

# Measuring Gender Differences in Attitudes Using the Lost-Letter Technique

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## Abstract

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*The research demonstrated the usefulness of the Lost Letter Technique (LLT) for investigating gender differences in attitudes about sensitive social issues. The results of two field experiments are reported. In Experiment 1, return rates were assessed for letters left in men's and women's public restrooms. Letters were addressed to a fictitious, socially-positive organization selected to appeal to both males and females. Return rates were 71% and did not differ significantly by type of restroom. In Experiment 2, letters were addressed to either a pro- or anti-gun organization and lost in men's and women's public restrooms. Return rates were consistent with the known gender differences in attitudes toward guns. Letters addressed to the pro-gun organization were returned more frequently from men's restrooms than from women's restrooms. Letters addressed to the anti-gun organization were returned more frequently from women's restrooms than from men's restroom*

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Obtaining accurate measurements of attitudes about sensitive social issues is difficult for researchers who use standard self-report techniques, such as interviews or surveys. With such methodologies, participants may experience reactivity, as their responses may be influenced by the testing situation (See Rosnow & Rosenthal, 2002; Sechrest & Belew, 1983; Webb, Campbell, Schwartz, & Sechrest, 1966; See also Milgram, Mann, & Harter, 1965). Respondents may avoid giving what they perceive to be a socially undesirable response. They may also avoid giving a response that they perceive to be undesirable. In research investigating issues related to gender, respondents may be influenced by the gender of the interviewer (See Padfield & Proctor, 2003; Williams & Heikes, 1993). For example, consider when a female versus male interviewer asks: "Do you believe abortion should remain legal?" or "Do you believe prostitution should be legalized?" Few research methods enable one to measure attitudes completely free of reactivity. The research described in this paper demonstrates the usefulness of one such methodology, the lost-letter technique, to measure gender differences in attitudes about sensitive social issues.

The lost-letter technique (LLT) was first used by Merritt and Fowler (1948) to study the honesty of the general public. They left postcards or ready-to-mail envelopes in public locations. Some envelopes contained letters, and others contained lead slugs, which were the size of a 50-cent coin. The results showed that 85 percent of the envelopes containing letters were posted; however, only 54 percent of the envelopes containing lead slugs were posted. The authors concluded that the general public is generally altruistic and willing to mail a lost letter; however, honesty is reduced when there was a possibility of financial gain. Subsequent studies have reached similar conclusions, showing that return rates for unstamped letters were significantly lower than for stamped letters, suggesting that individuals are less likely to carry out an altruistic act when they incur a financial loss to do so (See also Gabor & Barker, 1989; Page, 1980; Salter, Dickey, & Gulas, 1978; Simon, 1971; Simon & Gillen, 1971).

Stanley Milgram's classic use of the LLT as a behavioral measure of attitudes showed that return rates can be influenced by the addressee written on the letter, particularly when the addressee represents a controversial organization (Milgram, 1969; 1977; Milgram et al., 1965). Return rates were compared for letters addressed in one

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of three ways: (1) Friends of the Nazi Party; (2) Friends of the Communist Party; and (3) Mr. Walter Carnap. The results showed that return rates were much lower for the controversial addressees than for the individual (See also Cahill & Sherrets, 1979; Bridges, Williamson, Thompson, & Windsor, 2001). The results suggested that when an individual discovers a lost letter, the less positive an individual's attitude about the addressee, the more likely that the letter will be passed over or discarded. Consequently, low return rates were viewed as indicating a negative attitude toward the group to which letters were addressed. In contrast, higher return rates were viewed as indicating a more positive attitude toward the addressee.

The LLT has been useful for investigating the factors influencing levels of altruism in different geographic areas. Numerous studies have shown that letters lost in urban areas are returned less frequently than those lost in rural areas (Cherulnik, 1975; See also Bridges, 1996; Bridges, Anzalone, Ryan, & Anzalone, 2002; Bridges & Clark, 2000; Bridges & Coady, 1996a; 1996b; Bridges, Keeton, & Clark, 2002; Bridges, Ryan, & Schiebe, 2000; Bridges & Thompson, 2001; Bridges, Thompson, & Coady, 2001; Bridges, Thompson, & Willers, 2000; Bridges, Welch, Graves, & Sonn, 1997; Bridges et al., 2001; Kammann, Thompson, & Irwin, 1979; Whitehead & Metzler, 1981). These results are consistent with proposals that levels of altruism are influenced by population density, as more helping generally occurs in areas with low versus high population density (See Milgram, 1970; Latané & Darley (1970). An individual may feel less responsible for providing help when there are others around (Darley & Latané, 1968; Wallach, Kogan, & Bem, 1964). Bickman (1973) used the LLT to show that return rates for lost letters in college dormitories were influenced by the population densities of the dormitories. The results showed that return rates were lower for letters lost in high-density dormitories than low-density dormitories.

LLT studies have also shown that altruism can be influenced by the socioeconomic level of the potential helper. Lowe and Ritchey (1973) showed that return rates for lost letters were influenced by the socioeconomic level of the area where the letters were lost. The authors dropped pre-addressed but unstamped letters in areas populated by upper-middle class, middle-class, or lower-middle class individuals. Letters were returned at a higher rate from upper-middle class areas than from middle-class and lower-middle class areas. In a similar study, Brown and Reed (1982) left letters on cars at a suburban mall and found that return rates were higher for letters left on high and medium status versus low status cars. Although there may be many reasons why socioeconomic level is related to differences in altruistic behavior, one can reconcile these results as being consistent with Maslow's hierarchy of needs theory (Maslow, 1948) -- individuals actively involved in meeting their basic survival needs (i.e., physiological needs) will be less likely to engage in giving back to the community (i.e., fulfilling their esteem needs) than individuals who have their basic survival needs secured.

Research has also shown that mood can influence rates of helping. Soames (1987) left letters on cars of team supporters at a rugby game in Sydney, Australia. The results showed that negative mood was associated with higher levels of helping than positive mood, as letters were returned by supporters of the losing team at a higher rate than by supporters of the winning team. The results provided counterevidence to Rogers, Miller, Mayer, and Duval (1982) view that negative mood increases helping behavior only when the individual makes an internal attribution of responsibility.

Since Milgram's studies (1969; 1977; Milgram et al., 1965), there have been numerous investigations using the LLT to assess general attitudes toward members of minority groups whose names appear as addressees on the lost letters. In an early study, Montanye, Mulberry, and Hardy (1971) showed that return rates were influenced by racial prejudice. They found that return rates were lower for letters addressed to an African American equal rights movement than those addressed to a medical research association (See also Lowe & Ritchey, 1973; Brown & Reed, 1982). In other research, lower return rates have been observed for lost letters addressed to homosexual organizations than for letters addressed to other groups (Bridges 2001; Bridges et al., 2002; Bridges & Rodriguez, 2000; Bridges et al., 2001; Bridges, Williamson, & Jarvis, 2001; Bridges et al., 2001; Hansson & Slade, 1977; Levinson, Pesina, & Rienzi, 1993; Milgram, Mann, & Harter, 1965; Waugh, Plake, & Rienzi, 2000; Whitehead & Metzler, 1981).

Many LLT studies have investigated attitudes of a target population about a sensitive social issue. Lower return rates for letters addressed to organizations associated with the social issue can be interpreted as reflecting a more negative attitude toward that issue. Studies have investigated such varied topics as religious intolerance in Northern Ireland (Kremer, Barry, & McNally, 1986), attitudes toward Americans (Allen, & Rienzi, 1992), anti-war attitudes (Berkowitz, 1970), interracial marriage in the deep south of the United States (Bridges, Keeton, & Clark, 2002), forced busing (Baskett, Peet, Bradford, & Mulaik, 1973), drinking laws (Baskett et al., 1973; Weiner, 1975), the death penalty (Bridges, Anzalone, Coady, & Anzalone, 2002), euthanasia (Bridges et al., 2002), violence (Bridges, Scheibe, & Meyer, 2002), gun control (Himes & Mason, 1974), support for a political candidate (Milgram et al., 1965; Shotland, Berger, & Forsythe, 1970; Stern & Faber, 1997), support for a political issue (Bridges &

Thompson, 1999), creationism versus evolution (Bridges et al., 2002), and abortion (Bridges, Williamson, & Schiebe, 1998; Kunz & Fernquist, 1989).

Over the last sixty years, the LLT continues to be an important tool for researchers in social psychology. Researchers continue to develop variants of the technique to explore contemporary attitudes. In a recent variant of the LLT, Stern and Faber (1997) used electronic mail messages as lost letters and measured the types of reply emails that were received. In their first study, fictitious emails were sent to college faculty. Return rates were 19%. All returns were replies addressed to the sender of the message rather than the intended addressee of the email message. In their second study, Stern and Faber (1997) compared return rates for email messages containing political content for then Presidential candidate Ross Perot to known poll data. Two hundred email addresses in the United States were randomly selected. The return rates were consistent with poll data.

In a more recent study, the LLT was used to show that an individual's physical characteristics can influence the likelihood that he or she will receive help. Keating, Randall, Kendrick, and Gutshall (2003) lost letters containing a resume and a photograph. They varied the physical characteristics of the individual depicted in the photograph. They created digitized images of white and black faces of adult males and females. With computer software, faces were altered to make them more or less babyfaced. For babyfaced images, the eyes and the lips were enlarged. For the non-babyfaced images, eyes and lips were made smaller. Babyfaced and non-babyfaced pictures were printed on fictitious resumes and attached to stamped, pre-addressed envelopes. Envelopes were left in public locations in the United States and in Kenya. The results showed that in both countries return rates for babyfaced white and black females and babyfaced white males were returned more often than for other conditions. Return rates for babyfaced and non-babyfaced black males did not differ significantly. The authors concluded that faces with submissive-looking facial characteristics elicit help from strangers more than do faces with mature, dominant-looking facial characteristics.

The purpose of the present research is to describe a new variant of the LLT that was devised specifically to measure gender differences in attitudes about sensitive social issues. Only two prior studies using the LLT investigated sex differences in return rates (Bihm, Gaudet, & Sale, 1979; Gabor & Barker, 1989). In both studies, letters were left on the windshields of cars for which the gender of the driver had been observed. Gabor and Barker (1989) noted the gender as well as the approximate age of the drivers and found the lowest return rates for young female drivers and the highest return rate for older female drivers. Bihm, Gaudet, and Sale (1979) varied the gender of the addressee on the letter and found that female drivers were more likely to assist female addressees than male drivers were. This result contrasted with opposite results obtained in face-to-face interviews.

In the present research, we targeted male and female individuals separately by varying the locations where letters were dropped. We chose to drop letters in men's and women's public restrooms. By comparing return rates for letters dropped in men's and women's public restrooms, we reasoned that we could measure gender differences in attitudes toward the addressee of the lost letters. For the addressee, we varied whether the organization was a pro-gun or anti-gun organization. Prior research has shown that males are more likely to oppose gun control than females (Ellison, 1991; Kauder, 1993; Livingston & Lee, 1992; Marciniak & Loftin, 1991; Moore & Newport, 1994; Payne & Riedel, 2002; Tyler & Lavrakas, 1983; Webster, Gainer & Champion, 1993). There are no statistics on the number of women who are members of the National Rifle Association, as the organization does not ask members to report gender; however, it is generally believed that male members are greater in number than female members (See Homsher, 2001). We hypothesized that return rates for pro-gun and anti-gun letters would differ by whether the letter was lost in men's versus women's public restrooms.

Our research was carried out in two experiments. In the first experiment, we investigated the extent to which public restrooms were viable locations for losing letters. We considered the possibility that return rates from public restrooms would be too low to assess gender differences in attitudes about controversial topics. We observed evidence to the contrary. In Field Experiment 2, we investigated return rates for letters that were again lost in men's and women's public restrooms and were addressed either to a pro-gun organization or an anti-gun organization.

### **Field Experiment 1**

The purpose of Experiment 1 was to determine whether letters left in public restrooms would be mailed. We considered the possibility that individuals in public restrooms who found a lost letter would not want to pick it up due to concerns about hygiene. Furthermore, we considered the possibility that return rates for letters left in restrooms might be low because individuals in public restrooms could generally be in a hurry. Prior research has shown that individuals in a hurry were less likely to engage in altruistic acts than individuals not in a hurry (Darley & Batson, 1973). In order to assess the baseline rate of return for letters lost in public restrooms, we lost letters that were addressed to a socially-positive, fictitious organization that was selected to appeal both to males and females. This organization was "Oklahoma Childhood Leukemia Foundation."

### **Method**

*Participants.* The individuals who came in contact with the “lost” letters were not identifiable. It is likely that the participants in this study reflected the general sociodemographics of Norman, Oklahoma (See City of Norman, 2000). The population of Norman in 2000 was 95,694; 50% were male and 50% were female. The following percentages describe the population by racial group: 79.4%, White; 4.3%, Native American; 4.1%, African American; 3.8%, Hispanic; 3.4%, Asian; and 5.2%, other races. The following percentages describe the population by age group (as assessed in 1990 when the population was 77,024). At that time, 22.3% was under 18 years old, 21.1% was 18-24 years old; 33.4% was 25-44 years old; 15% was 45-64 years old; and 8.2% was over 64 years old. Norman, Oklahoma is located ten miles south of the metropolitan area of Oklahoma City.

*Procedure.* One hundred letters were hand-addressed to a fictitious organization. This organization was called The Oklahoma Childhood Leukemia Foundation. All letters were securely sealed. Letters were dropped in the restrooms of fifty public locations (e.g., shopping mall, retail stores, gas stations, public parks, government buildings, fast-food restaurants, among others). The dropping of the letters was carried out away from the view of others. The dropping was conducted in a naturalistic manner, as though a letter was set down for a moment and then forgotten. For each location, one letter was dropped in each of the men’s and women’s public restrooms. However, in order to prevent both letters being found at the same time by individuals who might know one another and discuss their found letters, only one letter was dropped at a given location on a given day. Half of the letters dropped on a given day were dropped in men’s restrooms, and half were dropped in women’s restrooms. All envelopes were addressed to the same street address. Inside each envelope, we included the same letter, which we modeled those used in prior studies (Milgram, 1969; 1977; Milgram et al., 1965). The content of the letter was designed to create in the reader a sense that the information was important and involved an event in the near future. The letter was typewritten as follows:

Hi Pat,

Just a note to tell you that the plans have been changed. The speaker can't be in Oklahoma City in time for next week's meeting, so bring the two reels of film instead. My guess is the film will have a very good effect on the group, particularly the new members. I'll try to get a few recent acquaintances to show up.

Laura and I are flying to Houston, but we'll be back in time for the meeting. Regards from my brother, and keep up the good work!

Best,

Jarrett

Letters were individually stamped and sealed. Letters were coded to indicate the date of the drop, the location where the letter was dropped, and whether the letter had been dropped in the men’s or women’s public restroom.

## **Results and Discussion**

Of the 100 letters left in public restrooms, 71 letters were returned. Of these 71 letters, 38 were returned from men’s restrooms and 33 were returned from women’s restrooms. In order to determine whether the return rate from men’s and women’s restrooms was significantly different, a chi-square goodness of fit test was conducted using an alpha level of .05. The results of this analysis indicated that the difference of 5 letters was not significantly different,  $\chi^2(1, n = 71) = .35, p > .05$ .

We concluded from these results that it would be feasible to use men’s and women’s public restrooms as drop locations in a LLT study. The return rate was sufficiently high to enable one to compare return rates for more complex designs, such as those involving 2 x 2 designs where one factor would be type of restroom and the other factor would be type of addressee on lost letters. We also noted that in the present field experiment, return rates for the gender-neutral organization did not vary significantly for men’s and women’s public restrooms. Consequently, any future differences observed in return rates for letters dropped in men’s and women’s public restrooms for addressees representing different organizations will not be easily explained by differences in baseline return rates from men’s and women’s restrooms.

## **Field Experiment 2**

The purpose of Experiment 2 was to determine whether the LLT could be used to detect a gender difference in attitudes about sensitive social attitudes. Letters were addressed to one of two fictitious organizations, one pro-gun and one anti-gun. The pro-gun organization that was used was called the “Friends of the National Rifle Association (NRA).” The anti-gun organization that was used was called the “Foundation to Abolish the National Rifle Association (NRA).” Because the number of letters dropped in Study 2 was greater than in Study 1, we chose to drop letters in the metropolitan area of Oklahoma City, which is approximately 17 miles from the city used in

Study 1 (i.e., Norman, Oklahoma). We hypothesized that the rates of return for pro-gun and anti-gun letters would differ by type of restroom.

### Method

*Participants.* As in Experiment 1, individuals who came in contact with the “lost” letters were not identifiable. They were members of a different city than those involved in Experiment 1, ( i.e., Oklahoma City, Oklahoma). It is likely that the participants in this study reflected the general sociodemographics of Oklahoma City, Oklahoma (See Oklahoma City, 2000). In 2000, the population of Oklahoma City was 506,132; however, the population of the Oklahoma City Metropolitan area was 1,083,346. In 2000, 48.7% of the population was male and 51.3% was female. The following percentages describe the population by racial group: 68.4%, White; 3.5%, Native American; 15.4%, African American; 3.5%, Asian; 0.1%, Native Hawaiian; 5.3%, belonged to two or more groups; and 3.5% belonged to the “other” group. The median age was 32.4 years old.

*Procedure.* Letters were hand-addressed to two fictitious organizations – Friends of the National Rifle Association (NRA) and Foundation to Abolish the National Rifle Association (NRA). There were 200 letters dropped for each organization (i.e., 400 in total). All other aspects of the procedure were the same as in Experiment 1.

### Results

The results indicated that this variation of the LLT could be used to detect gender differences in attitudes toward guns. The return rates for each type of letter by type of restroom are displayed in Table 1. Out of the 400 letters dropped, 136 were returned. This rate of return was far lower than the rate of return observed in Field Experiment 1 (i.e., 34% versus 70%). This comparison is consistent with prior research showing much lower return rates for controversial addressees than for non-controversial addressees (See Milgram, 1969). The general attitude toward a children’s charity is likely to be more positive than toward a political organization.

**Table 1.** Return rates of letters lost in male and female public restrooms by type of letter from Field Experiment 2.

Type of Letter	Type of Public Restroom	
	Men	Women’s
Pro-gun	50	40
Anti-gun	16	30

The pattern of results observed in the present study supported our hypothesis that the rates of return for pro-gun and anti-gun letters would differ by type of restroom. As shown in Table 1, more pro-gun letters were returned from men’s public restrooms than from women’s public restrooms and more anti-gun letters were returned from women’s public restrooms than from men’s public restrooms. A chi-square test of independence was conducted using an alpha level of .05. This analysis indicated that the addressee of the letter (pro-gun versus anti-gun) was independent of the type of restroom where letters were dropped (men’s versus women’s),  $\chi^2(1, n = 136) = 5.26, p < .05$ . Following MacDonald and Gardner (2000), pairs of cells were compared to further investigate the pattern of results. The results of these comparisons indicated that the rate of return for anti-gun and pro-gun organizations differed significantly for letters left in men’s restrooms,  $\chi^2(1, n = 66) = 17.52, p < .001$ , but did not differ significantly for letters left in women’s restrooms,  $\chi^2(1, n = 70) = 1.43, p > .05$ . The rates of return for pro-gun letters and anti-gun organizations did not differ significantly by location,  $\chi^2(1, n = 90) = 1.11, p < .05$  and  $\chi^2(1, n = 46) = 4.26, p > .05$ , respectively.

### General Discussion

The present research demonstrates that the LLT can be used to investigate gender differences in attitudes toward sensitive social attitudes. This was accomplished by targeting men and women separately with lost letters in men’s and women’s public restrooms. In future research, this variation on the LLT technique can be used in order to gender differences in attitudes toward the range of social issues that have been investigated in prior LLT studies as well new topics relevant to contemporary political campaigns and/or policy debates.

Nevertheless, any researcher who chooses to use the LLT must be aware of the disadvantages of the technique. The LLT assesses global attitudes in a population and cannot easily detect fine-grained distinctions. The LLT also requires a relatively large sample (See Milgram, 1977). There have been a number of studies in which the viability of the LLT was questioned (Bolton, 1974; Wicker, 1969; Zelnio & Gagnon, 1977); but in those studies, return rates were quite low when small sample sizes were used or when issues selected for the addressees on the

letters were not of a highly emotional nature. Other studies have observed that results obtained in LLT studies were not predictive of election results (Baskett et al., 1973; Bouchard & Stuster, 1969; Weiner & Lurey, 1973). Researchers interested in using the LLT to predict election outcomes should consider the fact that voter turnout can be low and can vary dramatically across different segments of the population. Consequently, researchers should make every effort to distribute lost letters in a manner that approximates expected voter turnout patterns.

In circumstances where no difference is observed in return rates for lost letters, researchers are also advised to analyze the time taken to return letters. Prior research has shown that this secondary analysis can be informative. For example, Barefoot and Strickland (1977) reported a study in which they dropped unsealed envelopes that contained important or unimportant messages. Important messages were stamped with the word "CONFIDENTIAL". Unimportant messages were not stamped. The results showed no significant difference in return rates for the two types of messages; however, important messages were returned more rapidly than unimportant messages (c.f., Bond & Pedersen, 1984).

There are statistical issues to consider before embarking on a LLT study. In most studies, the chi-square test for independence is used to determine whether return rates or speed of return varied across conditions. For studies in which chi-square will be the primary method of analysis, one should consider the complexity of the design before embarking on the study. Prior research has shown that as the number of cells increases in a study, the possibility of a Type I error also increases for the chi-square test for independence (Bradley, Bradley, McGrath, & Cutcomb, 1979; MacDonald & Gardner, 2000; Parshall & Kromrey, 1996).

For researchers who would like to lose letters in public single-sex restrooms as was done in the present research, it should be noted that the letter drop procedure can be more time-consuming than other implementations of the LLT. Researchers must work in teams, consisting of one male and one female. For each public location (e.g., a retail outlet or public building), one letter can be dropped in either a men's or women's restroom. The number of letters dropped per day will depend on the stamina of your research team and the distance between locations. We found that the number of letters dropped per day was as low as 8-16 per day. In all LLT studies, as in the present study, there is possibility that an individual might find more than one lost letter. An individual may be less likely to mail second or third found letters. In order to ensure that this does not occur, it is ideal not to use locations more than once. If locations must be resampled, it is ideal not to sample them at the same time of day or week.

We strongly recommend the use of this new variant of the LLT as a teaching tool in college courses in which students are learning about different research methodologies or are learning about gender differences in social attitudes (See also Mugford, 1974). Students can be encouraged to generate an original hypothesis related to some gender difference in attitudes, and then test the hypothesis in a LLT study. Students can be encouraged to discuss aloud the methodological issues related to the importance of selecting locations for the letter-drops, and steered toward selecting appropriate locations for a methodologically-sound study. Specifically, great care must be taken to ensure that equal numbers of letters are dropped in men's and women's restrooms on a given day. Furthermore, the locations selected to receive a male letter or female letter should be comparable in terms of all relevant extraneous factors, particularly population density of target locations. Students can also be required to submit a full APA style research report describing the field experiment and results. In the general discussion of this paper, students can be encouraged to discuss the unobtrusive nature of the LLT, as well as the cautions that must be considered when interpreting results obtained in LLT studies (e.g., lack of control over the research situation).

In sum, the research described in this paper demonstrated the viability of using the LLT to explore gender differences in attitudes about sensitive social issues. The technique could be used to investigate other issues for which gender differences are hypothesized, such as legislation regarding abortion rights, prostitution, funding for education, elder care, war policies, and many others.

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