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ORIGINAL ARTICLE

# Using the lost letter technique to measure real-life behavioral effects of alcohol use

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## Abstract

**Introduction and aims:** People's behaviors after alcohol use are more extreme and alcohol has a narrowing effect on a person's cognitive capacity. We tested this effect, making use of the Lost-Letter Technique (LLT), in which the return rate of "lost letters" by public mail is used to measure altruistic behavior. We hypothesized that return rates would be lower when people are under the influence of alcohol, and that an anti-alcohol prime in the address would even further decrease return rates.

**Design and methods:** 768 letters were dropped, half of those at times when some degree of intoxication was likely versus when sober passers-by were common. Three different addressees were used to convey an anti-alcohol cue, a charitable cue, and a neutral cue.

**Results:** The average response rate was 33.1%, and was significantly lower during late bar hours than during lunch hours (20.3% versus 45.8%). Also, when envelopes were found by people who were more likely to have consumed alcohol, anti-alcohol cues gained significantly lower response rates (12.7% versus 23.1%).

**Discussion and conclusions:** This study confirms that alcohol use causes less altruistic behavior and different responses to alcohol-related cues, suggesting that LLT is a promising method to study people's behavior. Future research could also focus on other substances, (mood-)states, and technology as a means of data collection.

## Keywords

Alcohol use, behavioral effects, innovative methods, lost letter technique (LLT)

## History

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In 1965, Milgram, Mann, and Harter introduced the lost-letter technique (LLT) to measure people's political attitudes (Milgram et al., 1965). The LLT uses addressed and stamped letters to several (fictitious) persons or organizations that are being "lost" in various public areas where they can be found by passers-by. The technique essentially focuses on people's willingness to display altruistic behaviors, i.e., expending effort for an unknown other, with no expectation of any compensation or benefits (cf. Fessler, 2009). People who find such letters can either decide to ignore them, or, altruistically, pick them up and take them (possibly) for posting later (Bridges et al., 2000a); the return rate is taken to reflect receivers' stance toward the addressee. In Milgram et al.'s studies, the large numbers of dropped letters carried addresses of political groups and other institutions; the number of letters of each addressee, which were returned in the mail turned out to be indicative of receivers' political stance: support for a political group was reflected by higher return rates.

For almost 30 years, the LLT has not been used, until Bridges and various colleagues extended its use. In addition

to the attitudes, a community might have for certain organizations on the letters' addresses, they investigated the effects of community size on return rates and found that in smaller communities, return rates tend to be higher (Bridges & Coady, 1996).

Subsequently, they explored the effects of various dimensions of the addressee, depending on community size. It turned out that, although in general smaller communities have higher return rates, especially in small communities, lower return rates were found when the addressee was deviant, i.e., "For Prostitution, or Female and Male Sex Workers" (Bridges et al., 1998). Other manipulations of the addresses were explored, such as in-county and out-county post boxes (Bridges et al., 2000a), "personhood" by adding a person's name on the address (Bridges et al., 2000b), or campaigns supporting versus opposing gay and lesbian teachers in communities known to be either "anti-gay" or "gay-friendly" (Bridges et al., 2002). Turner and colleagues investigated the possible effects of altercasting in a study in which a hand written note was added to the lost letter instructing the finder to mail the lost letter which was placed behind the windshield of a car. They did not find any affects for positive altercasting in comparison with a direct instruction (Turner et al., 2010).

So far, LLT has predominantly focused on establishing differences between trait-like variables such as political attitudes and world views (but see Bridges et al., 2000b). In the current study, we tried to further extend the versatility of the

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LLT by exploring the effects of a more state-like variable, i.e. alcohol intoxication. Specifically, we set out to test whether people likely to have consumed alcohol would behave less altruistically and responded differently in response to alcohol-related cues than people more likely to be sober.

### Alcohol myopia theory

The Alcohol Myopia Theory (AMT) by Josephs and Steele (1990) is one of the best accepted theories on the effect of alcohol on behavior (Giancola et al., 2010). The AMT postulates that consuming alcohol makes social behaviors more extreme and that alcohol has a narrowing effect on a person's cognitive capacity, causing a focus on only the most salient, conspicuous cues.

This hypothesis was first tested in a series of studies by MacDonald and colleagues (MacDonald et al., 1995) on attitudes toward driving under influence. Sober and intoxicated participants completed a questionnaire assessing their attitudes and intentions to drink and drive in a number of situations. Different versions of the questionnaire were used, differing in the way questions were phrased. One version of the questionnaire had questions about drinking and driving phrased in an impelling manner, i.e., taxing participants' opinions about a decision to drive while under influence in order to get home quickly, or in order to spare the expenses of taking a taxicab. The other version required them to rate their opinions toward a decision phrased in an inhibiting manner, i.e., to abstain from driving to prevent getting in an accident or getting arrested. The results show that when given impelling cues, intoxicated persons show significantly higher intentions and significantly less negative attitudes toward drinking and driving than sober persons. When questions were phrased in an inhibiting manner, intoxicated subjects responses were generally in line with the responses by sober subjects.

Similar results were found in a study on the decision whether to engage in risky sexual behavior (MacDonald et al., 1996). After having viewed a video vignette depicting a male and female undergraduate couple who were interested in having sexual intercourse, but did not have condoms available, impelling cues imbedded into the video (female character being very attractive, and disclosing that she took birth control pills) led to more favorable intentions toward having unprotected sex for intoxicated males than for their sober counterparts (cf. Macdonald et al., 2000).

Several other studies offer further support for the hypothesis that intoxicated individuals are easily influenced by whatever cues are most salient in the situation at hand (e.g., see Davis et al., 2007; Giancola et al., 2010). The question central to this study is whether the LLT can be used to show this particular effect in real life.

### Alcohol and the LLT

Measuring the behavioral effects of alcohol use is a complicated issue, regardless of whether this is done under controlled circumstances or in real life. Controlled studies usually take place in a laboratory or under otherwise contrived circumstances, and participants may well be aware

that their behavior and responses to questions are under scrutiny, and may engage in reputation-enhancement by displaying pro-social behaviors. Arguably, this is especially the case in studies where the effects of alcohol are under scrutiny, as for both practical and ethical reasons, the administration of doses of alcohol cannot reasonably be done without the participants' awareness and consent. Studying the effects of alcohol on human cognition, emotions, and behavior outside the laboratory has its own problems, chief among which is that observing the behavior of intoxicated individuals in real-life settings such as bars, is not likely to yield information about the processing of environmental stimuli.

The LLT, however, circumvents the problems of social desirability, allowing researchers to study behavior in real-life settings, unbeknownst to participants (cf. Fessler, 2009). In addition, it offers an ethically sound means to study the effects of alcohol intoxication.

Returning a lost letter entails a conscious decision to not leave it lying on the ground, but to help an unknown other (an act of altruism toward the sender) by tucking it in a pocket or bag until a moment in the near future when a mailbox is present. As such, it constitutes an altruistic act (Fessler, 2009).

The literature on the AMT discussed above suggests a narrowing effect of alcohol intoxication on people's cognitive capacity, causing a restricted attention span, and, consequently, a focus on the most salient cues in the environment. Thus, we would expect that in case of drunkenness, the mere sight of a lost letter would be overshadowed by cues more proximal to the observer's goal as finding one's bicycle, avoid bumping into other passers-by, or find a particular bar, and that altruistic behavior (picking up and posting lost letters) will be performed less frequent. If a letter ends up being picked up by an intoxicated individual, any information on it, such as cues embedded in the address, would then become the most salient, triggering a stronger response than it would for sober persons.

### Current study

These ideas were tested in a study using the LLT. A total of 768 letters were dropped in two city centers in the East of the Netherlands, at two different moments during the week: half were dropped during late bar hours on Fridays and Saturdays, and the other half during lunch time office hours on week days (Mon–Thu). Furthermore, these were dropped close to bicycles that were likely to be owned by students. This, we expected, would effectively target individuals who could reasonably be expected to have imbibed at least a few alcoholic consumptions on the one hand, and individuals who were likely to be sober on the other (see e.g., Gmel et al., 2005; Kuntsche & Labhart, 2012; Quigg et al., 2013). The letters' envelopes furthermore varied in the cue embedded in the address. The latter could either consist of a cue supposed to be averse to intoxicated individuals (anti-alcohol), a charitable cue assumed to invoke altruism regardless of intoxication, and a neutral cue.

The following hypotheses were formulated based on the aforementioned:

H1: There will be a lower response rate for the letters dropped during late bar hours, than the letters dropped during office lunch hours.

H2: The anti-alcohol cue will result in lower return rates than both other cues, but only for the letters dropped during late bar hours.

H3: The charitable cue will result in a higher return rate than the averse and neutral ones.

## Methods

The study consisted of a 2 (alcohol use: Friday and Saturday during late bar hours versus Monday till Thursday during office lunch hours)  $\times$  3 (address cue: anti-alcohol versus charitable versus neutral) experimental design. Two Dutch cities were selected, which are close to each other so that losing letters in a small time frame was possible, and both consist of a city center with a shopping area and nightlife area. A total of 768 letters were dropped, 384 in each city, in 32 days, over a two-month period in the summer of 2012. We chose to use a longer period of time in order to prevent accidental differences in the crowds (e.g., a school class passing by, or sport fans for an event). In each “wave”, 24 letters were dropped at 12 pre-determined places in each city, with about a quarter mile between the individual letters. The envelopes were labeled with three different addresses; an anti-alcohol, a charitable, and a neutral cue. As a control variable for darkness, we used two colors of envelopes (in both conditions); in 50% of the cases a regular envelop (white), and in 50% a bright yellow (fluorescing) envelop. This, we hoped, would provide insights into the mere effect of darkness in de bar hours versus the office hour conditions on the return rates. Letters were only dropped if the weather forecasts were good, to prevent the letters from becoming soaked in the rain.

## Distribution

In each of the two cities, 12 spots were defined where the letters would be dropped. These spots were selected to ensure sufficient (street) light both at night and during the day, absence of public mail boxes, presence of many parked bicycles, and considerable numbers of people passing by. Subsequently, for each city, a distribution scheme was made to ensure equal distribution of all envelope types at each location, and during each wave.

For each wave, the letters were sorted, in line with the distribution scheme, and put in the research assistant’s jacket pocket. On each of the 12 spots, the research assistant knelt down, as if to tie his shoe strings. If no one was watching, he then took a letter from his pocket and shoved it between the rear wheels of some parked bicycles with address facing upwards. Both during office and bar hours we selected bicycles that were considered typical student’s bicycles. Due to high rates of bicycle theft, it is common practice among Dutch students to have cheap and rather conspicuous bicycles, the idea being that markedly older, colored, and dilapidated bicycles are less likely to be stolen. Therefore, we excluded

bicycles that were new, expensive, fitted with child’s seats and/or bags, and those that were powered by electricity.

## Address primes and envelopes

Three fictitious addresses were used to convey anti-alcohol (*Anti Alcohol Foundation*), charitable (*Help Your Fellow Human Beings Foundation*), and neutral (*Fan Foundation*) cues. Care was taken to ensure that all addressees were about the same in text length (in Dutch). The PO Box number and postal code were identical for each addressee, and belonged to a mailbox in Amsterdam, rented especially for this study. As mentioned before, as a control for the night-time condition, we used two different colored envelopes, one regular white envelope, and one conspicuous bright yellow envelop. All envelopes were sized C5 (114  $\times$  229 mm), of the same weight, and were carrying a valid stamp (€ 0.50, about \$ 0.67).

All envelopes contained a single-page printed letter, containing an invitation to a general members meeting for one of the three specific foundations. The letter contained no other information and was pretested for neutrality using a focus group (three males and three females). All letters were unobtrusively coded to be able to determine the particular study condition the letter belonged to, the city in which the letter was lost, and the date at which this had happened (just in case someone would open the envelop, read the letter, and use a new envelop to post the letter). These codes were embedded in the letter date, the hometown of the person signing the letter, and the initials of the signee.

## Analysis

In order to investigate possible effects for alcohol use (late bar hours and office lunch hours), the three cues (anti-alcohol, charitable, and neutral), and the two types of envelopes as a control variable (regular and high conspicuous) we conducted an analysis of variance. The charitable and neutral cue results were combined as a collapsed control group in order to investigate the possible effects for the anti-alcohol cue.

## Results

Out of a total of 768 dropped letters, 249 were returned; a response rate of 32.6%, which is in line with previous LLT studies.<sup>1</sup> A number of returned letters, however, had to be omitted from the analyses based on comments of the participants. One participant had inadvertently found two lost letters, and had written “Is this a joke?” on both envelopes (we were able to ascertain that this was the same person because of the postal code and house number written on both envelopes). Another participant had included items such as a train ticket, a 5 cents coin, and a receipt in the envelope. Yet another participant had drawn obscene images on the envelope, and one participant joked that s/he could not appear at the anti-alcohol meeting because of drunkenness. Because these four respondents (five envelopes) processed the envelopes in a non-regular manner (indicative of suspicion regarding the true purpose of the letters), these were excluded from the analyses.

As has also been depicted in [Table 1](#), return rates differed between bar hours (75, 19.7%) and office lunch hours (174,

Table 1. Return rates for the lost letters (percentage between parentheses).

		Address cue		
		Collapsed control	Anti-alcohol	Total
Alcohol use	Office hours	122 (74.8)	52 (40.9)	<b>174 (45.5)<sup>a</sup></b> <b>75 (19.7)<sup>a</sup></b>
	Bar hours	59 (23.1) <sup>b</sup>	16 (12.7) <sup>b</sup>	
	<b>Total</b>	<b>181 (35.5)<sup>c</sup></b>	<b>68 (26.7)<sup>c</sup></b>	

Superscripted indices a, b, and c summarize the results chi-square analyses, two tailed. Equal indices indicate significant differences in return rates.

45.5%), as indicated by a significant  $X^2$  test result, Pearson  $X^2$  (1,  $n = 764$ ) = 58.05,  $p < .001$ , Cramer's  $V = .28$ .

A  $X^2$  test for independence showed a significant association between response and cue conditions,  $X^2$  (2,  $n = 763$ ) = 9.64,  $p < .01$ , Cramer's  $V = .11$ . The number of returned letters differed between the conditions, with 80 (31.4%) in the charitable condition, 68 (26.9%) for anti-alcohol, and 101 (39.6%) for neutral. Excluding the charitable condition from the analyses resulted in a highly significant association,  $X^2$  (1,  $n = 508$ ) = 9.27,  $p < .01$ , Cramer's  $V = .14$ . Comparing only the charitable and neutral conditions, however, failed to achieve significant results,  $X^2$  (1,  $n = 510$ ) = 3.78,  $p = .06$  (2-sided); similarly, comparing the anti-alcohol and charitable conditions did not yield a significant association either,  $X^2$  (1,  $n = 508$ ) = 1.24, *ns*. These analyses therefore show the response rate in the anti-alcohol cue condition to deviate from the neutral condition, whereas the response rate in the charitable cue condition does not significantly deviate from both other conditions.

A follow-up analysis was conducted to single out the responses in the anti-alcohol cue condition depending on presumed alcohol intake. Specifically, the charitable and neutral cue were collapsed and pitted against the anti-alcohol cue, because we were interested in the specific possible effects of the anti-alcohol cue in the bar hour conditions compared to the office hour conditions. In addition, analyses reported above showed no differences between the charitable and neutral conditions. A significant association was found when comparing the response rates in the two conditions combined for the collapsed control with the anti-alcohol condition,  $X^2$  (1,  $n = 763$ ) = 5.71,  $p = .02$  (2-sided), Cramer's  $V = .09$ . When zooming in on the effects on the bar and office hour conditions separately, a significant association between response and cue conditions emerged; in the anti-alcohol cue condition, 12.7% of the envelopes were returned, and in the collapsed control 23.1% was returned,  $X^2$  (1,  $n = 381$ ) = 5.81,  $p = .02$  (2-sided), Cramer's  $V = .12$ . In the office hour condition, no such association was found (40.9% versus 47.8%),  $X^2$  (1,  $n = 382$ ) = 1.623, *ns*. See Table 1.

No significant differences were found for the yellow and conspicuous envelop and the white non-conspicuous envelop,  $X^2$  (1,  $n = 763$ ) = 0.52, *ns*; this does not change if a differentiation is made between the day time office lunch hours and the (dark) late bar hours ( $X^2$  (1,  $n = 382$ ) = 1.52, *ns*, and  $X^2$  (1,  $n = 381$ ) = 0.13, *ns*, respectively).

## Discussion

The current study successfully utilized the LLT to show the effect of alcohol intoxication on people's responses to alcohol-related cues. Notably, the overall return rate found here was virtually identical to those reported in earlier work (Bridges et al., 1998, 2000a, 2000b, 2002); apparently, the willingness to display altruistic behaviors has not diminished over the years.

It was expected that for people more likely to have consumed alcohol (i.e., during late bar hours), lost-letter return rates would be lower than for people who found the lost letter in their lunch break. In conformance with Hypothesis 1, the response rate for letters lost during bar hours was indeed lower than the response rate for those during office hours. As we can reasonably assume that the average amount of alcohol consumed during those bar hours is likely to be higher than during office hours, we would like to argue that this difference in return rates can in fact be attributed to the cognitive effects of alcohol intake. Nevertheless, it could be argued that the reduced return rate in bar hours can be explained by the fact that these letters were dropped at night. However, a number of reasons render this alternative explanation unlikely. First, all letters were dropped in locations that were well lit by streetlights. Additionally, the actual dropping was done by placing it on the ground between the rear wheels of parked bicycles, with the address facing upwards. As such, these dropped letters were very hard to miss for someone unlocking their bicycles, even in night time. Finally, two types of envelopes were used, bright yellow, fluorescent envelopes and regular plain white ones. If night time darkness would have negatively influenced the conspicuousness of the letters, we would have expected this to especially affect the plain white envelopes rather than the more conspicuous yellow ones. In other words, this would have resulted in lower return rates for the white envelopes dropped during bar hours than for white ones. The results, however, show no such difference.

Furthermore, in the bar hour condition, the anti-alcohol cue resulted in a drop of returned letters compared to the other cue conditions, which is in conformance with Hypothesis 2. No such difference was found during office hours. Apparently, this cue triggered only triggered people under the influence of alcohol to object, and not support an organization of which the name (*Anti Alcohol Foundation*).

Contrary to Hypothesis 3, we did not find any effect of the charitable cue *Help Your Fellow Human Beings Foundation*. We expected that a general prime aimed at aiding fellow human beings would increase the willingness to post the letter



(and actually help somebody). This specific cue, however, did not increase the response rate.

To our knowledge, this study was the first to use the LLT to map human behavior in relation to alcohol intake. The striking resemblance of the overall response rate found here with those of other LLT researchers (e.g., Bridges et al., 1998, 2000a, 2000b, 2002) suggests that this method is suitable for this type of research questions. The LLT could be highly useful in studying the effects of alcohol intoxication in the wild, effectively circumventing the problems of social desirability and ethics, that plague more controlled studies. As a downside, however, it does not allow us to obtain any other information about our unwitting participants, i.e., the anonymous people who answered the call to post our lost letters. Consequently, we cannot be absolutely sure to what extent these participants were actually under the influence of alcohol. We are reasonably sure that people on the street during bar hours and in the center of the two cities had indeed been visiting the many bars there, as shops were closed at those times, and that the vast majority had been consuming alcohol to some degree. In future research, it could be incorporated to observe drinking behavior in the various conditions in order to better estimate alcohol intake.

Extending findings of previous LLT studies, this study confirms that the actual state respondents are in (in particular alcohol intoxication) indeed influences the willingness to pick up and post the letter, or in other words, show altruistic behavior. Therefore, it would be interesting to explore this finding via two routes. First, in relation to the AMT it would be interesting to investigate what other effects of alcohol use in crowds could occur. Second, the finding that the particular state people are in, apparently, influences participation in a LLT study is interesting (and new). We could think of other states (e.g., excitement, depletion, craving, marijuana use), or other circumstances (temperature, noise, smell) for which the LLT would be a helpful research tool. At any rate, we feel the LLT has yet to reach its full potential.

### Declaration of interest

The authors report no conflict of interest.

### Note

1. This is in line with the previous lost letter designs in which 32.3% (Bridges et al., 2002), 34.1% (Bridges et al., 2000b), 39.9% (Bridges et al., 2000a), and 40.3% and 45.4% (Bridges et al., 1998) were returned.

### References

- Bridges, F. S., Thompson, P. C., & Willers, P. H. (2000a). Lost letter returns on five topics from urban, waterfront, and smaller rural communities. *Psychological Reports*, 86, 1097–1100.
- Bridges, F. S., & Coady, N. P. (1996). Urban size differences in incidence of altruistic behavior. *Psychological Reports*, 78, 307–312.
- Bridges, F. S., Anzalone, D. A., Ryan, S. W., & Anzalone, F. L. (2002). Extensions of the lost letter technique to divisive issues of creationism, Darwinism, sex education, and gay and lesbian affiliations. *Psychological Reports*, 90, 391–400.
- Bridges, F. S., Ryan, S., & Scheibe, J. J. (1998). Affiliation, community size, and destination in return of lost letters. *Psychological Reports*, 83, 1387–1393.
- Bridges, F. S., Ryan, S., & Scheibe, J. J. (2000b). Affiliation, community size, and person-positivity effect in return of lost letters. *Psychological Reports*, 87, 1003–1010.
- Davis, K. C., Hendershot, C. S., George, W. H., Norris, J., & Heiman, J. R. (2007). Alcohol's effects on sexual decision making: an integration of alcohol myopia and individual differences. *Journal of Studies on Alcohol and Drugs*, 68, 843–851.
- Fessler, D. M. T. (2009). Return of the lost letter. Experimental framing does not enhance altruism in an everyday context. *Journal of Economic Behavior and Organization*, 71, 575–578.
- Giancola, P. R., Josephs, R. A., Parrott, D. J., & Duke, A. A. (2010). Alcohol myopia revisited: Clarifying aggression and other acts of disinhibition through a distorted lens. *Perspectives on Psychological Science*, 5, 265–278.
- Gmel, G., Heeb, J.-L., Rezny, L., Rehm, J., & Mohler-Kuo, M. (2005). Drinking patterns and traffic casualties in Switzerland: Matching survey data and police records to design preventive action. *Public Health*, 119, 426–436.
- Josephs, R., & Steele, C. (1990). The two faces of alcohol myopia: Attentional mediation of psychological stress. *Journal of Abnormal Psychology*, 99, 115–126.
- Kuntsche, E., & Labhart, F. (2012). Investigating the drinking patterns of young people over the course of the evening at weekends. *Drug and Alcohol Dependence*, 124(3), 319–324.
- MacDonald, T., Fong, G., Zanna, M., & Martineau, A. (2000). Alcohol myopia and condom use: Can alcohol intoxication be associated with more prudent behavior? *Journal of Personality and Social Psychology*, 78, 605–619.
- MacDonald, T., Zanna, M., & Fong, G. (1995). Decision making in altered states: Effects of alcohol on attitudes toward drinking and driving. *Journal of Personality and Social Psychology*, 68, 973–985.
- MacDonald, T., Zanna, M., & Fong, G. (1996). Why common sense goes out of the window: Effects of alcohol on intentions to use condoms. *Personality and Social Psychology Bulletin*, 22, 763–775.
- Milgram, S., Mann, L., & Harter, S. (1965). The lost-letter technique: A tool of social research. *The Public Opinion Quarterly*, 29, 437–438.
- Turner, M. M., Banas, J. A., Rains, S. A., Jang, S., Moore, J. L., & Morrison, D. (2010). The effects of altercasting and counter-attitudinal behavior on compliance: A lost letter technique investigation. *Communication Reports*, 23, 1–13.
- Quigg, Z., Hughes, K., & Bellis, M. A. (2013). Student drinking patterns and blood alcohol concentration on commercially organized pub crawls in the UK. *Addictive Behaviors*, 38, 2924–2929.