

The Effect of Cover Letter Appeals and Visual Design on Response Rates in a Government Mail Survey

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Introduction

Curtin et al. (2000) point out that survey firms are devoting an ever-increasing amount of resources to encourage an equivalent amount of survey participation over time. In this environment, government surveys that have already adopted the total design method of enhancing response rates (Dillman 2000; Dillman 1978) may reasonably be convinced to turn their attention towards the content of the cover letter, given the relatively small amount of time and resources it takes to vary the content. In addition, given what we now know about visual design (e.g., Tourangeau et al., 2004; Redline et al., 2003), it seems reasonable to wonder if any aspects of the cover letter's visual design might be favorably altered. Thus, this paper reports the results of an experiment undertaken to study the effects on response rates of varying the verbal appeal and visual design of the cover letter that accompanied a nation-wide government survey.

Theoretical Background

Response Rates

Historically, cover letters have not surfaced as important predictors of response rates. In synthesizing across prior meta-analyses, Yammarino et al. (1991) found that repeated contacts, monetary incentives, sponsorship, and the inclusion of and type of outgoing and return postage have been observed consistently to affect response rates (e.g., Fox et al., 1988; Goyder 1982; Heberlein and Baumgartner, 1978; and Yu and Cooper, 1983).

This is not to say, however, that cover letters have been shown to have no effect. One of the four key findings of Yammarino et al. (1991) was that cover letters that include appeals and a survey of less than four pages should be able to increase response rates. Similarly, Brennan (1992) concluded that to his surprise a letter signed by a higher status researcher might be more effective than one signed by a lower ranking researcher. In his literature review, Harvey (1987) concluded that the effect of type

of cover letter appeal on response rates was inconclusive. Sample treatment sizes ranged from a low 55 to a high of 1001. Thus, inadequate sample power to detect differences could explain the inconclusiveness of these findings.

Perhaps most importantly, Fox et al. (1988) precluded the analysis of factors, such as cover letter appeals, from their meta-analysis. Thus, it is difficult to assess whether the content of the cover letter has not surfaced as an important predictor of response rates because it is not an important predictor, or because it has been difficult to characterize and measure accurately.

Verbal Appeals

What appeals work most effectively to convince people that answering a survey is either a worthwhile or necessary expenditure of their time and resources? *Altruistic* appeals attempt to establish that someone other than the respondent serves to gain from responding to the survey and *egoistic* appeals argue that the respondent can expect to gain personally from responding. Two types of altruistic appeals have been studied: *social utility* (how society serves to gain) and *help-the-sponsor* (how the sponsor serves to gain).

In one of the earliest studies published, Linksy (1965) found in a survey of nurses that what we might reasonably classify as an egoistic appeal today effectively increased response rates. He also concluded that the social utility and help-the-sponsor arguments were ineffective, acknowledging, however, that this finding contradicted earlier findings by Longworth (1958). A few years later, Champion and Sear (1969) compared an egoistic with a help-the-sponsor appeal and also concluded that an egoistic appeal was more effective than the help-the-sponsor appeal (36.8% versus 33.2%). In 1980, Childers et al. found that the egoistic and help-the-sponsor appeals did not differ significantly in their effect on response rate, but both resulted in significantly higher response than the social utility appeal.

In sharp contrast to the above findings, Kerin and Harvey (1976) surveyed corporate executives and found that the help-the-sponsor

appeal generated a greater return rate than the egoistic appeal (41% versus 30%). Shortly thereafter, Houston and Nevin (1977) examined four appeals (social utility, help-the-sponsor, egoistic, and combined) and reported that overall, the social utility appeal yielded the highest response rate (43% versus 40.8%, 41.2%, and 40.4%, respectively). Jones and Linda (1978) concluded that the type of cover letter appeal had an effect on both response rate and response quality, with what we might categorize today as a social utility appeal producing the best results followed in order, by a egoistic and a help-the-sponsor appeal. More recently, Gendall et al. (1995) compared a combined altruistic appeal (it contained elements of the help-the-sponsor and social utility appeals) against an egoistic appeal and found that response rates were greater with the altruistic.

A question that none of these studies address is: Is it even worth presenting an argument at all? In perhaps the only study to address this issue, Childers et al. (1980) found that both the altruistic and egoistic appeals negatively impacted response rates in comparison to a no-appeal condition. This, it would seem, deserves further study.

Survey Sponsorship

A few studies have directly examined the interactional effects of verbal appeal and sponsor, with mixed results. Houston and Nevin (1977) found that altruistic appeals elicited greater response from academic-sponsored surveys and egoistic appeals were more effective when they originated from commercial institutions, and suggested that these findings were in keeping with the respective roles of commercial and university researchers. In direct opposition to this, Jones (1978) did not find interactional effects between three survey sponsors (commercial establishment, university, government agency) and appeal (social utility, egoistic, and help-the-sponsor). Whereas, Childers et al. (1980) crossed three appeals (egoistic, social utility, and help-the-sponsor) with two sponsors (academic and business) and found that the appeals did not significantly differ in their ability to increase response to a university-sponsored survey, but they did in a commercially sponsored survey.

Taken together, one might reasonably conclude that altruistic messages work best originating from academic institutions. Five of the seven studies confirm this finding. Still, there is enough ambiguity in the literature to cast

doubt on this finding. Two of the seven studies assert that an egoistic message works best with academically sponsored surveys. Perhaps differences in the populations studied are a consideration here. In any event, there is little here to inform government-sponsored surveys which approach to adopt.

Government surveys differ from either academic or commercial surveys in that they are conducted under the authority of the government. Cialdini (1984) discusses the importance of this when he argues that people decide whether to perform a requested task on the basis of the inherent attractiveness of that task and other social or psychological influences, including among other things, *authority*. Groves et al. (1992) argue that in the survey context, one would expect that surveys will be more successful in generating response if the sponsor is generally seen as having legitimate authority to collect the information, and specifically cite 'government or educational institutions' as having such authority.

Previous research has shown that a mandatory appeal prominently displayed on the outside of the envelope "U.S. Census Form Enclosed. YOUR RESPONSE IS REQUIRED BY LAW." increased response rates by as much as 20 percentage points to industry surveys and 10 percentage points in the decennial census (Dillman et al., 1994). The latter research also showed that displaying a benefits appeal on the envelope instead of the mandatory appeal "U.S. Census Form Enclosed, IT PAYS TO BE COUNTED IN THE CENSUS" was ineffective.

Dillman et al. (1996) conducted 50 in-depth interviews to examine the cognitive and motivational attributes of three proposed decennial census mailing packages, which contained similar sorts of messages as the ones above. A conclusion that emerged very clearly from their research was that any marketing strategy used must be designed *not* to undermine the authority and official look of the mailing package. This finding was confirmed by a mailout/mailback test of the same packages, in which the more official looking package outperformed the other two (Leslie 1997).

The fact that a mandatory message and an official looking mailing package were shown to significantly increase response rates in government sponsored surveys led us to think it was worth testing an authoritative appeal in the cover letter of a government survey as well.

Visual Design

There has been a growing understanding that the verbal language of a self-administered survey can only be conveyed through the visual channel by way of its visual design, and that this visual design has effects (e.g., Tourangeau et al. 2004; Redline et al. 2003; Smith 1995; Schwarz et al. 1991). Without necessarily terming it thus, a few of the previous studies on cover letters manipulated the visual design of the appeals in an effort to increase their effectiveness. For instance, Houston and Nevin (1977) fully capitalized the first sentence of each appeal and made it the heading in the letter. The second sentence in each appeal was placed in the body of the letter and underlined to enhance its attention-getting qualities. And the third sentence was used as the closing statement. Childers et al. (1980) attempted to increase the impact of the appeal by moving it to the postscript of the cover letter. And in perhaps the only research conducted to control for the effects of graphics, Gendell et al. (1995) found that the effect of computer-generated graphics (i.e., pictures), if there was one, was negative. Thus, another reason it may be difficult to generalize about the effect of cover letter appeals overall is that in a substantial proportion of the already small number of studies, the verbal appeals are confounded with visual design changes.

Methodology

A study of these issues was undertaken in the 2003 National Survey of College Graduates (NSCG), a biennial panel survey designed to collect data that provide insight into aspects of the educational backgrounds and career paths of college graduates. At the beginning of each decade (2003) the NSCG is administered to a nationally representative sample of all college degree holders who were identified through the decennial Census. The target population consisted of all individuals under the age 76 in the United States with at least a bachelor's degree as of census day (April 1, 2000).

The NSCG is conducted by the Census Bureau for the National Science Foundation. Initial data collection was done through the use of a self-administered mail survey using a pre-notification letter, a first mailing, a reminder postcard, and a second mailing. The first mailing was designed so that all respondents received the questionnaire prior to October 1, 2003. The cover letter experiment was limited to the first mailing (that is, responses received between October 1, 2003 and the effective start

date of the second mailing, November 19, 2003). Data collection started October 1, 2003 and ended in early June 2004.

Cover Letter Treatments

Four cover letters were developed that differed in their verbal appeals (no appeal, authoritative, egoistic, and altruistic), and one that manipulated the visual design of the altruistic letter, and tested along with the letter that was originally slated for use in the 2003 NSCG (the benchmark letter). The experimental letters were designed so that for the most part, as shown in Table 1 (next page), only the appeals (defined as the salutation, opening paragraph, and closing statements) differed. To the extent possible, other stimuli in these letters were kept constant. The rationale for focusing on the results before the second mailing, rather than for the full survey, is that response rates increase at this point eliminate future and more expensive contacts.

A brief description of the six letters is given below.

- **Minimal/No Appeal Letter** – As can be seen in Table 1, this letter attempted to be as factual (non-persuasive) and brief as it could be, while still being a cover letter. This letter provides a test of whether a motivational appeal over and above simply asking people to fill out the questionnaire and return it is beneficial. Thus, this letter serves as our control.
- **Benchmark Letter** – Unlike the letters developed specifically for this test, this letter is a composite of the NSCG cover letters used during the 1990s and the letter originally proposed for use in the 2003 NSCG. Its opening paragraph employs a help-the-sponsor-altruistic appeal. Besides employing a help-the-sponsor appeal, this letter differs from the experimental letters in several important ways. It includes an estimate of the time to complete the questionnaire, and although the remaining content is similar to the remaining letters, the order and the wording of that content differ one may argue substantially.
- **Authoritative Appeal Letter** – This letter attempted to make the survey sound very official and mimicked a mandatory approach as closely as possible, by invoking the United States Code under which the survey is conducted. The cover letter from the American Community Survey and the advance letter used by the Survey of

Table 1. Differences in the salutations, opening paragraphs, and closing statements of the letters tested in the 2003 National Survey of College Graduates

Letter Treatment	Salutation	Opening Paragraph	Closing Statements
No Appeal/ Minimal Letter	Dear (Respondent Name):*	One week ago you received a letter from me telling you about a survey the U.S. Census Bureau is conducting called the 2003 National Survey of College Graduates. The questionnaire for this survey is enclosed with this letter.	Thank you for filling out the survey.
Benchmark Letter	Dear (Respondent Name):*	I am writing to ask for your help with the 2003 National Survey of College Graduates. This is an important study of our country's highly educated and trained people, sponsored by the National Science Foundation, an agency of the federal government mandated by Congress to study the education of the American people.	Thank you for your help. I look forward to hearing from you.
Authoritative Appeal Letter	FROM THE DIRECTOR U.S. CENSUS BUREAU	We are asking you to complete the enclosed copy of the 2003 National Survey of College Graduates under the authority of Title 13, United States Code, Section 8. Section 9 of this law requires us to keep all information about you strictly confidential. This information may only be used for statistical purposes. In addition Title 13 imposes severe criminal sanctions if any U.S. Census Bureau employee violates these provisions.	Thank you for your participation.
Egoistic Appeal Letter	Dear (Respondent Name):*	We hear a lot about the relationship between education and income these days, but it is often difficult to tell what the true experiences of America's college-educated population have been. Here is your opportunity to voice whether your college degree has made a difference.	I hope you enjoy filling out this questionnaire. I look forward to receiving it as soon as possible.
Altruistic Appeal Letter	Dear (Respondent Name):*	The Internet, Doppler radar, and tumor detection are the results of U.S. government funding in research and education. The health, prosperity, welfare, and protection of people in the United States depend on the government's investing wisely in research and education.	Thank you for filling out this survey. Your information will help us assist everyone.
Altruistic Letter with Visual Design Changes	Dear (Respondent Name):*	What do the Internet, Doppler radar, and tumor detection have in common? They are all innovations that resulted from U.S. government funding in research and education. The health, prosperity, welfare, and protection of people in the United States depend on the government's investing wisely in research and education. So, what does this have to do with you? Why should you fill out this survey? How can you help?	Thank you for filling out this survey. Your information will help us assist everyone

* Each of these letters was personalized using the respondent's last name.

Participation provided ideas for the development of this letter.

- **Egoistic Appeal Letter** – This letter attempted to convince respondents that they would benefit personally from responding to the survey. As previous research has done, it tried to do this by providing respondents with the opportunity to voice their opinions about, in this case, whether their education has made a difference in their lives.
- **Altruistic Appeal Letter** - This letter attempted to convince respondents that society stands to benefit from their answering the survey—and it tried to do this by implying that there was a connection between filling out the survey, government funding in research and education, and three scientific inventions we hoped would be viewed as valuable products in the lives of everyday people, the Internet, Doppler radar, and tumor detection.
- **Altruistic Appeal Letter with Visual Design Changes** – This is nearly the same as the previous letter, except for its visual presentation. In the altruistic appeal letter the first sentence of every paragraph is a factual statement. In this version of the letter, that statement has been turned into a question and printed in bold face type.

Sampling Information

The experiment was conducted on a sample of 177,320 cases drawn from the 2000 decennial census for the 2003 NSCG. This experiment is unique in that the sample size is far larger than past research on the topic. The 177,320 sample cases were first divided into six groups of approximately 29,553 cases. Cover letters were randomly assigned to each cover letter group. To accommodate another embedded experiment not discussed in this paper, however, only half of the cases in both the “Benchmark Letter” and the “Altruistic Appeal Letter with Visual Design Changes” were part of this experiment. Once unmailable cases were culled from the mailout, a total of 138,053 cases were contained in the mailout.

Results and Discussion

Response Rates

This study focuses on the difference in first mailout response rates across the different cover letters. As can be seen in Table 2, response rates ranged from a low of 28.63 percent for the Benchmark Letter to a high of 30.45 percent for the Altruistic Appeal Letter, for at most nearly

two percent spread between the lowest a highest performing letters in our experiment. Thus, it seems fair to conclude that our study is one more, and because of its size, perhaps one of the most reliable studies to date, to provide further evidence that one can not expect a huge gain in response rates from differences in cover letter appeal.

Table 2. First Mailback Response Rates

Cover Letter	Responses	Total	Response Rate
Minimal/No Appeal Letter	8,065	27,562	29.26%
Benchmark Letter	3,955	13,812	28.63%
Authoritative Appeal Letter	8,264	27,638	29.90%
Egoistic Appeal Letter	8,092	27,632	29.28%
Altruistic Appeal Letter	8,408	27,611	30.45% ¹
Altruistic Appeal Letter with Visual Design Changes	3,986	13,798	28.89% ²
Total	40,770	138,053	29.54%

In today’s environment of increased budget cuts, however, with many institutions holding out hope of improving response rates at the margins because they have already adopted the total design method of improving response rates (Dillman 2000; 1978), one could well conclude that the small gain in response rates outweighs the cost involved, and is therefore worthwhile. In our study, all of the letters we developed moved in the predicted direction of improving response rates when compared to the Benchmark Letter. Thus, it would seem that our thinking at the inception of this study was at least somewhat justified--that it was worth attempting to improve the original letter. From a very practical point of view, if one person out of a hundred can be encouraged to respond to the NSCG first mailing, that translates into approximately \$150,000 savings in follow-up costs for this survey.

¹ The Altruistic Appeal Letter is significantly different from the Minimal/No Appeal Letter at the .10 level of the test.

² The Altruistic Appeal with Visual Design Changes is significantly different than the Altruistic Letter at the .10 level of the test.

Verbal Appeals

We included a no-appeal letter as our control. Most of the studies to date have compared an egoistic with an altruistic appeal, but this assumes that some appeal is better than none. The one study, however, that included a no-appeal condition in the mix, found, somewhat surprisingly, that the no-appeal condition outperformed the appeal conditions (Childers et al. 1980). Table 2 shows that the Altruistic Appeal Letter was statistically different from the Minimal/No Appeal Letter at the 10 percent level of the test (30.45% versus 29.26%).³

Our results differ from Childers et al. (1980) in two very important ways. First, one of the appeals (the altruistic appeal) did perform significantly better than the no-appeal condition, and secondly, except for the Benchmark Letter, the remainder of the letters moved in the direction of positive performance. Still, the conclusion to be drawn from these two studies may be that overall, respondents decide to respond to a survey for reasons other than its verbal appeal. That is, the large majority of the respondents would have responded to the NSCG without being persuaded or provided any verbal rationale to do so at all (the control condition).

The relative stability of respondents' behavior across treatments makes one question if the messages had little effect because respondents' never bothered to read and scrutinize them much in the first place. In Petty and Cacioppo's (1986) elaboration likelihood model of persuasion, this would be an example of low elaboration—that is, by and large, respondents come to the task with a low level of motivation for attempting to decipher the messages presented to them, and the outcomes show it. Or did they read the messages, scrutinize them, and find them lacking? A more definite answer to this question would guide us as to whether we want to say less (that is use the no appeal style) in the future, or do we need to elaborate even further and more persuasively? Unfortunately, our research cannot directly answer this question. What our research does say is that by invoking the altruistic, social utility appeal we can hope to persuade one out of a hundred more people to

³ We were conservative in constructing the multiple comparison tests. Tests are developed for inference to the survey population and are thus much more conservative than a test of influence on the response of the selected sample. Details of the testing are available from the authors.

respond to the survey than would have responded had we said practically nothing. This finding suggests that those who did read and who were persuaded by the verbal message in the letter were persuaded for a benevolent reason—the good of the society.

Survey Sponsorship

We examined the two approaches previously studied, the egoistic and altruistic approaches, plus a potentially new promising approach, the authoritative appeal, in a government-sponsored survey. Table 2 shows that although the authoritative appeal did not, as we may have expected, significantly improve response to the survey, it moved in this direction. The results of our study suggest that what works best in a government-sponsored survey is the same as that which has been shown at least 5 out of 7 times to work before—the altruistic appeal. The immediate implication of this finding is that a government-sponsored survey would do best adopting this appeal.

Visual Design

Table 2 shows that the response rate to the Altruistic Letter with Visual Design Changes was significantly less than the Altruistic Appeal Letter at the .10 level of the test, which is the opposite of what we hypothesized. We thought that replacing the light typeface statement at the beginning of each paragraph with a bold typeface question would encourage respondents to read the letter, and this, in turn, might improve response rates. We cannot tell from our research whether the bold typeface did in fact encourage respondents to read, but rather than being encouraged by what they read, words such as 'survey' discouraged them from responding. Or, glancing at the letter and seeing it formatted in a way that was contrary to their expectations for serious letter discourse (question and answer format rather than pure prose) discouraged them from reading further. The question and answer format may have looked as though it was attempting to appeal to them in too obvious a way, the way 'junk' mail tends to do, and this may have been a turn off.

Either way, it is clear that one of the most interesting findings to come out of this study is that the time and effort spent crafting a successful verbal appeal can quickly be obliterated by merely changing its visual design slightly. Thus, this is one more study in a body of research that is quickly mounting to suggest that we need to better understand the effect of

what may appear to be innocuous or even beneficial visual design changes before we implement them.

Conclusions and Future Research

The results of this study confirm our general expectation that cover letter appeals, along with their visual design, affect respondents' likelihood to respond. While the impact is generally small, it can be very cost effective in a multi-mode survey. An egoistic appeal (offering respondents the chance to voice their opinion) is not much of an attraction, but clearly demonstrating how society stands to gain is. Furthermore, the likelihood to respond will be enhanced if the letter is not the result of attempting to piecemeal together previous letters (as represented by the benchmark letter), although we admit that our research has not defined what a well-written letter is any more than any other research we have seen to date. This is an area ripe for study.

This research has once more confirmed that not only do we need to pay attention to what we say verbally, but also we must pay attention to how it is said visually. What seem to be beneficial (or perhaps insignificant) visual design changes can have dramatic effects as was the case here, entirely wiping out the gains to be made from crafting a successful altruistic appeal.

We embedded an experiment within this one to study the effects of including a brochure with the mailing package. The interaction between the appeal and brochure is left for future research, as is examining the differential effects of the appeals on different segments or characteristics of the population to determine if a targeted mailing strategy might enhance response rates even further. Extending the most promising of the cover letter strategies (the authoritative and altruistic) to the design of the overall survey (that is, applying the strategy to the design of every piece of correspondence, the mailing packages, etc.) also seems worth exploring. Finally, we posed many questions throughout this paper, which lay behind what we are trying to understand here: what information do respondents attend to when they receive their mail and why? Continuing our attempts to answer these questions seem critical to our being able to design mailing packages that respondents are willing to open, read, and answer.

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References

- Brennan, M. (1992) Techniques for Improving Mail Response Rates. *Marketing-Bulletin*, 3, 24-37.
- Champion, D.J. and Sear, A.M. (1969) Questionnaire Response Rate: A Methodological Analysis. *Social Forces*, 47, 335-339.
- Childers, T.L., Pride, W.M., and Ferrell, O.C. (1980) A Reassessment of the Effects of Appeals on Response to Mail Surveys. *Journal of Marketing Research*, XVII, 365-370.
- Cialdini, R.B. 1984 *Influence: The New Psychology of Modern Persuasion*. New York: Quill.
- Curtin, R., Presser, S., and Singer, E. (2000) The Effects of Response Rate Changes on the Index of Consumer Sentiment. *Public Opinion Quarterly*, 64, 413-428.
- Dillman, D.A. (2000) *Mail and Internet Surveys: The Tailored Design Method*. New York: John Wiley & Sons.
- Dillman, D.A., Singer, E., Clark, J.R., Treat, J.B. (1996a) "Effects of Benefits Appeals, Mandatory Appeals, and Variations in Confidentiality on Completion Rates for Census Questionnaires." *Public Opinion Quarterly* 60(3): 376-389.
- Dillman, D.A., Jenkins, C., Martin, B., and DeMaio, T. (1996b) "Cognitive and Motivational Properties of Three Proposed Decennial Census Forms" U.S. Census Bureau.
- Dillman, D.A., Clark J.R., and Treat, J.B. (1994) Influence of 13 Design Factors on Completion Rates to Decennial Census Questionnaires. *Proceedings of the 1994 Annual Research Conference, U.S. Bureaus of the Census, Washington, D.C.*
- Dillman, D.A., Sinclair, M.D., and Clark, J.R. (1993) Effects of Questionnaire Length, Respondent-Friendly Design, and a Difficult Question on Response Rates for Occupant-Addressed Census Mail Surveys. *Public Opinion Quarterly* 57: 289-304.
- Dillman, D.A. (1978) *Mail and Telephone Surveys: The Total Design Method*. New York: John Wiley & Sons.
- Finamore, J.M. (2003a) "National Survey of College Graduates: Overview of the 3003

Sample Design- Working Draft #3." U.S. Census Bureau.

Finamore, J.M. (2003b) "Sampling Specification for the 2003 National Survey of College Graduates (Document # NSCG03-Samp-1)-Working Draft#5." Internal Census Bureau Memorandum.

Finamore, J.M. (2003c) "Subsampling Specification for the 2003 National Survey of College Graduates (Document # NSCG03-Samp-2) Working Draft #1," Internal Census Bureau Memorandum.

Fox, R.J., Crask, M.R., and Kim, J. (1988) Mail Survey Response Rate: A Meta-Analysis of Selected Techniques for Inducing Response. *Public Opinion Quarterly*, 52, 467-491.

Gendall, P., Hoek, J., and Esslemont, D. (1995) The Effect of Appeal, Complexity and Tone in a Mail Survey Covering Letter. *Journal of the Market Research Society*, 37 (3), 251-268.

Groves, R.M., Cialdini, R.B., and Couper, M.P. (1992) Understanding the Decision to Participate in a Survey. *Public Opinion Quarterly*, 56, 475-495.

Goyder, J.C. (1982) Further Evidence on Factors Affecting Response Rates to Mailed questionnaires. *American Sociological Review* 47: 550-53.

Harvey, L. (1987) Factors Affecting Response Rates to Mailed Questionnaires: A Comprehensive Literature Review. *Journal of Market Research Society*, 29 (3), 341-353.

Heberlein, T.A. and Baumgartner, R. (1978) Factors Affecting Response Rates To Mailed Questionnaires: A Quantitative Analysis of the Published Literature. *American Sociological Review*, 43, 447-462.

Houston, M.J. and Nevin, J.R. (1977) The Effects of Source and Appeal on Mail Survey Response Patterns. *Journal of Marketing Research*, XIV, 347-348.

Jones, W.H., Linda, G. (1978) Multiple Criteria Effects in a Mail Survey Experiment. *Journal of Marketing Research*, 15(2), 280-284.

Kerin, R.A. and Harvey, M.G. (1976) Methodological Considerations in Corporate Mail Surveys: A Research Note. *Journal of Business Research*, 4 (3), 277-281.

Leslie, T.F., (1997) Comparing Two Approaches to Questionnaire Design: Official Government Versus Public Information Design. *Proceedings of the American Statistical Association, Section on Survey Methods*.

Linsky, A.S. (1965) A Factorial Experiment in Inducing Responses to a Mail Questionnaire. *Sociology and Social Research*, 49, 183-189.

Longworth, D. S. (1953) Use of a Mail Questionnaire. *American Sociological Review*, XVIII, 310-313.

Petty, R.E. and Cacioppo, J.T. (1986) *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*. New York: Springer-Verlag.

Redline, C., Dillman, D.A., Dajani, A.N., and Scaggs, M.A. (2003) Improving Navigational Performance in U. S. Census 2000 by Altering the Visually Administered Languages of Branching Instructions. *Journal of Official Statistics*, 19, 403-419.

Redline, C. and Dillman, D.A. (2001) The Influence of Alternative Visual Designs of Respondents' Performance with Branching Instructions in Self-Administered Questionnaires. In *Survey Nonresponse*, (Groves, R., Dillman, D., Eltinge, E., and Little, R., (eds.)). New York: John Wiley and Sons, Inc.

Schwarz, N. Strack, F. Hipper, H.J. and Bishop, G. (1991) The Impact of Administration Mode on Response Effects in Survey Measurement in J. Jobe and E. Loftus (eds), *Cognitive Aspects of Survey Methodology*, Special issue of *Applied Cognitive Psychology* 5: 193-212.

Smith, T.W. (1995) Little Things Matter: A Sampler of How Differences in Questionnaire Format Can Affect Survey Responses. In *Proceedings of the American Statistical Association, Survey Research Methods Section*, pp1046-51. Alexandria, VA: American Statistical Society.

Snedecor, G.W. and Cochran, W.G. (1989) *Statistical Methods*, 8th Edition. Iowa State University Press, Iowa.

Tourangeau, R., Couper, M. P., and Conrad, F. (2004) Spacing, Position, and Order: Interpretive Heuristics for Visual Features of Survey Questions. *Public Opinion Quarterly*. 68(3): 368-393.

Yammarino, F.J., Skinner, S. J., and Childers, T. L. (1991) Understanding Mail Survey Response Behavior. *Public Opinion Quarterly*, 55, 613-639.

Yu, J. and Cooper, H. (1983) A Quantitative Review of Research Design Effects on Response Rates to Questionnaires. *Journal of Marketing Research*, XX, 36-44.