the tradition in rhetoric is to seek justice, offer advice or revelation, the tradition in corporate rhetoric is to “sell the organization and its products” (Cheney and McMillan 104). In corporate rhetoric self-justifying arguments praise the organization for its successes and absolve it from responsibilities for failures. Therefore, the rhetorical critic is presented with difficulties in analyzing a corporate apology that is intrinsically tied to the need to be positive toward the organization.

Second, there is the obvious difference that in the first apology Intel does not offer to suffer in any way for its actions. The burden of responsibility falls on the user, who must place a telephone call and discuss the issue with a “technically trained Intel person.” Moreover, the user must be prepared for “the passing of time” before the problem is resolved and therefore must be patient. In the press release, Intel alters its previous position and now makes clear that it will accept adversity through suffering a financial loss in the form of a charge against earnings. Moreover, Intel is prepared to suffer another cost -- the admission of failure. In other words, Intel will suffer for its deeds.

The importance of suffering for misdeeds is a key concept for apologia. As Brummett has shown in two dissimilar instances, scapegoating or victimage is “constantly enacted in the living rooms, streets, playgrounds, and offices of our daily lives” (*Symbolic* 64). The argument of this thesis is that scapegoating and victimage must occur in apologia.

The process first outlined by Kenneth Burke, and applied by Brummett, involves the guilt that results from an individual’s violation of the social order. That guilt must be eliminated through suffering. Either the guilt is “killed” within ourselves through mortification or outside ourselves through the scapegoating of another who represents the guilt. The accusations which call forth apologia are a violation of the social order and require that a “kill” take place. The apologist must either mortify themselves in some way or relocate

responsibility and reposition guilt through scapegoating of another. For example, the automobile manufacturer, Chrysler when faced with mounting debt sought the government's financial assistance. Rather than apologize for their mismanagement of the corporation, they chose to scapegoat "unscrupulous foreign competitors" who had victimized them (Schultz and Seeger 56).

Initially, Intel attempts to scapegoat the users of the comp.sys.intel by assigning blame for the violation to them. Grove redefines the problem as the controversy itself, not the flaw, and states that they were responsible for the "hubbub." Although Grove compliments news group participants, he blames the usegroup for failure to grasp the right perspective, "his perspective." For a number of reasons, which are explained in detail in Chapter 4, the Internet usegroup was not a suitable or willing subject for scapegoating.

Dr. Grove's first attempt at an apology failed. He failed to satisfy the usegroup and, consequently, failed to quell the controversy. The apology failed because the usegroup was unwilling to serve as a scapegoat for Intel's problems. No sacrifice on the part of the usegroup was acceptable to them. When the controversy continued for another three weeks, the corporate persona, Intel, was forced to accept mortification, to inflict punishment on itself. The mortification Intel chose included a \$475,000,000 charge against earnings. While it appears that Dr. Grove was unwilling to take the guilt for the violation of the social order

on his shoulders, the corporate persona was. The guilt was removed and the conflict, as a result, resolved.

This chapter has offered a generic analysis of Intel's apologia, demonstrating how that discourse initially failed to meet and then successfully met generic constraints. Furthermore, the need to incorporate victimage (scapegoating or mortification) in apologia was demonstrated. The next chapter will analyze the situational constraints that came into play surrounding the discourse. These situational constraints result in rhetoric being deemed more or less acceptable by its audiences.

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CHAPTER 4

THE SITUATIONAL CONSTRAINTS: SOCIETY AND TECHNOLOGY

Walter Fisher writes that a text may be enlightened in a number of ways. He proposes that a genre assessment might provide a deeper understanding of text than can be gained than from a reading of the text alone (xi). One of the important assumptions of genre, as Chapter 3 shows, is the determination of generic constraints and the measurement of a proposed member of a genre against those generic constraints. Another important assumption concerning genres is that they are situationally grounded. An analysis of situational constraints, therefore, may provide greater enlightenment to the critic. This chapter will analyze in depth the nature of the situation in which Intel presented its two apologetic texts. Particular attention will be paid to the situational factors which may explain why Intel's Internet posting was not accepted by its audience. The nature of society's relationship with technology will be explored, as will the close connection between computers, the Internet and society. The chapter concludes with a discussion of how successfully Intel rose to the situational challenges it faced.

Bitzer argues that each rhetor is controlled by the situation (2). That situation is composed of three components: the exigency, or perceived need,

which calls forth the rhetoric, the audience for that rhetoric, and a set of constraints which, for the purposes of this study, is the generic parameters of apologia (6). The exigence which called for the discourse in this instance was the perceived flaw in the Pentium™ microprocessor. The audience was, at least initially, individuals who frequented the comp.sys.intel usegroup.

The Exigence: Technology, Computers and Society

To understand the exigence which called for Intel's apology, an explanation of how a flaw in computer technology is viewed by society must be provided. This explanation must then be set within the overall framework of how society views computers and technology in general.

Technology is defined as "the application of knowledge to practical purposes" (Bereano 5). While humans have been applying knowledge, particularly scientific knowledge, for practical purposes since the dawn of time, technology emerged as a significant force in society during Britain's Industrial Revolution of the mid-eighteenth century (Perry). The economic progress that technology brought resulted in a belief in the benefits of technological progress (Florman 53). The future was generally depicted as one where "machines would do all the onerous work, and life would become increasingly utopian" (Florman 53).

During this golden age of technology, nature was brought under control, material abundance was prevalent and technological innovations were routinely invoked as emblems of national greatness (Smith 71). The impassable mountain ranges were traversed, the rivers bridged and the great cities constructed. The wealth of nations and individuals grew. With these technological changes in society grew the notion that humankind could create a world based on “perfectability and measure” -- the standards of technology (S. Ross 260). As individuals and as societies, we formed a relationship with technology which, we believed, would lead us to a utopia of perfection. We began to feel what Stephen Ross calls “nostalgia for the future” (260). If we would just let technology take its course, our future would be bright.

By the early twentieth century, however, writers like Jacques Ellul, Oswald Spengler and Lewis Mumford had begun to warn about the negative aspects of technology (Dudek 1). The individual, they argued, would be forced by technology into becoming a “helpless slave, driven by this force to perform work he detests” (Florman 54). By the mid-twentieth century, the growing belief was that technology had “escaped human control and . . . [was] making our lives intolerable” (Florman 53). Technology had brought among other things air pollution, overcrowding and traffic jams, and the possibility of nuclear annihilation. Authors at mid-century portrayed individuals who feared they were being forced to do degrading work and to consume goods they did not

necessarily want. Society felt cut off from nature and from each other by technology and an elite group of technocrats (Florman 66). More or less alone, humankind faced a world where our products might destroy us. Like Dr. Frankenstein and his monster, society feared its creations gone out of control (Joerges 207). The complexity of technological society seemingly led to big government, big war, big corporations and lonely individuals who were apprehensive about what the future might bring.

The antidote to this technological hell was envisioned by many to be the computer, particularly the personal computer. Computers were seen as the “antitechnology technology” which would end individual dependence on big government, big corporations and big machines (Turkle 173, 184). However, even computers eventually fell into a similar trap of big corporations. They were expensive, large, difficult to operate, and available only to large organizations. These problems appeared to be solved with the introduction of the personal computer. The personal computer represented decentralization and personal autonomy as well as a remedy to the problems technology brought about (Turkle 172). People could work at home in a comfortable environment; they would not have to commute, thereby saving energy; and they would have a greater voice in their affairs via the personal networks envisioned from the early days of computer development. With the personal computer, society regained a sense of control over the technological machine. The character of Charlie

Chaplin, the hero of the film *Modern Times*, who had been out-of-control technology's victim, was used to introduce IBM's personal computer. His character signified the role the personal computer could play as a means of overcoming technology's dangers.

Computer technology, however, is different from previous technology which created machines. Unlike a spinning wheel, bicycle, or automobile, computers are opaque. You cannot determine how they work just by looking at them or by taking them apart. A microprocessor, in particular, is just an array of lines etched onto a shiny surface. As a consequence, a great deal of faith is involved in using a computer (Turtle 184).

The way in which computers operate is viewed almost magically. Indeed, the personal computer is discussed in the popular press in terms that are "explicitly magical" (Stahl 243). It is endowed with a magical ability with permits its user to transcend limits in the way that a talisman might transport a wizard in a fairy tale. In early ethnographic studies of human interaction with computers, Turtle demonstrates that individuals' feelings toward personal computers go beyond magic, however. Some users compare using a computer to the experience of sex or drugs while others view it as a type of social playground (Turtle 13-15). Another author points out that "computers are fulfilling emotional needs . . . it is not our urgent need for bar graphs but our aching

hearts that is [sic] drawing computers into many American lives" (Easterbrook 129).

We are using personal computers to provide us with freedom and knowledge. We are investing them with the same capacity for a brighter future that was attributed in the mid-eighteenth century to the Industrial Revolution. We see a coming utopia based on the personal computer. This utopia promises society a liberty not enjoyed since prior to the Industrial Revolution. This utopian world is described by a proponent of personal computers as a place where:

. . . all the people of the world, not just the wealthy, will use the wonderful services that information machines make available . . . for a coming utopia . . . offering all the democratic benefits of the ancient Greek city state, the Israeli Kibbutz, and the New England town meeting. . . . (Winner 163)

The utopian world that the personal computer would produce was visualized as one far more perfect than the world which arose from the industrial technology of the nineteenth and early twentieth centuries. When a flaw (the Pentium™ microprocessor flaw) appeared in the heart of the machine leading to this utopia, an exigence appeared that called forth rhetoric. Intel needed to address the concern that a flaw existed in the technology which had been endowed with magical abilities and which was destined to create a new

utopia. Users felt computer technology would offer us the golden future we had long dreamed for. That utopia contained a flaw and that flaw needed to be addressed while maintaining the vision of that utopia.

The Audience: The Internet

The second component of the rhetorical situation is the audience. The audience for Intel's apology was the comp.sys.intel usegroup on the Internet. Even though Intel's press release was directed to the public at large, the debate concerning the flaw was being driven to a great extent by the Internet audience. That audience had developed unique characteristics resulting from their relationship with technology and personal computers in particular. In addition, the Internet forum had produced a mythology and style of discourse which affected the debate and its outcome.

The myth of decentralization, community and personal autonomy associated with personal computers is strong. Since it was first envisioned in the early development of computer systems, the Internet has been the reservoir for dreams for a better life and a better, more perfect world. The new version of the Horatio Alger fable is Steve Jobs and Steve Wozniak working in their garage creating Apple Computers -- inexpensive computers accessible, in theory, to anyone. It is a world where individuals are endowed with the ability to change the future, to chart new courses for civilization through the combination of

hardware and software. As Carey states, Internet fables are composed of the “electrical sublime” where the “dual elixirs of communication and technology will dissolve our troubles and transport us to a new plane of economic advance, social harmony and human understanding” (172). This capability is within the grasp of each of us just as it was in the hands of Jobs and Wozniak.

In the myth of this new world, the participants perceive themselves as folk heroes who challenge impersonal elites and the ‘system’. They are “straight-talking, hard-working [individuals]” who deal only in facts, “not in appearance or tricky shadings of language” (Smith 75). Downes has compared the myth of the Internet to that of the myths depicted in the western movie. Like the cowboys who fought to preserve their frontier from the robber barons or ranchers of the American West, the heroes of cyberspace fight to maintain their freedom and their utopian dreams (53). In the frontier of cyberspace, they work to protect the “individual’s right to challenge authority” and, thus, preserve the possibility of reaching the goal of a democratic utopia (Downes 53).

As part of that myth, the Internet is viewed as a worldwide digital version of London’s Speaker’s Corner where open discussion of all issues is unhindered by notions of hierarchy or elites. Some have referred to it as “the ultimate salon” or the “‘electronic salon’ to soothe the anomie and coarseness of contemporary life” (Chapman 13). Howard Rheingold views the Internet as a virtual community where one finds solace and fraternity. Likewise, Downes

describes the perception of the Internet as a “last frontier of democratic experience through the unfettered distribution of and access to information” (4).

The myth of the Internet as an open forum is fostered by Internet posting styles. The postings create an anonymity which seems to grant all participants equal status in discussions (Baym 140). The lack of visual clues in these dialogues decreases social inhibition (Bay 153). The equal status and uninhibited nature of the dialogue has formed the core of the Internet belief that their forums are the democratic ideal.

Myth and reality, as usual, fail to coincide. While access to the Internet is viewed as unlimited, most individuals using the forums obtain accounts through student status or their employers (Baym 142). As a consequence, the great bulk of the participants are “a relatively small subset of those who work at First World universities, government institutions, and research corporations willing to pay the hefty annual Internet fee . . . which in turn profoundly limits the class, occupational, cultural, national and gender range of participants” (Aycock and Buchignani 188).

Researchers have found that, far from the democratic ideal, the Internet is male dominated (Herring) and that “lurking” (not joining in discussions but viewing messages) is the most common form of participation (Baym 138). As Gary Chapman has pointed out, the electronic salons are now strewn with broken furniture resulting from the combative nature of much of the Internet

dialogue (14). Rather than detailed discussion of issues important to a usegroup, participants resort to “flaming”, what Chapman calls a nasty and profane diatribe (14). The anonymous nature of Internet discourse has permitted individuals to feel that they can broadcast their opinions no matter how full of invective, how deviant, or how outrageous they are (Aycock and Buchignani 187).

The result of the discourse is to increase disputes rather than to resolve them. The combative nature of the discourse encourages the development of irrational controversies (Aycock and Buchignani 192). The equal participation encourages people to join in a debate rather than resolve it. There is a contagious nature to Internet discourse, with debate growing unhindered by any vaccine of responsibility. Moreover, the lack of visual clues tends to encourage misunderstanding. Proffered solutions are met with flaming. Rumors play an important part in Internet discussion where a “combination of lack of information and a strong interest in what is going on, makes one very receptive to any communication” (Koenig 24).

Intel's Responses to the Situational Constraints

Grove's Internet message violated a number of situational constraints imposed by society's views concerning technology and computers. First, he failed to address the magical nature with which computers are imbued. Instead,

Grove described a process which strips away the magic and replaces it with a world where “no microprocessor is ever perfect.” The computer technology viewed as leading to a utopian future becomes the same flawed technology produced by humans which has brought about the very problems computers will resolve. Unmasking personal computer technology before an audience who believed in its unsullied qualities would not enchant individuals in that audience. The situational constraints called for a response that would keep the magic of computers intact. Grove’s response failed to do that. In contrast, Intel’s press release unmask the corporation, rather than technology, as flawed, “arrogant and uncaring.”

Second, Grove violates the image of individual control which arises from personal computer technology. Rather than being depicted as in charge of their futures, users are subjected to the failures of a big corporation and are, furthermore, asked to be patient with the bureaucracy of that big corporation. All control for the resolution of the problem is turned over to Intel who will make the decision on who deserves a replacement microprocessor. The only thing left to the individual is waiting patiently. While Grove’s Internet message violates the situational constraints, Intel’s press release, on the other hand, recognizes these limitations. In the press release, Intel’s offer to replace the microprocessor, “no questions asked,” is “for the lifetime of a user’s PC.” The press release goes on to say that this “means that users can conclude they do not

currently want a replacement, but still have the option of replacing the chip in the future if they wish." Control is left to the individual to decide when and how to participate in the exchange. The deep-seated myth of individual control in personal computer technology is consequently preserved.

Third, Grove's Internet posting makes it clear that the Pentium™ microprocessor flaw is part of a long history of flaws which results in "half a dozen or more . . . steppings" in the life of a typical computer chip. Intel, Grove points out, encountered even "thornier problems with early versions of the 386 and 486." He compounds his error by pointing out that the flaw would be "swamped by other known computer failure mechanisms." In other words, the icon of the new utopia is as corrupt as humankind's previous technological innovations. The situation called for a response that would portray the microprocessor flaw as an unusual, or one-in-a-million occurrence. Intel's press release apology uses that strategy, identifying the flaw as "subtle" and pointing out that the flaw is one "almost no one will ever encounter."

Grove's Internet message does suggest a grasp of two constraints imposed by the Internet - the personal style of messages and their rumor-spreading quality. He responds in a personal way, using an informal salutation, "Andy Grove." He uses "thru" rather than the more formal "through" and "'94" rather than "1994." The personal style is reinforced by the physical images he uses

such as “we gathered up what problems we found” and “so we breathed a sigh of relief.”

To deal with the rumor-spreading characteristics of the Internet, Grove provides technical information to fill the void that is likely to keep rumors active. Grove acts in a way comparable to how Heidegger proposed the modern technologist would behave. Grove believes that he could impose order, devise solutions for all types of problems and could get things under control (Heidegger xxviii). The technical fix appears to Grove to be easier than the social fix. He believes that the power of technical reason could be communicated via a personal message to the usegroup. The Internet, however, is a social forum even if the usegroup deals in technical matters. While Grove attempts to respond to the need for information to fill the void which leads to rumors, he fails to place his technical discussion in a form that will conform to the personal style of Internet postings.

The Internet is seen as a forum in which “wit and use of language are rewarded” and is “biased toward those who learn how to manipulate attention and emotion with the written word” (Rheingold 59). None of Grove’s message demonstrates wit or a skilled use of language. Grove’s language is stilted and unnatural for the freewheeling Internet. For example, he states, “I will monitor your communications in the future.” Few individuals on the Internet would use the terms “monitor” and “communication” to represent the interaction of a

usegroup. The message is replete with circuitous sentences such as the following:

This group concluded after months of work that (1) an error is only likely to occur at a frequency of the order of once in nine billion random floating point divides, and that (2) this many divides in all the problems they evaluated (which included many scientific programs) would require elapsed times of use that would be longer than the mean time to failure of the physical computer subsystems.

Grove, equally, failed to understand that the Internet is not a forum for settling controversy. It functions more to encourage debate than to still it. To a great extent, usegroup discussions are a chain reaction of posting, reaction, escalation, reaction, further escalation, etc. Without hierarchy or other status, each voice counts as much as the next. Grove's posting would be viewed as equal to any of the other postings to the usegroup. The message would have only taken its place in that chain reaction.

Finally, many individuals who populate the Internet perceive themselves as folk heroes striving to achieve a new utopia. This quality of Internet denizens is overlooked by Grove. He denigrates their discussion as "hubbub" and calls them to task for their failure to discover the flaw in the first place. The usegroup was unwilling to see themselves as flawed and continued to serve their mythic

role as the cowboys, willing to protect their electronic frontier from evil. At the shoot-out at the comp.sys.intel corral, the gunfight was won by the cowboys rather than the engineer.

Conclusion

Society's close attachment to computer technology and its hopes for that technology limit the ways in which apologists may respond to accusations concerning computer technology. Unlike older technologies that society has come to accept as flawed, the new technologies of personal computers and the "information superhighway" are being held out as the means to achieve a bright new future. Apologies for flaws in these technologies may only be successful when they place the blame elsewhere, perhaps on human fallibility. Any apology for flawed new technology must recognize the mystical relationship society has developed with this machine.

In addition, apologists using the Internet as an audience must recognize how it differs from other audiences. The myths of the Internet call forth actions on the part of audience which challenge authority rather than encourage more passive listening. An apologist in this forum can expect to receive a combative response which may lead to additional accusations and a heightening rather than a lessening of any conflict. Furthermore, the Internet forum is closely monitored by the popular press. Discussions in its usegroups or other forums

may not stay solely on-line but may become debates within the general public. An apologist may wish to address that general public through traditional means rather than the belligerent Internet audience. Intel was far more successful dealing with the general public than it was in responding to the accusations of the comp.sys.intel usegroup.

This chapter has shown how two aspects of the situational constraints - exigence and audience - affected the discourse and the outcome of the discourse in the Pentium™ controversy. Chapter 5 will summarize the findings of study and offer conclusions concerning technical apologia.

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CHAPTER 5

SUMMARY AND CONCLUSIONS

This thesis has presented an analysis of the controversy surrounding the Intel Pentium™ microprocessor. Chapter 2 provided a chronological account of the events of the controversy based primarily on reports published in *The Dallas Morning News* and *The Wall Street Journal*.

In Chapter 3, the methods of genre criticism were described and a generic analysis of Intel's discourse concerning the controversy was conducted. This analysis demonstrated that Dr. Grove's November 27 Internet posting did not follow the generic parameters of apologia suggested by Ware and Linkugel. Rather, all four of the factors of apologia - denial, bolstering, differentiation, and transcendence - were incorporated into the posting. All the available postures of apologia - absolution, vindication, explanation, and justification - were similarly utilized. This analysis found that Intel's December 20 press release, in contrast to the Internet posting, stayed within the parameters of the genre, relying on denial and differentiation for an absolute posture. Finally, Chapter 3 described and analyzed the importance of the differences between the two personas (Dr. Grove and Intel Corporation) used in the two texts.

Chapter 4 described the situational constraints - exigence and audience - that influenced the controversy and Intel's discourse. The exigence was determined to be the flaw in a technology perceived by society to be beyond flaws. The Internet audience characteristics were described and analyzed. Further, the situational constraints presented by the exigence and audience were reviewed and their possible influence on the controversy analyzed.

This chapter discusses the implications of these findings on corporate apologia, particularly technological apologia. The questions posted in Chapter 1 are addressed and recommendations are given regarding opportunities for future research. To facilitate reading ease, the recommendations are offered after the discussion of each research question.

The Questions

To what extent may the parameters of the genre of apologia be useful in our understanding of corporate discourse? In what way would the genre of apologia need to be changed to accommodate corporate discourse?

This study demonstrates that there are problems in applying the generic parameters of apologia to corporate discourse. While Intel's second apology, the December 20 press release, follows the form outlined by Ware and Linkugel of combining two factors (denial and differentiation) to present one posture (absolution), the November 27 Internet posting uses a combination of all the

available factors and postures. The form of the posting contradicts Ware and Linkugel's theory of apologia which postulates a combination of only two factors for one posture in a speech of self-defense. As a consequence, Intel's Internet posting fails to meet the requirements of the generic parameters.

In the early 1990s, Microsoft Corporation faced an exigence that called forth an apology. The United States Justice Department was investigating the company for violation of federal trade practice laws. Cherri Clopton, in one of the first analyses of corporate apologia involving the computer industry, demonstrates that Microsoft used a 'shotgun' strategy similar to Grove's approach in the Internet posting. She fails, however, to provide any explanation as to why Microsoft used this approach which failed to confirm to generic constraints. In light of finding a similar approach taken by Intel, three possible problems may be present when the genre of apologia is applied to corporate discourse.

First, Kruse may be correct that the analysis of apologia using existing parameters should be reserved for individual's speeches. There appear to be reasons, at this point unexplored, which prevent a corporation from using strategies similar to those of an individual. As the Intel press release demonstrates, corporations are capable of using the genre but may not be able to do so consistently as suggested by Grove's Internet posting and Clopton's analysis of Microsoft's apology.

Second, as Conley has pointed out, the generic parameters of apologia may be more complex than those proposed by Ware and Linkugel. Apologetic discourse, particularly corporate rhetoric, may not be easily compartmentalized. The flaws of seeing what one wants to see that Conley addressed may be more pronounced in corporate rhetoric where the organization discourse is limited to attempts to promote itself. The need to promote an organization may limit the range of options available in corporate apologia. These needs were unforeseen by Ware and Linkugel who developed their constructs regarding individual speeches of self-defense.

Third, in the analysis of an individual's self-defense rhetoric, the rhetor may be quickly identified. This study has shown that identifying the rhetor, or the persona of the rhetor, is a problem for the critical evaluation of corporate rhetoric. Grove spoke on behalf of a corporation in his own voice, while Intel spoke as a corporate persona. Lee Iacocca may speak on behalf of Chrysler or on his own behalf. Difficulties may be presented to critics who attempt to determine whether a corporate individual is addressing an audience as an individual, a company president or the very embodiment of the corporation. When a corporate rhetor is identified as the apologist, the application of concepts such as motivation states which may be readily applied to individuals become harder to use.

Recommendations:

Continuing research must be conducted on corporate apologia. The limited sample of corporate apologies evaluated to date prevent definitive conclusions from being drawn concerning this genre. The research so far suggests that there are problems in the application of apologia to corporate discourse. Attention should be directed toward possible new theories for corporate apologetic discourse.

Furthermore, these studies should be divided into two separate categories. The first category would be corporate rhetoric spoken by an individual, an Iacocca or a Grove, where there is no doubt concerning persona. The second category would be corporate rhetoric spoken by a corporate persona as in "IBM announced today" or "Intel said today." Future research should examine these differing personas to determine if the persona employed is a factor in changing rhetorical strategies. Also, research should attempt to determine whether one type of persona is more likely to use rhetoric which closely fits generic parameters.

How might the concept of victim be effectively incorporated into the genre of apologia, particularly corporate apologia?

This study has shown that the concept of victim can be very effectively incorporated into the genre of apologia, including corporate apologia. The

analysis of Intel's apologetic discourse was augmented by the inclusion of a discussion of the unwillingness of the comp.sys.intel usegroup to be scapegoated by Intel. Moreover, the computer users were unwilling to accept the scapegoating of their beloved technology. Since it was necessary to find a vessel for the transgression, Intel had to seek an alternative to scapegoating. This need was fulfilled by its own mortification.

The inclusion of victim or "the kill" makes the strategies used in apologia easier to understand and, furthermore, provide an opportunity to address the success or failure of apologia in a concrete way. A rhetorical critic may look at what a rhetor attempts to scapegoat and determine if that is a suitable or willing subject. An unwilling subject would cause the rhetor to shift strategies, to find another scapegoat or to engage in mortification. For example, this study has shown that Intel attempted unsuccessfully to make technology and Internet users scapegoats for its error. Intel was then faced with finding another scapegoat or engaging in mortification. When Intel changed its strategy and was willing to mortify itself financially the controversy was resolved and the apology accepted by its audience.

Recommendations:

Further rhetorical analyses need to be conducted to examine the concept of victim in apologia. Classic speeches by individuals should be reanalyzed to determine if scapegoating or mortification could have been used for a more

effective outcome. Attention should be paid, in addition, to how scapegoating or mortification strategies have been incorporated into corporate apologies.

Another area of research would include an analysis over a lengthy controversy to determine how strategies regarding the victim were used across time.

In what ways does the nature of Internet discourse
impact apologia delivered via that medium?

This study has shown that the Internet is generally not a forum for solving controversies, rather it is one in which controversies are fomented. On the Internet where everyone's voice counts equally, there is a common quickness to challenge the authority of any posting and an adversarial style that results in behavior such as flaming. In such an environment, kategoria or accusations of wrong-doing are what keep discussion moving.

As a consequence, Internet apologists need to be aware of these factors and determine if they may be used to their advantage. I believe that the Internet, in its current state, is not a forum conducive to apology. The Internet is a forum that brings forth accusations rather than offering a means for a rhetor to provide detailed accounts in self-defense.

Recommendations:

The Internet is ripe for additional research in the area of apologia as well as communications studies in general. Some areas that need exploration are:

- The rhetoric of the Internet, particularly usegroups. Some initial research is being conducted on the discourse of other groups, such as interpersonal forums such as chat groups, but most of the usegroup forums remain unexamined.
- Rhetorical criticism, including Narrative Theory or Dramatism, might be used in analyzing Internet usegroups.
- Freedom of Speech issues regarding the posting of messages. Analysis of the First Amendment as it relates to Internet usegroups has potential for this expanding area of discourse, particularly political discourse.
- Political address in usegroups. The ways in which politicians use political usegroups in an election year would be a possible research topic.
- Effectiveness of corporate rhetoric, particularly in the commercial areas of the Internet such as the World Wide Web.

What unique arguments or discourse does technology present
which would effect how apologia function when centered
on technological issues?

This study has shown that society's attitudes toward technology
constrains individuals attempting to apologize for technological failures. I

conclude that for old technology, such as chemical plants, nuclear power generating stations, or automobiles, companies may successfully blame that old technology for failure since it is within the accepted belief system of the audience. Society has come to believe that “old” technology is inherently flawed or otherwise bad. Apologies for failures of new technology, such as computers or similar information technologies, may not blame that technology, however, since it is not within the belief system of that audience. New technology has become society’s repository for dreams for a better tomorrow. Society is unwilling to judge computer technology.

Farrell and Goodnight have demonstrated in their analysis of the Three Mile Island crisis that the public must rely on experts to explain technological problems to them (273). These experts, however, are frequently unable to express this information in a way that the public finds simple to understand. While not a focus of the rhetorical analysis, this study indicates that Intel encountered problems explaining technology situations to an expert audience. Although comp.sys.intel usegroup was composed of an elite group of computer users, Intel was unable to express a technical apology in a way that this group could comprehend and accept.

Recommendations:

The social constraints this study has found concerning acceptance of technological flaws and apologies for those flaws in personal computers, need to

be more completely researched. Discourse relating to flaws in computer hardware and software should be analyzed to see how it may have been similarly constrained. In addition, such discourse should be analyzed to determine how technology may impact generic theory concerning apologies.

Another area of potential research would be to analyze discourse concerning failures of old technology and compare it with discourse relating to failures of new technology. Such research could determine if the findings of this study may be encountered in areas other than the personal computer industry.

In Conclusion

Peter Lewis wrote in *The New York Times* shortly after the Pentium™ controversy ended that the flaw “in reality . . . will have more psychological consequences than practical ones” (C8). Those consequences apply to not only society’s hopes for computer technology but to its perceptions of Intel Corporation as well.

As interesting as an examination of those consequences might be, the controversy has also provided an opportunity to further study and understand the communication environment - opportunities and constraints -- present in technological flaws and the Internet. The analysis of the Pentium™ controversy provided an opportunity to look at new forms of discourse that potentially will have an impact on apologia and the theoretical framework of rhetorical criticism.

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APPENDIX A

TEXT OF DR. ANDREW GROVE'S INTERNET MESSAGE

1 Internet - comp.sys.intel

2 27 Nov 1994 19:31:21 GMT

3 This is Andy Grove, president of Intel. I'd like to comment a bit on the
4 conversations that have been taking place here.

5 First of all, I am truly sorry for the anxiety created among you by our
6 floating point issue. I read thru some of the postings and it's clear that many of
7 you have done a lot of work around it and that some of you are very angry at us.

8 Let me give you my perspective on what has happened here.

9 The Pentium processor was introduced into the market in May of '93 after
10 the most extensive testing program we at Intel have ever embarked on. Because
11 this chip is three times as complex as the 486, and because it includes a number
12 of improved floating point algorithms, we geared up to do an array of tests,
13 validation, and verification that far exceeded anything we have ever done. So
14 did many of our OEM customers. We held the introduction of the chip several
15 months in order to give them more time to check out the chip and their systems.
16 We worked extensively with many software companies to this end as well.

17 We are very pleased with the result. We ramped the processor faster than
18 any other in our history and encountered no significant problems in the user
19 community. Not that the chip was perfect, no chip ever is. From time to time,
20 we gathered up what problems we found and put into production a new

21 “stepping” -- a new set of masks that incorporated whatever we corrected.
22 Stepping N was better than stepping N minus 1, which was better than stepping
23 N minus 2. After almost 25 years in the microprocessor business, I have come to
24 the conclusions that no microprocessor is ever perfect; they just come closer to
25 perfection with each stepping. In the life of a typical microprocessor, we got
26 thru half a dozen or more such steppings.

27 Then, in the summer of '94, in the process of further testing (which
28 continued thru all this time and continues today), we came upon the floating
29 point error. We were puzzled as to why neither we nor anyone else had
30 encountered this earlier. We started a separate project, including
31 mathematicians and scientists who worked for us in areas other than the
32 Pentium processor group to examine the nature of the problem and its impact.

33 This group concluded after months of work that (1) an error is only likely to
34 occur at a frequency of the order of once in nine billion random floating point
35 divides, and that (2) this many divides in all the problems they evaluated (which
36 included many scientific programs) would require elapsed times of use that
37 would be longer than the mean time to failure of the physical computer
38 subsystems. In other words, the error rate a user might see due to the floating
39 point problem would be swamped by other known computer failure
40 mechanisms. This explained why nobody -- not us, not our OEM customers, not

41 the software vendors we worked with and not the many individual users -- had
42 run into it.

43 As some of you may recall, we had encountered thornier problems with
44 early versions of the 386 and 486, so we breathed a sigh of relief that with the
45 Pentium processor we had found what turned out to be a problem of far lesser
46 magnitude. We then incorporated the fix into the next stepping of both the 60
47 and 66 and the 75/90/100 Mhz Pentium processor along with whatever else we
48 were correcting in that next stepping.

49 Then, last month Professor Nicely posted his observations about this
50 problem and the hubbub started. Interestingly, I understand from press reports
51 that Prof. Nicely was attempting to show that Pentium-based computers can do
52 the jobs of big time supercomputers in numbers analyses. Many of you who
53 posted comments are evidently also involved in pretty heavy duty mathematical
54 work.

55 That gets us to the present time and what we do about all this.

56 We would like to find all users of the Pentium processor who are engaged in
57 work involving heavy duty scientific/floating point calculations and resolve
58 their problem in the most appropriate fashion including, if necessary, by
59 replacing their chips with new ones. We don't know how to set precise rules on
60 this so we decided to do it thru individual discussions between each of you and
61 a technically trained Intel person. We set up 800# lines for that purpose. It is

62 going to take us time to work thru the calls we are getting, but we will work thru
63 them. I would like to ask for your patience here.

64 Meanwhile, please don't be concerned that the passing of time will deprive
65 you of the opportunity to get your problem resolved -- we will stand behind
66 these chips for the life of your computer.

67 Sorry to be so long-winded -- and again please accept my apologies for the
68 situation. We appreciate your interest in the Pentium processor, and we remain
69 dedicated to bringing it as close to perfection as possible.

70 I will monitor your communications in the future - forgive me if I can't
71 answer each of you individually.

APPENDIX B

INTEL'S DECEMBER 20 PRESS RELEASE

1 INTEL ADOPTS UPON-REQUEST REPLACEMENT POLICY FOR PENTIUM™
2 PROCESSORS WITH FLOATING POINT FLAW; WILL TAKE Q4 CHARGE
3 AGAINST EARNINGS

4 SANTA CLARA, Calif., December 20, 1994 -- Intel today said it will exchange
5 the processor for any owner of a Pentium™ processor-based system who is
6 concerned about the subtle flaw in the floating point unit of the processor. The
7 company has been criticized in recent weeks for replacing processors on the
8 basis of need rather than on request. Intel will take a reserve against fourth
9 quarter earnings to cover costs associated with the replacement program.

10 The flaw can produce reduced precision in floating point divide
11 operations once every nine billion random number pairs. Intel said that while
12 almost no one will ever encounter the flaw, the company will nevertheless
13 replace the processor upon request with an updated version that does not have
14 the flaw. This offer will be in effect for the lifetime of a user's PC, which means
15 that users can conclude they do not currently want a replacement, but still have
16 the option of replacing the chip in the future if they wish. Intel is making a
17 rapid manufacturing transition to the updated version, and expects to be able to
18 ship sufficient replacement parts to meet demand during the next few months.

19 "The past few weeks have been deeply troubling. What we view as an
20 extremely minor technical problem has taken on a life of its own," said Dr.

1 Andrew S. Grove, president and chief executive officer. "Our OEM customers
2 and the retail channel have been very supportive during this difficult period,
3 and we are very grateful," Dr. Grove said. "To support them and their
4 customers, we are today announcing a no-questions-asked return policy on the
5 current version of the Pentium processor.

6 "Our previous policy was to talk with users to determine whether their
7 needs require replacement of the processor. To some people, this policy seemed
8 arrogant and uncaring. We apologize. We were motivated by a belief that
9 replacement is simply unnecessary for most people. We still feel that way, but
10 we are changing our policy because we want there to be no doubt that we stand
11 behind this product."

12 Intel will send a replacement processor to PC users who choose to do the
13 replacement themselves, and will offer telephone technical assistance. Call 1-
14 800-628-8686 for details. Intel also said it planned to contract with service
15 providers to do replacements at no charge for PC owners who prefer to bring
16 their PC's to a service location. Details will be provided in the next few weeks.
17 Finally, Intel said it would work with its OEM customers to provide replacement
18 for PC users who prefer to work with the manufacturer of their system.

19 The company said it would take an unspecified but material charge
20 against fourth quarter earnings to cover costs associated with the replacement
21 program announced today. Intel said it was unable to determine the amount of

1 the reserve, but said an estimated total will be provided on or before January 17,
2 the date of Intel's 1994 financial results announcement.

3 Following this release a copy of an advertisement that will appear starting
4 on December 21 in major newspapers in North America.

5 Intel, the world's largest chip maker, is also a leading manufacturer of
6 personal computer, networking and communications products.

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