

Statement on the National Aviation Operations Monitoring Service

by

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Thank you very much for the invitation to submit this statement and to testify before the Committee as it explores the history of NASA's National Aviation Operations Monitoring Service (NAOMS).

Currently at Stanford, I am the Frederic O. Glover Professor of Humanities and Social Sciences, Professor of Communication, Professor of Political Science, Professor of Psychology (by courtesy), and Associate Director of the Institute for Research in the Social Sciences.

As a member of the team that developed NAOMS, my role was as an expert on survey research methodology and questionnaire design.

My Qualifications and Experience

While I have been a professor at the Ohio State University and now at Stanford University, a great deal of my research has involved the collection and analysis of survey data, and many of my publications have been designed to identify best practices in survey methodology.

As my curriculum vitae outlines (see Appendix A of this statement), I have published five books and am currently completing the fifth The Handbook of Questionnaire Design (Oxford University Press). I have published 107 journal articles and book chapters in peer-reviewed publications. I have presented 252 papers reporting my research findings at research conferences around the world, where presentations were selected through a peer review process. I have received 65 grants and contracts supporting my research and am currently overseeing active grants and contracts totaling more than \$10 million.

I have served as a consultant to the following federal agencies on survey research issues: The Government Accountability Office (GAO), the Internal Revenue Service (IRS), the Central Intelligence Agency (CIA), the National Institutes of Health (NIH), the National Oceanic and Atmospheric Administration (NOAA), the Environmental Protection Agency (EPA), the Bureau of the Census, the Bureau of Labor Statistics

(BLS), the Centers for Disease Control and Prevention (CDC), and the National Cancer Institute (NCI). I have advised these agencies on how to implement best practices in the survey research they conduct.

I currently serve as co-principal investigator of the American National Election Study (ANES), the academic world's leading survey study of voting and elections, which is supported by a \$7.6 million grant from the National Science Foundation. This project began in 1948 with a national survey of a representative sample of American voters, and the same sort of survey has been conducted every two years since then. The data from the ANES are made public at no charge to all interested investigators around the world. As co-principal investigator, my responsibilities include all decisions about methodology for the collection of the survey data and all decisions regarding the design of the questionnaires used.

I also serve on the Board of Overseers of the General Social Survey, which is the nation's pre-eminent survey study of trends in Americans' social and political attitudes and behavioral experiences. Since the early 1970s, this study has involved annual or biannual surveys of representative national samples of American adults interviewed in their homes for hours and documenting a wide range of their opinions and experiences. Like the ANES, the GSS has been funded by the National Science Foundation, and the study's data are made available for free to all interested researchers around the world and

The NAOMS Vision

The instigation of NAOMS was a commitment made in the 1990s by the federal government to reduce the risk of commercial airplane crashes by a specific targeted amount within ten years. Once that target was set, federal agencies looked for ways to assess whether that goal would be achieved and realized they had none. Simply tracking plane crashes would not be sufficient, because they happen extremely rarely and therefore do not indicate the amount of underlying risk posed by the many small events that, when cumulated, can increase the risk of an accident. Consequently, some alternative monitoring system was needed.

The Federal Aviation Administration, other agencies, and private sector organizations (e.g., commercial airlines) have been collecting some information on the frequency with which some risk-elevating events have been occurring. But the array of event types being tracked was more limited than is needed for thoroughly tracking the functioning of the entire air travel system. Some anecdotal information has also been collected, but this information could not be used to calculate statistically reliable risk levels. Therefore, a new system for collecting information on the frequency of precursors to accidents was needed.

NAOMS was designed to serve this purpose and to collect the needed information via high quality scientific and reliable surveys of people around the world who were watching the operation of the aviation system first-hand and who knew what was happening in the field. Indeed this use of the survey method was in keeping with many

other long-term federally funded survey projects that provide valuable information to monitor public risk, identify sources of risk that could be minimized, identify upward or downward trends in specific risk areas, to call attention to successes, identify areas needing improvement, and thereby save lives while promoting commerce in the nation.

As originally conceived by Battelle project manager Loren Rosenthal, NAOMS was to be a multifaceted survey project building on the Aviation Safety Reporting System (ASRS). For many years, ASRS has been a successful system for collecting anecdotal information from pilots about some of the risk-elevating events they witnessed. Each time an event occurs, a pilot can choose to fill out a form describing it briefly and mail the form to NASA's ASRS office in Mountain View, California. An aviation expert then telephones the reporter to conduct a telephone interview to gather detailed information about the event. A subset of this information is then entered anonymously into a database that NASA maintains. And when important insights about risks have been obtained through this system, NASA has sent out reports to the aviation community.

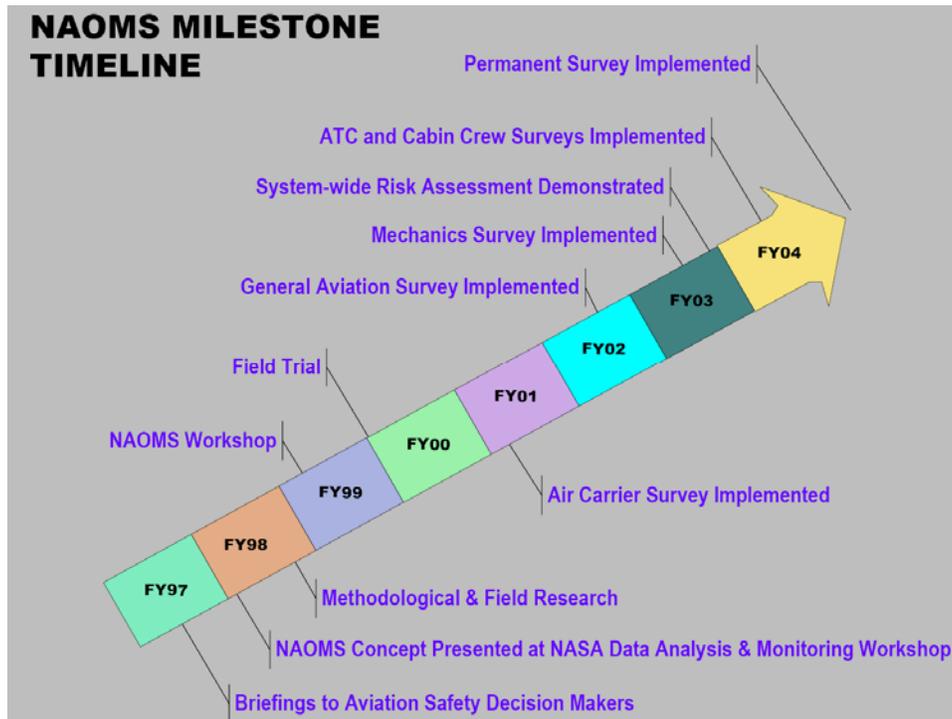
ASRS has successfully collected information that has had observable positive effects enhancing public safety. Pilots have come to trust it and NASA generally (because nothing undesirable has occurred to a pilot as the result of filing an ASRS report), and ASRS has had the flexibility to collect data on whatever events pilots deem worth reporting.

But this flexibility also constitutes a significant limitation of ASRS as well. Because pilots voluntarily choose to file reports on events, their choices about when to report and what to report are uncontrolled. Consequently, many safety-related events go unreported to ASRS. And as a result, it is impossible to use ASRS to track trends in event rates over time. Therefore, NAOMS was envisioned to complement ASRS by producing accurate measurements of rates and trends in rates of a wide array of types of events.

Every week of every year, NAOMS was planned to collect information from a representative sample of pilots flying commercial aircraft. The pilots would be asked to report the number of each of a series of different specific events that they had witnessed during a specific recent time period (e.g., the last 60 days). These counts could then be used to calculate the rates at which the events had occurred during that period throughout the entire air travel system.

NAOMS had the potential to succeed especially because ASRS had already been successful. The trust that the community of commercial pilots had developed in NASA through its running of ASRS meant that these pilots could most likely be counted on to participate in NAOMS surveys at a high rate without concern about retribution. That is, the pilots could be expected to provide accurate and honest reports of event frequencies, because they already knew that NASA (through ASRS) was capable of compiling and reporting such data in a trustworthy and safety-enhancing way.

But NAOMS was envisioned to go well beyond ASRS, by tapping the knowledge and experiences of other professionals participating in the air travel system and observing risk-elevating events. Specifically, the original plan for NAOMS included collecting survey data every week of every year from general aviation pilots, helicopter pilots, air traffic controllers, flight attendants, and mechanics, as shown in the following timeline that was presented by NASA at various public meetings describing the project:



Thus, the plan was to design and implement a “permanent survey” data collection operation to generate ongoing data to track event rates into the future.

NAOMS Resembled Many Other Federal Surveys

This use of survey methodology in NAOMS was consistent with the conduct of surveys by many organizations in the public and private sectors to track rates of events over time and to inform decision-making and organizational practices. Survey methodology is a highly developed science that can utilize reports of people’s experiences to document events occurring around the nation and around the world quickly and cheaply. In fact, each year, billions of dollars are spent conducting surveys around the world. The U.S. federal government is one of the largest producers of such data. For decades, survey data have been routinely collected and used by many federal agencies to track contemporary life in America in a wide array of domains and to provide valuable information for policy-making and policy implementation.

A small subset of the survey research projects that have been funded by the U.S. government continuously, beginning in the years shown and sponsored by the agencies in parentheses, includes:

- Survey of Income and Program Participation (Census Bureau) 1984 –
- Consumer Expenditure Surveys (Census Bureau) 1968 –
- Annual Housing Surveys (Census Bureau) 1973 –
- Survey of Consumer Attitudes and Behavior (National Science Foundation) 1953 –
- Health and Nutrition Examination Surveys (National Center for Health Statistics) 1959 –
- National Health Interview Surveys (National Center for Health Statistics) 1970 –
American National Election Studies (National Science Foundation) 1948 –
- Panel Study of Income Dynamics (National Science Foundation) 1968 –
- General Social Survey (National Science Foundation) 1972 –
- National Longitudinal Survey (Bureau of Labor Statistics) 1964 –
- Behavioral Risk Factor Surveillance System (Centers for Disease Control and Prevention) 1984 –
- Monitoring the Future (National Institute of Drug Abuse) 1975 –
- Continuing Survey of Food Intake by Individuals (Department of Agriculture) 1985 –
- National Aviation Operations Monitoring System (National Aeronautics and Space Administration) 2002 –
- National Survey of Drinking and Driving (National Highway Traffic Safety Administration) 1991 –
- National Survey of Family Growth (National Center for Health Statistics) 1973 –
- National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (Census Bureau) 1991 –
- National Survey of Child and Adolescent Well-Being (Department of Health and Human Services) 1997 –
- Survey of Earned Doctorates (Science Resources Statistics Program, National Science Foundation) 1958 –
- National Survey on Drug Use and Health (Department of Health and Human Services) 1971 –
- Youth Risk Behavior Surveillance System (Department of Health and Human Services) 1990 –

- National Crime Victimization Survey (Bureau of Justice Statistics) 1973 –
- Schools and Staffing Survey (National Center for Educational Statistics) 1987 –
- Educational Longitudinal Survey (National Center for Educational Statistics) 2002 –
- Current Employment Statistics Survey (Bureau of Labor Statistics) 1939 –

Just a few of the many other major surveys sponsored by federal agencies over the years include:

- National Survey of Distracted and Drowsy Driving (National Highway Traffic Safety Administration)
- National Survey of Veterans (Department of Veterans Affairs)
- National Survey of Children's Health (Health Resources and Services Administration's Maternal and Child Health Bureau)
- National Survey of Recent College Graduates (Science Resources Statistics Program, National Science Foundation)
- National Survey of Speeding and Other Unsafe Driving Actions (National Highway Traffic Safety Administration, Department of Transportation)

Survey data form the basis of many important government policy-making decisions. For example, economists in the Federal Reserve and other agencies pay close attention to the federal unemployment and inflation rates, both of which are calculated using data from national surveys. The many other federal agencies listed above collect survey data because those data are used in on-going decision-making.

Decades of research have shown that the reliability and validity of optimally-collected survey data are generally quite high, and that respondents can be relied upon to provide quite accurate descriptions of their past experiences, behaviors, and opinions. Most visibly, surveys conducted just before U.S. presidential elections predict the actual election vote results very closely (see, e.g., Visser, P. S., Krosnick, J. A., Marquette, J., & Curtin, M., 1996; Mail surveys for election forecasting? An evaluation of the Columbus Dispatch poll. *Public Opinion Quarterly*, 60, 181-227, Visser, P. S., Krosnick, J. A., Marquette, J., & Curtin, M., 2000; Improving election forecasting: Allocation of undecided respondents, identification of likely voters, and response order effects. In P. Lavrakas & M. Traugott (Eds.), *Election polls, the news media, and democracy*. New York, NY: Chatham House). Even when there is error in such survey measurements (and there is), the error is not huge in percentage point terms (bearing in mind that a small shift in percentages can change the winner of a close election). For example, since 1936, the percent of votes won by the winner has correlated with the Gallup Poll's pre-election

prediction of that percentage .85, a nearly perfect association.¹ Likewise, since 1948, the American National Election Study surveys' post-election measurements of the proportions of votes won by the winning presidential candidate have correlated with official government vote counts .92, again nearly perfect.

Equally striking are the results of the Monthly Survey of Consumer Attitudes and Behavior, conducted continuously by the University of Michigan's Survey Research Center since 1970. Each month, a representative national sample of American adults has been asked what they expect to happen to the unemployment and inflation rates in the future (as well as many other topics), and their aggregated answers have predicted later changes in actual unemployment and inflation remarkably well (correlations of .80 and .90, respectively, between 1970 and 1995). This is testimony not only to the aggregated wisdom of the American public but also to the ability of scientific surveys to measure that wisdom accurately.

A high level of accuracy can be achieved if optimal procedures are implemented to conduct a survey, and departures from such procedures can significantly compromise the accuracy of a survey's findings. Necessary features include drawing a representative sample of the population, taking extensive steps to collect data from as many sampled people as possible, optimizing the choice of survey mode to achieve accurate measurements, asking questions that are easily comprehensible and do not entail biased wording or format, weighting results to correct for unequal sampling probabilities, and much more.

Survey Methods Development in NAOMS

When I was brought onto the research team, I was told that the project was committed not just to designing and conducting surveys, but to doing so with the best possible practices to assure the most accurate data possible. Thus, rather than simply using intuition and budget limitations as guidelines for making methodological decisions, the project set out to design practices that would optimize data accuracy.

To this end, we conducted a series of studies, including a large-scale field trial, to answer a series of questions with regard to the first survey we developed for air carrier pilots:

- What risk-elevating events should we ask the pilots to count?
- How shall we gather the information from pilots – written questionnaires, telephone interviews, or face-to-face interviews?
- How far back in the past can we ask pilots to remember without reducing the accuracy of their recollections?

¹ Correlations can range from 1 (meaning a perfect match between the variables) to 0 (meaning a relation between the variables no better than chance) to -1 (meaning a perfect inverse relation between the variables).

- In what order should the events be asked about in the questionnaire?

What events? The goal of the NAOMS survey was to collect information on as many different sorts of risk-elevating events as possible. To begin generating a comprehensive list of such events, we conducted a series of focus group discussions with professionals who were active in the air traffic system, including air carrier pilots, general aviation pilots, helicopter pilots, and air traffic controllers. In each of these group discussions, we asked participants to generate as comprehensive a list of risk-inducing events as they could during a 2-hour period. These exercises revealed a coherent and repeatedly-occurring list of events that seemed quite suitable for tracking by NAOMS surveys.

In addition, we consulted with industry and government safety groups, including members of CAST, the FAA, and the analysts who conducted telephone interviews of pilots submitting reports to ASRS. We also reviewed the contents of aviation event databases, such as the ASRS, NAIMS, and BTS databases. In the end, we chose to track a set of events that was faithful to those pinpointed by these data-gathering exercises.

What mode? At the time that NAOMS was launched, it was widely recognized in the survey research community that face-to-face interviewing was the optimal way to collect accurate and honest data from respondents. Although most surveys at that time were being conducted by telephone, the federal government's most important and visible surveys continued to rely on face-to-face interviewing. When a competent, committed, and professional interviewer meets face-to-face with a respondent, the respondent develops a sense of trust in and rapport with the interviewer, inspiring the respondent to devote the cognitive effort needed to generate accurate responses and the confidence that his/her identity will be protected, so that honest reports can be provided without fear of retribution.

We therefore decided to explore the viability of face-to-face interviewing of pilots for NAOMS. However, we recognized that such interviewing would be costly and logistically challenging, so we also explored the viability of two alternative modes: telephone interviewing and paper-and-pencil questionnaires. At the time we initiated NAOMS, the published survey methodology literature did not offer clear guidance about the quality of data to be expected from these two latter modes. We therefore designed a "field trial" to compare the three modes of data collection.

At the start of the field trial, a sample of licensed pilots was selected to be interviewed face-to-face. But it quickly became clear that because of the ongoing mobility of the pilots, it would be practically impossible to coordinate schedules with them to allow interviewers to meet with them and conduct interviews at anything approaching a reasonable cost. Therefore, face-to-face interviewing was abandoned. Consequently, the field trial focused on comparing telephone interviewing and paper questionnaires mailed to respondents using a method developed by Professor Don Dillman (a long-time consultant to the U.S. Census Bureau) to assure high response rates.

Pilots were randomly assigned to be interviewed in one of these modes, and the survey research group at Battelle's Center for Public Health Research and Evaluation conducted the data collection. The cost per interview was \$60 for each mailed questionnaire completed, as compared to \$75 for each telephone interview completed. But according to all indicators of data quality, we got what we paid for: the telephone interviews yielded superior data. For example, the response rate for the mail questionnaires was 73%, and the response rate for the telephone interviews was 81%. Whereas pilots never failed to answer a question during a telephone interview, respondents failed to answer 4.8% of the questions on the paper questionnaires. Respondents reported significantly more confidence in the accuracy of their answers during the telephone interviews than of their answers on the paper questionnaires. And a built in accuracy check showed that the telephone responses were 30% more accurate than the paper responses. We therefore chose to conduct the survey via telephone interviews.

How far back in the past could pilots remember accurately? Our goal was to collect information on as many events as possible without compromising the accuracy of recollections. The longer the time period that pilots were asked to describe, the more rare events could be detected, with no added cost. But if the recall period addressed in the questionnaire was short, then we would have had to increase the number of pilots interviewed considerably in order to detect rare events. A comprehensive review of the existing scholarly literature did not provide clear guidance on what the optimal recall period would be for NAOMS pilots, so we built into the field trial a manipulation designed to identify this optimal recall period.

Specifically, we randomly assigned some pilots to report on the events they witnessed during the last week and others to report on the last 2 weeks, the last 4 weeks, the last 2 months, the last 4 months, or the last 6 months. We found that the most accurate reports were provided for the 2 month recall period, so we selected that period for the final questionnaire. During the initial months of NAOMS main study data collection, respondents were randomly assigned to be asked about either the last 30 days, the last 60 days, or the last 90 days. But eventually, all pilots were asked about the last 60 days.

What order of questions? Once we had specified a list of events to be addressed, we had to specify the order in which to ask about these events. If the order is optimized, it can make respondents' reporting process easier and their reports more accurate. And if order is not optimized, it can increase the difficulty of the task for the respondents, decrease their enjoyment of it, thereby decrease their motivation to provide accurate reports, and in the end, reduce the accuracy of the reports they do provide.

Optimizing question order begins with the recognition that more complete and accurate recollection occurs when question order matches the way that information is organized in people's long-term memories. That is, psychologists believe that clusters of related pieces of information are stored together in memory. Asking a person to go to a

specific location in memory and retrieve all the needed information there before moving on to retrieving information from a different location is preferable to asking people to jump around from place to place in memory, question by question (e.g., Barsalou, 1988; DeNisi & Peters, 1996; Raaijmakers, & Shiffrin, 1981; Sudman, Bradburn, & Schwarz, 1996; Tulving, 1972).

According to this logic, memories of similar safety-compromising events are likely to be stored together in clusters in pilots' memories. So once a pilot begins retrieving memories from a particular cluster, it is easiest and most efficient to recall all other memories in that cluster, rather than jumping to another cluster. Therefore, our questionnaire grouped together questions asking about events that were stored near one another in pilots' memories.

Identifying each respondent's memory organization scheme at the start of each interview is not practical. However, it was possible to assess the most common type or types of mental organizations used by pilots and tailor our questionnaire design to those types. We conducted a series of studies using a series of methods drawn from cognitive psychology to identify pilots' memory organizations, and the results of these studies clearly pointed to a memory organization that applied well across pilots and that we showed could be used to enhance the accuracy of recollections. In fact, our testing indicated that using the memory organization we identified to order questions enhanced recall accuracy by 25% or more over other orders we tested.

Questionnaire pretesting. Once a survey questionnaire is designed, it is important to pretest it in various ways to assure that respondents understand the questions and can answer them. To test understandability and answerability, we conducted a series of tests. One test was built into the field trial, whereby we asked respondents to comment on and evaluate the understandability of the questions and to identify any questions that were not sufficiently clear and understandable. We also conducted cognitive think-aloud pretest interviews using a technique pioneered by researchers at the National Center for Health Statistics. This involved having pilots listen to the questions, restate them in their own words, and think aloud while answering the questions. These pretests were used to identify instances in which question wording needed improvement.

Field trial results. The field trial involved collecting data from about 600 pilots, and this allowed us to evaluate the performance of the methodology fully. The results produced by the field trial documented that the methodology worked well. We achieved a very high response rate, and tests indicated high validity of the data. Thus, at the conclusion of the field trial, we had evidence sufficient to conclude that the method was well-designed and suitable for generating reliable data.

Peer reviewing. Questions have been raised recently about whether the NAOMS methodology was subjected to a peer review process. In fact, peer review did occur. The research plan for NAOMS was presented at many public meetings and private meetings with stakeholder organizations and with experts involved in aviation and social science researchers. In all of these meetings, details of the rationale for NAOMS and its methodology were described. The attendees asked questions, made comments, and

offered suggestions. In addition, multiple meetings were held with large groups of NASA staff and FAA staff to provide details on the NAOMS plan and accomplishments and to acquire feedback.

As far as I understand, NASA did not request or suggest to the NAOMS project team that any additional peer review occur. If such a request had been made, we would have been happy to implement additional review processes. However, that lack of such a request was not surprising to me or unusual in the context of federal survey design and data collection. I have been involved in many federal survey projects, and I have advised federal agencies on many others. The vast majority of these projects involved less peer review than NAOMS carried out. In fact, the only federally funded survey studies I know of that have routinely involved elaborately structure peer review processes are ones that were conducted by the government for use in litigation. These peer review processes rarely yielded significant changes in the survey process. I therefore do not believe that any additional peer review of the NAOMS methodology would have been significantly beneficial or caused any significant changes in procedure.

An important reason for this is that in my role as a professor, I am responsible for keeping fully informed about the state of the survey methodology literature and new developments in survey techniques. By reading printed and online publications and attending conferences to hear presentations, I stay abreast of the field's understanding of best practices. Consequently, I was called upon regularly to evaluate our methodology vis a vis common practices in the field of survey research and the views of my professional peers on design issues. Thus, the views of my peers were regularly a focus during our planning process.

Summary. The methods we used to develop the NAOMS questionnaire were state of the art. Indeed, the preliminary studies we conducted constitute valuable contributions to the scholarly literature on optimal survey design, producing findings pointing to best practices and identifying new methods for future tests intended to optimize survey designs. Thus, NASA can be very proud of what it accomplished during this phase of the project.

My View of NAOMS

It was a privilege and an honor for me to have been asked to serve as a methodology expert on the NAOMS project. And it was a pleasure to work with the research team that carried out the project. Robert Dodd (now of the NTSB), Loren Rosenthal and Joan Cwi (of Battelle Memorial Institute), and Mary Connors and Linda Connell (of NASA) were consummate professionals who worked wonderfully together, even through times of tough decision-making. And the work done by the team was of superb quality.

Because NAOMS was so well conceived, I looked forward to continuation of the project and the development of a large publicly available database for the study of air travel safety. In our public meetings with interested parties, we presented the following

slides to illustrate the widespread use of surveys by federal agencies and the common practices for running these surveys over long time periods and distributing the data.

Survey Benefits



- **Surveys have been used to shape national policy for many decades**
- **This use is extensive in areas such as public health policy and economics**
- **Aviation safety is a natural topic for survey data collection**
- **Survey methods are mature and well understood**

Examples of Continuing Surveys



- **Survey of Income and Program Participation (Census Bureau) 1984 -**
- **Consumer Expenditure Surveys (Census Bureau) 1968 -**
- **Annual Housing Surveys (Census Bureau) 1973 -**
- **Consumer Attitudes and Behavior (SRC) 1953 -**
- **Health and Nutrition Examination Surveys (NCHS) 1959 -**
- **National Health Interview Surveys (NCHS) 1970 -**
- **American National Election Studies (NSF) 1948 -**
- **Panel Study of Income Dynamics (NSF) 1968 -**
- **National Longitudinal Surveys (BLS) 1964 -**
- **Behavioral Risk Factor Surveillance System (CDC) 1984 -**
- **Monitoring the Future (NIDA) 1975 -**

Features of These Studies



- Federally-funded via contracts or grants
- Long-term tracking studies
- Large constituencies use the data
- Important policy decisions are based on the data
- Conducted by the most prestigious survey research firms in the nation

Features of These Studies (cont'd)



- Design done by collaborative teams of investigators
- Principal Investigators remain stable over time
- Planning Boards make decisions – rotating membership
- Advisory Oversight Boards oversee the entire project and make suggestions about planning board membership and project direction.
- Methodological experts serve on advisory boards

Features of These Studies (cont'd)



- Questionnaires have core items that remain constant from wave to wave
- Topical questions are rotated into and out of the questionnaire to reflect current interests
- Press releases and press conferences mark the release of new data (e.g., once a year)
- Publications by the project staff summarize a simple set of core trend findings
- Data are released to the public
- Numerous investigators in government, at universities, and in private industry analyze the data and publish findings.

Thus, we intended to set up such a long-term data collection and dissemination system for NAOMS.

When I heard that interviewing of air carrier pilots had been terminated and then that all funding for NAOMS had been stopped, I was surprised. As far as I knew, the project had been conducted according to best practices, and nothing that happened during that period suggested anything to the contrary.

In my view, NAOMS was intelligently conceived and excellently implemented. Thus, for as far as it went, NAOMS deserves a great deal of praise from NASA and from all Americans. Indeed, NASA and the federal government should be very proud of what it accomplished with NAOMS, because its success is just what all government agencies hope for when setting out to do good for this nation.

My belief in the value of NAOMS for this country led me to write an op-ed essay published in the New York Times in 2006 just after I got the news of discontinued funding. I wrote that essay with the goal of calling attention to the great success of NAOMS and perhaps to lead to a reconsideration of its termination.

At the very least, I hoped that a way could be devised to allow researchers to have access to the data that were collected via approximately 24,000 interviews with air carrier pilots over a period of years.

These data can be useful in a number of ways. First, they can document the frequency with which various types of events were occurring. According to our interviews with pilots early on in the project, they thought that NAOMS would be valuable partly because it would call attention to surprisingly high frequencies of some low-risk events that could be easily reduced or eliminated.

Second, the NAOMS data can be compared to data on the frequency of similar events collected by other data sources. For example, ASRS and the FAA collect data that can be used to compute event rates and compared directly to some of the events asked about in the NAOMS questionnaire. If the NAOMS questionnaires yield different rates than these other reporting systems, that would highlight potential opportunities to explore the sources of those discrepancies, which might yield improvements in measurement methods and a clearer understanding of what measurement procedures are most accurate.

Third, the NAOMS data can be used to compute trends over time in event rates. This was of course the primary intended purpose of NAOMS when it was originally envisioned. Thus, NAOMS could be used to gauge whether changes in the air travel system during the years of data collection were successful in reducing risk. Because NAOMS data were collected both before and after September 11, 2001, it would be possible to see how the changes in practices that occurred at that time translated into changes in event frequencies.

Fourth, the NAOMS questionnaires are designed in ways that allow analysts to assess some of the conditions under which particular types of events are most likely to occur. For example, it is possible to explore whether some types of events occurred more on aircraft flown by pilots with less total career flying experience or by pilots with more than a certain amount of experience. It is possible to explore whether some types of events occurred more on some types of aircraft than on others. Such findings could be used to inspire further research to identify the reasons for the observed relations and then perhaps to change aviation practices to enhance safety.

Fifth, the NAOMS data would allow researchers to conduct studies for optimizing survey methods generally. Not only is this possible by publishing reports of the field trial and preliminary studies done to prepare the NAOMS questionnaire and methodology, but the main study data can be used for this purpose in multiple ways. For example, it would be possible to compare the findings of data collected from pilots asked about events they witnessed during the last 30, 60, or 90 days to see how length of the recall period affected the accuracy of their recollections. This would be useful information to inform survey designers generally interested in optimizing recall questions. Also, it would be possible to explore how survey non-response is related to survey results, addressing a particularly hot topic in the survey methodology literature at the moment.

For all of these reasons, I believe that the existing NAOMS data should be made publicly available right away so that analysts can learn everything that can be learned from the data, to make the most of the \$8.4 million that NASA spent on the project. I believe that the model for making these data public should be the ASRS. NASA has been very successful in setting up a system for fully publicly disseminating the terrifically valuable information provided by pilots through the ASRS reporting system, and a comparable dissemination system can be created for NAOMS data as well.

Documenting the NAOMS Data in Detail

In order to allow the dissemination of these data to yield the most positive benefits, it is essential that NASA provide extensive and detailed documentation of the procedures by which the study was designed and the procedures by which the main data were collected. This includes descriptions of sampling, of respondent recruiting, of locating potential respondents, of training interviewers, of releasing cases for interviewing at particular times, and more. The full array of electronic files documenting all phases of the data collection should be made public while protecting the identities of the individuals who were interviewed.

In addition, NASA should help analysts use the data by providing written guidelines on how to properly analyze the data in light of the study design. No one knows the design complexities better than the NAOMS research staff. So they should write documentation to help analysts understand the origins of and potential uses of the data set.

Just one illustration of how complex analysis of these data involves the issue of multiple reporting of the same event. One potential use of NAOMS data is to calculate the rates at which particular risk-increasing events happened during particular time periods. NAOMS was designed to yield such estimates, but calculation of them must be done carefully.

Consider, for example, bird strikes. An analyst might be tempted to simply count up the number of times that pilots who were interviewed during a particular time period (e.g., calendar year 2003) reported experiencing a bird strike. Then, the analyst might be tempted to multiply this total by the ratio of the total number of licensed pilots during that time period divided by the number of pilots who completed interviews in the survey to yield a projected total number of bird strikes that occurred to the entire population of pilots.

However, multiple pilots witnessed each bird strike, and each bird strike could have been reported by each of those pilots. Specifically, a collision of a bird with an airplane would have been witnessed by 2 pilots on aircraft with two cockpit crew members and by 3 pilots on aircraft with three cockpit crew members. Thus, each bird strike had twice the probability of being reported by 2-crew aircraft pilots and three times the probability of being reported by 3-crew aircraft pilots. So in order to calculate the

number of events accurately, the observed total number of events must be adjusted downward to account for this multiple reporting.

NAOMS was designed knowing that this sort of calculation must be carried out. The questionnaire collected information necessary to implement corrections for this multiple reporting. Providing information to analysts about how to do this computation would be a valuable public service. With substantial documentation accompanying the data, analysts can be sure to calculate statistics properly by taking into account all such analytic considerations.

In addition to providing this documentation immediately, I would strongly recommend to NASA that they assemble and fund a “swat” team of suitable experts to conduct all possible analyses with the NAOMS data and issue an initial report of their findings as quickly as possible. Subsequent reports can then be issued later as additional analyses are conducted.

I assume that this “swat team’s” effort should build on the work that NASA has done already in constructing a final report on the data, which they planned to release later this year. I have not seen a draft of that report and don’t know anything about its contents. But if it is not completely comprehensive in addressing all issues that the data can address and completely comprehensive in fully documenting all procedural details of how the data were collected, I would recommend that its scope be expanded accordingly, with proper government funding to permit it to be done as well as all of the rest of NAOMS to date.

The Future of NAOMS

One might imagine that the book has been closed on NAOMS and that clean-up activity is all that remains on this project. But I believe that to think of NAOMS in these terms would forego a wonderful opportunity for NASA and for this government and for this country.

NAOMS data are not being generated by any other source. And from all indications, the NAOMS data that were collected are reliable and valid. Furthermore, our team’s public meetings with stakeholders indicated considerable enthusiasm for the sorts of data that NAOMS was intended to provide.

Therefore, I believe, the vision of a multi-faceted NAOMS data collection monitoring service was and is terrifically positive for everyone who flies on planes, everyone who works in the commercial aviation system, everyone who manufactures airplanes, and everyone who monitors and helps to optimize aeronautics in American.

Consequently, I recommend **restarting NAOMS data collection** where it left off and bring its potential fully into being. Doing so would be a great service of this government to this country.

There has been some discussion recently of the notion that NASA has prepared NAOMS to be handed off to another organization to continue the data collection in the future. Two organizations that have been mentioned in this regard are the Air Line Pilots Association (ALPA) and the Commercial Aviation Safety Team (CAST).

I believe that such a hand-off would be unwise, untenable, and unlikely to lead to successful continuation of NAOMS data collection. The reason is that within the aviation safety community, NASA is uniquely qualified to carry out this work in an optimal form, for a series of reasons.

First, NASA has built up a unique credibility and trust in the aviation safety community by running ASRS successfully over the years. No other agency has the trust of all interested parties inside and outside of government the way NASA does. This trust will enhance the likelihood that pilots, air traffic controllers, flight attendants, and mechanics will agree to participate in survey interviews. NASA's reputation for scientific excellence is especially important to allow NAOMS data to earn the trust that they deserve.

Second, NASA has the scientific credibility and third-party objectivity to be able to collect data at a distance from those who run airlines, manufacture aircraft, and fly on those aircraft. If the data collection were to be run by any interested party, their values might be perceived, rightly or wrongly, to have influenced the results they obtain and/or distribute. This is a context in which government oversight and management of an information collection system run by a private sector contractor with considerable expertise is the best way to allow that system to be most effective and most helpful to all who can benefit from it.

Most importantly, I have not heard of any commitment made by ALPA, CAST, or any other private sector organization to commit funds to initiate and maintain continued NAOMS data collection using the same high-quality methodology that NASA developed. The benefits of ASRS data are obvious to all who use that growing dataset of anecdotes. Considerable added value can and should be created by making long-term commitment through appropriate funding to allow NASA to restart NAOMS data collection from pilots, air traffic controllers, flight attendants, and mechanics.

The members of this committee fly on commercial airlines, as do huge numbers of your constituents, including me. I believe that we all deserve to fly on the safest possible system. NASA's efforts in building and carrying out NAOMS offer the opportunity to significantly enhance our safety by watching carefully what happens in real time and documenting risk-elevating events in ways that enable minimization of them. As the aviation system grows and changes in the coming years, keeping a close eye on its functioning can only increase public confidence in air travel. I therefore urge this committee to please take this opportunity to do what I believe your constituents would want: to reactive this valuable system under NASA's roof.

Conclusion

The U.S. Federal Government in general and NASA in particular have a great deal to be proud of regarding NAOMS. NAOMS was intended to fill a hole by creating an ongoing pipeline of valuable information for the public and for the private sector to enhance the welfare of all Americans. It has succeeded in doing so and can continue to do so in the future. Thank you for taking this opportunity to consider assuring that to happen.

Appendix A:

Curriculum Vitae

Jon A. Krosnick

ABBREVIATED CURRICULUM VITAE

Jon A. Krosnick

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Stanford University
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Stanford, California 94305
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<http://www.stanford.edu/group/polisci/faculty/krosnick.html>

Education A.B., Harvard University (in Psychology, Magna Cum Laude), 1980.
M.A., University of Michigan (in Social Psychology, with Honors), 1983.
Ph.D., University of Michigan (in Social Psychology), 1986.

Employment

2006- Research Professor, Survey Research Laboratory, University of Illinois.

2005- Senior Fellow, Institute for the Environment, Stanford University.

2004- Frederic O. Glover Professor in Humanities and Social Sciences, Stanford University.

2004- Professor, Department of Communication, Stanford University.

2004- Professor, Department of Political Science, Stanford University.

2004- Professor, Department of Psychology (by courtesy), Stanford University.

2004- Associate Director, Institute for Research in the Social Sciences, Stanford University.

2004- Director, Methods of Analysis Program in the Social Sciences, Stanford University.

2004-2006 Visiting Professor, Department of Psychology, The Ohio State University.

2003-2004 Visiting Professor, Department of Communication, Stanford University.

1986-2004 Assistant to Associate to Full Professor, Departments of Psychology and Political Science, The Ohio State University.

- 1987-1989 Adjunct Research Investigator, Survey Research Center, Institute for Social Research, University of Michigan.
- 1987-1989 Lecturer, Survey Research Center Summer Program in Survey Research Techniques, University of Michigan.
- 1986-1987 Visiting Scholar, Survey Research Center, Institute for Social Research, University of Michigan.
- 1985 Lecturer, Department of Psychology, The Ohio State University.
- 1982-1985 Research Assistant, Center for Political Studies and Survey Research Center, Institute for Social Research, University of Michigan.
- 1980-1981 Senior Research Assistant, Department of Psychology, Harvard University.
- 1979-1981 Senior Research Assistant, Department of Behavioral Sciences, School of Public Health, Harvard University.

Honors

- 1976 Bausch and Lomb Science Award.
- 1982 National Institute of Mental Health Graduate Training Fellowship.
- 1984 Phillip Brickman Memorial Prize for Research in Social Psychology.
- 1984 American Association for Public Opinion Research Student Paper Award.
- 1984 National Institute of Mental Health Graduate Training Fellowship.
- 1984 Pi Sigma Alpha Award for the Best Paper Presented at the 1983 Midwest Political Science Association Annual Meeting.
- 1984 Elected Departmental Associate, Department of Psychology, University of Michigan, recognizing outstanding academic achievement.
- 1990 Invited Guest Editor, Social Cognition (Special issue on political psychology, Vol. 8, #1, May)
- 1993 Brittingham Visiting Scholar, University of Wisconsin.
- 1995 Erik H. Erikson Early Career Award for Excellence and Creativity in the Field of Political Psychology, International Society of Political Psychology.
- 1996-1997 Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford, California.
- 1998 Elected Fellow, American Psychological Association.

- 1998 Elected Fellow, Society for Personality and Social Psychology.
- 1998 Elected Fellow, American Psychological Society.
- 2001-2007 Appointed University Fellow, Resources for the Future, Washington, DC.
- 2003 Prize for the Best Paper Presented at the 2002 Annual Meeting of the American Political Science Association, Section on Elections, Public Opinion, and Voting Behavior.

Selected Invited Addresses

- 2003 Invited Address, Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- 2004 Invited Address, Distinguished Lecture Series Sponsored by the Departments of Psychology and Political Science, University of California, Davis, California.
- 2004 Keynote Lecture, International Symposium in Honour of Paul Lazarsfeld, Katholieke Universiteit Leuven (Belgium).
- 2005 Invited Address, Joint Program in Survey Methodology Distinguished Lecture Series, University of Maryland, College Park, Maryland.
- 2005 Invited Address, "Climate Change: Science → Action", Conference Hosted by the Yale School of Forestry and Environmental Studies, Aspen, Colorado.
- 2005 Invited Commentator, "Science for Valuation of EPA's Ecological Protection Decisions and Programs," a U.S. Environmental Protection Agency Science Advisory Board Workshop, Washington, DC.
- 2006 Invited Address, "The Wonderful Willem Saris and his Contributions to the Social Sciences." Farewell Symposium for Willem Saris, University of Amsterdam, Amsterdam, the Netherlands.
- 2006 Invited Workshop, "The State of Survey Research." Annual Summer Meeting of the Society for Political Methodology, Davis, California.
- 2006 Invited Keynote Address, "Recent Lessons Learned About Maximizing Survey Measurement Accuracy in America: One Surprise After Another." 2006 Survey Research Methodology Conference, Center for Survey Research, Academia Sinica, Taipei, Taiwan.
- 2006 Invited Address, "Review of Nonresponse Analysis Across Multiple Surveys." Conference on "Sample Representativeness: Implications for Administering and Testing Stated Preference Surveys," Resources for the Future, Washington, D.C.

- 2006 Invited Address, "Introduction to Survey Issues in Ecological Valuation." Meeting of the U.S. Environmental Protection Agency Scientific Advisory Board Committee on Valuing the Protection of Ecological Systems and Services (CVPESS), Washington, D.C.
- 2006 Invited Address, "Gas Pumps and Voting Booths: Energy and Environment in the Midterm Elections." First Wednesday Seminar, Resources for the Future, Washington, D.C.
- 2006 Invited Address, "What Americans Believe and Don't Believe about Global Warming: Attitude Formation and Change in Response to a Raging Scientific Controversy." National Science Foundation Speaker Series, Washington, D.C.
- 2006 Invited Address, "Moving Survey Data Collection to the Internet? Surprising Ways that Mode, Sample Design and Response Rates Affect Survey Accuracy." New York Chapter of the American Association for Public Opinion Research, Fordham University, New York, New York.
- 2006 Invited Address, "Climate change: What Americans Really Think." Conference entitled "A Favorable Climate for Climate Action," sponsored by the Sustainable Silicon Valley, Santa Clara University, Santa Clara, California.
- 2006 Invited Lecture, "What Americans Really Think About Climate Change: Attitude Formation and Change in Response to a Raging Scientific Controversy." Brown Bag Series, National Oceanic and Atmospheric Administration, Silver Spring, Maryland.
- 2007 Invited Lecture, "What Americans Really Think About Climate Change: Attitude Formation and Change in Response to a Raging Scientific Controversy." Education And Outreach Colloquium, Earth Sciences Division, NASA Goddard Space Flight Center, Greenbelt, Maryland.
- 2007 Inaugural Lecture, "The Brave New World of Survey Research: One Surprise After Another." Survey Research Institute First Annual Speaker Series, Cornell University, Ithaca, New York.
- 2007 Inaugural Lecture, "What Americans Really Think About Climate Change: Attitude Formation and Change in Response to a Raging Scientific Controversy." National Centers for Coastal Ocean Science/Center for Sponsored Coastal Ocean Research Ecosystem Science Seminar Series & NOS Science Seminar Series, National Oceanic and Atmospheric Administration, Silver Spring, Maryland.
- 2007 Plenary Speaker, "What Americans Really Think About Climate Change: Attitude Formation and Change in Response to a Raging Scientific Controversy." Annual Ocean and Coastal Program Managers' Meeting, Sponsored by the Office of Ocean and Coastal Resource Management in

partnership with the National Estuarine Research Reserve Association, National Oceanic and Atmospheric Administration, Washington, DC.

- 2007 Oral Testimony on Assembly Bill 372 (to revise the order in which the names of candidates for an office must appear on the ballot) before the Nevada State Legislature, Carson City, Nevada.
- 2007 Invited Lecture, "What Americans Really Think About Climate Change: Attitude Formation and Change in Response to a Raging Scientific Controversy." The White House Office of Science and Technology Policy, Washington, D.C.
- 2007 Invited Lecture, "What Americans Really Think About Climate Change: Attitude Formation and Change in Response to a Raging Scientific Controversy." Workshop on Climate Science and Services: Coastal Applications for Decision Making through Sea Grant Extension and Outreach. NOAA Coastal Services Center, Charleston, South Carolina.
- 2007 Invited Lecture, "Climate Change: What Americans Think." Capital Hill Briefing Sponsored by the Environment and Energy Study Institute, Cannon House Office Building, Washington, D.C. Broadcast live in C-SPAN.
- 2007 Invited Lecture, "The Impact of Candidate Name Order on Election Outcomes." The Carter Center, Atlanta, Georgia.
- 2007 Invited Lecture, "What Americans Really Think About Climate Change: Attitude Formation and Change in Response to a Raging Scientific Controversy." Google, Mountain View, California.
- 2007 Invited Lecture, "Climate Change: What Americans Really Think." The Commonwealth Club, San Francisco, California.
- 2007 Invited Address, "Representativeness of Online Panels." Time-Warner 2007 Research Conference, New York, New York.
- 2007 Invited Lecture, "What the Public Knows." News Executives Roundtable: Covering Climate Change, Stanford, California.
- 2007 Invited Address, "The Top Ten Signs of an Excellent Survey Vendor." Intuit Corporate Customer & Market Insight Offsite, Palo Alto, California.
- 2007 Invited Lecture, "What Americans Really Think About Climate Change." Association of Science- Technology Centers Conference, Los Angeles, California.

Editorial Board Member

- 1989-2000
2006- Journal of Personality and Social Psychology
- 1990-1994 Journal of Experimental Social Psychology

1997-2003	Basic and Applied Social Psychology
1988-1991, 1994-2002	Public Opinion Quarterly
1998-2005	Media Psychology
2006-	Sociological Methodology

External Grants and Contracts

1977	CBS Research Grant, to support development and evaluation of a mass media promotional campaign for sound recordings.
1984	Society for the Psychological Study of Social Issues Doctoral Dissertation Grant-in-aid.
1984	CBS Research Grant, to support literature review/research on the causes of heavy television viewing among children and adolescents.
1985	CBS Research Grant, to support empirical research on the effect of television viewing on alcohol use among children and adolescents.
1985	CBS Research Grant, to support empirical research on the causes of heavy television viewing among children and adolescents.
1987-1989	National Institute on Aging Research Grant, to study changes in political orientations over the life span (with Duane F. Alwin).
1987	National Association of Broadcasters Research Grant, to study the causes of heavy television viewing among children and adolescents.
1988	Society for the Psychological Study of Social Issues Grant-in-Aid, to support research on the causes of heavy television viewing among children and adolescents.
1990-1992	National Science Foundation, The information processing consequences of attitude importance.
1991	National Science Foundation Research Experience for Undergraduates Grant Supplement, The information processing consequences of attitude importance.
1992	Society for the Psychological Study of Social Issues Grant-in-Aid, to support research on the impact of the Gulf War on the constituents of presidential evaluations.
1992	National Science Foundation Research Experience for Undergraduates Grant Supplement, The information processing consequences of attitude importance.

- 1994 National Science Foundation, Explaining the surprising accuracy of mail surveys.
- 1995 National Science Foundation Research Experience for Undergraduates Grant Supplement, Explaining the surprising accuracy of mail surveys.
- 1995 U.S. Department of the Interior/Minerals Management Service/University of California Coastal Marine Institute, Testing and calibrating the measurement of nonmarket values for oil spills via the contingent valuation method (with Michael Hanemann).
- 1995 Electric Power Research Institute/Industrial Economics, Elicitation of public perceptions regarding the potential ecological effects of climate change (part I).
- 1996 Electric Power Research Institute/Industrial Economics, Elicitation of public perceptions regarding the potential ecological effects of climate change (part II).
- 1997 National Science Foundation, Formation and change of public beliefs about global warming.
- 1997 National Oceanic and Atmospheric Administration/U.S. Environmental Protection Agency/Resources for the Future, Formation and change of public beliefs about global warming: Wave II of survey interviewing.
- 1998, 1999, 2000, 2001 Robert Dodd and Associates/The Battelle Memorial Institute/National Aeronautics and Space Administration, National aviation operational monitoring system questionnaire development.
- 2000, 2001 Resources for the Future, American public opinion on the environment.
- 2001, 2002 Columbus Airport Authority, The dynamics and causes of airport customer satisfaction.
- 2002 Time-sharing Experiments for the Social Sciences (TESS) grant (funded by the National Science Foundation), Social desirability and reports of voter turnout (with Allyson L. Holbrook).
- 2003 National Science Foundation, Social and psychological mechanisms of the relation between age and openness to attitude change (with Penny Visser).
- 2003 New York Academy of Medicine/W. K. Kellogg Foundation, Engaging the community in terrorism preparedness planning.
- 2003 Decade of Behavior 2000-2010 Distinguished Lecture Program Grant to feature Richard E. Petty at the 2003 annual meeting of the American Association for Public Opinion Research.
- 2004 National Science Foundation, Optimizing the number of points on rating scales.

- 2004 The Bureau of Labor Statistics, U.S Department of Labor, Refining the categorization of jobs in the biotechnology industry.
- 2005 National Science Foundation, 2005 Summer Institute in Political Psychology.
- 2005 National Science Foundation, Survey Research Methodology Optimization for the Science Resource Statistics Program.
- 2005 National Science Foundation, American National Election Studies 2005-2010 (with Arthur Lupia).
- 2006 American Psychological Association, The psychology of voting and election campaigns: A proposal for a stand-alone conference (with Wendy Wood, Arthur, Lupia, and John Aldrich).
- 2006 National Science Foundation, Agenda-setting workshop in the area of e-science: Development of the next generation of cybertools applied to data collections in the social and behavioral sciences (with Arthur Lupia).
- 2006 National Science Foundation, Development of a computer network for experimental and non-experimental data collection via the Internet from a nationally representative sample of American households.
- 2006 National Science Foundation and the Department of Homeland Security, Expansion of the American National Election Study: Gauging the public's Attitudes on terrorism and homeland security (with Arthur Lupia).
- 2007 National Science Foundation, 2007 Summer Institute in Political Psychology.
- 2007 National Science Foundation, Survey Research Methodology Optimization for the Science Resource Statistics Program.
- 2007 National Science Foundation, Survey Research Methodology Optimization for the Science Resource Statistics Program (Supplement).
- 2007 National Science Foundation, Research Experience for Undergraduates Supplement for the American National Election Study.
- 2007 National Science Foundation, The Impact of Polls on Political Behavior.
- 2007 National Science Foundation, American National Election Studies Supplement to Support Additional Pretesting of Questionnaire Items.
- 2007 National Science Foundation, American National Election Studies Supplement to Support a Conference on Methodology for Coding Open-ended Question Responses.

Books

- Weisberg, H., Krosnick, J. A., & Bowen, B. (1989). Introduction to survey research and data analysis. Chicago: Scott, Foresman.
- Krosnick, J. A. (Ed.). (1990). Thinking about politics: Comparisons of experts and novices. New York: Guilford Press (Book version of a special issue of Social Cognition, Volume 8, Number 1, 1990).
- Petty, R. E., & Krosnick, J. A. (Eds.). (1995). Attitude strength: Antecedents and consequences. Hillsdale, NJ: Erlbaum.
- Weisberg, H., Krosnick, J. A., & Bowen, B. (1996). Introduction to survey research, polling, and data analysis. Thousand Oaks, CA: Sage.
- Carson, R. T., Conaway, M. B., Hanemann, W. M., Krosnick, J. A., Mitchell, R. C., Presser, S. (2004). Valuing oil spill prevention: A case study of California's central coast. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Krosnick, J. A., & Fabrigar, L. R. (forthcoming). The handbook of questionnaire design. New York: Oxford University Press.

Journal Articles and Book Chapters

- Krosnick, J. A. (1978). One approach to the analysis of drumset playing. Percussive Notes, Spring-Summer, 143-149.
- Judd, C. M., Krosnick, J. A., & Milburn, M. A. (1981). Political involvement and attitude structure in the general public. American Sociological Review, 46, 660-669.
- Krosnick, J. A., & Judd, C. M. (1982). Transitions in social influence at adolescence: Who induces cigarette smoking? Developmental Psychology, 18, 359-368.
- Judd, C. M., & Krosnick, J. A. (1982). Attitude centrality, organization, and measurement. Journal of Personality and Social Psychology, 42, 436-447.
- Krosnick, J. A. (1982). Teaching percussion: Growing with your students. National Association of College Wind and Percussion Instructors Journal, Summer, 4-7.
- Judd, C. M., Kenny, D. A., & Krosnick, J. A. (1983). Judging the positions of political candidates: Models of assimilation and contrast. Journal of Personality and Social Psychology, 44, 952-963.
- McAlister, A. L., Krosnick, J. A., & Milburn, M. A. (1984). Causes of adolescent cigarette smoking: Tests of a structural equation model. Social Psychology Quarterly, 47, 24-36.
- Iyengar, S., Kinder, D. R., Peters, M. D., & Krosnick, J. A. (1984). The evening news and presidential evaluations. Journal of Personality and Social Psychology, 46, 778-787.

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- Alwin, D. F., & Krosnick, J. A. (1985). The measurement of values in surveys: A comparison of ratings and rankings. Public Opinion Quarterly, 49, 535-552.
- Reprinted in Singer, E., & Presser, S. (Eds.) (1989). Survey research methods: A reader. Chicago: University of Chicago Press.
- Reprinted in Bartholomew, D. (Ed.) (2006). Measurement. Oxford, UK: The Bardwell Press.
- Schuman, H., Ludwig, J., & Krosnick, J. A. (1986). The perceived threat of nuclear war, salience, and open questions. Public Opinion Quarterly, 50, 519-536.
- Krosnick, J. A., & Alwin, D. F. (1987). An evaluation of a cognitive theory of response order effects in survey measurement. Public Opinion Quarterly, 51, 201-219.
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- Krosnick, J. A., & Alwin, D. F. (1988). A test of the form-resistant correlation hypothesis: Ratings, rankings, and the measurement of values. Public Opinion Quarterly, 52, 526-538.
- Judd, C. M., & Krosnick, J. A. (1989). The structural bases of consistency among political attitudes: The effects of political expertise and attitude importance. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), Attitude Structure and Function. Hillsdale, NJ: Erlbaum.
- Krosnick, J. A. (1989). Attitude importance and attitude accessibility. Personality and Social Psychology Bulletin, 15, 297-308.
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- Reprinted in Bulmer, H. (Ed.), Questions. Thousand Oaks, CA: Sage Publications.
- Krosnick, J. A., & Alwin, D. F. (1989). Aging and susceptibility to attitude change. Journal of Personality and Social Psychology, 57, 416-425.

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- Krosnick, J. A. (1990). Expertise in political psychology. Social Cognition, 8, 1-8. (also in J. Krosnick (Ed.), Thinking about politics: Comparisons of experts and novices. New York: Guilford, 1990, pp. 1-8).
- Krosnick, J. A. (1990). Lessons learned: A review and integration of our findings. Social Cognition, 8, 154-158. (also in J. Krosnick (Ed.), Thinking about politics: Comparisons of experts and novices. New York: Guilford, 1990, pp. 154-158).
- Krosnick, J. A., Li, F., & Lehman, D. (1990). Conversational conventions, order of information acquisition, and the effect of base rates and individuating information on social judgments. Journal of Personality and Social Psychology, 59, 1140-1152.
- Krosnick, J. A., & Milburn, M. A. (1990). Psychological determinants of political opinionation. Social Cognition, 8, 49-72. (also in J. Krosnick (Ed.), Thinking about politics: Comparisons of experts and novices. New York: Guilford, 1990, pp. 49-72).
- Krosnick, J. A., & Sedikides, C. (1990). Self-monitoring and self-protective biases in the use of consensus information to predict one's own behavior. Journal of Personality and Social Psychology, 58, 718-728.
- Krosnick, J. A., & Kinder, D. R. (1990). Altering the foundations of support for the president through priming. American Political Science Review, 84, 497-512.
- Reprinted in J T. Jost and J. Sidanius (Eds.) (2004). Political psychology: Key readings. New York, NY: Psychology Press.
- Alwin, D. F., & Krosnick, J. A. (1991). Aging, cohorts, and the stability of sociopolitical orientations over the life span. American Journal of Sociology, 97, 169-195.
- Alwin, D. F., & Krosnick, J. A. (1991). The reliability of survey attitude measurement: The influence of question and respondent attributes. Sociological Methods and Research, 20, 139-181.
- Judd, C. M., Drake, R. A., Downing, J. W., & Krosnick, J. A. (1991). Some dynamic properties of attitude structures: Context induced response facilitation and polarization. Journal of Personality and Social Psychology, 60, 193-202.
- Krosnick, J. A. (1990). Americans' perceptions of presidential candidates: A test of the projection hypothesis. Journal of Social Issues, 46, 159-182.
- Krosnick, J. A. (1991). Response strategies for coping with the cognitive demands of attitude measures in surveys. Applied Cognitive Psychology, 5, 213-236.
- Krosnick, J. A. (1991). The stability of political preferences: Comparisons of symbolic and non-symbolic attitudes. American Journal of Political Science, 35, 547-576.
- Krosnick, J. A. (1992). The impact of cognitive sophistication and attitude importance on response order effects and question order effects. In N. Schwarz and S. Sudman (Eds.),

- Order effects in social and psychological research (pp. 203-218). New York: Springer-Verlag.
- Krosnick, J. A., & Abelson, R. P. (1992). The case for measuring attitude strength in surveys. Pp. 177-203 in J. Tanur (Ed.), Questions about questions: Inquiries into the cognitive bases of surveys. New York: Russell Sage.
- Krosnick, J. A., Betz, A. L., Jussim, L. J., & Lynn, A. R. (1992). Subliminal conditioning of attitudes. Personality and Social Psychology Bulletin, 18, 152-162.
- Lehman, D. R., Krosnick, J. A., West, R. L., & Li, F. (1992). The focus of judgment effect: A question wording effect due to hypothesis confirmation bias. Personality and Social Psychology Bulletin, 18, 690-699.
- Krosnick, J. A., & Berent, M. K. (1993). Comparisons of party identification and policy preferences: The impact of survey question format. American Journal of Political Science, 37, 941-964.
- Krosnick, J. A., & Brannon, L. A. (1993). The impact of the Gulf War on the ingredients of presidential evaluations: Multidimensional effects of political involvement. American Political Science Review, 87, 963-975.
- Krosnick, J. A., & Brannon, L. A. (1993). The media and the foundations of Presidential support: George Bush and the Persian Gulf conflict. Journal of Social Issues, 49, 167-182.
- Krosnick, J. A., Boninger, D. S., Chuang, Y. C., Berent, M. K., & Carnot, C. G. (1993). Attitude strength: One construct or many related constructs? Journal of Personality and Social Psychology, 65, 1132-1149.
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- Krosnick, J. A., & Smith, W. A. (1994). Attitude strength. In V. S. Ramachandran (Ed.), Encyclopedia of human behavior. San Diego, CA: Academic Press.
- Ostrom, T. M., Bond, C., Krosnick, J. A., & Sedikides, C. (1994). Attitude scales: How we measure the unmeasurable. In S. Shavitt & T. C. Brock (Eds.), Persuasion: Psychological insights and perspectives. Boston, MA: Allyn and Bacon.
- Rahn, W. M., Krosnick, J. A., & Breuning, M. (1994). Rationalization and derivation processes in survey studies of political candidate evaluation. American Journal of Political Science, 38, 582-600.
- Berent, M. K., & Krosnick, J. A. (1995). The relation between political attitude importance and knowledge structure. In M. Lodge & K. McGraw (Eds.), Political judgment: Structure and process. Ann Arbor, MI: University of Michigan Press.

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- Fabrigar, L. R., & Krosnick, J. A. (1995). Attitude measurement and questionnaire design. In A. S. R. Manstead & M. Hewstone (Eds.), Blackwell encyclopedia of social psychology. Oxford: Blackwell Publishers.
- Fabrigar, L. R., & Krosnick, J. A. (1995). Voting behavior. In A. S. R. Manstead & M. Hewstone (Eds.), Blackwell encyclopedia of social psychology. Oxford: Blackwell Publishers.
- Krosnick, J. A., & Petty, R. E. (1995). Attitude strength: An overview. In R. E. Petty and J. A. Krosnick (Eds.), Attitude strength: Antecedents and consequences. Hillsdale, NJ: Erlbaum.
- Krosnick, J. A., & Telhami, S. (1995). Public attitudes toward Israel: A study of the attentive and issue publics. International Studies Quarterly, 39, 535-554.
- Reprinted in Israel Affairs, vol. 2 (1995/1996).
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- Fabrigar, L. R., & Krosnick, J. A. (1991). The effect of question order and attitude importance on the false consensus effect. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Berent, M. K., & Krosnick, J. A. (1991). Attitude measurement reliability: The impact of verbal labeling of response alternatives and branching. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Lehman, D. R., Krosnick, J. A., West, R. L., & Li, F. (1991). The focus of judgment effect: A question wording effect due to hypothesis confirmation bias. Paper presented at the American Association for Public Opinion Research Annual Meeting, Phoenix, Arizona.
- Krosnick, J. A., Boninger, D. S., Chuang, Y. C., & Carnot, C. G. (1991). Attitude strength: One construct or many related constructs? Paper presented at the Nags Head Conference on Attitude Strength, Nags Head, North Carolina.
- Krosnick, J. A. (1991). Research on attitude importance: A summary and integration. Paper presented at the Nags Head Conference on Attitude Strength, Nags Head, North Carolina.
- Krosnick, J. A., & Berent, M. K. (1991). Memory for political information: The impact of attitude importance on selective exposure, selective elaboration, and selective recall. Paper presented at the Society for Experimental Social Psychology Annual Meeting, Columbus, Ohio.
- Krosnick, J. A., & Brannon, L. A. (1992). The impact of war on the ingredients of presidential evaluations: George Bush and the Gulf conflict. Paper presented at the Conference on the Political Consequences of War, The Brookings Institution, Washington, D.C.
- Berent, M. K., & Krosnick, J. A. (1992). The relation between attitude importance and knowledge structure. Paper presented at the Midwest Political Science Association Annual Meeting, Chicago, Illinois.

- Smith, W. R., Culpepper, I. J., & Krosnick, J. A. (1992). The impact of question order on cognitive effort in survey responding. Paper presented at the Sixth National Conference on Undergraduate Research, University of Minnesota, Minneapolis, Minnesota.
- Krosnick, J. A., & Brannon, L. A. (1992). The impact of war on the ingredients of presidential evaluations: George Bush and the Gulf conflict. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Petersburg, Florida.
- Narayan, S. S., & Krosnick, J. A. (1992). Response effects in surveys as a function of cognitive sophistication. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Boninger, D. S., Krosnick, J. A., & Berent, M. K. (1992). Imagination, perceived likelihood, and self-interest: A path toward attitude importance. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Culpepper, I. J., Smith, W., & Krosnick, J. A. (1992). The impact of question order on satisficing in attitude surveys. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Berent, M. K., & Krosnick, J. A. (1992). Attitude importance, information accessibility, and attitude-relevant judgments. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Krosnick, J. A., & Brannon, L. A. (1992). The impact of war on the ingredients of presidential evaluations: George Bush and the Gulf conflict. Paper presented at the International Society of Political Psychology Annual Meeting, San Francisco, California.
- Rahn, W. M., Krosnick, J. A., & Breuning, M. (1992). Rationalization and derivation processes in political candidate evaluation. Paper presented at the American Political Science Association Annual Meeting, Chicago, Illinois.
- Krosnick, J. A., & Brannon, L. A. (1992). Effects of knowledge, interest, and exposure on news media priming effects: Surprising results from multivariate analysis. Paper presented at the Society for Experimental Social Psychology Annual Meeting, San Antonio, Texas.
- Berent, M. K., & Krosnick, J. A. (1993). Attitude importance and selective exposure to attitude-relevant information. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Fabrigar, L. R., & Krosnick, J. A. (1993). The impact of personal and national importance judgments on political attitudes and behavior. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Miller, J. M., & Krosnick, J. A. (1993). The effects of candidate ballot order on election outcomes. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Narayan, S. S., & Krosnick, J. A. (1993). Questionnaire and respondents characteristics that cause satisficing in attitude surveys. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.

- Narayan, S. S., & Krosnick, J. A. (1993). Response effects in surveys as a function of cognitive sophistication. Paper presented at the American Psychological Society Annual Meeting, Chicago, Illinois.
- Smith, W. R., & Krosnick, J. A. (1993). Need for cognition, prior thought, and satisficing in attitude surveys. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Smith, W. R., & Krosnick, J. A. (1993). Cognitive and motivational determinants of satisficing in surveys. Paper presented at the American Psychological Society Annual Meeting, Chicago, Illinois.
- Berent, M. K., & Krosnick, J. A. (1994). Attitude importance and selective exposure to attitude-relevant information. Paper presented at the Midwest Political Science Association Annual Meeting, Chicago, Illinois.
- Fabrigar, L. R., & Krosnick, J. A. (1994). The impact of attitude importance on consistency among attitudes. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Krosnick, J. A. (1994). Survey methods and survey results: Overturing conventional wisdom. Paper presented to the American Marketing Association, Columbus Chapter.
- Krosnick, J. A., & Fabrigar, L. R. (1994). Attitude recall questions: Do they work? Paper presented at the American Association for Public Opinion Research Annual Meeting, Danvers, Massachusetts.
- Miller, J. M., & Krosnick, J. A. (1994). Does accessibility mediate agenda-setting and priming? Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Smith, W. R., & Krosnick, J. A. (1994). Sources of non-differentiation and mental coin-flipping in surveys: Tests of satisficing hypotheses. Paper presented at the American Association for Public Opinion Research Annual Meeting, Danvers, Massachusetts.
- Visser, P. S., & Krosnick, J. A. (1994). Mail surveys for election forecasting? An evaluation of the Columbus Dispatch Poll. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Visser, P. S., Krosnick, J. A., & Curtin, M. (1994). Mail surveys for election forecasting? Paper presented at the American Association for Public Opinion Research Annual Meeting, Danvers, Massachusetts.
- Krosnick, J. A., & Brannon, L. A. (1995). News media priming and the 1992 U.S. presidential election. Paper presented at the American Political Science Association Annual Meeting, Chicago, Illinois.
- Krosnick, J. A., & Cornet, P. J. (1995). Attitude importance and attitude change revisited: Shifts in attitude stability and measurement reliability across a presidential election campaign.

- Paper presented at the American Psychological Society Annual Meeting, New York, New York.
- Krosnick, J. A., & Fabrigar, L. R. (1995). Designing rating scales for effective measurement in surveys. Invited address at the International Conference on Survey Measurement and Process Quality, Bristol, England.
- Krosnick, J. A., Narayan, S. S., & Smith, W. R. (1995). The causes of survey satisficing: Cognitive skills and motivational factors. Paper presented at the Midwest Association for Public Opinion Research, Chicago, Illinois.
- Miller, J. M., Fabrigar, L. R., & Krosnick, J. A. (1995). Contrasting attitude importance and collective issue importance: Attitude properties and consequences. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Miller, J. M., & Krosnick, J. A. (1995). Ballot order effects on election outcomes. Paper presented at the Midwest Political Science Association Annual Meeting, Chicago, Illinois.
- Miller, J. M., & Krosnick, J. A. (1995). Mediators and moderators of news media priming: It ain't accessibility, folks. Paper presented at the International Society of Political Psychology Annual Meeting, Washington, D.C.
- Narayan, S. S., & Krosnick, J. A. (1995). Education moderates response effects in surveys. Paper presented at the American Association for Public Opinion Research Annual Meeting, Ft. Lauderdale, Florida.
- Smith, W. R., & Krosnick, J. A. (1995). Mental coin-flipping and non-differentiation in surveys: Tests of satisficing hypotheses. Invited address at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Visser, P. S., & Krosnick, J. A. (1995). The relation between age and susceptibility to attitude change: A new approach to an old question. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Visser, P. S., & Krosnick, J. A. (1995). Mail surveys win again: Some explanations for the superior accuracy of the Columbus Dispatch poll. Paper presented at the American Association for Public Opinion Research Annual Meeting, Ft. Lauderdale, Florida.
- Ankerbrand, A. L., Krosnick, J. A., Cacioppo, J. T., & Visser, P. S. (1996). Candidate assessments and evaluative space. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Bizer, G. Y., & Krosnick, J. A. (1996). Attitude accessibility and importance revisited. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Krosnick, J. A. (1996). Linking survey question structure to data quality: The impact of no-opinion options. Paper presented at the conference on "Quality Criteria in Survey Research," sponsored by the World Association for Public Opinion Research, Cadenabbia, Italy.

- Krosnick, J. A., & Brannon, L. A. (1996). News media priming during the 1992 U.S. presidential election campaign. Paper presented at the International Society of Political Psychology Annual Meeting, Vancouver, British Columbia.
- Miller, J. M., Fabrigar, L. R., & Krosnick, J. A. (1996). The roles of personal importance and national importance in motivating issue public membership. Paper presented at the Midwest Political Science Association Annual Meeting, Chicago, Illinois.
- Miller, J. M., & Krosnick, J. A. (1996). Can issue public membership be triggered by the threat of a policy change? Paper presented at the International Society of Political Psychology Annual Meeting, Vancouver, British Columbia.
- Krosnick, J. A., & Visser, P. S. (1996). Changes in political attitude strength through the life cycle. Paper presented at the Society for Experimental Social Psychology Annual Meeting, Sturbridge, Massachusetts.
- Miller, J. M., & Krosnick, J. A. (1997). The impact of policy change threat on issue public membership. Paper presented at the Midwest Political Science Association Annual Meeting, Chicago, Illinois.
- Ankerbrand, A. L., Krosnick, J. A., Cacioppo, J. T., Visser, P. S., & Gardner, W. (1997). Attitudes toward political candidates predict voter turnout. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Ankerbrand, A. L., & Krosnick, J. A. (1997). Response order effects in dichotomous questions: A social desirability explanation. Paper presented at the American Psychological Society Annual Meeting, Washington, DC.
- Krosnick, J. A. (1997). Miraculous accuracy in political surveys: The keys to success. Presentation in the Federation of Behavioral, Psychological, and Cognitive Sciences Seminar on Science and Public Policy, Library of Congress, Washington, D.C.
- Krosnick, J. A. (1997). Non-attitudes and no-opinion filters. Paper presented at the Conference on no opinion, instability, and change in public opinion research. University of Amsterdam, the Netherlands.
- Krosnick, J. A. (1997). Attitude strength. Paper presented at the Conference on no opinion, instability, and change in public opinion research. University of Amsterdam, the Netherlands.
- Bizer, G. Y., & Krosnick, J. A. (1998). The relation between attitude importance and attitude accessibility. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Holbrook, A., Krosnick, J. A., Carson, R. T., & Mitchell, R. C. (1998). Violating conversational conventions disrupts cognitive processing of survey questions. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Louis, Missouri.

- Krosnick, J. A. (1998). Applying stated preference methods to assessing the value of public goods. Paper presented at the National Oceanic and Atmospheric Administration Application of Stated Preference Methods to Resource Compensation Workshop, Washington, DC.
- Krosnick, J. A. (1998). Implications of psychological research on justice and compensation for handling of natural resource damage cases. Paper presented at the National Oceanic and Atmospheric Administration Application of Stated Preference Methods to Resource Compensation Workshop, Washington, DC.
- Krosnick, J. A. (1998). Acquiescence: How a standard practice in many survey organizations compromises data quality. Paper presented at the conference on "Quality Criteria in Survey Research," sponsored by the World Association for Public Opinion Research, Cadenabbia, Italy.
- Krosnick, J. A., Lacy, D., & Lowe, L. (1998). When is environmental damage Americans' most important problem? A test of agenda-setting vs. the issue-attention cycle. Paper presented at the International Society of Political Psychology Annual Meeting, Montreal, Quebec, Canada.
- Visser, P. S., Krosnick, J. A., Marquette, J., & Curtin, M. (1998). Improving election forecasting: Allocation of undecided respondents, identification of likely voters, and response order effects. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Louis, Missouri.
- Krosnick, J. A. (1998). The impact of science on public opinion: How people judge the national seriousness of global warming and form policy preferences. Paper presented at the American Political Science Association Annual Meeting, Boston, Massachusetts.
- Krosnick, J. A. (1998). Response choice order and attitude reports: New evidence on conversational conventions and information processing biases in voting and in election forecasting polls. Paper presented at the Society of Experimental Social Psychology Annual Meeting, Lexington, Kentucky.
- Krosnick, J. A. (1998). The impact of the Fall 1997 debate about global warming on American public opinion. Paper presented at Resources for the Future, Washington, D.C.
- Krosnick, J. A. (1998). What the American public believes about global warming: Results of a national longitudinal survey study. Paper presented at the Amoco Public and Government Affairs and Government Relations Meeting, Woodruff, Wisconsin.
- Krosnick, J. A. (1998). What the American public believes about global warming: Results of a national longitudinal survey study. Paper presented in the Second Annual Carnegie Lectures on Global Environmental Change, Carnegie Museum of Natural History, Pittsburgh, Pennsylvania.
- Green, M. C., & Krosnick, J. A. (1999). Survey satisficing: Telephone interviewing increases non-differentiation and no opinion responses. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.

- Green, M. C., & Krosnick, J. A. (1999). Comparing telephone and face-to-face interviewing in terms of data quality: The 1982 National Election Studies Method Comparison Project. Paper presented at the Seventh Annual Conference on Health Survey Research Methods, Williamsburg, Virginia.
- Holbrook, A. L., Krosnick, J. A., Carson, R. T., & Mitchell, R. C. (1999). Violating conversational conventions disrupts cognitive processing of attitude questions. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Petersburg, Florida.
- Krosnick, J. A. (1999). What happens when survey respondents don't try very hard? The notion of survey satisficing. Paper presented at the National Center for Social Research, London, United Kingdom.
- Krosnick, J. A. (1999). Satisficing: A single explanation for a wide range of findings in the questionnaire design literature. Paper presented at Linking the Path: A Conference for Analysts, Researchers, and Consultants, sponsored by the Gallup Organization, Lincoln, Nebraska.
- Krosnick, J. A. (1999). Methodology for the NAOMS Survey. Presentation at the Workshop on the Concept of the National Aviation Operational Monitoring System (NAOMS), Sponsored by the National Aeronautics and Space Administration, Alexandria, Virginia.
- Krosnick, J. A. (1999). Refining measurement of public values for policy-making: A test of contingent valuation procedures. Paper presented at the American Political Science Association Annual Meeting, Atlanta, Georgia.
- Krosnick, J. A. (1999). The threat of satisficing in surveys: The shortcuts respondents take in answering questions. Paper presented at the National Center for Social Research Survey Methods Seminar on Survey Data Quality, London, England.
- Krosnick, J. A. (1999). Optimizing questionnaire design: How to maximise data quality. Paper presented at the National Center for Social Research Survey Methods Seminar on Survey Data Quality, London, England.
- Krosnick, J. A. (1999). The causes and consequences of no-opinion responses in surveys. Paper presented at the International Conference on Survey Nonresponse, Portland, Oregon.
- Miller, J. M., & Krosnick, J. A. (1999). The impact of threats and opportunities on political participation. Paper presented at the Midwest Political Science Association Annual Meeting, Chicago, Illinois.
- O'Muircheartaigh, C., Krosnick, J. A., & Helic, A. (1999). Middle alternatives, acquiescence, and the quality of questionnaire data. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Petersburg, Florida.
- Bizer, G. Y., & Krosnick, J. A. (2000). The importance and accessibility of attitudes: Helping explain the structure of strength-related attitude attributes. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.

- Holbrook, A. L., Krosnick, J. A., Visser, P. S., Gardner, W. L., & Cacioppo, J. T. (2000). The formation of attitudes toward presidential candidates and political parties: An asymmetric nonlinear process. Paper presented at the American Psychological Society Annual Meeting, Miami, Florida.
- Holbrook, A. L., Krosnick, J. A., Visser, P. S., Gardner, W. L., & Cacioppo, J. T. (2000). The formation of attitudes toward presidential candidates and political parties: An asymmetric, nonlinear, interactive process. Paper presented at the American Political Science Association Annual Meeting, Washington, D.C.
- Krosnick, J. A. (2000). Peering into the future of thinking and answering: A psychological perspective on internet survey respondents. Paper presented at *Survey Research: Past, Present, and Internet*, the 2000 Nebraska Symposium on Survey Research, University of Nebraska, Lincoln, Nebraska.
- Krosnick, J. A. (2000). The present and future of research on survey non-responses: Reflections on Portland '99 and beyond. Roundtable presentation at the American Association for Public Opinion Research Annual Meeting, Portland, Oregon.
- Holbrook, A. L., Krosnick, J. A., Moore, D. W., & Tourangeau, R. (2000). Response order effects in Gallup surveys: Linguistic structure and the impact of respondent ability, motivation, and task difficulty. Paper presented at the American Association for Public Opinion Research Annual Meeting, Portland, Oregon.
- Miller, J. M., Krosnick, J. A., & Lowe, L. (2000). The impact of policy change threat on financial contributions to interest groups. Paper presented at an invited conference, Political Participation: Building a Research Agenda, Center for the Study of Democratic Politics, Princeton University, Princeton, New Jersey.
- Miller, J. M., & Krosnick, J. A. (2000). Attitude change outside the laboratory: News media "priming" turns out not to be priming after all. Paper presented at the Society of Experimental Social Psychology Annual Meeting, Atlanta, Georgia.
- Saris, W., & Krosnick, J. A. (2000). The damaging effect of acquiescence response bias on answers to agree/disagree questions. Paper presented at the American Association for Public Opinion Research Annual Meeting, Portland, Oregon.
- Visser, P. S., & Krosnick, J. A. (2000). Exploring the distinct mechanisms through which strength-related attitude attributes confer resistance to attitude change. Paper presented at the Society for Personality and Social Psychology Annual Meeting, Nashville, Tennessee.
- Bizer, G. Y., & Krosnick, J. A. (2001). Need to evaluate and need for cognition predict political attitudes and behavior. Paper presented at the Midwestern Psychological Association, Chicago, Illinois.
- Krosnick, J. A. (2001). Who shapes public policy? Presentation made at the Annual Conference of the Ohio Farm Bureau Federation, Columbus, Ohio.
- Krosnick, J. A., & Bizer, G. Y. (2001). Exploring the structure of strength-related attitude features: The relation between attitude importance and attitude accessibility. Paper

- presented at the Society for Personality and Social Psychology Annual Meeting, San Antonio, Texas.
- Krosnick, J. A., Visser, P. S., & Holbrook, A. L. (2001). Real-time attitude change outside the laboratory: The case of the 1997 national debate on global warming. Paper presented at the Society for Personality and Social Psychology Annual Meeting, San Antonio, Texas.
- Krosnick, J. A., & Miller, J. M. (2001). An unrecognized need for ballot reform: Effects of candidate name order. Paper presented at the conference entitled Election Reform: 2000 and Beyond, sponsored by the USC-Caltech Center for the Study of Law and Politics and the Jesse M. Unruh Institute of Politics, University of Southern California, Los Angeles, California.
- Miller, J. M., & Krosnick, J. A. (2001). What motivates political cognition and behavior? Paper presented at the Midwest Political Science Association Annual Meeting, Chicago, Illinois.
- Green, M. C., Krosnick, J. A., & Holbrook, A. L. (2001). Experimental comparisons of the quality of data obtained from face-to-face and telephone surveys. Paper presented at the American Association for Public Opinion Research Annual Meeting, Montreal, Canada.
- Silver, M. D., & Krosnick, J. A. (2001). An experimental comparison of the quality of data obtained in telephone and self-administered mailed surveys with a listed sample. Paper presented at the American Association for Public Opinion Research Annual Meeting, Montreal, Canada.
- Chang, L., & Krosnick, J. A. (2001). The representativeness of national samples: Comparisons of an RDD telephone survey with matched Internet surveys by Harris Interactive and Knowledge Networks. Paper presented at the American Association for Public Opinion Research Annual Meeting, Montreal, Canada.
- Chang, L., & Krosnick, J. A. (2001). The accuracy of self-reports: Comparisons of an RDD telephone survey with Internet Surveys by Harris Interactive and Knowledge Networks. Paper presented at the American Association for Public Opinion Research Annual Meeting, Montreal, Canada.
- O'Muircheartaigh, C., & Krosnick, J. A. (2001). A cross-national comparison of middle alternatives, acquiescence, and the quality of questionnaire data. Paper presented at the American Association for Public Opinion Research Annual Meeting, Montreal, Canada.
- Marquette, J., Green, J., & Krosnick, J. A. (2001). Experimental analysis of the accuracy of pre-election vote choice reports. Paper presented at the American Association for Public Opinion Research Annual Meeting, Montreal, Canada.
- Holbrook, A. L., Krosnick, J. A., Carson, R. T., & Mitchell, R. C. (2001). Violating conversational conventions disrupts cognitive processing of attitude questions. Paper presented at the 2001 Fifth Tri-Annual UC Berkeley Invitational Choice Symposium, Pacific Grove, California.
- Krosnick, J. A. (2001). Americans' perceptions of the health risks of cigarette smoking: A new opportunity for public education. Paper presented at the invited conference "Survey

- Research on Household Expectations and Preferences,” Institute for Social Research, University of Michigan, Ann Arbor, Michigan.
- McCready, W., Skitka, L., & Krosnick, J. A. (2001). Using a web-enabled national panel to conduct social psychological experiments. Workshop presented at the Society of Experimental Social Psychology Annual Meeting, Spokane, Washington.
- Krosnick, J. A., Courser, M., Mulligan, K., & Chang, L. (2001). Exploring the determinants of vote choices in the 2000 Presidential election: Longitudinal analyses to document causality. Paper presented at the American Political Science Association Annual Meeting, San Francisco, California.
- Silver, M. D., & Krosnick, J. A. (2001). Optimizing survey measurement accuracy by matching question design to respondent memory organization. Paper presented at the Federal Committee on Statistical Methodology Research Conference, Arlington, Virginia.
- Krosnick, J. A., Courser, M., Mulligan, K., & Chang, L. (2002). Exploring the causes of vote choice in the 2000 Presidential election: Longitudinal analyses to document the causal determinants of candidate preferences. Paper presented at a conference entitled “Assessing the Vitality of Electoral Democracy in the U.S.: The 2000 Election,” The Mershon Center, Ohio State University, Columbus, Ohio.
- Miller, J. M., & Krosnick, J. A. (2002). Mediators and moderators of news media agenda-setting. Paper presented at the Midwest Political Science Association Annual Meeting, Chicago, Illinois.
- Shaeffer, E. M., Krosnick, J. A., & Holbrook, A. L. (2002). Assessing the efficacy of object rankings following ratings. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Lampron, S., Krosnick, J. A., Petty, R. E., & See, M. (2002). Self-interest, values, involvement, and susceptibility to attitude change. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Krosnick, J. A. (2002). Comments on Baruch Fischhoff’s “Environmental Risk: What’s Worth Knowing – and Saying?” Paper presented at the 2nd Annual Public Policy Symposium, “Responding to Contemporary Environmental Risks.” Sponsored by the Ohio State University Environmental Policy Initiative, Fischer College of Business, Ohio State University, Columbus, Ohio.
- Thomas, R. K., Uldall, B. R., & Krosnick, J. A. (2002). More is not necessarily better: Effects of response categories on measurement stability and validity. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Petersburg, Florida.
- Uldall, B. R., Thomas, R. K., & Krosnick, J. A. (2002). Reliability and validity of web-based surveys: Effects of response modality, item format, and number of categories. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Petersburg, Florida.

- Shook, N., Krosnick, J. A., & Thomas, R. K. (2002). Following the storm: Public opinion changes and political reactions in surveys. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Petersburg, Florida.
- Chang, L., & Krosnick, J. A. (2002). Comparing self-administered computer surveys and auditory interviews: An experiment. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Petersburg, Florida.
- Silver, M. D., & Krosnick, J. A. (2002). Optimizing survey measurement accuracy by matching question design to respondent memory organization. Paper presented at the American Association for Public Opinion Research Annual Meeting, St. Petersburg, Florida.
- Krosnick, J. A., Visser, P. S., Holbrook, A. L., & Berent, M. K. (2002). Challenging the common-factor model of strength-related attitude attributes: Contrasting the antecedents and consequences of attitude importance and attitude-relevant knowledge. Paper presented at the General Meeting of the European Association of Experimental Social Psychology, San Sebastian, Spain.
- Krosnick, J. A., Miller, J. M., & Tichy, M. P. (2002). An unrecognized need for ballot reform: Effects of candidate name order. Paper presented at the International Society for Political Psychology Annual Meeting, Berlin, Germany.
- Chang, L., & Krosnick, J. A. (2002). RDD telephone vs. Internet survey methodology for studying American presidential elections: Comparing sample representativeness and response quality. Paper presented at the American Political Science Association Annual Meeting, Boston, Massachusetts.
- Bizer, G. Y., Krosnick, J. A., Holbrook, A. L., Petty, R. E., Rucker, D. D., & Wheeler, S. C. (2002). The impact of personality on electoral behavior and cognition: A study of need for cognition and need to evaluate. Paper presented at the American Political Science Association Annual Meeting, Boston, Massachusetts.
- Krosnick, J. A., Visser, P. S., & Holbrook, A. L. (2002). Social psychology under the microscope: Do classic experiments replicate when participants are representative of the general public rather than convenience samples of college students? Paper presented at the Society of Experimental Social Psychology Annual Meeting, Columbus, Ohio.
- Visser, P. S., Krosnick, J. A., Simmons, J. (2002). Distinguishing the cognitive and behavioral consequences of attitude importance and certainty. Paper presented at the Society of Experimental Social Psychology Annual Meeting, Columbus, Ohio.
- Chang, L., & Krosnick, J. A. (2002). RDD telephone vs. Internet survey methodology for studying American presidential elections: Comparing sample representativeness and response quality. Invited presentation at Westat, Rockville, Maryland.
- Chang, L., & Krosnick, J. A. (2002). Comparing the quality of data obtained from telephone and Internet surveys: Field and laboratory experiments. Invited paper presented at the FCSM Statistical Policy Seminar "Challenges to the Federal Statistical System in Fostering Access to Statistics." Bethesda, Maryland.

- Lampron, S. F., Krosnick, J. A., Shaeffer, E., Petty, R. E., & See, M. (2003). Different types of involvement moderate persuasion (somewhat) differently: Contrasting outcome-based and value-based involvement. Paper presented at the Society for Personality and Social Psychology Annual Meeting, Los Angeles, California.
- Visser, P. S., & Krosnick, J. A. (2003). Attitude strength: New insights from a life-course development perspective. Paper presented at the Society for Personality and Social Psychology Annual Meeting, Los Angeles, California.
- Krosnick, J. A. (2003). Basic methodological work for and in repeated cross-sectional and longitudinal surveys: A few thoughts. Paper presented at the National Science Foundation Workshop on Repeated Cross-sectional and Longitudinal Surveys, Arlington, Virginia.
- Pfent, A. M., & Krosnick, J. A. (2003). Rationalization of presidential candidate preferences. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Holbrook, A. L., & Krosnick, J. A. (2003). Meta-psychological and operative measures of psychological constructs: The same or different? Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Krosnick, J. A., Visser, P. S., & Holbrook, A. L. (2003). Social psychology under the microscope: Do classic experiments replicate when participants are representative of the general public rather than convenience samples of college students? Invited presentation at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Saris, W. E., Krosnick, J. A., & Shaeffer, E. M. (2003). Comparing the quality of agree/disagree and balanced forced choice questions via an MTMM experiment. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Anand, S., & Krosnick, J. A. (2003). Satisficing in attitude surveys: The impact of cognitive skills and motivation on response effects. Paper presented at the Midwestern Psychological Association Annual Meeting, Chicago, Illinois.
- Bizer, G. Y., Krosnick, J. A., Holbrook, A. L., Petty, R. E., Rucker, D. D., & Wheeler, S. C. (2003). The impact of personality on political beliefs, attitudes, and behavior: Need for cognition and need to evaluate. Paper presented at the American Psychological Society Annual Meeting, Atlanta, Georgia.
- Holbrook, A. L., Pfent, A., & Krosnick, J. A. (2003). Response rates in recent surveys conducted by non-profits and commercial survey agencies and the news media. Paper presented at the American Association for Public Opinion Research Annual Meeting, Nashville, Tennessee.
- Shaeffer, E. M., Langer, G. E., Merkle, D. M., & Krosnick, J. A. (2003). A comparison of minimal balanced and fully balanced forced choice items. Paper presented at the American Association for Public Opinion Research Annual Meeting, Nashville, Tennessee.

- Pfent, A., Krosnick, J. A., & Courser, M. (2003). Rationalization and derivation processes in presidential elections: New evidence about the determinants of citizens' vote choices. Paper presented at the American Association for Public Opinion Research Annual Meeting, Nashville, Tennessee.
- Krosnick, J. A., Visser, P. S., & Holbrook, A. L. (2003). How to conceptualize attitude strength and how to measure it in surveys: Psychological perspectives. Paper presented at the American Association for Public Opinion Research Annual Meeting, Nashville, Tennessee.
- Chang, L., & Krosnick, J. A. (2003). Comparing data quality in telephone and internet surveys: Results of lab and field experiments. Invited paper presented at the American Statistical Association Annual Meetings, San Francisco, California.
- Pfent, A., & Krosnick, J. A. (2003). Post-decisional dissonance reduction by a new method: Rationalization of political candidate choices illuminates the basic dynamics of decision-making. Paper presented at the Society of Experimental Social Psychology Annual Meeting, Boston, Massachusetts.
- Krosnick, J. A., & Fabrigar, L. R. (2003). "Don't know" and "no opinion" responses: What they mean, why they occur, and how to discourage them. Invited paper presented at the Basel Workshop on Item Non-response and Data Quality in Large Social Surveys, University of Basel, Basel, Switzerland.
- Krosnick, J. A. (2003). Comments on theories of persuasion. Invited discussant at the conference entitled "Integrating Message Effects and Behavior Change Theories in Cancer Prevention, Treatment, and Care," Annenberg Public Policy Center, Annenberg School for Communication, University of Pennsylvania, Philadelphia, Pennsylvania.
- Krosnick, J. A. (2003). Survey methodology – scientific basis. Presentation at the National Aviation Operations Monitoring Service Working Group Meeting #1, Seattle, Washington.
- Krosnick, J. A. (2003). Survey methodology – NAOMS design decisions. Presentation at the National Aviation Operations Monitoring Service Working Group Meeting #1, Seattle, Washington.
- Krosnick, J. A. (2004). Survey methodology – scientific basis. Presentation at the National Transportation Safety Board, Washington, DC.
- Krosnick, J. A. (2004). Survey methodology – NAOMS design decisions. Presentation at the National Transportation Safety Board, Washington, DC.
- Krosnick, J. A. (2004). Public uses of the news media. Presentation as a part of the symposium "Politics and the media," Social Sciences Resource Center, Stanford Libraries, Stanford University, Stanford, CA.
- Krosnick, J. A. (2004). Peering into the minds of respondents: The cognitive and social processes underlying answers to survey questions. Invited keynote lecture at the International Symposium in Honour of Paul Lazarsfeld, Katholieke Universiteit Leuven (Belgium).

- Krosnick, J. A., Shook, N., & Thomas, R. K. (2004). Public opinion change in the aftermath of 9/11. Paper presented at the American Association for Public Opinion Research Annual Meeting, Phoenix, Arizona.
- Holbrook, A. L., & Krosnick, J. A. (2004). Vote over-reporting: A test of the social desirability hypothesis. Paper presented at the American Association for Public Opinion Research Annual Meeting, Phoenix, Arizona.
- Chang, L., & Krosnick, J. A. (2004). Assessing the accuracy of event rate estimates from national surveys. Paper presented at the American Association for Public Opinion Research Annual Meeting, Phoenix, Arizona.
- Shaeffer, E. M., Lampron, S. F., Krosnick, J. A., Tompson, T. N., Visser, P. S., & Hanemann, W. M. (2004). A comparison of open vs. closed survey questions for valuing environmental goods. Paper presented at the American Association for Public Opinion Research Annual Meeting, Phoenix, Arizona.
- Holbrook, A. L., Berent, M. K., Krosnick, J. A., Visser, P. S., & Boninger, D. S. (2004). Attitude importance and the accumulation of attitude-relevant knowledge in memory. Paper presented at the American Political Science Association Annual Meeting, Chicago, Illinois.
- Chang, L., & Krosnick, J. A. (2004). Measuring the frequency of regular behaviors: Comparing the 'typical week' to the 'past week.' Paper presented at the American Political Science Association Annual Meeting, Chicago, Illinois.
- Krosnick, J. A. (2004). What do Americans want government to do about global warming? Evidence from national surveys. Invited presentation at the "Workshop on Global Warming: The Psychology of Long Term Risk," Cooperative Institute for Climate Science, Woodrow Wilson School of Public and International Affairs, Princeton University, Princeton, New Jersey.
- Krosnick, J. A., & Malhotra, N. (2004). The causes of vote choice in the 2004 American Presidential Election: Insights from the 2004 YouGov surveys. Paper presented at the conference "The 2004 American Presidential Election: Voter Decision-Making in a Complex World," Stanford University, Stanford, California.
- Krosnick, J. A., Visser, P. S., & Holbrook, A. L. (2004). The impact of social psychological manipulations embedded in surveys on special populations. Paper presented at the Pacific Chapter of the American Association for Public Opinion Research Annual Meeting, San Francisco, California.
- Krosnick, J. A. (2005). The future of the American National Election Studies. Roundtable: The political psychology of surveys. Paper presented at the Midwestern Political Science Association Annual Meeting, Chicago, Illinois.
- Malhotra, N., & Krosnick, J. A. (2005). What motivated Americans' views of the candidates and vote preferences across the 2004 presidential campaign? Paper presented at the American Association for Public Opinion Research Annual Meeting, Miami, Florida.

- Garland, P., Krosnick, J. A., & Clark, H. H. (2005). Does question wording sometimes send unintended signals about expected answers? Paper presented at the American Association for Public Opinion Research Annual Meeting, Miami, Florida.
- Callegaro, M., De Keulenaer, F., Krosnick, J. A., & Daves, R. (2005). Interviewer effects in an RDD telephone pre-election poll in Minneapolis 2001: An analysis of the effects of interviewer race and gender. Paper presented at the American Association for Public Opinion Research Annual Meeting, Miami, Florida.
- Krosnick, J. A., & Rivers, D. (2005). Web survey methodologies: A comparison of survey accuracy. Paper presented at the American Association for Public Opinion Research Annual Meeting, Miami, Florida.
- Holbrook, A. L., & Krosnick, J. A. (2005). Vote over-reporting: Testing the social desirability hypothesis in telephone and internet surveys. Paper presented at the American Association for Public Opinion Research Annual Meeting, Miami, Florida.
- Anand, S., Krosnick, J. A., Mulligan, K., Smith, W., Green, M., & Bizer, G. (2005). Effects of respondent motivation and task difficulty on nondifferentiation in ratings: A test of satisficing theory predictions. Paper presented at the American Association for Public Opinion Research Annual Meeting, Miami, Florida.
- Rivers, D., & Krosnick, J. A. (2005). Comparing major survey firms in terms of survey satisficing: Telephone and internet data collection. Paper presented at the American Association for Public Opinion Research Annual Meeting, Miami, Florida.
- Krosnick, J. A. (2005). Thought piece on survey participation. Paper presented at the conference entitled "New Approaches to Understanding Participation in Surveys," Belmont Conference Center, Elkridge, Maryland.
- Malhotra, N., & Krosnick, J. A. (2005). Pilot test of new procedures for identifying new and emerging occupations and their places in the SOC: A study of biotechnology. Paper presented at the U.S. Bureau of Labor Statistics, Washington, DC.
- Holbrook, A. L., & Krosnick, J. A. (2005). Do survey respondents intentionally lie and claim that they voted when they did not? New evidence using the list and randomized response techniques. Paper presented at the American Political Science Association Annual Meeting, Washington, DC.
- Malhotra, N., & Krosnick, J. A. (2005). The determinants of vote choice in the 2004 U.S. Presidential Election. Paper presented at the American Political Science Association Annual Meeting, Washington, DC.
- Krosnick, J. A. (2005). Effects of survey data collection mode on response quality: Implications for mixing modes in cross-national studies. Paper presented at the conference "Mixed Mode Data Collection in Comparative Social Surveys," City University, London, United Kingdom.

- Krosnick, J. A., & Malhotra, N. (2006). The impact of presidential job performance assessments on vote choices in 2004. Paper presented at the conference "The Wartime Election of 2004," Ohio State University, Columbus, Ohio.
- Rabinowitz, J. L. & Krosnick, J. A. (2006). Investigating the discriminant validity of symbolic racism. Paper presented at the annual meeting of the Society for Personality and Social Psychology, Palm Springs, California.
- Krosnick, J. A. (2006). An evaluation framework: Total survey error in research practice. Paper presented at the Survey Methods Symposium sponsored by Central Market Research and Insights, Microsoft, Redmond, Washington.
- Krosnick, J. A. (2006). Data quality from phone vs. internet surveys. Paper presented at the Survey Methods Symposium sponsored by Central Market Research and Insights, Microsoft, Redmond, Washington.
- Krosnick, J. A. (2006). The distinguishing characteristics of frequent survey participants. Paper presented at the annual meeting of the Midwest Political Science Association, Chicago, Illinois.
- Krosnick, J. A. (2006). An overview of the mission of the American National Election Studies. Presentation at the annual meeting of the Midwest Political Science Association, Chicago, Illinois.
- Krosnick, J. A. (2006). The use of the internet in valuation surveys. Presentation at the workshop "Morbidity and Mortality: How Do We Value the Risk of Illness and Death?", sponsored by the U.S. Environmental Protection Agency, the National Center for Environmental Research, and the National Council on Economic Education, Washington, DC.
- Krosnick, J. A. (2006). What the American public thinks about climate change: Findings from a new Stanford/ABC/Time Magazine Survey. Presentation at the "California Climate Change Policy Workshop," sponsored by the Woods Institute for the Environment, California State Capital Building, Sacramento, California.
- Holbrook, A. L., & Krosnick, J. A. (2006). Vote over-reporting: A test of the social desirability hypothesis. Paper presented at the American Psychological Association Annual Meeting, New Orleans, Louisiana.
- Bannon, B., Krosnick, J. A., & Brannon, L. (2006). News media priming: Derivation or rationalization? Paper presented at the American Political Science Annual Meeting, Philadelphia, Pennsylvania.
- Malhotra, N., Krosnick, J. S., & Thomas, R. (2006). The effect of polls on political behavior. Paper presented at the American Political Science Annual Meeting, Philadelphia, Pennsylvania.
- Krosnick, J. A. (2006). Doing social psychology that's relevant and valued and valuable. Paper presented at the Society of Experimental Social Psychology Annual Meeting, Philadelphia, Pennsylvania.

- Krosnick, J. A. (2006). Overview of the American National Election Studies: Lessons learned about the causes of voter turnout and candidate choice. Paper presented at the conference "The Psychology of Voting and Election Campaigns," Social Science Research Institute, Duke University, Durham, North Carolina.
- Krosnick, J. A. (2006). What Americans really think about climate change. Presentation to the Stanford Women's Club of the East Bay, Contra Costa County Library, Orinda, California.
- Krosnick, J. A. (2006). The impact of survey mode and the merging of face-to-face recruitment with Internet data collection. Paper presented at the 2006 Federal Committee on Statistical Methodology Statistical Policy Seminar, "Keeping Current: What We Know – What We Need to Learn." Washington, DC.
- Krosnick, J. A. (2006). Comparisons of the accuracy of information obtained by face-to-face, telephone, internet, and paper and pencil data collection. Paper presented at the Pacific Chapter of the American Association for Public Opinion Research Annual Meeting, San Francisco, California.
- Bizer, G. Y., Krosnick, J. A., Holbrook, A. L., Wheeler, S. C., Rucker, D. D., & Petty, R. E. (2007). The impact of personality on political beliefs, attitudes, and behavior: Need for cognition and need to evaluate. Paper presented at the Society for Personality and Social Psychology Annual Meeting, Memphis, Tennessee.
- Sargent, M. J., Rabinowitz, J., Shull, A., & Krosnick, J. A. (2007). Support for government efforts to promote racial equality: Effects of antigroup affect and perceptions of value violation. Paper presented at the Society for Personality and Social Psychology Annual Meeting, Memphis, Tennessee.
- Krosnick, J. A. (2007). Americans' beliefs about global climate change: New national survey findings. Paper presented at the American Association for the Advancement of Science Annual Meeting, San Francisco, California.
- Krosnick, J. A. (2007). Comparisons of survey modes and a new hybrid. Paper presented at the American Association for the Advancement of Science Annual Meeting, San Francisco, California.
- Garland, P., & Krosnick, J. A. (2007). The impact of race on evaluations of artistic products: Evidence of 'ownership' bias among prejudiced whites. Paper presented at the National Conference of Black Political Scientists, Burlingame, California.
- Lupia, A., & Krosnick, J. A. (2007). Remaking the American National Election Studies. Paper presented at the National Conference of Black Political Scientists, Burlingame, California.
- Krosnick, J. A. (2007). What Americans really think about climate change: Attitude formation and change in response to a raging scientific controversy. Presentation sponsored by the California Research Bureau at the California State House, Sacramento, California.

- Harbridge, L., & Krosnick, J. A. (2007). Presidential approval and gas prices: The Bush presidency in historical context. Paper presented at the American Association for Public Opinion Research annual meeting, Garden Grove, California.
- Krosnick, J. A., & Smith, T. (2007). Proposing questionnaire design experiments for the General Social Survey. Paper presented at the American Association for Public Opinion Research annual meeting, Garden Grove, California.
- Cote, F., Tahk, A., & Krosnick, J. A. (2007). Comparing the validity of public predictions of changes in the economy: RDD telephone data vs. volunteer samples completing paper and pencil questionnaires. Paper presented at the American Association for Public Opinion Research annual meeting, Garden Grove, California.
- Schneider, D., Krosnick, J. A., & Ophir, E. (2007). Ballot order effects in California from 1976 to 2006. Paper presented at the American Association for Public Opinion Research annual meeting, Garden Grove, California.
- O'Muircheartaigh, C., Krosnick, J. A., & Dennis, J. M. (2007). Face-to-face recruitment of an Internet survey panel: Lessons from an NSF-sponsored demonstration project. Paper presented at the American Association for Public Opinion Research annual meeting, Garden Grove, California.
- Malhotra, N., & Krosnick, J. A. (2007). The effect of survey mode and sampling on inferences about political attitudes and behavior: Comparing the 2000 and 2004 ANES to Internet surveys with non-probability samples. Paper presented at the American Association for Public Opinion Research annual meeting, Garden Grove, California.
- Krosnick, J. A., Malhotra, N., & Miller, L. (2007). Survey mode in the 21st Century: Probability vs. non-probability samples of a nation's population. Paper presented at the conference entitled "Cyberinfrastructure and National Election Studies: The Wivenhoe House Conference." University of Essex, Colchester, UK.
- Pasek, J., & Krosnick, J. A. (2007). Trends over time in America: Probability/telephone vs. non-probability/internet. Paper presented at the conference entitled "Cyberinfrastructure and National Election Studies: The Wivenhoe House Conference." University of Essex, Colchester, UK.
- Krosnick, J. A. (2007). Methods and results from the New Scientist Survey on Climate Change Policy. Presentation at the National Press Club, Washington, DC.
- Krosnick, J. A. (2007). The ANES Recompetition and its Implications for the GSS recompetition. Presentation at the American Sociological Association annual meeting, New York, New York.
- Harder, J., & Krosnick, J. A., (2007). Causes of voter turnout: A social psychological perspective. Paper presented at the American Psychological Association annual meeting, San Francisco, California.
- Schneider, D., Berent, M. K., Thomas, R., & Krosnick, J. A. (2007). Measuring customer satisfaction and loyalty: Improving the 'net promoter' score. Paper presented at the World Association for Public Opinion Research annual meeting, Berlin, Germany.

Cobb, C., & Krosnick, J. A. (2007). The impact of postdoc appointments on science and engineering career outcomes and job satisfaction. Paper presented at the conference “Using Human Resource Data”, Science Resources Statistics Workshop, Washington, DC.

Off-Campus Academic Colloquia

- 1985 State University of New York at Stony Brook, Department of Political Science.
 Princeton University, Department of Sociology.
 Princeton University, Department of Politics.
 University of California at Berkeley, Department of Sociology.
 Yale University, Department of Sociology.
 Yale University, Department of Political Science.
 Ohio State University, Department of Psychology.
 University of Southern California, Annenberg School for Communication.
- 1986 University of Michigan, Department of Sociology.
- 1987 Yale University, Department of Psychology.
 Yale University, Department of Political Science.
 University of Michigan, Department of Sociology.
- 1988 University of Minnesota, Department of Political Science.
- 1990 University of Florida, Department of Psychology.
 University of Florida, Bureau of Economic and Business Research.
 Denison University, Department of Psychology.
- 1991 University of Michigan, Summer Institute in Survey Research Techniques.
- 1992 University of Michigan, Summer Institute in Survey Research Techniques.
 University of Michigan, Department of Communication.
- 1993 University of Wisconsin, Departments of Psychology, Sociology, and Political Science.
 University of Michigan, Summer Institute in Survey Research Techniques.
- 1994 Yale University, Department of Psychology.
 University of Michigan, Research Center for Group Dynamics.
 Cornell University, Peace Studies Center.
- 1995 University of Michigan, Summer Institute in Survey Research Techniques.
 University of Minnesota, Department of Political Science.
- 1996 University of Pennsylvania, Annenberg School for Communication.
 University of Chicago, Center for Decision Research.
 Purdue University, Department of Psychology.

- 1997
Stanford University, Department of Psychology.
University of California – Berkeley, Institute of Governmental Studies.
University of California – Berkeley, Institute of Personality and Social Research.
University of California – Irvine, Department of Social Sciences.
University of California – Los Angeles, Institute for Social Science Research.
University of California – Santa Barbara, Department of Psychology.
University of California – Santa Cruz, Board of Psychology.
Center for Advanced Study in the Behavioral Sciences.
London School of Economics and Political Science, Methodology Institute.
- 1998
Arizona State University, Department of Psychology.
London School of Economics and Political Science, Methodology Institute.
University of Amsterdam, Department of Psychology.
Carnegie Mellon University, Center for the Integrated Study of the Human Dimensions of Global Change, Department of Engineering and Public Policy.
- 1999
University of Chicago, American Politics Workshop, Department of Political Science.
Indiana University, Departments of Political Science and Psychology.
University of Minnesota, Departments of Political Science and Psychology.
- 2000
University of California, Los Angeles, Department of Political Science.
University of Southern California, Jesse M. Unruh Institute of Politics.
University of Michigan, Institute for Social Research, Survey Research Center.
- 2001
The William and Flora Hewlett Foundation, Menlo Park, California.
London School of Economics and Political Science, Methodology Institute.
Resources for the Future, Washington, DC.
- 2002
University of Colorado - Boulder, Department of Psychology.
University of Florida - Gainesville, Department of Psychology.
Stanford University, Department of Communication.
University of Chicago, Harris School of Public Policy.
Uppsala University (Sweden), Department of Government.
University of North Carolina, Department of Political Science.
University of Chicago, Political Psychology Workshop, Departments of Psychology and Political Science.
Pitzer College, Department of Political Science.
- 2003
University of Illinois at Chicago, College of Urban Planning and Public Affairs.
University of Illinois at Chicago, Survey Research Laboratory.
Stanford University, Social Psychology Research Seminar (April).
Stanford University, Social Psychology Research Seminar (October).
Stanford University, Department of Psychology Colloquium Series.
- 2004
Harvard University, Research Workshop in American Politics, Department of Government.

- Stanford University, Organizational Behavior Seminar, Graduate School of Business.
Stanford University, Marketing Seminar, Graduate School of Business.
Stanford University, American Empirical Seminar, Stanford Institute for the Quantitative Study of Society.
University of California, Davis, Distinguished Lecture Series, Departments of Psychology and Political Science.
- 2005 The Rand Organization, Santa Monica, California.
- 2006 Harvard University, Department of Psychology.
Duke University, Social Science Research Institute.
University of North Carolina, Chapel Hill, Department of Political Science.
University of Florida, Department of Psychology.
University of Florida, Department of Political Science.
University of California, Santa Barbara, Department of Psychology.
- 2007 The Rand Organization, Santa Monica, California.

Consulting and Court Testimony

Socio-Environmental Studies Laboratory, National Institutes of Health, Washington, D.C.
National Oceanic and Atmospheric Administration, Washington, D.C.
Environmental Protection Agency, Washington, D.C.
National Aeronautics and Space Administration (Robert Dodd and Associates/The Battelle Memorial Institute), Mountain View, California.
Center for Survey Methods Research, U.S. Bureau of the Census, Washington, D.C.
Office of Survey Methods Research, U.S. Bureau of Labor Statistics, Washington, D.C.
Leadership Analysis Group, U.S. Central Intelligence Agency, McLean, Virginia.
United States Government Accountability Office, Washington, DC.
Centers for Disease Control and Prevention, Atlanta, Georgia.
National Cancer Institute, Rockville, Maryland.
Center for Human Resource Research, Ohio State University, Columbus, Ohio.
Office of Lake County Prosecuting Attorney, Painesville, Ohio.
The Attorney General of the State of Ohio, Columbus, Ohio.
Centre for Comparative Social Surveys, City University, London, United Kingdom.
Rand Corporation, Santa Monica, California.
Stanford University Alumni Association, Stanford, California.
SRI International, Arlington, Virginia.
The Attorney General of Oklahoma.

Office of Social Research, CBS Inc., New York, New York.
ABC News, New York, New York.
Home Box Office, New York, New York.
Google, Mountain View, California.
Pfizer, Inc., New York, New York.
American Civil Liberties Union of Northern California/Brad Seligman/Howard, Rice, Nemerovski, Canady, Falk, & Rabkin, San Francisco/Berkeley, California.
Beau Townsend Ford Dealership, Dayton, Ohio.
United States Trotting Association, Columbus, Ohio.

Berlex Laboratories, Inc., Wayne, New Jersey.
 YouGov, London, United Kingdom.
 MJ Research, Waltham, Massachusetts.
 Empire Blue Cross/Blue Shield, New York, New York.
 Momentum Market Intelligence, Portland, Oregon.
 Central Market Research and Insights, Microsoft, Redmond, Washington.

The Urban Institute, Washington, D.C.
 Industrial Economics, Cambridge, Massachusetts.
 Healthcare Research Systems, Columbus, Ohio.
 Survey Research Center, University of Maryland, College Park, Maryland.
 Center for Human Resource Research, Columbus, Ohio.
 Washington State University, Pullman, Washington.
 Turner Research, Jacksonville, Florida.
 NuStats, Austin, Texas.
 Kaiser Family Foundation, Menlo Park, California.
 Achievement Associates, Darnestown, Maryland.
 The Saguaro Seminar: Civic Engagement in America, Harvard University, Cambridge, Massachusetts.

Donald McTigue, Esq., Columbus, Ohio.
 Thompson Coburn LLP, St. Louis, Missouri.
 Shook, Hardy, & Bacon LLP, Kansas City, Missouri.
 Arnold and Porter LLP, New York, New York.
 Bradley W. Hertz, Esq., Los Angeles, California.
 Larson King LLP, Minneapolis, Minnesota.
 Paul, Hastings, Janofsky, and Walker, LLP, San Francisco, California.
 Carr, Korein, Tillery, LLP, Chicago, Illinois.
 Milberg, Weiss, Bershad, Hynes, and Lerach, LLP, New York, New York.
 Bourgault & Harding, Las Vegas, Nevada.
 Aikin Gump Strauss Hauer & Feld, LLP, Washington, DC.
 McManemin and Smith, PC, Dallas, Texas.
 Zimmerman Reed, PLLP, Minneapolis, Minnesota.
 Spolin Silverman, Cohen, and Bertlett LLP, Santa Monica, California.
 Righetti Wynne P.C., San Francisco, California.
 Blackwell Sanders Peper Martin LLP, Kansas City, Missouri.
 Davis Wright Tremaine LLP, Seattle, Washington.
 Storch Amini & Munves, P.C., New York, New York.
 Twomey Law Office, Epsom, New Hampshire.
 Righetti Law Firm, P.C., San Francisco, California.
 Dostart Clapp Gordon & Coveney LLP, San Diego, California.
 Wynne Law Firm, Greenbrae, California.
 Lorens and Associates, San Diego, California.
 Arias, Ozzello & Gignac, LLP, Los Angeles, California.
 Keller Grover, LLP, San Francisco, California.
 Law Offices of Kevin T. Barnes, Los Angeles, California.
 Cohelan & Khoury, San Diego, California.
 Law Offices of Joseph Antonelli, West Covina, California.

Short Courses on Questionnaire Design

Internal Revenue Service, Washington, DC.
 United States General Accounting Office, Washington, DC.
 Office of Management and Budget, The White House, Washington, DC.
 United States Government Accountability Office, Washington, DC.
 Science Resources Statistics Program, National Science Foundation, Washington, DC.
 National Opinion Research Center, Chicago, Illinois.
 Survey Research Laboratory, University of Illinois at Chicago, Chicago, Illinois.
 Center for AIDS Prevention Studies, Department of Epidemiology and Biostatistics, University of California, San Francisco, California.
 Monitor Company, Cambridge, Massachusetts.
 American Association for Public Opinion Research Annual Meeting, St. Louis, Missouri.
 American Association for Public Opinion Research Annual Meeting, Portland, Oregon
 American Association for Public Opinion Research Annual Meeting, Miami, Florida
 New York Chapter of the American Association for Public Opinion Research, New York, New York.
 Office for National Statistics, London, United Kingdom.
 Market Strategies, Southfield, Michigan.
 Total Research Corporation, Princeton, New Jersey.
 Pfizer, Inc., New York, New York.
 Worldwide Market Intelligence Conference, IBM, Rye, New York.
 American Society of Trial Consultants Annual Meeting, Williamsburg, Virginia.
 American Society of Trial Consultants Annual Meeting, Westminster, Colorado.
 American Society of Trial Consultants Annual Meeting, Memphis, Tennessee.
 American Marketing Association Advanced Research Techniques Forum, Vail, Colorado.
 Satisfaction Research Division, IBM, White Plains, New York.
 American Marketing Association Marketing Effectiveness Online Seminar Series.
 Faculty of Education, University of Johannesburg, Johannesburg, South Africa.
 Odom Institute, University of North Carolina, Chapel Hill, North Carolina.
 Google, Mountain View, California.
 Eric M. Mindich Encounters with Authors, Harvard University, Cambridge, Massachusetts.
 RTI International, Research Triangle Park, North Carolina.
 BC Stats, Province of British Columbia Ministry of Labour and Citizens' Services, Victoria, British Columbia, Canada.
 Alphasdetail, San Mateo, California.

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