INTERNET EXPERIMENTS

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The lost e-mail method: Milgram's lost-letter technique in the age of the Internet

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We examined Milgram's (1977) lost-letter technique using e-mail. In the first experiment, 79 college faculty received mock lost e-mail messages. Nineteen percent of those who received the messages responded, in all cases by returning the message to the "sender" instead of forwarding it to the "recipient." In the second study, attitudes toward presidential candidate Ross Perot were examined by sending out two different messages to 200 randomly selected e-mail addresses in the United States. Although there was no differential response rate, examination of content revealed attitudes consistent with concurrent poll data.

In 1934, Richard LaPiere published a classic article in which he demonstrated that people who expressed intentions to discriminate against Chinese people through survey instruments were unlikely to actually discriminate. Since that time, psychologists interested in attitude measurement have been concerned with the potential incongruence between what people are willing to say or write in a survey and what they actually do.

During the 1960s, Milgram (1977) devised the lost-letter technique, a method designed to address the incongruence between measured attitude and behavior. Milgram and his colleagues distributed (dropped) preaddressed, stamped letters throughout an area and tabulated the rate at which they were picked up and sent on (to a post office box). By manipulating the addresses on the envelopes (e.g., to communist or Nazi organizations), attitudes toward different groups could be measured.

The advantage of this technique for measuring attitudes was that it required a behavior on the part of the subject. Milgram (1977) asserted that this method could "measure attitudes . . . through their actions instead of their words" (p. 278).

Since the original "lost-letter studies," a new kind of mail has become popular. With electronic mail (e-mail), people communicate by sending and receiving information through computers. A growing literature stresses the difference between forms of computer-mediated communication (CMC) such as e-mail and face-to-face communication (see Bordia, 1997). Researchers have found that as status cues and nonverbal feedback disappear (Kiesler, Siegal, & McGuire, 1984), more disorderly and less considerate interactions occur. On the positive side, participants communicating via computer have been found to participate more equally and democratically than those communicating face to face (Bordia, 1997). The focus of the present study was to examine whether the lost e-mail method could be a useful application of the Internet for the measurement of attitudes.

EXPERIMENT 1

In the first experiment, lost e-mail messages were sent to all existing faculty accounts at a small college. It was hypothesized that messages that were more socially appropriate, as operationalized by how positive the message was toward the college, would be more likely to be sent on than less socially appropriate messages. It was also hypothesized that more urgent messages would be more likely to be sent on.

Method

Subjects. Seventy-nine members of the faculty of Beaver College, a small liberal arts college in suburban Philadelphia, received

"lost" e-mail messages. The messages had originally been sent to 104 faculty. Only faculty who had checked their accounts during the study were considered as subjects.

Apparatus. The e-mail messages were sent from Beaver College's Unix mainframe computer using "Pine" e-mail software. The accounts used were cryptically encoded student accounts with the suffix "Beaver.Castle.Edu."

Procedure. All 104 faculty included in the original sample were randomly assigned to receive one of four e-mail messages. The messages all included both the sender's and addressee's e-mail addresses.

All four messages began with the following mock message, presumably from one student (Stacey) to another (Rick):

> Stacey-
> How is everything going at school? You sounded
> kind of doubtful in your last letter.
> When is the family going to see grandpa in the
> hospital?
> Try to send a letter soon—my phone broke and I
> can never seem to catch up with you.

The second part of the message contained the purported responses, from Rick to Stacey. This part of the message was manipulated in order to examine (1) effects of social appropriateness in the message and (2) effects for urgency in the message.

Social appropriateness was manipulated by slanting this part of the message with either a positive or a negative bias toward the college. In the low social appropriateness condition, this part of the message began with the following:

Rick-
Things haven't gotten much better. I'm just not
sure that school is for me.

In the high social appropriateness condition, the message read:

Rick-
Things have really turned around for me. I guess
I have just been going through some kind of weird
transition thing. I'm really glad that I ended up
staying in school. I think I would have made a
big mistake by dropping out.

Next, the urgency of the message was manipulated. In the low-urgency message, the message concluded as follows:

We are going to the hospital next week. Gotta go
do work—finals crunch.

In the high-urgency condition, the message read:

We are going to the hospital this afternoon.
Gotta go do work—finals crunch.

The messages were all sent out on the same day, and the responses were tabulated 12 days after the original mailing.

To provide anonymity for the respondent, a piece of paper was taped across the top of the video monitor. In the interest of not including those who did not use their accounts in the analysis, however, it was necessary to determine who had sent the message on and who had not. This was done through the use of the "finger" command, a UNIX command that informs the user of the last time an individual logged onto their account.[1] A debriefing message was sent out soon after the responses were tabulated.

Results

Nineteen percent ($n = 15$) of the messages received were returned to the sending account. No messages were forwarded to the account that the message was supposedly intended for.

There were no significant effects of the manipulated variables of message appropriateness or urgency. All respondents sent the message back with some written message of their own. Of these, one respondent forwarded jokes to the experimenters while another requested more information about what they had read in the letter.

EXPERIMENT 2

In the second experiment, the lost e-mail method was used to study attitudes toward Ross Perot, a controversial independent presidential candidate. By accessing a "white pages" list (an expansive list of e-mail addresses) on the World-Wide Web (WWW), it was possible to send messages to a larger and potentially more diverse population. It was hypothesized that messages that mentioned the unpopular candidate would be less likely to be returned to the sending account.

Method

Subjects. An Internet "white pages" list was used as a sampling frame from which the experimenters chose 200 subjects. Every 10th page of the site was used. Two hundred messages were initially sent out. When mail was returned from addresses that were no longer valid, the message was sent to another randomly chosen address from the same frame. The sampling was considered completed when the researchers could assume that 200 messages had been delivered. Unlike the first study, it was not possible to estimate how many messages had actually been read by the participants.

Procedure. The respondents randomly received one of two messages. The control message read:

Hey Steve,
How is it going? I am going to be fund raising
over the next few months and we could really use
some help. I was just wondering if you would be
interested. Talk to you later,
Jon

The experimental letter read:

Hey Steve,
How is it going? I am going to be fund raising
for Ross Perot over the next few months and could
really use some help. I was just wondering if you
would be interested. Talk to you later.
Jon

During the time the experiment was being conducted, Ross Perot had a 5% showing in the polls (Cooper, 1996, September 30).

In this experiment, the e-mail address of the recipient was not included in the content of the message. The intended dependent variable, therefore, was simply the number of control versus experimental messages returned.

Results

Twenty-nine percent ($n = 58$) of the overall number of messages were returned by the participants. There was no significant difference in the response rate for the experimental message (27%) versus the control message (31%).

The content of the returned experimental messages was more informative. These messages were rated by two raters who were instructed to code the content of each message as either positive, neutral, or negative to-

ward Perot, politics in general, or the letter. Messages that expressed a positive attitude toward another candidate were coded as negative.

Although there are potential problems with content analysis, still, we found very strong consistency in raters' perceptions of the replies to the message. The two raters were in complete agreement on the ratings [$r(27) = 1.00$, $p < .001$].

Of the 27 messages sent in response to the experimental (Perot) messages, 52% ($n = 14$) expressed an unfavorable attitude (e.g., "Sorry . . . I am voting for Dole," "Perot, OY") while 48% ($n = 13$) expressed a neutral attitude (e.g., "You seem to have the wrong address").

No responses, however, expressed a positive attitude toward Perot. Assuming a null hypothesis of equal distribution of responses between negative, neutral, and positive responses, this reflects a statistically significant difference [$\chi^2 (2, N = 27) = 13.56, p = .001$].

DISCUSSION

Milgram (1977) suggested that the lost-letter technique be used to measure issues that people feel strongly about and in cases where there is reason to believe that the "respondent's knowledge that he is involved in a study seriously distorts his response" (p. 286).

In Experiment 1, the two variables examined through the lost e-mail method (attitude expressed toward the school and urgency of the message) were not polarizing enough for the technique to be effective. Experiment 1 did, however, demonstrate a normative difference in how lost e-mail and lost letters are treated. Lost e-mail is returned to the sender instead of being directed to the intended recipient.

The results from Experiment 2 clearly challenge the original hypothesis that attitudes can be measured by examining the differential response rates to different lost e-mail messages. Instead, we found that a closer examination of the responses themselves reveals attitudes consistent with, and perhaps more telling than, more traditional surveys of the population. During the same period of time that the study was conducted (September 19–24, 1996), Ross Perot was found to have only 5% support in the polls. Our findings were consistent with these data.

Both experiments illustrate how changes in our means of communication lead to changes in norms surrounding communication. Specifically, with e-mail, the behaviors and expectations are different from what we would expect from a traditional lost-letter study.

Changes in Technology and Changes in Behavioral Research

Recent theory and research on social psychological impacts of technology (e.g., Crabb, 1996; Stern & Kipnis, 1993) have suggested that changes in technology lead to changes in norms and social behavior. In the present study, this has direct impact on methodology.

In a lost-letter study, as originally described by Milgram (1977), the dependent variable is the number of let-

ters returned for each group. In our lost e-mail study, the dependent variable shifted to the actual content of the responses to the message.

Participants in both studies were willing to participate in, or "butt into," the mock interchange. This highlights a loss of privacy that may be endemic to CMC. We would expect this behavior to be less frequent when the malfunction was in other forms of communication, such as letters delivered to the incorrect household or telephone numbers dialed incorrectly.

An interesting finding from Experiment 1 was that although participants had both the sender's and the receiver's e-mail addresses, all responses were returned to the original sender. This is contrary to how lost letters were handled in Milgram's research and would be the equivalent of taking a lost letter, putting it in another envelope, and sending it back to the person who had addressed it. Returning a missent message to the sender when you have the intended address is inefficient. The intended recipient is bound to receive the letter later. Forwarding the message, however, takes more effort than simply using an e-mail program's "reply" option.

Implications for Psychological Research

Is the application of the lost-letter technique to e-mail a useful tool for social psychological research? Although the manipulations used in the present examination did not affect response *rate*, we would argue that under conditions similar to those prescribed by Milgram for the lost-letter technique, the lost e-mail method can be a useful laboratory tool. The measure allows for a very quick measure of the behavioral component of attitude. In the revised methodology, the observable behaviors include responding as well as commenting directly on the subject of interest.

Since there were only minimal differences in responding between conditions, and since the data of interest have shifted from response rate to content analysis of letters which had mentioned the topic of interest, it may be logical for researchers to e-mail only messages in which the object of interest was mentioned. This would allow for more powerful analyses as the research participants would not need to be assigned to different conditions.

Logistical and Ethical Considerations

Of first concern is the generalizability of samples studied using this type of method. In the first study, only the faculty of one small college were studied. In the second study, a more general sample of people with Internet access was studied. It is expected that as a larger proportion of the general population gains access to the Internet, samples taken from Internet "white pages" lists will become increasingly representative of the general population.

A second logistical issue is that of sample. If one wishes to keep within a community, such as a campus or other organization, one is limited to not only the number of people with accounts, but also to the number of people who actually log on to the accounts and presumably check their e-mail. This is not a concern if the researcher

leaves the confines of the organization and studies the general population of e-mail users.

Certain ethical considerations should be addressed when studying attitudes via e-mail. The lost-letter technique, by e-mail or in its original form, is not amenable to informed consent. With lost e-mail, it is important to protect anonymity as well as confidentiality, particularly if the technique is to be used in a small community, such as the college campus. In Experiment 1, the content of responses was kept anonymous by blocking part of the screen and all other information was kept confidential.

All things considered, this research methodology has a very low ethical cost. As in field research, subjects are unaware that they are being studied. Thus, the lost e-mail method can be considered an unobtrusive method.

Future Directions

In the present study, an old technique of examining attitudes was adapted for use in a computerized age. The technique allows for an unobtrusive glance at candid attitudes that the Internet-accessing population has toward a topic of interest. If the Internet is to become a data-collecting instrument, research to establish the generalizability of the Internet-using population is appropriate. If lost e-mail messages are going to become a more useful tool, future research should be aimed at establishing norms of attitudinal response to different topics, particularly those of a controversial nature, such as attitudes of racism and prejudice, or topics on which attitudes are polarized, such as attitudes toward abortion and euthanasia.

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NOTE

1. Although we did not determine if any of the recipients had fingered the sending account, the account did not have any identifying information that would have been accessible through the finger command.