

Computer Audio-Recorded Interviewing (CARI)



As an industry leader in survey research, RTI International offers clients expertise in a variety of data collection techniques and experience with diverse populations. Among the technologies now available for specialized data collection is computer audio-recorded interviewing (CARI). This innovation was first developed and used by RTI for quality control on the National Survey of Child and Adolescent Well-Being in 1999. Today, CARI has a growing variety of applications. These include providing performance feedback to interviewers, enhancing data quality, assessing questionnaire design, and estimating survey error.

What Is CARI?

CARI involves creating audio recordings of both telephone and in-person interviews, after getting consent from both parties to record the interview. CARI saves time and money by reducing or eliminating the need for live monitoring, costly re-interviews, and verifications. It also provides a valuable opportunity to improve the quality of data collection, interviewer performance, and questionnaire design by creating a digital record of the actual exchanges between interviewer and respondent.

Much of the power of CARI comes from the system used to review and rate the recordings. The system must provide a way for users to quickly and easily navigate through many cases and recordings, review the recordings, and apply a series of codes to rate them on important characteristics such as reading skills, professionalism, and interview authenticity.

Capturing the recordings is only the first step. Once the recordings have been collected, they are uploaded to a central database where the CARI review system operates. The cases are then distributed to staff who listen to the recordings and assign codes, based on what they hear

during the interview, that can be used to score each recording. By using a standard set of codes, scores can be compared across surveys or survey modes, across interviewers, and over time.

Interviewer performance, data quality, and questionnaire design are among the critical issues that can be evaluated through analysis of the scores generated through CARI. The operation of reviewing and coding the recordings produces evaluation data that can be handled in a methodical and logical manner, using the power of statistics and database queries. For example, a report on interviewer performance can identify those who are performing exceptionally well or who are making critical errors; supervisors can then intervene accordingly. Falsification or short-cutting can be easily identified if the interviewer is entering data without asking the question out loud, which may occur if the interviewer feels it was already answered in a prior module. If a particular question is evoking confusion among respondents, it may receive a low score for subject comprehension, suggesting that the text may need to be re-written or additional training provided to interviewers. These situations impact the value and validity of survey results, yet they are difficult to detect without a technology like CARI.

Computer Audio-Recorded Interviewing

Based on years of experience implementing CARI, RTI has developed a comprehensive quality evaluation system known as QUEST. This proprietary system and set of protocols enable research staff to review and manage the audio files recorded during the interview, rate them for quality, and provide feedback to the interviewers. The system is standardized to support both telephone and in-person surveys.

Benefits of CARI

Benefits of using CARI include the following:

- Improved opportunities for coaching and management of interviewing staff for telephone or field studies, based on evidence from actual interviews
- Ability for multiple reviews of the same interview by repeated playback
- Inter-rater reliability: Recordings can be used to train monitors on evaluation protocols, thereby ensuring consistency in interviewer feedback and minimizing rater variability
- Lower cost for determining the authenticity of field interviews by reducing or eliminating field observations and verifications
- Survey item performance: Audio recordings can be evaluated by survey item, providing important insights into survey instrument performance and respondent cognitive difficulty in answering complex, challenging, or sensitive questions
- Capture and clarification of open-ended or free-speech responses
- Evaluation of respondent reactions to particular survey sections or items
- Assessment of interviewer-respondent interactions through behavior coding

Selected Publications and Presentations

Sattaluri, S., C. J. Spain, M. T. Nguyen, and M. R. Thissen (May 2010). Technical Challenges in the Development and Implementation of QUEST. Presented at International Field Directors and Technology, Chicago, IL.

Speizer, H., S. H. Kinsey, R. K. Heman-Ackah, and M. R. Thissen (November 2009). Developing a common, mode-independent approach for evaluating interview quality and interviewer performance. In *Federal Committee on Statistical Methodology*, Washington, DC.

Thissen, M. R., S. Sattaluri, E. S. McFarlane, and P. P. Biemer (2008). The evolution of audio recording in field surveys. *Journal of Survey Practice*.

Biemer, P.P., D. Hergert, J. Morton, and W. G. Willis (2000). The feasibility of monitoring field interview performance using computer audio recorded interviewing (CARI). *Proceedings of the American Statistical Association's Section on Survey Research Methods*, 1068–1073.

RTI Projects Using CARI

U.S. Department of Education/National Center for Education Statistics

- Early Childhood Longitudinal Study- Birth Cohort (ECLS-B)
- Early Childhood Longitudinal Study- Kindergarten Repeaters

Department of Health and Human Services/Administration for Children and Families

- National Survey of Child and Adolescent Well-Being
- Evaluation of the Community Health Marriage Initiative's Impact

More Information

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