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VICTIMS AND SHAREHOLDERS: THE DILEMMAS OF PRESENTING CORPORATE POLICY DURING A CRISIS

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Corporate crises—such as accidents, scandals, and product safety incidents—exacerbate stakeholder demands in such a way that conflict can arise between the interests of shareholders and crisis victims. We show that such conflict arises in the case of accidents, in which (1) the needs of victims are immediate and concrete and the potential corporate liability is great and (2) management can plausibly claim there are mitigating circumstances and factors beyond its control. In the case of accidents, if managers are accommodating to victims, shareholders are likely to suffer. The conflict does not arise in the case of scandals, for neither of those conditions holds. Shareholders benefit when managers are accommodating. This article discusses the theoretical and managerial implications of these findings.

In this research, we empirically analyzed the impact on the stock market of the announcements that corporate managements make during three types of crisis: accidents, scandals, and product safety incidents. Such crises affect all a corporation's stakeholders (Freeman, 1984), including shareholders, customers, employees, and suppliers. They also create a new category of stakeholders—the victims. As Shrivastava wrote, in a crisis "the most profoundly affected stakeholders, and ironically sometimes the most easily forgotten because of their powerlessness, are the victims" (1987: 23). Although the announcements managers make during a crisis can have profound impacts on both shareholders and victims, researchers have not carefully studied this phenomenon or constructed a theory of how such announcements

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may affect the interests of victims and shareholders. Many corporate managements have appeared to be accommodating to the victims of crises. Lee Iacocca, for example, apologized for the Chrysler executives who were indicted for rigging cars with disengaged odometers, and Frank Lorenzo took out advertisements saying he was sorry for the misplaced baggage, delays, and reservation errors that plagued Continental Airlines (Ansberry, 1987). In contrast, in other situations corporate leaders have consistently denied wrongdoing, even in the face of overwhelming evidence to the contrary, perhaps because their lawyers have warned that admissions could be used against them in court. Thus, after a gas leak from a Union Carbide plant killed thousands of people in Bhopal, India, and Warren Anderson, the corporation's chief executive, flew to the scene, apparently to show sympathy for the victims, the company offered a theory of sabotage as a defense and denied that it had any responsibility for the tragedy.

Confronted with a crisis, some corporations appear accommodating and others appear defensive. What impact do these diverse presentations of corporate policy have on shareholder interests? In this research, we tried to explain how investors will respond to the presentations of corporate policy made during a crisis, basing predictions on distinctions between the three types of crisis studied. We then examined 112 presentations of corporate policy during crises to determine how investors actually were affected.

AGENCY THEORY AND SIGNALING THEORY

Agency theory and signaling theory are both relevant for understanding the dilemmas of presenting corporate policy during a crisis. The economic approach to agency theory (Fama, 1980; Jensen & Meckling, 1976) emphasizes the stock market valuation of a company. It is an investor's model (cf. Hirsch, Friedman, & Koza, 1990) that fits the classic view of firms in which serving shareholder interests is the primary goal of managers (Friedman, 1962; MacAvoy, 1981; Rappaport, 1981, 1983).[1] According to this view, corporations should subordinate the interests of crisis victims to the interests of shareholders.

Theorists have, however, often qualified the classic theory, stating that the claims of laws and ethics bound the obligation to earn profits (e.g., Friedman, 1962, 1970). In this qualified view, serving shareholder interests can include such activities as making charitable contributions, treating employees well, building community infrastructures, and attending to the needs of crisis victims. Nonetheless, the classic theory provides no guidance to managers about how to reconcile potentially conflicting interests. A different ethical standard, derived from religious sources such as the Sermon on the Mount or philosophical ones such as Kant's formulation of the categorical imperative (Johnson, 1974), requires an unconditional devotion to what is "right" regardless of whether being right is simply prudential. Under

[1] Preston and Post (1975) offer a critique of this model.

that standard, if shareholder interests conflict with the legitimate needs of crisis victims, corporations should sacrifice the needs of shareholders for those of victims.

The market price of a good or service is influenced by the signals the sellers send. Signaling theory is the study of those signals. It has been applied to many areas, including financial markets (Bhattacharya, 1979, 1980; Leland & Pyle, 1979; Ross, 1977) and advertising and public relations (Nelson, 1974). Porter (1980: 76) applied it to business strategy. The origins of signaling theory are in the strategic thinking of Schelling (1963), the sociology of Goffman (1961, 1969, 1974, 1981), and communications theory (Schramm, 1948; Westley & MacLean, 1970). Goffman has provided many insights about the use of signals for impression management, describing how people "engage in self-presentation in order to manage the identities that others assign to them" (cf. Tedeschi & Melburg, 1984: 31). When someone attributes negative or undesirable qualities to an actor, the actor must offer an explanation. The actor may attempt to excuse or justify its behavior, apologize and express remorse, guilt, or shame, or make attempts at restitution (Bies, 1987, 1988; Bies, Shapiro, & Cummings, 1988; Browning, 1988a, 1988b, 1989; Cummings & Anton, 1989; Sitkin & Bies, 1988). If others accept these explanations and actions, the actor's responsibility can be diminished, its positive identity restored, and its reputation reestablished.

Among economists, Spence (1973, 1974) formalized signaling theory and applied it to labor markets, but the theory may be applied to markets in general, including the stock market, where investors buy and sell stocks with incomplete information and can be influenced by presentations of corporate policy. In any market, (1) there is an information gap between buyers and sellers, with buyers knowing less about the commodity sold than sellers, and (2) sellers emit a signal at some time during a transaction, a signal to which buyers respond (Barzel, 1976; Mirrlees, 1971; Riley, 1975).

Though researchers have examined the effects of various types of corporate behavior on the stock market (Alexander, Benson, & Kampmeyer, 1984; Beatty & Zajac, 1987; Montgomery, Thomas, & Kamath, 1984), no one has studied the signals corporate managements send during crises. Studies have focused on crises themselves (cf. Sprecher & Pertl, 1983), examining specific incidents or types of incidents. Such studies include those focusing on product safety recalls (Bromiley & Marcus, 1989; Hofer, Pruitt, & Reilly, 1988; Jarrel & Peltzman, 1985), alleged corporate crimes and scandals (Davidson & Worrell, 1988; Strachan, Smith, & Beedles, 1983), airline crashes (Davidson, Chandy, & Cross, 1987), the Three Mile Island nuclear power plant accident (Spudeck & Moyer, 1989), the Chernobyl nuclear power plant accident (Fields & Janjigian, 1989), and the aforementioned Bhopal tragedy (Marcus & Goodman, 1989). With the exception of Marcus and Goodman (1989), none of these studies has examined corporate policy announcements following a crisis. None has looked at the changes in investors' expectations in response to the signals sent by management (cf. Alexander, Benson, & Gunderson, 1986; Bettis & Weeks, 1985; Schipper, Thompson, & Weil, 1987).

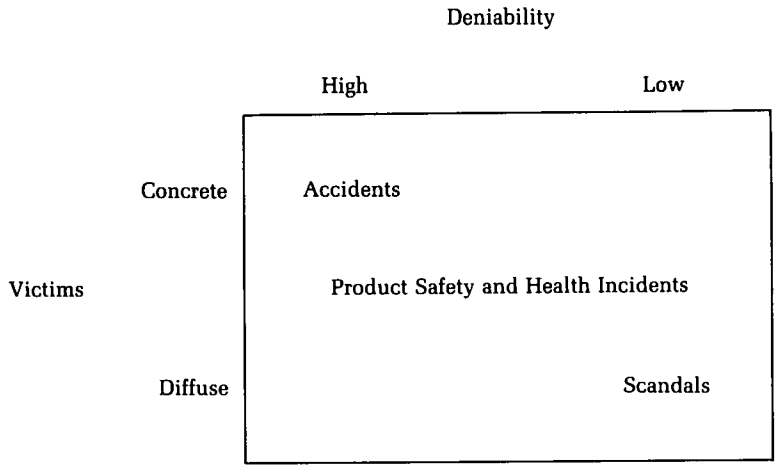
Crisis Types

A crisis is an emotionally charged event that can be a "turning point for better or worse" (Carroll, 1989: 492). In a crisis, a company's management can project an image at variance with undesirable interpretations of the crisis by issuing statements to clarify its policies or explain its behavior and announcing its intention to evaluate the situation and rectify matters so it does not recur (Meyers, 1986). Fink (1986) distinguished between crisis events themselves, over which management has no control, and management's presentation of a crisis, over which it has control. Crisis events themselves can result in losses in sales, production, investment opportunities, and prestige; delays; deterioration in relations with key constituencies; and the distraction of top management. A company's management can respond to a crisis with apologies and denials. It can announce reforms, introduce changes in procedures, open or close channels of communication, and indicate that it is making efforts to tighten or loosen corporate discipline (Fisse & Braithwaite, 1983). In some cultures—the Japanese, for example—a company's chief executive is expected to resign after a major crisis. The signals management sends can protect a company by opening avenues of retreat or by providing explanations for negatively perceived actions.

In research on international relations and economics, proponents of signaling theory have proposed that under some conditions it is in an actor's best interests to use signals for deception (Akerloff, 1970; Jervis, 1970; Jovanovic, 1981). However, Bettis (1983) and Peavey (1984) suggested that although investors may not accept company signals at face value, it is unlikely that they will completely disregard them. Since investors find it difficult to determine what best explains a crisis, and each of the explanations the various parties offer may have some plausibility, they are likely to place at least some credence in the explanations management offers (cf. Fombrun & Shanley, 1990).

But not all crises are alike, and the differences among them may be important. Crises differ in at least two important respects: first, in their effects on any victims they might have; and second, in what can be plausibly said about their causes (see Figure 1). On the basis of these factors, different types of crisis can be distinguished and predictions made about how corporate policy presentations during a crisis will affect investors. We distinguished three types of crisis. *Accidents* have identifiable victims. They are undesirable or unfortunate happenings that occur unexpectedly and without design. A company can plausibly deny responsibility for an accident because it can claim that the events occurred almost entirely by chance. The victims of a *scandal* are less identifiable than the victims of an accident. Scandals are disgraceful or discreditable occurrences that compromise the perpetrators' reputations. Responsibility for a scandal is hard to deny because the events usually are the result of faults and misdeeds. In terms of effects on victims and deniability, *product safety and health incidents* lie somewhere between accidents and scandals.

FIGURE 1
Classification of Crises



Accidents. Analyses of corporate accidents appear in the following sources: Buchholz, Evans, and Wagley (1985), Godson (1975), Keir, Mann, and Olsen (1972), Kemeny (1979), Perrow (1984), Sethi (1977), Sharplin (1985), Shrivastava (1987), Starling and Baskin (1985), and Sturdivant (1985). Accidents are discrete one-time events. They create a concrete class of victims: the people who are killed, injured, or otherwise suffer loss or misfortune. Victims usually engage legal counsel immediately after an accident (Lieberman, 1981), and these attorneys forcefully press the victims' claims against the offending company and threaten to go to court if an appropriate settlement is not reached. The attorneys generally are experienced, formidable foes who have proved themselves capable of winning multimillion dollar awards in the past (cf. Landes & Posner, 1987; Litan & Winston, 1988). For instance, in the prototypical Bhopal accident, Marvin Belli and a host of other famous litigators rushed to the scene (Shrivastava, 1987). The unpredictability of the U.S. court system, which makes it difficult to insure away the risks of accidents to a company, increases corporate anxiety about post-accident litigation.

Some qualifications in this description of accidents are in order. First, the property damage may be far greater than the human damage, as it is, for example, in an oil spill (Sethi, 1977). Nevertheless, an identifiable and well-organized group—to continue the oil spill example, environmentalists and their attorneys taking up the cause of violated nature—may fight vigorously against the company or companies that have perpetrated the damage. A second qualification is that all the human damage is not immediate. Some of it may not be precisely connected to the events surrounding an accident and easily proven in court to be their consequence; for example, when radiation is released after a nuclear accident, damaging effects may be latent for a long

time and the web of causation may be hard to unravel (Marcus, 1986). These qualifications do not negate our main point: accidents generally occur at a single point in time and create an identifiable group of victims who are well-represented by legal counsel. Generally motivated by threatened lawsuits, managers will tend to deny responsibility for accidents and to suppress their own human feelings of sympathy for the victims.

The question of interest to us was not simply what motivates management statements but rather why those statements have credibility with investors. To answer that question, it was necessary to probe more deeply into the causes of accidents (Perrow, 1984). Catastrophic accidents in complex, tightly coupled systems like nuclear power plants, airlines, marine transportation systems, and petrochemical complexes typically begin with unexpected interactions. The many components, parts, and operators in the system fail in some unanticipated way. The failure is incomprehensible for a time because of the complexity and tight coupling of the system. While no one knows what the problem really is, the accident spreads. According to Perrow (1984), such accidents in large-scale technological systems are uncommon, even rare, yet they are normal, indeed inevitable, and companies can do little to prevent them. It is unlikely that all the causes of an accident will come together at the same time; yet when an accident does occur, it is plausible for company spokespersons to declare that what has occurred is an "act of God" and for investors to believe that the company could not have foreseen or prevented what has taken place and that the accident does not reflect underlying inadequacies in either the company, its management, or its way of doing business.[2]

Since after an accident the motivation for a corporation to deny responsibility is great and such denial has some inherent plausibility, we predict that investors will react negatively to accommodative signals and positively to defensive ones. By an accommodative signal, we mean a statement in which management accepts responsibility, admits to the existence of problems, and takes actions to remedy a situation. A defensive signal is a statement in which management insists that the problems do not exist, tries to alleviate doubts about the firm's ability to generate future revenue, and takes action to resume normal operations rapidly.

> *Hypothesis 1: When a company is involved in an accident, its investors will react more positively to defensive signals than to accommodative signals.*

Scandals. Analysis of corporate scandals appear in Boulton (1978), Fisse and Braithwaite (1983), Franklin (1986), Post (1978), Sampson (1973),

[2] Gaskins (1989: 17), however, noted that even though accidents are often perceived as unexpected or unforeseen occurrences, "as they surely are to *some* persons involved in them (usually the victims) . . . most injuries can also be anticipated by at least someone involved in the event." When an accident is litigated it is likely that the attorneys for the plaintiffs will try to implicate the organization involved, showing that some employees had foreknowledge of the event and did not take action.

Sethi (1977), and Litschert and Nicholson (1977). A scandal is not a discrete event. Usually it has obscure origins and no immediate victims. There is not likely to be a group of well-represented victims pressing its claims against an offending company. A scandal may harm a firm's competitors, but they are not likely to sue or to win large awards. Courts have frequently dismissed shareholder suits claiming misappropriation of funds, and when findings have favored the plaintiffs, the awards have been small. The political and economic system in which a scandal occurs in a sense is the victim, and the integrity of that system is what is compromised and has to be defended during the long, disturbing, and often titillating (to observers) process of revelation that accompanies a scandal. People's sense of fair play has been violated by someone's achieving power or accumulating riches in way the generally accepted, if not commonly followed, rules of the game prohibit.

The diffuse victims of a scandal pose less of a threat to the company involved than the concrete victims of an accident. Perhaps all the corporation will suffer from a scandal is public shame and a nominal fine from the government, the actual result of the 1975–76 Lockheed Corporation bribery scandal (see Table 1) (Fisse & Braithwaite, 1983). Thus, in the case of scandals, companies seek to get things over with and behind them, and the quickest way to do so may be to offer an apology backed up by organizational and management change designed to prevent recurrence of the dubious behavior. This tactic is one Drexel, Warner, and Lambert eventually adopted in the recent insider trading scandal and that Michael Milken, a key figure in the case, finally also adopted. If Drexel and Milken had been accommodating sooner, perhaps they would have met a happier fate.

In a scandal, denying responsibility is not likely to be credible because complex, tightly coupled technological systems beyond human control do not engender scandals. Rather, they are the results of human and organizational lapses and inadequacies. Behind scandals lie greed and corruption, the failure and inability of governments to prevent white-collar crime, and the failure of corporations to police their employees. The environment that breeds scandals often is one in which excuses like "everyone is doing it" and "it is possible to get away with it" abound. Corporations may actually implicitly urge their employees to "get the job done no matter what it takes." Realistically, since the temptations are great and the stakes are high, under such circumstances even humans of great honor may succumb. Further, when people do succumb they can draw upon an arsenal of apparently irrefutable justifications. They can maintain that they acted to protect their jobs, the jobs of their fellow workers, or the viability of the national economy. As Milken said, he was acting to provide financing for a capital-starved country. His claim was that he was a pioneer in "the creation of new instruments for the financing of companies, most of which did not have access to the capital markets" (Milken, 1990: A12).

After the people involved in a scandal have written confessions and made apologies, the company involved can invoke numerous excuses. These include the desire of the corporation to fulfill its obligations to the stake-

holders that depend on it, including its customers and suppliers and the communities to whom it pays taxes. No moral absolutes, it may seem, can stand in the way of those obligations. Thus,

> *Hypothesis 2: When a company is involved in a scandal, its investors will respond more positively to accommodative signals than to defensive signals.*
>
> *Hypothesis 3: Defensive signals will provide significantly better returns to shareholders in the case of accidents than in the case of scandals.*
>
> *Hypothesis 4: Accommodative signals will provide significantly better returns to shareholders in the case of scandals than in the case of accidents.*

Product safety and health incidents. Analysis of product safety and health incidents appear in Buchholz, Evans, and Wagley (1985), Fisse and Braithwaite (1983), Goodpaster (1984), Sapolsky (1986), Sethi (1977), Starling and Baskin (1985), Sturdivant (1985), and Whiteside (1972). In such incidents, no unique event creates mass suffering at a single stroke, but there are repeated events or revelations, as in the case of the safety problems with the Ford Motor Company's Pintos and the case of the long-term exposure of the Manville Corporation's employees to asbestos. Or there may simply be a threat of revelations, as in the case of the poisoned Johnson and Johnson Tylenol. Over time, such events and revelations may reveal actual or potential suffering as great and numbers of victims as large as accidents generate (Brodeur, 1985). Again, the victims are likely to be represented by legal counselors who press claims against the offending companies. The companies involved face court settlements for vast sums of money. But the victims of product safety violations do not form as identifiable and cohesive a body as the victims of accidents. The former type of group is not created in a single moment by an event of great magnitude; typically, its members only become aware that they are victims gradually as their illnesses set in and similar cases are decided in the courts. In addition, complicating circumstances may inhibit many victims of health and safety incidents from bringing their cases forward; such circumstances might include product misuse, poor or reckless driving, and heavy smoking combined with exposure to a substance like asbestos. People subject to such complications may fear that the courts will dismiss their claims after they have exposed themselves to financially and emotionally expensive court procedures.

Thus, although there are real victims aligned with an assembly of attorneys seeking to satisfy their demands in product safety cases, the actual number of victims is likely to be in dispute and to remain in dispute while the company involved deliberates about its liabilities and options. A company's motivation to deny responsibility here is clearly very great. Its officials may believe that any admissions on their part will be used against them in the courts, and admissions may only add to the number of people who feel they have wrongly suffered. Indeed, discussions, disputes, and warnings

issued within the company usually show that someone was aware of the dangers earlier than the company has been willing to admit publicly. This information may enable victims to collect large and comprehensive awards for pain, suffering, and other intangibles. The efforts of management, therefore, will be geared toward preventing the release of potentially damaging internal material. Thus, at first glance, it appears that managers can appeal to investors by means of denial.

Nonetheless, there are differences between product safety and health incidents and accidents that make it less likely that investors will believe company denials in the case of the former. The root causes of product safety and health cases are not as complex as the root causes of accidents. The interactions are not so numerous, and the coupling is not so tight. Safety incidents evolve relatively slowly, and a company usually has plenty of opportunities to recover and reverse direction, to stop or at least limit production, to recall products, or at a minimum to attach warnings to them. Thus, the company and its spokespersons cannot plausibly claim that what has taken place is a one-time "act of God" that does not implicate the company's policies, procedures, or integrity or the competence of its management.

Who the victims are and whether they will come forward is less certain in product safety cases than in accidents. Moreover, investors are not likely to believe claims that the crisis is an act of God that does not represent organizational inadequacies. Thus,

> *Hypothesis 5: When product safety and health incidents occur, no significant differences will exist between the reactions of a company's investors to accommodative and defensive signals.*

METHODS

To test these hypotheses we identified and classified a series of post-crisis policy declarations, assessed their impacts on the stock market, and compared the market impacts of accommodative and defensive policy declarations after accidents, scandals, and product safety incidents.

Data

Identifying and classifying policy declarations. The five hypotheses developed in the prior section were tested on 112 declarations of corporate policy. To obtain the observations, we examined major case books and monographs on business and society and focused on 15 of the total of 27 crises that we found described. Table 1 lists the cases studied. We originally sought five examples of each type of crisis—accidents, scandals, and product safety and health incidents, but the original group of 27 crises had 13 scandals, 9 product safety and health cases, and only 5 accidents. Because of the small number of accidents, we included airline crashes (Davidson et al., 1987), despite the fact that the investing public is likely to know the amount

TABLE 1
Cases Analyzed

Corporation	Incident	Year
Accidents		
American Airlines	DC-10 crash in Chicago; most fatalities in U.S. air disaster	1979
General Public Utilities	Three Mile Island; worst domestic nuclear power plant accident	1979
McDonnell Douglas	DC-10 crash in Paris; most fatalities in international air catastrophe	1974
Union Carbide	Chemical explosion in Bhopal, India; nearly one-half million victims, worst in history	1984
Union Oil	Massive oil spill on coast of Santa Barbara, CA	1969
Scandals		
Exxon	Political bribery to overseas leaders in at least a half-dozen countries	1975
General Dynamics	Grand jury and Congressional investigations of numerous improprieties in Defense Department procurements	1984
ITT	Allegations of improper ties to U.S. government officials including illegal campaign contributions	1972
Lockheed	Overseas sales arrangements involving payoffs to foreign officials to win contracts for L-1011 jetliner	1975
Northrop	Charges of illegal political contributions to Richard Nixon's presidential campaign	1974
Product safety and health incidents		
Firestone	Recall of 400,000 steel-belted passenger car radials	1978
Ford	Damage awards and class action suits against Pintos followed by recall of vehicle	1978
General Motors	Controversy about auto safety ignited by Ralph Nader's charges against the Corvair	1966
Johnson & Johnson	Recall of Tylenol from market as result of cyanide deaths	1982
Procter & Gamble	Government report linking Tampons to toxic shock syndrome leading to product recall	1980

of insurance coverage airlines have since it is mandated by law and settlements are usually for the amount of coverage. The two airline crashes studied here, the Turkish Airlines crash in Paris in 1974 and the American Airlines crash in Chicago in 1979, were among the most severe in history, so

it is possible that the investing public might have believed that the coverage was not adequate.

Case studies, monographs, or both provided substantial documentation about the chronology of events for each crisis chosen. We established this selection criterion because we wanted to have sufficient background material on a particular crisis to interpret, clarify, and classify each policy declaration. In the 12 deleted cases, either background material was inadequate or the company involved was not listed on the New York Stock Exchange and could not be included because information on returns would have been missing. In one case, the Manville Corporation asbestos affair, the duration of the crisis was so long (10 years) that it was not possible to compare it to the others.

Once the crises had been identified, we searched the *Wall Street Journal Index* for specific declarations of corporate policy associated with each crisis. Other studies of corporate crises (e.g., Bromiley & Marcus, 1989; Jarrel & Peltzman, 1985) have used the *Wall Street Journal* to provide a precise, fairly accurate record of information that reached the market. Brealey and Myers (1984) posited that the market reacts instantaneously, or nearly instantaneously, to new and unanticipated information. We therefore had to judge whether each announcement of corporate policy that appeared in the *Wall Street Journal* contributed new information. Two undergraduate business majors, whom we trained and closely supervised, made these judgments. If they could not agree that an announcement contained new information, we reviewed the disputed announcement, drawing on knowledge obtained from our background reading, and excluded announcements from the analysis if we could not agree. Of the 112 observations used in the analysis, there was agreement among all four judges on 97; in the remaining instances, we and one student felt that the announcement contained new information.

The undergraduate judges also classified the presentations of corporate policy as either accommodative or defensive (cf. Marcus, 1984; Post, 1978; Sutton & Callahan, 1987; Tedeschi & Melburg, 1984). As was noted, we defined accommodative signals as those in which managers accepted responsibility, admitted to the existence of problems, and attempted to take actions to remedy a situation. They included apologies and expressions of remorse, guilt, shame, and intent to make restitution. Examples of accommodative signals were: "Union Carbide is donating nearly $1 million in aid to the victims and is planning to set up an orphanage" and "McDonnell Douglas is accelerating a program to install a closed lock mechanism on the cargo doors of all its DC-10s in service." We defined defensive signals as those in which managers insisted that problems did not exist, tried to alleviate doubts about their and the firm's ability to generate future revenues, and took actions designed to resume normal operations rapidly. Denials of intention, volition, and agency played a large role in defensive signaling. Managers might claim, for instance, that an accident was the result of a mistake, inadvertency, or sabotage. The following were examples of defen-

sive signals: "Union Carbide suggests that sabotage was the cause of the gas-leak disaster," and "Utility defends itself against recent criticisms of the integrity of its management in the controversy over Three Mile Island." We again used the process discussed above to classify policy declarations as accommodative or defensive. Of the 112 observations used in the analysis, all judges agreed on 87; in the remaining instances, we and one student felt the announcement had been appropriately classified.

Number of observations and serial correlation. The number of observations used was in the normal range for studies of this kind: we had 112 observations, and other researchers have had from 27 to 131 (cf. Davidson et al., 1987; Davidson & Worrell, 1988; Fields & Janjigian, 1989; Hoffer, Pruitt, & Reilly, 1988; Jarrel & Peltzman, 1985; Sprecher & Pertl, 1983). In another respect, though, the data used in this study were not comparable to those in other studies because we did not concentrate on a single type of crisis. Rather, the 112 observations all concerned only 15 crises, and we assumed that each observation was independent. One problem with this assumption is that once a public announcement is made, managers may feel a need to be consistent with it in subsequent statements. Another possibility is that managers will observe the effects of their announcement on stock prices and modify their subsequent behavior. If such situations arose, announcements would be serially correlated.

Therefore, we had to try to limit this possibility. We did so by including only announcements separated by five market days, unless the information a closer announcement contained was truly novel and unanticipated. This rule was violated for only 8 observations. A further check on serial correlation is described later in this section.

Analyses

Assessing the impact of the policy declarations. We tested the impact of the 112 observations on the market using methods developed by Brown and Warner (1980, 1985). To estimate the impact on stock price changes of unanticipated announcements, it is necessary to assess the extent to which security price performance around the time of an announcement is abnormal. The abnormal, or excess, return is the part of a return not anticipated by a statistical or economic model; it is the deviation of the actual return from the model's predictions. We defined a normal, or expected, return for each policy declaration at time t as $ER_{it} = a + BR_{mt} + e_{it}$, where ER is the expected return of the policy declaration i at time t, a is the regression intercept, B is the beta coefficient of the regression, R_{mt} represents the returns of a standard market index at time t, and e_{it} is the disturbance term, or residual, for security i at time t (Fama, 1976; Reinganum, 1985). Since an announcement does not affect returns prior to an event, those returns are considered normal in relation to the announcement (Scholes & Williams, 1977). An estimation period for the prior-to-event conditions is necessary. The estimation period used here began 244 trading days before each post-crisis announcement under analysis and ended 6 days before it. We analyzed

the average impact of each announcement on the market on the day before it appeared in the *Wall Street Journal* and on the day of its appearance (Ruback, 1982, 1983; Strachan et al., 1983), calculating the abnormal return as $A_{it} = R_{it} - ER_{it}$, where A_{it} is the abnormal return for security i at time t, with the actual return, R_{it}, for security i on day t derived from its prices, and ER_{it} being the expected return. The average impact for the day of the announcement and day prior to the announcement is used because it has been shown that investors are likely to know of an event at least a day before it is published in the *Wall Street Journal*. After obtaining an excess return for each policy declaration, we conducted a t-test to analyze the significance of the excess return in terms of the probability of its occurrence.

As a check on serial correlation, we then computed regression equations using total excess return as the dependent variable and the lagged excess return as the independent variable. If serial correlation was an issue, the significance level for the t-test of the lagged excess return would have to be less than .05. We could only perform this analysis for crises with more than five announcements or the results would have been meaningless because of insufficient degrees of freedom. With one exception (Northrop), the crises examined included all the instances in which there were policy announcements less than five days apart. Crises with five or more announcements accounted for 90 of the 112 observations in the analysis. The significance of t was over .05 in all those cases. Thus, we were reasonably sure that serial correlation was not a serious problem.

Comparing crisis types. We compared the mean excess returns of subgroups of policy signals to determine if the differences between the means were significant. We examined the following six subgroups: (1) defensive and (2) accommodative announcements following accidents; (3) defensive and (4) accommodative announcements following scandals, and (5) defensive and (6) accommodative announcements following product safety and health incidents. We calculated the mean excess return and standard deviation for each subgroup and conducted t-tests to determine if the average abnormal returns for the subgroups significantly differed from each other. To test Hypothesis 1, we compared the mean excess returns for subgroups 1 and 2; for Hypothesis 2, we compared subgroups 3 and 4; for Hypothesis 3, subgroups 1 and 3; for Hypothesis 4, subgroups 2 and 4; and for Hypothesis 5, we compared subgroups 5 and 6. We used the standard deviation of the subgroups as an estimate for the standard error in the traditional t-test formula (Nachmias & Nachmias, 1976: 282).

As a further test of the hypotheses, we combined the variables into a model and introduced control variables. The model was structured with excess returns, the dependent variable, set equal to the sum of values for accommodative signals, the control variables, and an error term. For each type of crisis, a dummy variable represented the type of signal, its value set to 1 for an accommodative and 0 for a defensive signal. If the value of t was significantly negative for accident-related accommodative signals, significantly positive for scandal-related accommodative signals, and insignificant

for product safety–related accommodative signals in the presence of the control variables, we derived confidence in our results. The first control variable was a dummy variable set to 1 for an initial announcement of company policy following a crisis and set to 0 for subsequent announcements. We created this variable to determine if first announcements had a greater effect on the excess return outcome than subsequent announcements. A strong version of the efficient market hypothesis (Fama, Fisher, Jensen, & Roll, 1969) would hold that a first announcement should encapsulate an entire company response. The second control variable counted company announcements, with 1 for the first announcement, 2 for the second, and so on. We created this variable to determine if there were significant differences between the market's response to early and later announcements. The negative impact of an event itself (Fink, 1986) might cause market responses to early policy declarations to be generally negative, but responses to later announcements might be generally positive. The final control variable assigned each declaration a place in a string of accommodative or defensive responses, with 1 for the first accommodative or defensive signal, 2 for the second, and so on up to the final announcement in the string. We created this variable to determine if there were differences related to the ordering of the announcements. The efficient market theory (Fama, 1970) would suggest that the earliest announcements in a string will be the least anticipated and thus, the most effective.

RESULTS

Table 2 gives the date of each policy announcement studied, its classification, the excess return associated with it, and the results of the significance test for that return. It might appear from a quick scanning of the results that the corporate announcements had little impact on the market. However, in a group of 112 observations chance would account for significance at the .05 level or better for only 5.7 excess returns and for significance at the .01 level or better for only 1.14 returns. The number of significant excess returns we found—33 at the .05 level or better and 16 at the .01 level or better—was far greater than the likely chance distribution.

Table 3 shows the results of the tests of the five hypotheses. Hypothesis 1 states that following accidents, investors will react negatively to accommodative signals and positively to defensive signals. For accidents, the mean excess return associated with defensive policy announcements was +.89 percent, and the mean excess return for accommodative policy announcements was −.78 percent. We could not, however, reject the null hypothesis ($p = .08$). Hypothesis 2 states that following scandals, investors will react positively to accommodative signals and negatively to defensive signals. For scandals, the mean excess return of defensive policy announcements was −2.68 percent, and the mean excess return of accommodative policy announcements was +3.22 percent; thus, we rejected the null hypothesis ($p = .01$). Hypothesis 3 states that shareholders will get significantly better re-

TABLE 2
Significance of Abnormal Excess Returns Following the Announcements of Corporate Policy

Policy Statements	Type of Signal	Abnormal Return	*t*
Accidents			
American Airlines			
7/18/79	Defensive	.006	0.17
General Public Utilities			
5/ 3/79	Accommodative	−.093	−8.13**
8/ 2/79	Accommodative	.024	2.05*
10/10/79	Accommodative	−.028	−2.46*
11/ 6/79	Accommodative	−.028	−2.45*
3/ 5/80	Accommodative	.028	2.43*
8/ 8/80	Accommodative	−.025	−2.23*
11/ 7/80	Accommodative	.033	2.92**
11/14/80	Accommodative	.023	2.01*
12/ 9/80	Defensive	.012	1.03
3/25/81	Defensive	−.057	−5.04**
6/ 9/81	Defensive	−.026	−2.25*
6/23/81	Accommodative	−.024	−2.09*
7/ 2/81	Defensive	.004	0.52
8/12/81	Accommodative	.078	6.83**
8/20/81	Accommodative	−.000	−0.02
11/23/81	Accommodative	−.002	−0.14
1/18/82	Accommodative	−.002	−0.18
7/ 2/82	Defensive	.004	0.32
11/ 1/82	Defensive	.077	6.74**
2/ 2/83	Accommodative	−.029	−2.56*
10/ 6/83	Defensive	.079	6.91**
11/29/83	Accommodative	.016	1.37
12/ 1/83	Defensive	.049	4.30**
3/16/84	Accommodative	.014	1.12
4/17/84	Accommodative	−.017	−1.51
5/10/84	Accommodative	−.013	−1.12
McDonnell Douglas			
3/ 7/74	Accommodative	−.051	−1.35
3/18/74	Accommodative	−.063	−1.66*
12/ 4/75	Accommodative	.020	0.53
Union Carbide			
12/10/84	Accommodative	−.089	−5.68**
12/11/84	Accommodative	−.042	−2.65**
12/19/84	Defensive	.017	1.10
12/20/84	Defensive	.029	1.84
1/ 7/85	Defensive	.031	1.95
1/11/85	Accommodative	−.007	−0.42
1/28/85	Defensive	−.013	−0.80
2/ 5/85	Defensive	−.003	−0.22
2/11/85	Accommodative	.014	0.88
2/13/85	Defensive	.031	1.95
3/ 6/85	Accommodative	−.003	−0.20
3/15/85	Accommodative	−.026	−1.68

TABLE 2 (continued)

Policy Statements	Type of Signal	Abnormal Return	*t*
Union Carbide (continued)			
3/19/85	Accommodative	.011	0.68
3/25/85	Accommodative	.031	1.98*
4/11/85	Defensive	.001	0.05
4/25/85	Defensive	.002	0.12
5/ 2/85	Accommodative	.007	0.43
5/30/85	Accommodative	−.014	−0.91
8/ 1/85	Defensive	−.024	−1.54
8/29/85	Accommodative	.033	2.09*
Union Oil			
2/ 7/69	Defensive	−.013	−0.69
2/14/69	Defensive	−.004	−0.22
2/20/69	Accommodative	−.018	−0.93
Scandals			
Exxon			
7/14/75	Accommodative	.002	0.08
7/16/75	Accommodative	−.028	−1.11
7/17/75	Accommodative	−.018	−0.72
7/24/75	Accommodative	.024	0.98
9/26/75	Accommodative	−.009	−0.38
11/17/75	Accommodative	−.001	−0.02
General Dynamics			
3/26/85	Accommodative	.022	0.98
5/ 3/85	Defensive	−.024	−1.06
5/23/85	Accommodative	.056	2.47*
ITT			
3/ 3/72	Accommodative	−.020	−0.99
3/ 9/72	Defensive	−.026	−1.27
7/ 6/72	Defensive	−.013	−0.61
Lockheed			
7/30/75	Defensive	−.024	−0.38
8/ 6/75	Defensive	.018	0.29
8/ 7/75	Defensive	−.024	−0.39
9/10/75	Accommodative	−.027	−0.43
10/ 1/75	Defensive	−.032	−0.50
10/ 8/75	Defensive	−.053	−0.85
2/ 6/76	Accommodative	−.046	−0.73
2/17/76	Accommodative	.055	0.87
3/ 3/76	Accommodative	.018	0.29
3/ 4/76	Accommodative	.198	3.15**
3/ 5/76	Accommodative	.266	4.23**
4/14/76	Accommodative	.051	0.81
9/ 9/76	Defensive	.021	0.33
Northrop			
5/ 7/74	Accommodative	−.011	−0.27
5/10/74	Accommodative	.032	0.77
10/15/74	Defensive	−.112	−2.74**
11/21/74	Accommodative	.048	1.18

TABLE 2 (continued)

Policy Statements	Type of Signal	Abnormal Return	*t*
Product safety and health incidents			
Firestone			
3/ 8/78	Defensive	−.054	−2.87**
4/14/78	Defensive	.012	0.61
7/10/78	Defensive	−.023	−1.22
7/14/78	Accommodative	−.009	−0.46
7/24/78	Accommodative	−.029	−1.54
8/ 9/78	Accommodative	−.010	−0.51
8/15/78	Defensive	−.010	−0.51
10/23/78	Accommodative	.053	2.81**
11/30/78	Accommodative	.070	3.74**
Ford			
2/ 8/78	Defensive	.018	1.31
3/20/78	Accommodative	−.003	−0.25
GM			
1/13/66	Defensive	−.016	−1.55
3/ 9/66	Defensive	.014	1.37
3/23/66	Accommodative	−.014	−1.36
8/ 8/66	Defensive	−.001	−0.08
1/ 3/67	Defensive	.029	2.82**
2/16/67	Defensive	.010	0.96
3/ 2/67	Accommodative	.004	0.43
3/20/67	Accommodative	.001	0.03
3/30/67	Accommodative	−.021	−2.02*
12/ 1/67	Accommodative	.021	2.00*
Johnson & Johnson			
10/ 4/82	Accommodative	−.051	−2.48*
10/ 8/82	Accommodative	−.021	−1.02
10/18/82	Accommodative	.013	0.64
10/25/82	Accommodative	−.047	−2.27*
11/12/82	Accommodative	.019	0.92
Procter & Gamble			
6/30/80	Defensive	−.004	−0.28
9/23/80	Accommodative	−.002	−0.15
9/29/80	Accommodative	−.009	−0.68
11/ 5/80	Defensive	.005	0.40

* $p < .05$
** $p < .01$

turns if a company's management gives defensive signals following an accident than they will if it gives defensive signals following a scandal. The mean excess return for defensive signals following accidents was +.89 percent, and the mean excess return for defensive signals following scandals was −2.68 percent, results that negated the null hypothesis at the .05 level. Hypothesis 4 states that shareholders will get significantly better returns as a result of accommodative signals following scandals than as a result of accommodative signals following accidents. The mean excess return for ac-

TABLE 3
Results of the Tests of the Hypotheses

Type of Signal	Number of Policy Announcements	Mean Abnormal Return[a]	Standard Deviation	*t*
Hypothesis 1				
Accident-related defensive	20	0.89	3.25	
Accident-related accommodative	33	−0.78	3.51	1.76
Hypothesis 2				
Scandal-related defensive	10	−2.68	3.73	
Scandal-related accommodative	19	3.22	7.74	−2.72**
Hypothesis 3				
Accident-related defensive	20	0.89	3.25	
Scandal-related defensive	10	−2.68	3.73	2.26*
Hypothesis 4				
Accident-related accommodative	33	−0.78	3.51	
Scandal-related accommodative	19	3.22	7.74	−2.13*
Hypothesis 5				
Product safety–related defensive	12	−0.08	2.20	
Product safety–related accommodative	18	−0.19	3.03	0.11

[a] Returns are expressed as a percentage of market value.
* $p < .05$
** $p < .01$

commodative signals following scandals was +3.22 percent, and the mean excess return for accommodative signals following accidents was −.78 percent, negating the null hypothesis at the .05 level. The last hypothesis states that differences in investor reactions to defensive and accommodative signals following product safety and health incidents will not be significant. The mean excess return for defensive signals following health and safety incidents was −.08 percent, and the mean excess return for accommodative signals following such incidents was −.19 percent; we could not reject the null hypothesis ($p = .92$). Thus, results support four of five hypotheses and nearly support the fifth.

Table 4 presents the results of the regression analysis containing the control variables. Accident-related accommodative signals have a significant negative impact at less than the .05 level, scandal-related accommodative signals have a significant positive impact at less than the .01 level, and product safety–related accommodative signals do not have a significant effect. These results are as we expected them to be, and they support the hypotheses. The variable for the first company announcement does not have a significant effect. However, there are significant differences between earlier and later company announcements, indicated by significant results for the sequence variable at the .05 level or below. Sequential position in a string of accommodative or defensive announcements also had significance ($p < .01$). The result for the string order variable suggests that investor reactions to a crisis itself do affect policy declarations made soon after the crisis (Fink,

TABLE 4
Results of Regression Analyses[a]

Variables	Parameter Estimate	Standard Error	*t*	Probability of *t*
Intercept	−.025	.010	−2.43	.02
Accident-related accommodative signal	−.021	.010	−2.08	.04
Scandal-related accommodative signal	.034	.012	2.91	.00
Product safety–related accommodative signal	−.000	.012	−0.01	.99
First company announcement	−.013	.013	−0.99	.32
Sequential place of announcement	−.006	.003	2.01	.05
String order of announcement	.002	.001	3.37	.00
Adjusted R^2	.22			
F	6.27			
Probability of *F*	.00			

[a] $N = 112$.

1986). Thus, there is a halo effect, with investors generally receiving early announcements more negatively than later ones. However, the result for the string variable also indicates that investors view early signals in a string of accommodative or defensive signals more positively than later ones because the first time they hear the news about a particular event, it is unanticipated. Our findings about the impacts of accommodative signals following accidents, scandals, and product safety incidents hold despite these trends.

CONCLUSIONS AND IMPLICATIONS

In the study reported here, we attempted to extend agency and signaling theories by determining the impact on shareholders of declarations of managerial policy following crises. We examined three types of crisis and made predictions based on the effects of those crises on their victims and investors' beliefs about the crises' causes. Our results generally support predictions that significant differences exist between shareholder responses to accommodative and defensive signals from management after the three types of crisis. Accommodative signals tend to serve shareholder interests after scandals, but defensive signals tend to serve such interests following accidents. The differences between shareholder responses to accommodative and defensive policies are not significant in the case of product safety and health incidents.

These results cannot, and are not meant to, provide policy guidance for managers. Even though this study may improve their understanding of the effects of their announcements on shareholders, managers confronting an actual crisis continue to face dilemmas. If they go through the process of imaginatively rehearsing (Dewey, 1939) the consequences of the policies they consider presenting, they confront a number of options. On the one hand, they can announce policies tending to be in the interests of both the victims and shareholders. This approach corresponds to a concept of en-

lightened self-interest, which is in accord with a broad interpretation of the classic theory in which firms may embrace additional interests so long as the claims do not conflict with the claims of shareholders (Friedman, 1962). As we have shown, accommodative policies following a scandal generally fit this pattern: shareholders and the diffuse victims of a scandal are both served when managers present an accommodative policy. Managers wishing to serve both the interests of victims and shareholders would be foolish to be anything but accommodative. However, following an accident, managers who imaginatively rehearsed the consequences of their announcements would face a more difficult dilemma. They would have to decide which stakeholders to favor—the victims or the shareholders. An accommodative policy would tend to benefit the former, but a defensive policy would benefit the latter. The tenet that managers should maximize shareholder returns within the bounds of law and ethics provides them no guidance on what to do as it does not say how to reconcile conflicts between ethics and profits.

In our opinion, under such circumstances managers should adopt a rigorous ethical position in which they lay prudence aside and sacrifice profits for the sake of the victims of a crisis. Especially after product safety and health incidents, when there is no predictable market reaction and managers have no way of knowing how investors will respond, managers should act on the basis of moral conviction.

It is worth considering further the meaning of the ambiguous product safety and health results. One critical factor may be that our analysis examined only short-term effects. The outcomes of the Ford Pinto and Johnson and Johnson Tylenol cases are now known. Ford executives were defensive until forced to admit that there were problems with the vehicle. Johnson and Johnson executives, on the other hand, remained accommodative throughout the incident, even though our data show that their firm suffered considerable stock market damage. The initial stock market impact on Johnson and Johnson was quite negative, but in the long term the actions of the company's management earned the firm respect and helped it gain back market share in a remarkably short time, given the nature of the problem. Ford, in contrast, suffered reputational damage. It also had to pay large awards to the victims, which hurt the company financially. These cases suggest that it may take many years before the true impact of managerial actions can be understood. The instrument used in this study for estimating market impact emphasizes short-term effects; under assumptions of perfect market efficiency, researchers should take long-term effects into account, but unfortunately the information available is not perfect, and long-term effects are not always predictable. Assumptions of perfect market efficiency, moreover, have come under increasing criticism (Bromiley, Govekar, & Marcus, 1987); but little can be done about this problem, for even if longitudinal data were available they would likely be contaminated by confounding variables.

Additional research on policy announcements would therefore be welcome, as this study raises many important questions. Is there a way to estimate the long-term market effect of policy declarations? Can our results be

replicated with a different group of observations? For example, would a different time frame make a difference? And to what extent are the findings culture-bound as well as time-bound—would managers and shareholders in another country, such as Japan, react similarly?

In sum, this study suggests that there may be circumstances in which it is right for managers to ignore stockholders and put other considerations first. Stockholders should not necessarily be the sole determinant of the goodness of a particular policy. We disagree with the following statement by Lee Iacocca: "Confession is good for the soul, and when you offend someone, even unintentionally, it feels good to say 'I'm sorry.' But when there's a chance that you might end up in court, you'd better think twice" (1984: 141). Rather, we believe that it is necessary to think more about what will cause managers to empathize with the victims of a crisis and what will induce them to follow their conscience and adhere to moral principle even when they know that doing so might not be in the interests of shareholders (Deak, 1989).

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