



**Title:** The Impact of Working Memory in Survey Methodology:  
A Look at Response Order Effects, Question Order Effects, and the Health and Retirement Study  
Cognitive Measure

**Date/Time:** Monday, August 8, 2017, 10:00 – 11:30 AM (ET)

**Speaker:** Beth Cochran, University of Nebraska

**Discussant:** Robert Belli, University of Nebraska

**Chair:** Wendy L. Martinez, Bureau of Labor Statistics

**Sponsor:** WSS Methodology Section

**Abstract:** It has been theorized that working memory plays a role in survey methodology contributing to response order and question order effects, however there is little empirical evidence linking working memory and survey context effects. This dissertation examines whether respondents' working memory influences response order and question order effects through incorporating working memory measures into the survey questionnaire. The sample was randomly assigned to complete the survey via telephone or web, and respondents completed a series of working memory measures and attitudinal questions.

It was hypothesized that as working memory capacity improved there would be a decrease in the likelihood of respondents of all ages selecting the options associated with response order effects. Results support the hypothesis for younger adults who became less susceptible to response order effects as working memory improves, however, for older adults the results adversely indicate that improvement in working memory leads to respondents being more likely to select the early responses in web and late responses in telephone. The results are present for questions with a short list of two responses and for questions with a longer list of six responses.

Where question order effects are concerned, it was hypothesized that respondents with higher working memory would be more likely to be influenced by the preceding question than those with low working memory. In general the results provide only modest support that working memory has a significant impact on question order effects. In only one of three pairs of questions analyzed did working memory have a significant effect indicating that respondents with higher working memory are more likely to exhibit contrast effects than respondents with lower working memory.

As another objective, this dissertation included a subset of the Health and Retirement Study (HRS) cognitive measures into the survey to assess whether they adequately reflect respondents' working memory. Comparing the working memory and HRS measures, the results show significant differences between the measures indicating they reflect different underlying cognitive constructs. These findings indicate that the cognitive section of the HRS, and similar studies, may benefit from including measures designed specifically for working memory..

**Location:** Bureau of Labor Statistics Janet Norwood Conference Center, Room 8

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