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Media Selection for the Delivery
Of Good and Bad News:
A Laboratory Experiment

Thomas C. Head
Ricky W. Griffin
Thomas S. Bateman

TR-ONR-DG-07

May 1984

Department of Management
Texas A&M University

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Richard Daft
and
Ricky Griffin
Principal Investigators

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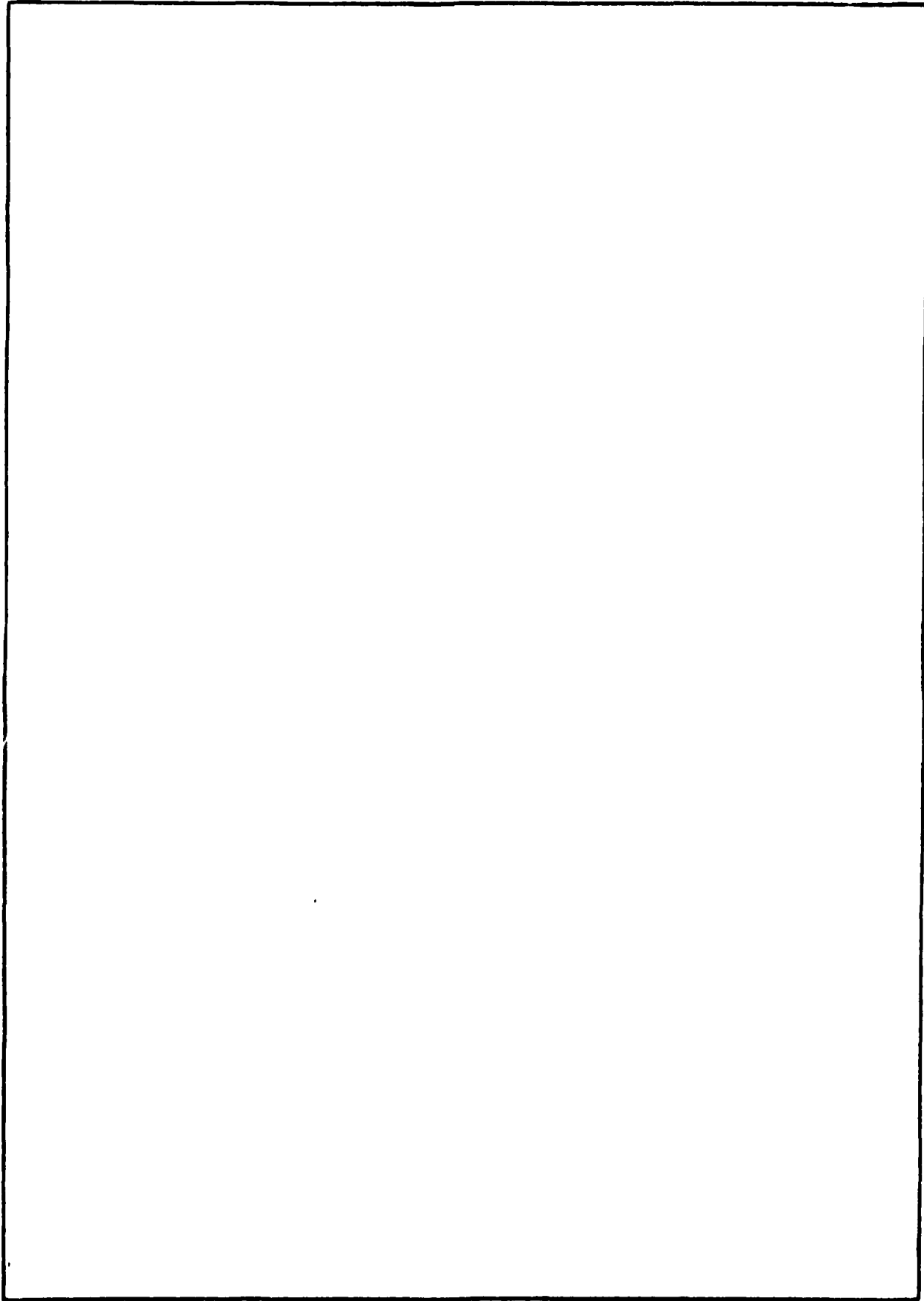
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<p>This study investigated the extent to which managers choose different media to convey good versus bad news. A sample of undergraduate students role-played a middle manager's position in a large organization. Each was asked to relay several pieces of good and bad news to his or her subordinates. Results indicated that the managers used face-to-face communication to deliver bad news significantly more often than they used either the telephone or a written memo.</p>		

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MEDIA SELECTION FOR THE DELIVERY
OF GOOD AND BAD NEWS: A
LABORATORY EXPERIMENT

Information and information processing are becoming increasingly important themes at all levels of analysis in organizational science (cf., Galbraith, 1977; Daft and Macintosh, 1981; Daft and Wiginton, 1979; Salancik and Pfeffer, 1978). Given that managers spend a large portion of their time processing information (cf., Mintzberg, 1973), it is clearly important that we learn more about the information processing behaviors of managers. The study reported here was designed to investigate one particularly important, but neglected, area of managerial information processing behavior: variations in behavior regarding the delivery of good versus bad news.

Literature Review

The study of the delivery of good and bad news is conspicuous by its absence in the pages of management journals. The only aspect of good and bad news to be systematically studied has been positive and negative performance feedback (cf., Ilgen, Fisher, and Taylor, 1979; Fisher, 1979). For example, Fisher (1979) investigated conditions under which performance feedback was delayed and/or upwardly distorted. Her findings indicated that superiors gave feedback significantly faster when subordinate performance was poor than when it was good. Further, the level of subordinate performance affected distortion in ratings developed for feedback purposes and the superiors' beliefs and attitudes about giving feedback. While these findings are of considerable interest, performance feedback clearly is only a small portion of the information transmitted from superiors to subordinates.



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There is, however, a considerable amount of literature pertaining to good and bad news in other fields such as medicine (cf., Oken, 1961) and social psychology (cf., Rosen and Tesser, 1970). Of particular interest is an observed phenomenon called the mum effect. Essentially, the mum effect suggests that there is a tendency for people to transmit good news, but to avoid transmitting bad news.

One of the first tests of the mum effect was a laboratory experiment conducted by Rosen and Tesser (1970). As each subject performed a dummy task under the guidance of an experimenter, a different experimenter came in and announced that another subject who was not present was to call home for either good or bad news. Both experimenters then left, ostensibly to find the subject for whom the message was to be delivered. A short time later, a confederate playing the role of the other subject entered the room to begin work. Thirty five of the 36 true subjects told the confederate that there was a message for them. When the news had been described as being good, in 82 percent of the cases this information was also conveyed. When the news was bad, however, only 26 percent of the subjects provided this information, even after being asked by the confederate if there was anything else the subject knew about the call. The primary conclusion drawn from this study, then, was that people are reluctant to transmit information about bad news.

In an extension, Tesser, Rosen, and Conlee (1972) looked at whether the mum effect held only for the intended recipient of the news or if it carried over to third parties as well. Subjects were seated in a waiting room with two confederates, one of whom was expecting good or bad news. The two confederates left the waiting room for a short time, and an experimenter entered and delivered the message to the subject. One of the

two confederates then returned. When the person who returned was the "neutral" third party, 85 percent of the subjects explained that the other person's call had come in and indicated whether it was good or bad news. When the confederate who returned was the target of the message, all of the subjects relayed the message and its content when the news was good, but only half of the subjects relayed the bad news. Hence, the conclusion is that the reluctance to transmit bad news apparently is only present when the recipient of the news is the one affected by it.

Tesser and Rosen (1975) review several other studies in which the mum effect has been tested. They note that the mum effect has been shown to occur between friends, strangers, similar subjects, and attractive subjects, and without regard to mood, sex, or emotionality of either the communicator or recipient. Hence, the mum effect appears to be a potentially powerful force that might have important implications for information processing in organizations in general and for the information processing behavior of managers in particular.

Possible reasons for the occurrence of the mum effect are also noted by Tesser and Rosen (1975). Specifically, people may be reluctant to convey bad news for any or all of the following reasons: (1) they may feel guilt from being the bearer of bad news, (2) they may not want to be evaluated negatively by the recipient, (3) they may have to change their own mood in order to effectively convey the news, (4) they may not want to put the receiver in a bad mood, (5) they may only want to communicate what they think the receiver wants to hear, and/or (6) they may be sensitive to norms about the appropriateness of delivering good versus bad news. Given that

these conditions are as generally applicable to interactions within organizational settings as within non-organizational settings, this study was designed to test two specific hypotheses.

H1 : Managers will choose different media to communicate good news versus bad news.

That is, managers will be differentially motivated to provide subordinates good news as opposed to bad news. This differential motivation, in turn, may cause them to select different kinds of media to transmit good news versus bad news.

H2 : Managers will choose less personal media to communicate bad news and more personal media to convey good news.

This hypothesis is based loosely upon the work of Lengel (1982). He proposes a continuum of communication media, based upon the richness of the medium used. Richness is the capacity a given medium has for conveying information. Face-to-face conversations are the richest medium, for they provide many different cues, both verbal and nonverbal, simultaneously. Less rich, in order, are: telephone conversations, memos, letters, and numeric documents such as computer printouts.

It is apparent that part of the richness dimension involves the closeness, or amount of personal contact, that is used in a particular communication episode. The richer the medium is, the more directly involved the parties become with each other.

Since people evidently enjoy, or at least do not object, to the task of conveying good news, they may choose a more personal medium, such as a telephone call, in order to enjoy the potential rewards of that delivery. Conversely, when the news is bad, a less personal medium, such as a memo, may create distance, both physically and psychologically, between the communicator and the receiver.

Method

Overview of Study

Groups of four or five subjects were randomly assigned roles in a hypothetical organization. One subject in each group played the role of a middle manager; these subjects are the focus of this study. The remaining subjects were assigned roles of first-line managers. They played no real part in this study other than to serve as recipients of news. During the period of study, the middle manager was provided with several pieces of good and bad news to convey to the first-line managers. Observations were made by the experimenter as to which of several media were used to convey the news.

Subjects

There were 160 subjects involved in this study. The subjects were attending a large Southwestern university, and enrolled in the introductory management class. Participation in a behavioral science experiment was a requirement for the class. The unit of analysis in this study was the individual playing the role of middle manager in each group. Following the procedure outlined below, 35 subjects played this role.

Procedure

Subjects reported to a behavioral laboratory in groups of 4 or 5. They were told that they would be playing the roles of managers within a large company. One individual was randomly selected and assigned to the role of Middle Manager. The experimenter retained the role of Vice President. Remaining subjects were assigned the roles of First-Line Supervisors. All subjects then read information sheets describing the

company, its structure, and their own role. First-Line Supervisors were told that for the duration of the study they would work at their desks doing paperwork (actually, an in-basket exercise). Further, they were also told that in the recent past they had submitted two budget requests, one for subordinates' pay raises, and one for the purchase of equipment, and that they would receive news about each request while they worked. Information about the requests was also referred to in the in-basket exercises. They were then put in separate "offices" and started work.

The Middle Manager was also assigned some paperwork to do, and was told that the Vice President (experimenter) would periodically be making decisions about the various budget requests. As each decision was made, it would be passed on to the Middle Manager who was, in turn, supposed to review it and then transmit it to the appropriate First-Line Supervisor. The experimenter specifically noted that the Middle Manager could select any of several different media to convey the news to the First-Line Supervisors. Alternatives included a face-to-face meeting, a written memo, or a telephone call (in the case of a telephone call, the subject was told to write the message on a piece of paper, write "telephone call" across the top, and then return it to the Vice President for delivery).

The experiment was structured such that one First-Line Supervisor received two budget approvals (two pieces of good news), one received two budget denials (two pieces of bad news), and the remaining Supervisor or Supervisors received one budget approval and one budget denial (one piece of good news and one piece of bad news). The ordering of approvals/denials was randomly determined for each group.

Variables and Analyses

The independent variable of interest in this study was message content (good news versus bad news). The dependent variable of concern was media chosen to relay the message (face-to-face conversation, written memo, or telephone call). Since the data are nominal and ordinal in nature, conventional statistical tests such as ANOVA cannot be used. Hence, all data were analyzed with Chi-square tests.

Results

The Chi-square results for media content by media selection are summarized in Table 1. As shown, there is a significant overall effect (Chi-square = 23.14, $p < .05$). There is also a significant effect for media selection for bad news (Chi-square = 18.78, $p < .05$) but no significant

Insert Table 1 About Here

difference for good news. Hence, the results suggest that while individuals chose a variety of media to transmit news, this choice did not vary directly as a result of message content. When the news was bad, however, a face-to-face meeting was chosen to convey the news significantly more often than the other media.

It was hypothesized that the managers would choose different media to convey good and bad news, and that less personal modes would be used to communicate bad news. While neither hypothesis was directly supported, there was a significant difference in media selection for the delivery of bad news, directly opposite what was predicted.

A second Chi-square analysis was performed to assess potential effects of message focus on the overall pattern. Message focus means whether the news related to the personnel budget request or the equipment budget request. Because the personnel news (8% pay raise for line workers) involved employees, it would be perceived to be more personal and more severe, and thus received more negatively than for news related to equipment. Thus, there might be difference in the ways messages are delivered. These results are summarized in Table 2. Again, there is an overall significant effect (Chi-square = 23.23, $p < .05$). There is also

Insert Table 2 About Here

a media effect for bad news for the personnel budget request (Chi-square = 11.50, $p < .05$). There is not, however, a significant effect when the bad news related to equipment (Chi-square = 4.65, n.s.). Face-to-face meetings were chosen 2 to 1 over other media for the delivery of bad, personnel-related news. Hence, message focus also tends to affect media selection for the delivery of bad news.

Discussion

This study was designed to assess the extent to which managers choose different communication media to transmit different kinds of information. Based on the communications literature in general and an observed phenomenon called the mum effect, it was hypothesized that managers would choose different media to communicate good news as opposed to bad news. Further, it was also hypothesized that less personal media would be used to communicate bad news and that more personal media would be used to transmit good news.

A sample of 36 undergraduates was used to role-play a Middle Manager. Each was asked to transmit a variety of pieces of good and bad news to lower-level managers. Results indicated that while there was no difference in media selection attributable to message content, subjects did choose personal meetings to convey bad news significantly more often than they chose less personal media such as the telephone or a memo. Furthermore, this tendency was evident for the delivery of personnel-related news but not for equipment-related news.

The rationale for the hypotheses was drawn from research on the mum effect (Rosen and Tesser, 1970). Results contrasted with the original hypotheses. Given two basic differences in this study and earlier research on the mum effect, however, it becomes reasonable to expect a different pattern of findings. First, in contrast to earlier studies, subjects in this study were playing managerial roles. Second, they received the information in the context of that role and were explicitly instructed to pass the information on to the relevant person. Hence, an alternative frame of reference is needed to explain the results.

One such frame of reference is simply the nature of managerial work with respect to information processing and interpersonal relations. Like other human beings, people in managerial roles are, in general, sensitive to the feelings and emotions of other people. When they have to deliver bad news, it seems likely that they will consider the nature of the message and how it should most appropriately be delivered.

Further, it seems perfectly plausible that managers may choose more personal media, such as a face-to face meeting, to deliver bad news. Bies (1982) found that the deliverer can diminish the impact of bad news on the receiver by providing causal attributions and temporal rationalizations.

By conveying where the cause lies, or stating the blame, the sender can increase the receiver's understanding of the news. Temporal rationalization is directing the receiver attention to the future or past in order to diminish the impact of the negative communication. This is accomplished by providing hope for a better future or an illustration that things have been worse. By giving bad news personally, a manager can readily assess the need for lessening the impact of the news, and provide the cause and temporal rationalization as it is needed.

This argument is also consistent with the results from Fisher's (1979) study, as well as part of the Tesser and Rosen model. As summarized earlier, Fisher found that leaders gave negative performance feedback faster than positive performance feedback. Tesser and Rosen theorized that two of the possible reasons for the mum effect were that the sender could experience guilt, and/or they do not want to be negatively evaluated by the receiver. By providing the bad news quickly and attempting to diminish the impact, the manager might avoid these aversive consequences of being the bearer of bad news.

Unfortunately, this study suffers from the typical problems that characterize laboratory studies. In particular, the study used a small sample of role-playing college students. It is unclear to what extent the results might generalize to actual behavior in organizational settings.

Still, however, there are several interesting implications to be drawn from the study. First, managers do seem to vary the media they use to transmit bad news. Second, this variation may be greater when the news involves people in the organization rather than equipment. Finally, people seem to prefer the more personal, richer medium of the face-to-face meeting to transmit bad news.

There are also several interesting follow-up ideas suggested by the results of this study. In the laboratory, one avenue for further research would be to make the information more directly relevant to the person transmitting the news and/or the person receiving the news. A second variation would involve varying the media by which the manager him or herself received the message to determine what effect, if any, this had on media selection for further transmission.

Of course, the real need lies in the area of field research. More attention is needed in areas such as how managers react when they receive information by various media, how and why they choose various media for further transmission, how these choices affect leader-follower interrelationships, and how these choices affect follower perceptions of and reactions to the workplace. Such research will involve the use of interviews, archival data, and observation as opposed to traditional paper-and-pencil questionnaires. That is, the focus needs to be on actual behavior rather than recollections or perceptions of behavior.

References

- Bies, R.J. "The Delivery of Bad News In Organizations: A Social Information Perspective," Unpublished paper presented at 42nd Annual Meeting of the Academy of Management, New York City, 1982.
- Daft, Richard L. and John C. Wiginton, "Language and Organization," Academy of Management Review, 1979, 4, 179-191.
- Daft, Richard L. and Norman B. Macintosh, "A Tentative Exploration into Amount and Equivocality of Information Processing in Organizational Work Units," Administrative Science Quarterly, 1981, 26, 207-224.
- Fisher, Cynthia, "Transmission of Positive and Negative Feedback to Subordinates: A Laboratory Investigation," Journal of Applied Psychology, 1979, 64, 533-540.
- Galbraith, Jay, Organization Design, Addison-Wesley, 1977.
- Ilgen, Daniel R., Cynthia D. Fisher, and M. Susan Taylor, "Consequences of Individual Feedback on Behavior in Organizations," Journal of Applied Psychology, 1979, 64, 349-371.
- Lengel, R.H. "Managerial Information Processing and Communication-Media Source Selection Behavior," unpublished Ph.D. Dissertation, Texas A&M University, 1982.
- Mintzberg, Henry, The Nature of Managerial Work, Harper and Row, 1973.
- Oken, D., "What to Tell Cancer Patients," Journal of the American Medical Association, 1961, 175, 1120-1128.
- Rosen, S. and A. Tesser, "On Reluctance to Communicate Undesirable Information: The MUM Effect," Sociometry, 1970, 33, 253-263.
- Tesser, A. and S. Rosen, "The Reluctance to Transmit Bad News," in L. Berkowitz (Ed.), Advances in Experimental Social Psychology, (Vol. 8), Academic Press, 1975.
- Tesser, A., S. Rosen, and M.C. Conlee, "News Valance and Available Recipient as Determinants of News Transmission," Sociometry, 1972, 35, 619-628.

Table 1

Chi-Square for Message Content and Media Selection

	<u>Message Content</u>			Total	
	Good News	Bad News	Total		
Memo	30(17)	24(14)	54(31)	$\chi^2 = .67$	
Telephone	17(10)	15 (8)	32(18)	$\chi^2 = .13$	
Meeting	33(19)	47(27)	80(45)	$\chi^2 = 2.45$	
Not Delivered	4 (3)	6 (3)	10 (6)		
Total	84(48)	92(52)	176		

$\chi^2 = 4.36$ $\chi^2 = 13.78^*$

Overall $\chi^2 = 23.14^*$

* p .05

Table 2

Chi-Square for Message Content, Message Focus and Media Selection

Message Content and Focus

	Good News (Equipment)	Bad News (Equipment)	Good News (Personnel)	Bad News (Personnel)	Total	
Memo	16 (9)	12 (7)	14 (8)	12 (7)	54 (31)	$\chi^2 = .86$
Telephone	19 (6)	9 (5)	7 (4)	6 (3)	32 (18)	$\chi^2 = 4.65$
Meeting	14 (8)	22 (13)	19 (11)	25 (14)	80 (45)	$\chi^2 = 5.32$
Not Delivered	2 (1)	3 (2)	2 (1)	3 (2)	10 (6)	
Total	42(24)	46(26)	42(24)	46(26)	176	

$\chi^2 = 1.46$ $\chi^2 = 4.65$ $\chi^2 = 5.62$ $\chi^2 = 11.50^*$

Overall $\chi^2 = 23.23^*$

* p < .05

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