

# THE EFFECT OF LEAVING DIFFERENT ANSWERING MACHINE MESSAGES ON RESPONSE RATES IN A NATIONWIDE RDD SURVEY

Peter Tuckel, Hunter College; Mark Schulman, Schulman, Ronca & Bucuvalas  
Peter Tuckel, Dept. of Sociology, Hunter College, 695 Park Ave., New York, NY 10021

**Key Words: Answering Machine Messages, Nonresponse Bias**

## OBJECTIVES OF THE STUDY

Response rates to telephone surveys have undergone a sharp decline in the past decade. This decline both calls into question the representativeness of the individuals who are interviewed and adds considerably to the costs incurred in conducting telephone surveys. One possible strategy for combatting nonresponse would be to leave a message on potential respondents' answering machines that might induce a higher level of cooperation. This paper considers the effectiveness of leaving a message and the persuasive potential of different messages. The paper also discusses the implications of the findings, placing them in the context of the general problem of nonresponse in RDD surveys.

## BACKGROUND

Competing hypotheses might be advanced concerning the efficacy of leaving a message. On the one hand, leaving a message might be expected to increase response rates. Just as a letter of prenotification tends to secure higher cooperation rates in mail surveys, analogously, a message left on an answering machine might improve response rates in telephone surveys (Dillman 1978, Frey 1989, Baumgartner 1990). The answering machine message, like the prenotification letter, presumably would serve to legitimize the survey. Alternatively, leaving a message might not have any discernible effects or possibly even negative effects. It may be the case that since mail and telephone surveys represent distinct modes of data collection, prenotification might work in the context of a mail but not a telephone survey. Also leaving a message might serve to "forewarn" potential respondents who might construe the survey request as a "nuisance call." Or perhaps in the environment surrounding telephone surveys today, in which participation rates are declining rapidly, leaving a message might not be a sufficiently motivating force.

Previous research on this topic generally has found that leaving a message has had little impact on response rates. One study, carried out among households in

eight southern California counties for the National Marine Fisheries Service and the California Department of Fish and Game (Baumgartner 1990), discovered that leaving a message had no measurable effect on either the contact or completion rates. A second study, based upon two polls of the general population in Minnesota sponsored by the Minneapolis Star Tribune (Daves 1990) produced a similar result. More recently, a third study, carried out among a national sample of households by a market research company (Tuckel and Shukers 1997) also noted that leaving a message had no effect on response rates. On the other hand, a study carried out among the general population in the Lubbock, Texas area under the auspices of Texas Tech University (Xu, Bates, and Schweitzer 1993) found that leaving a message boosted the contact rate but not the completion rate.

Whether or not leaving a message is an effective strategy, of course, might depend upon the content of the particular message. A common viewpoint expressed in the investigations above is that leaving a message might be effective if the right "hot buttons" could be found (Daves 1990). The question which naturally arises then is what messages would be most likely to stimulate higher levels of survey participation.

Contemporary research findings concerning nonresponse in telephone surveys provide directions for formulating messages that might be more compelling than those utilized in past studies. For example, one reason given for the rise in refusal rates is that the public is wary of surveys that are really sales calls in disguise. This wariness stems from the practice of telemarketers to conceal a sales call as a public opinion or consumer survey (the practice known as "sugging"). A possible way of offsetting this suspicious attitude would be to leave a message on machines explicitly stating that the purpose of the call is to conduct a public opinion survey and not to sell anything.<sup>1</sup>

Another reason given for the increase in refusal rates is that participants feel underappreciated. This lack of appreciation is conveyed to respondents in a number of ways ranging from lengthy interviews, to poorly-constructed questionnaires, to unprofessional interviewers (Sheppard 2000). Leaving a message with a promise of a monetary incentive might help to counteract this feeling of being underappreciated

(Singer et al. 1999). The offer of a monetary incentive might be particularly attractive if it is couched in terms of a symbolic gesture of appreciation on the part of the survey research company.

A third reason attributed to the rise in refusal rates is that because of the fast pace of modern-day life people don't have the same amount of time as beforehand to participate in surveys. Exacerbating this problem is that interviewing is often carried out in the evening hours which coincide with the time family members are eating dinner or involved in other activities and they do not wish to be disturbed.<sup>2</sup> A possible remedy for this problem would be to leave a message inviting potential respondents to callback the survey research organization via a toll-free number to complete the survey. Affording respondents the opportunity to initiate a callback would permit respondents to complete the survey at a time convenient to them. Also, it might serve to enhance their feeling of control over the research process and, in turn, their psychological investment in this process.

While these messages might elicit greater cooperation from respondents, it could be argued that these messages would have little or no effect on response rates. First, explicitly stating that the purpose of the call is to conduct a survey and not sell anything may not be enough of an assurance to allay concerns that the call is really a telemarketing ploy. Second, as earlier studies have shown, the promise of a monetary incentive is not the same thing as a pre-paid incentive and thus this offer may not be viewed by potential respondents as adequate compensation for their efforts or even as a sincere expression of appreciation (Church 1993, Cantor et al. 1997). Finally, affording respondents the option of initiating a callback to the survey research company via a toll-free number also may not resonate well among respondents. While this option might permit respondents to gain greater control over the interview process, respondents might feel that taking the initiative for conducting an interview properly resides with the survey research organization and not the respondent. Thus, this offer might be perceived an unwarranted imposition on potential respondents.

## METHODOLOGY

The data for this study are based on the results of a RDD nationwide survey of 1251 interviews conducted between February 15 to March 7, 2000. The topic of the survey was child abuse. Though this is a sensitive topic, the only information about the topic that was imparted to potential respondents in advance was that

the survey was "about issues of concern to Americans." Thus potential respondents did not de-select themselves from the survey because of the sensitive nature of the topic.

The sample universe consisted of all adults who were 18 years of age or older. Within each sampled household an eligible adult was randomly selected by means of the last birthday method. All household telephone numbers in the sample were divided up *a priori* into four equal size replicates. The numbers in the first replicate constituted the Control Group and the numbers in the three other replicates made up Treatment Groups One, Two, and Three, respectively. Households in the Control Group that yielded an "answering machine" call disposition for the first time were left no message. Households in Treatment Group One that yielded an "answering machine" call disposition for the first time were left a standard message. Embedded in this message was a statement that the purpose of the call was to conduct a public opinion survey and not to sell anything. Households in Treatment Group Two that produced an "answering machine" call disposition for the first time were left a message similar to the one left in Treatment Group One except there was also a promise of a monetary incentive (\$5.00) for participating in the survey. Finally, households in Treatment Group Three that produced an "answering machine" call disposition for the first time were left a message paralleling the message left in Treatment Group Two but with one important distinction. Potential respondents were invited to initiate a callback to the survey research organization via a toll-free number to complete the survey. Respondents were told they could callback the survey research organization any day up to March 1st between the hours of 10 am to 10 pm. Only one message was left per household in the sample.

Telephone calls were initiated between 5:00 pm to 9:30 pm on weekdays and noon to 9:30 pm on weekends in all time zones in the continental United States. In general, four call attempts were made for household numbers that did not yield contact with a "live" human being. An exception to this rule was household numbers that generated an "answering machine" call disposition. The number of call attempts to these numbers was effectively unlimited except by the field period. "Busy" call dispositions were counted as one-third of a call attempt. Once contact was established with a "live" human being, the number of potential call attempts jumped to 15.

"Busy" call dispositions were redialed after 20 minutes. Other non-contacts (i.e., numbers that generated only a "no answer," or "answering machine" call disposition or

a combination thereof) were redialed after 90 minutes. These numbers, however, were seldom redialed more than once in any one day. All numbers that resulted in a contact were redialed after 24 hours unless a respondent scheduled a specific callback time.

When contact was established with an adult member of a household, the following introductory script was used:

"Hello, I'm (insert name) from SRBI, the national opinion research firm. We're doing a brief survey about issues of concern to Americans. We just want your opinions. There are no right or wrong answers."

At the end of the field period, a data set was constructed consisting of the call dispositions at each attempt for each household number. Appended to this data set were standard demographic variables culled from the completed interviews.

## RESULTS

### Overall incidence level of "answering machine" call dispositions and the accessibility of answering machine households

To examine the impact of answering machine messages, it is important to gauge the overall incidence of household numbers that produce an "answering machine" call disposition and the proportion of these numbers that are accessible to telephone survey researchers. This information will provide a backdrop against which to measure the potential effects of leaving a message.

If one eliminates from the analysis telephone numbers that are either nonworking or nonresidential (as determined at the time of the final call disposition) and calculates the proportion of the remaining numbers that yield an "answering machine" disposition *at any time* during the field period, the figure produced is 27.7 percent. In other words, over one-quarter of the numbers in the sample frame result in an "answering machine" call disposition at some point during the course of the calling period.

As impressive as this figure is, by itself, it may not have much of a bearing on the conduct of telephone survey research. What is critically important, of course, is the degree to which these numbers are accessible to telephone surveyors. To measure the accessibility of answering machine households, we first compared the contact rates among households that produced a call disposition of "no answer" vs. "busy" vs. "answering

machine" on the first call attempt.<sup>3</sup> The results show that it is far more likely for survey researchers to contact a household number that initially yielded either an "answering machine" or "busy" call disposition than a "no answer" call disposition (roughly 60% of the former type households vs. 36% of the latter type households). The same basic results are obtained if we omit from the "no answer" and "busy" groups telephone numbers that ever yielded an "answering machine" call disposition over the course of the calling period.

We next compared the completion rates of these three types of households.<sup>4</sup> The data reveal that there is a slightly greater propensity for individuals from answering machine households to complete an interview than their counterparts from "no answer" households. This difference, though, becomes almost negligible when we omit from the analysis household numbers in the "no answer" and "busy" groups that ever produced an "answering machine" call disposition during the field period.

In sum, the overall *response rate* of answering machine households is noticeably greater than that of "no answer" households. The reason for this is almost totally attributable to the higher contact rate of the former vs. latter group of households.

While the above findings might serve as grounds for optimism for telephone surveyors, considerable caution must be exercised before adopting a complacent attitude. Two observations, in particular, should be borne in mind when considering the accessibility of answering machine households. First, it appears that the likelihood of contacting answering machine households is declining over time. Though comparisons with previously-conducted studies are hazardous because of the use of different methodologies, the data from this and earlier studies strongly suggest that answering machine households are becoming more difficult to reach. As noted above, approximately 60 percent of the "answering machine" call dispositions on the first call attempt produced a "live" contact at the time of the final disposition. This 60 percent figure was arrived at, though, after a virtually unlimited number of callback attempts was made during the field period in cases where an "answering machine" call disposition was encountered. If we artificially restrict the number of callback attempts in the present study to just 2, the contact rate for household numbers which initially produce an "answering machine" call disposition is just 43.8 percent. By comparison, a national RDD survey that was carried out in 1988 with 2 callback attempts shows a corresponding contact rate of 56.8% -- a 13 percentage point difference. Or, to draw another

comparison, if we artificially limit the number of callback attempts in the present study to 3, the contact rate for household numbers that initially produce an "answering machine" call disposition is 51.9 percent. Yet three other studies carried out between 1989 and 1997 employing 3 callback attempts show corresponding contact rates ranging from 55% to 75.8%.

A second factor which needs to be kept in mind is that the number of "no answer" call dispositions seems to be growing. In this study, 26 percent of the working, residential telephone numbers that are called up to 4 times yield only a "no answer" call disposition. This finding dovetails with other research (Piekarski 1999) showing that the proportion of "no answer" dispositions is on the rise. Thus, the relative accessibility of answering machine households vs. "no answer" households noted in the present study may be, in part, an artifact of the increasing difficulty of contacting "no answer" households. Stated otherwise, it is not that households with answering machines are so reachable, it is that "no answer" households are becoming less reachable.<sup>5</sup>

### The Effect of Leaving a Message

Among working, residential numbers that yielded an "answering machine" disposition at any time during the calling period, there is no discernible difference in either the contact or the completion rates of those households that were left a message vs. those that were not left a message. Table 1 shows that the difference in the contact rate between the two types of households was negligible (0.04%) and the difference in the completion rates was a scant 2.0 percent (with the completion rate actually being higher in the "no message" households).

The absence of a relationship between either the contact or completion rate and whether or not a message was left could be due to several factors. One factor might be that the specific messages left were not all that compelling. Alternative messages might have induced a higher contact and/or cooperation rate. A second factor might be that the content of the survey introductions was not the same as the content of the messages left. Both the introductions and messages left provided the same information about the topic and sponsor of the survey. However, the introductions read to members of answering machine households in the three treatment groups did not include certain components that were included in the messages left at these households: (1) a non-solicitation statement, (2) the offer of a monetary incentive, and (3) the option to initiate a callback to the survey research organization. Thus, potential

respondents might not have made the necessary linkage between the messages left and the survey.

The lack of an overall relationship between either the contact or completion rate and whether or not a message was left could be obscuring internal differences in the effectiveness of the three particular messages left. Yet as the data in Table 2 indicate, there is little variability in either the contact or completion rate across the three treatment groups. Within this context, it should also be noted that *not one potential respondent exercised the option of initiating a callback to the survey research organization via the toll-free number.*

### DISCUSSION

The findings from this and earlier studies help to illuminate the reasons why response rates to telephone surveys are declining. One reason appears to be the increasing use of call screening devices such as the answering machine or Caller ID by potential respondents. Compared with previous investigations, the present study reveals that, after controlling for the number of call attempts, the proportion of answering machine households that are reachable by telephone surveyors has fallen over time. Moreover, the proportion of working, residential telephone numbers that consistently produce a "no answer" response seems to be on the rise, suggesting greater use of Caller ID.

The findings from this study also show that respondents from answering machine households do not appear susceptible to requests for survey participation left on their machines. This may be because public opinion or market surveys today represent a low involvement category. Given this environment, messages left on potential respondents' machines would not be sufficiently motivating.

That the general environment today may not be as hospitable as in the past for conducting telephone surveys begs the question: Why has the climate changed so that it is more difficult today to carry out a survey? A number of different explanations could be offered to account for why the environment has become more hostile. One possible explanation might be the distrust which respondents harbor toward survey organizations. They may fear that their privacy will be invaded by having their survey responses disseminated to other unknown parties. Supporting this explanation is the finding in this study that *nearly three-fifths (58.2%) of the respondents from answering machine households who were promised a monetary incentive for their survey participation and who had completed*

the interview were reluctant to furnish their name and address in order to receive this inducement. This finding is all the more striking when one bears in mind that these respondents already had finished the interview and thus presumably were aware the survey was legitimate and not a disguised sales call.<sup>6</sup> Clearly, survey participants are worried that the information they provide will result in a further intrusion of their privacy. Survey researchers need to make greater efforts to allay the privacy concerns of respondents.

## NOTES

1. In the study conducted by Tuckel and Shukers (1997) respondents from answering machine homes were asked open-endedly what was the most salient aspect of the message left on their machines which made them more/less willing to participate in the survey. Approximately one-half of those who said the message increased their motivation for participation replied that the most compelling aspect of the message was that the purpose of the call was not a sales solicitation. In line with this finding, other research shows that incorporating a non-solicitation statement in survey introductions appears to reduce refusal rates (Van Leeuwen and De Leeuw 1999).

2. Commenting on the rising refusal rates in telephone surveys, Harry O'Neill, a leading survey industry spokesperson, observes: "When you ask people why they don't respond the reason they come up with, usually, is that it's an inconvenient time" (quoted in O'Brien 1999).

3. The contact rate is defined here as the proportion of working residential telephone numbers that yielded a "live" contact at the time of the final disposition. A "live" contact signifies establishing contact with a human being. So, for example, telephone numbers that yielded a call disposition of "language problems" or "health/hearing problem" would be considered "live" contacts.

4. The completion rate is defined here as the number of "completed interviews" divided by the number of both the "completed interviews" and the number of "refusals" at the time of the final disposition. "Refusals" consist of "initial refusal," "first soft refusal," "2nd hard refusal," and "no 18+ in the household." The "no 18+ in the household" call disposition is included in the denominator because it is often tantamount to a refusal, albeit a soft one.

5. Though not a focal point of the present study, the increasing prevalence of "no answer" dispositions

among working, residential telephone numbers deserves comment here. Two reasons can be given to account for this phenomenon. The first reason is the increase in the number of phone lines dedicated to electronic technologies such as fax machines and computers. The second reason, though less weighty, is the use of caller ID.

The growth in the incidence of "no answer" dispositions has important implications for the administration of telephone surveys. First, it means that survey research organizations need to dial more telephone numbers than in the past to obtain the same size sample of completed interviews. Second, the calculation of "response rates" needs to be adjusted for the fact that many of these "no answer" dispositions, though attached to households, are not really "working numbers" in the sense that they are reachable. The inclusion of these numbers, therefore, artificially deflates the response rates. Third, to the extent that some of these "no answer" dispositions are due to the use of caller ID, a bias is introduced into obtaining representative samples.

6. The argument could be made that the disinclination on the part of so many respondents to divulge their name and address to the interviewer was due to the sensitive topic of the survey (child abuse). Given this particular topic, respondents' concerns about maintaining the anonymity of their answers would be especially heightened. Yet when a crosstabulation is undertaken between whether or not the household has children, households *without* children are *more* reluctant to furnish this information than households with children (60% vs. 53%). This crosstabulation suggests that a generalized distrust of survey organizations is the paramount factor underlying the reluctance by respondents to disclose their name and address to interviewers.

## REFERENCES

Baumgartner, Robert M. 1990. "Telephone Answering Machine Messages and Completion Rates for Telephone Surveys." Paper presented at the annual meeting of the American Association for Public Opinion Research, Lancaster, Pennsylvania.

Cantor, David, Bruce Allen, Patricia Cunningham, J. Michael Brick, Renee Slobasky, Pamela Giambo and Genevieve Kenny. 1997. "Promised Incentives On A Random Digit Dial Survey." In *Nonresponse in Survey Research, Proceedings of the Eighth International Workshop on Household Survey Nonresponse*, Achim Koch and Rolf Porst (eds.), Mannheim, Germany, pp. 219-228.

Church, Allen H. 1993. "Estimating the Effect of Incentives on Mail Survey Response Rates: A Meta-Analysis." *Public Opinion Quarterly* 57: 62-79.

Daves, Robert P. 1990. "You Know What To Do At The Beep, But Do Survey Researchers." Paper presented to the Midwest Association for Public Opinion Research, Chicago, Illinois.

Dillman, D. A. 1978. *Mail and Telephone Surveys: The Total Design Method*. New York: Wiley-Interscience.

Frey, James H. 1989. *Survey Research by Telephone*. Beverly Hills, California: Sage Publications.

O'Brien, Meredith. 1999. "Protesting the Polls." *Quill* 87: 22-26.

Piekarski, Linda. 1999. "Telephony And Telephone Sampling." Paper presented at the International Conference on Survey Nonresponse, Portland, Oregon.

Sheppard, Jane. 2000. "CMOR Study Finds Respondent Profiles Differ By Data Collection Method." *Alert!* 38: 1;3-4.

Singer, Eleanor, Nancy Gebler, Trivellore Raghunathan, John Van Hoewyk, and Katherine McGonagle. 1999. "The Effect of Incentives on Response Rates in Interviewer-Mediated Surveys." *Journal of Official Statistics* 15: 217-30.

Tuckel, Peter S. and Barry M. Feinberg. 1991. "The Answering Machine Poses Many Questions For Telephone Survey Researchers." *Public Opinion Quarterly* 55: 200-217.

Tuckel, Peter and Trish Shukers 1997. "The Answering Machine Dilemma: Does leaving a message improve response rates?" *Marketing Research* 9: 5-9.

Van Leeuwen, Rob and Edith de Leeuw. 1999. "I Am Not Selling Anything: Experiments In Telephone Introductions." Paper presented at the International Conference on Survey Nonresponse, Portland, Oregon.

Xu, Minghua, Benjamin J. Bates, and John C. Schweitzer 1993. "The Impact of Messages on Survey Participation in Answering Machine Households." *Public Opinion Quarterly* 57: 232-237.

**Table 1. Contact and Completion Rates by Whether or Not a Message Was Left Among Answering Machine Households**

	Message Left	No Message Left
Contact Rate	63%	62.6%
(n)	(880)	(326)
Completion Rate	60.2%	62.2%
(n)	(367)	(143)

**Table 2. Contact and Completion Rates by Different Answering Machine Messages**

	Standard Message	Standard Message With Monetary Incentive (\$5)	Standard Message With Monetary Incentive (\$5) And Respondent -Initiated Callback Option
Contact Rate	62.8%	60.7%	65.6%
(n)	(304)	(303)	(273)
Completion Rate	58.6%	60.3%	61.9%
(n)	(128)	(126)	(113)