

**Cognition, Communication, & Survey Measurement
SURVMETH 632**

**Social & Cognitive Foundations of Survey Measurement
SURV 632**

Fall, 2007
Tuesdays, 3:00 – 5:40 PM
368 ISR
1208 LeFrak Hall

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Overview of the Course

This course will cover major sources of survey measurement error from the perspective of the social sciences, particularly cognitive psychology. The first part of the course (weeks 1 – 9) will focus on reporting errors and how they arise: misunderstanding questions, forgetting relevant information, using imprecise estimation strategies, and question and response order effects. The second part of the course (weeks 10 – 12) will examine sources of measurement error outside the conventional interview situation: coding and classification error, the use of verbal protocols in pretesting questionnaires and human-computer interaction and web surveys.

Course Requirements

Aside from reading the required materials before each class and participating in class discussion, students are expected to

- complete two papers proposing new research that either fills a gap in the literature or adds value to your own research: 60% of course grade (30% per paper)
 - First Research Proposal due October 23
 - Second Research Proposal due November 27
- complete a take-home final examination: 30% of course grade
 - Final exam due December 11
- participate in class discussion: this is particularly important in borderline situations – plus it makes class more interesting!: 10% of course grade

Course materials

Required reading other than chapters from the Sudman et al and Tourangeau et al texts will be on the Ctools site. In addition, presentation materials will be available on the course site.

Schedule and Reading Assignments

September 4 (week 1): Cognitive views of error and implications for survey response

Either

Sudman, S., Bradburn, N. & Schwarz, N. (1996)¹. Chapter 1, “Introduction,” and Chapter 3, “Answering a Survey Question: Cognitive and Communicative Processes.” *Thinking about answers: The Application of cognitive processes to survey methodology*. San Francisco: Jossey-Bass Publishers.

Or

Tourangeau, R., Rips, L. & Rasinski, K. (2000)². Chapter 1, “An Introduction and a Point of View,” *The psychology of survey response*. Cambridge: Cambridge University Press.

Recommended reading

Conrad, F. (1999). Customizing survey procedures to reduce measurement error. In Sirken, M.G., Herrmann, D.J. and Schechter, S., Schwarz, N., Tanur, J., and Tourangeau, R. (Eds.), *Cognition and survey research*. New York: John Wiley and Sons, pp. 301-317.

Groves, R. M. (1999). Survey error models and cognitive theories of response behavior. In Sirken, M.G., Herrmann, D.J. and Schechter, S., Schwarz, N., Tanur, J., and Tourangeau, R. (Eds.), *Cognition and survey research*. New York: John Wiley and Sons, pp. 235-250.

Groves, R. M. (1991). Measurement error across the disciplines. In P. Beimer, R. Groves, L. Lyberg, N. Mathiowetz & S. Sudman (eds.), *Measurement errors in surveys*. New York: John Wiley and Sons, Inc., pp. 1-25.

September 11: No Class

September 18 (week 2): Understanding Questions: Basic Processes

Clark, H. H. & Schober, M. F. (1992). Asking questions and influencing answers. In Tanur, J. M. (Ed.), *Questions about questions: Inquiries into the cognitive bases of surveys*. New York: Russell Sage Foundation, (15-48).

Conrad, F.G. & Schober, M.F. (2000). Clarifying question meaning in a household telephone survey. *Public Opinion Quarterly*, 64, 1-28.

Schwarz, N., Strack, F., & H. Mai. (1991). Assimilation and contrast effects in part-whole question sequences: A conversational logic analysis. *Public Opinion Quarterly*, 55, 3-23.

¹Henceforth referred to as “SB&S (1996).”

²Henceforth referred to as “TR&R (2000).”

TR&R (2000). Chapter 2, "Respondents' understanding of survey questions."

Recommended Reading

Beatty, P. (1995). Understanding the standardized/non-standardized interviewing controversy. *Journal of Official Statistics*, 11, 147-160.

Schober, M.F., Conrad, F.G. and Fricker, S.S. (2004). Misunderstanding standardized language in research interviews. *Applied Cognitive Psychology*, 18, 169-188.

Suchman, L., & Jordan, B. (1990). Interactional troubles in face-to-face survey interviews. *Journal of the American Statistical Association*, 85, 232-241.

Schwarz, N. (1996). Chapter 2, "Cognition and communication: The logic of conversation," and Chapter 6, "Making one's contribution informative: The changing meaning of repeated questions." *Cognition and communication: Judgmental biases, research methods, and the logic of conversation*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

September 25 (week 3): Understanding Questions: Interviewer-Respondent Interaction

Brennan, S. E., & Williams, M. (1995). The feeling of another's knowing: Prosody and filled pauses as cues to listeners about the metacognitive states of speakers. *Journal of Memory and Language*, 34, 383-398.

Fowler Jr., F.J., & Cannell, C.F. (1996). Using behavioral coding to identify cognitive problems with survey questions." In N. Schwarz & S. Sudman (Eds.), *Answering Questions: Methodology for Determining Cognitive and Communicative Processes in Survey Research* (pp. 15-36). San Francisco, CA: Jossey-Bass.

Schober, M.F., & Bloom, J.E. (2004). Discourse cues that respondents have misunderstood survey questions. *Discourse Processes*, 38, 287-308.

Recommended Reading

Conrad, F.G., Schober, M. F. & Dijkstra, W. (2007). Cues of communication difficulty in telephone interviews. In Lepkowski, J.M., Tucker, C., Brick, M., de Leeuw, E., Japec, L., Lavrakas, P., Link, M. & Sangster, R. (Eds). *Advances in telephone survey methodology*. New York: Wiley

Ongena, Y. & Dijkstra, W. (2007). A model of cognitive processes and conversational principles in survey interview interaction. *Applies Cognitive Psychology*, 21, 145-163.

October 2 (week 4): Memory, Forgetting and Measurement Error

Belli, R. F (1998). The structure of autobiographical memory and the event history calendar: Potential improvements in the quality of retrospective reports in surveys. *Memory*, 6, 383-406.

Lee, L., Brittingham, A., Tourangeau, R., Willis, G., Ching, P., Jobe, J. & Black, S. (1999). Are

reporting errors due to encoding limitations or retrieval failure? Surveys of child vaccination as a case study. *Applied Cognitive Psychology*, 13, 43-63.

TR&R (2000). Chapter 3, "The role of memory in survey responding."

Recommended Reading

Barsalou, L. (1988). The content and organization of autobiographical memories. In Neisser, U. and Winograd, E. (Eds.), *Remembering reconsidered: Ecological and traditional approaches to memory* (193-243).

Belli, R.F., Shay, W. L. & Stafford, Frank, P. (2001). Event history calendars and question list surveys: A direct comparison of interviewing methods. *Public Opinion Quarterly*, 65, 45 - 74.

Brown, N. (1998). Event cueing, event clusters, and the temporal distribution of autobiographical memories. *Applied Cognitive Psychology*, 12, 305-319.

Fisher, R. & Quigley, K. (1992). Applying cognitive theory in public health investigations: Enhancing food recall with the cognitive interview. In J. M. Tanur (ed), *Questions about questions: Inquiries into the cognitive bases of surveys*. New York: Sage (154-169).

Loftus, E., Smith, K., Klinger, M. & Fiedler, J. (1992). Memory and mismemory for health events. In Tanur, J. M. (Ed.) *Questions about questions: Inquiries into the cognitive bases of surveys*. New York: Russell Sage Foundation (102-137).

Schum, M. and Rips, L. (1999). The respondent's confession: Autobiographical memory in the context of surveys. In Sirken, M., Herrmann, D., Schechter, S., Schwarz, N., Tanur, J., and Tourangeau, R. (Eds.), *Cognition and survey research*. New York: John Wiley and Sons, (95-110).

Wagenaar, W. (1986). My memory: A study of autobiographical memory over six years. *Cognitive Psychology*, 18, 225-252.

October 9 (week 5): Placing Events in Time

Friedman, W. J. (1993). Memory for the time of past events. *Psychological Bulletin*, 35, 44-66

Rubin, D.C. & Baddeley, A.D. (1989). Telescoping is not time compression: A model of the dating of autobiographical events. *Memory and Cognition*, 17, 653-661.

Chapter 8 in SB&S (1996)

Recommended Reading

Brown, N., Rips, L. & Shevell, S. K. (1985). The subjective dates of natural events in very long term memory. *Cognitive Psychology*, 17, 139-177.

Huttenlocher, J., Hedges, L.V., & Bradburn, N. M. (1990). Reports of elapsed time: Bounding and rounding processes in estimation. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 16, 196-213.

Kemp, S. (1999). An associative theory of estimating past dates and past prices. *Psychonomic Bulletin & Review*, 6,

41-56.

Lee, P. J. & Brown, N. R. (in press). The role of guessing and boundaries on date estimation biases. *Psychonomic Bulletin & Review*.

Rips, L. J., Conrad, F.G. & Fricker, S. S. (2003). Straightening the seam effect in panel surveys. *Public Opinion Quarterly*, 67, 522-554

TR&R (2000). Chapter 5, "Answering questions about dates and durations."

October 16 – No class, Michigan Fall Break

October 23 (week 6): Judgment and Estimation Processes

First research prospectus due

Belli, R., Schwarz, N., Singer, E. & Talarico, J. (2000). Decomposition can harm the accuracy of behavioral reports. *Applied Cognitive Psychology*, 14, 295-308.

Schwarz, N., Hippler, H. J., Deutsch, B., & Strack, F. (1985). Response categories: Effects on behavioral reports and comparative judgments. *Public Opinion Quarterly*, 49, 388-395.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185, 1124-1131.

Recommended Reading

Alba, J.W., Chromiak, W., Hasher, L. & Attig, M. S. (1980). Automatic encoding of category size. *Journal of Experimental Psychology*, 6, 370-378.

Brown, N., & Siegler, R. (1993). Metrics and mappings: A framework for understanding real-world quantitative estimation. *Psychological Review*, 100, 311-325.

Gentner, D., & Collins, A. (1981). Studies of inference from lack of knowledge. *Memory and Cognition*, 9, 434-443.

October 30 (week 7): Reporting Quantities

Blair, E. & Burton, S. (1987). Cognitive processes used by survey respondents to answer behavioral frequency questions. *Journal of Consumer Research*, 14, 280-288.

Conrad, F. G., Brown, N. R. & Cashman, E. R. (1998). *Strategies for estimating behavioural frequency in survey interviews*. *Memory*, 6, 339-366.

Menon, G. & Yorkston, E. (2000). The use of memory and contextual cues in the formation of behavioral frequency judgments. In Stone, A. A., Turkkan, J.S., Bachrach, C. A., Jobe, J. B., Kurtzman, H. S. & Cain, V. S. (Eds.) *The science of self-report*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers (63-79).

TR&R (2000). Chapter 5, “Factual judgments and numerical estimates.”

Recommended Reading

Brown, N. R. (1995) Estimation strategies and the judgment of event frequency. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 21, 1539-1553.

Brown, N. R., Williams, R.L., Barker, E.T. & Galambos, N.L. (2007) Estimating frequencies of emotions and actions: A web-based diary study. *Applied Cognitive Psychology*, 21, 259-276.

Conrad, F.G., Brown, N.R. & Dashen, M. (2003). Estimating the frequency of events from unnatural categories. *Memory & Cognition*, 31, 552-562

November 6 (week 8): Context Effects in Attitude Measurement

Knäuper, B. (1998). Age differences in question and response order effects. In Schwarz, N., Park, D., Knäuper, B. and Sudman, S. (Eds.), *Cognition, Aging and Self-Reports*. Philadelphia: Psychology Press, pp. 341-363.

Schuman, H. (1992). Context effects: State of the art/state of the past. In N. Schwarz & S. Sudman (Eds.), *Context effects in social and psychological research*. New York: Springer-Verlag, pp. 5-20.

SB&S (1996). Chapter 4, “Psychological sources of context effects in survey measurement,” and Chapter 5, “The direction of context effects: What determines assimilation or contrast in attitude measurement?”

Recommended Reading

Knäuper, B. & Schwarz, N. (under review). Age and self-reports. How age-sensitive context effects may lead us astray. *The Psychologist*.

McCabe, A., & Brannon, L. (2004). Application of conversational norms to the interpretation of survey results as a function of participants’ need for cognition. *The Journal of Psychology*, 138, 91-94.

Schwarz, N. (2003). Culture-sensitive context effects: A challenge for cross-cultural surveys. In J. Harkness, F. van de Vijver, & P. Ph. Mohler (Eds.), *Cross-cultural survey methods* (pp. 93-100). New York: Wiley.

November 13 (week 9): Mapping and Reporting in Surveys

Krosnick, J., & Alwin, D. (1987). An evaluation of a cognitive theory of response order effects in survey measurement. *Public Opinion Quarterly*, 51, 201-219.

Schaeffer, N. C. (2000). Asking questions about sensitive topics: A selective overview. In Stone, A., Turkkan, J., Bachrach, C., Jobe, J., Kurtzman, H. and Cain, V. (Eds.), *The science of self-report*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers (105-121).

Schwarz, N. (1996). Chapter 5, "The conversational relevance of formal features of questionnaires" in *Cognition and communication: Judgmental biases, research methods, and the logic of conversation*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

SB&S (1996). Chapter 6, "Order effects within a question: Presenting categorical response alternatives."

Recommended Reading

Knäuper, B. (1999). The impact of age and education on response order effects in attitude measurement. *Public Opinion Quarterly*, 63, 347-370.

November 20 (week 10): Classification and coding

Kunda & Oleson (1995). Maintaining stereotypes in the face of disconfirmation: Constructing grounds for subtyping deviants. *Journal of Personality and Social Psychology*, 8, 565-579.

Malhotra, N. & Krosnick, J. (in press). Procedures for updating classification systems: A study of biotechnology and the standard occupational classification. *Journal of Official Statistics*.

Martin, J., Bushnell, D., Campanelli, P. and Thomas, R. (1995). A comparison of interviewer and office coding of occupations. *American Statistical Association: Proceedings of the Section on Survey Research Methods* (1122-1127).

Recommended Reading

Barsalou, L. (1991). Chapter 2, "Categorization." *Cognitive psychology: An overview for cognitive scientists*. Hillsdale, NJ: Lawrence Erlbaum Associates, Publisher.

Cantor, D. & Esposito, J. (1992). Evaluating interviewer style for collecting industry and occupation information. *Proceedings of the Section on Survey Research Methods* (661-666).

Conrad, F.G. & Couper, M.P. (2001). Classifying Open Ended Reports: Coding Occupation in the Current Population Survey. *Proceedings of the Federal Committee on Statistical Methodology Conference*. Arlington, VA

Hak, T. and Bernts, T. (1996). Coder training: Theoretical training or practical socialization? *Qualitative Sociology*, 19, 479 -501.

Sturgis, P. (2004). The effect of coding error on time use surveys estimates. *Journal of Official Statistics*, 20, 467-480.

Zarató, M. and Sandoval, P. (1995). The effects of contextual cues on making occupational and gender categorizations. *British Journal of Social Psychology*, 34, 353-362.

November 27 (week 11): Interacting with Computer Assisted Data Collection Tools

Second Research Prospectus Due

Couper, M., Traugott, M. & Lamias, M. (2001). Web survey design and administration. *Public Opinion Quarterly*, 65, 230-253.

Conrad, F.G., Schober, M. F., & Coiner, T. (2007) Bringing features of human dialogue to web surveys. *Applied Cognitive Psychology*, 21, 165-188.

Tourangeau, R. & Smith, T.W. (1998) Collecting sensitive information with different modes of data collection. In Couper, M. P., Baker, R. P., Bethlehem, J., Clark, C. Z. F., Martin, J., Nicholls, W. L., O'Reilly, J. (Eds.) *Computer Assisted Survey Information Collection*. New York: New York: John Wiley & Sons, 431-453.

Recommended Reading

Bosley, J., Conrad, F.G. and Uglow, D.A.. (1998). Pen CASIC: Design and usability. In Couper, M. P., Baker, R. P., Bethlehem, J., Clark, C. Z. F., Martin, J., Nicholls, W. L., O'Reilly, J. (Eds.) *Computer Assisted Survey Information Collection*. New York: John Wiley & Sons, pp. 521-541.

Conrad, F.G., Couper, M.P., Tourangeau, R. & Peytchev, A. (2006). Use and non-use of clarification features in web surveys. *Journal of Official Statistics*, 22,245-269.

Couper, M. P. (1999). The application of cognitive science to computer assisted interviewing. In Sirken, M., Herrmann, D., Schechter, S., Schwarz, N., Tanur, J., and Tourangeau, R. (Eds.), *Cognition and Survey Research*, New York: John Wiley and Sons, pp. 277-300.

Greatbatch, D.; Luff, P.; Heath, C.; Campion, P. (1994), Interpersonal communication and human-computer interaction: An examination of the use of computers in medical consultations. *Interacting with Computers*, 5: 193-216.

Lawrence, D., Atwood, M., Dews, S. and Turner, T. (1995). Social interaction in the use and design of a workstation: Two contexts of interaction. In Thomas, P. (Ed.), *The Social And Interactional Dimensions Of Human-Computer Interfaces*. New York: Cambridge University Press, pp. 240-259.

December 4 (week 12): Verbal protocols in survey research

Final Exam distributed

Beatty, P. C. & Willis, G. B. (2007). Research synthesis: The practice of cognitive interviewing *Public Opinion Quarterly*, 71, 387-312.

Conrad, F.G. & Blair, J. (2004). Aspects of data quality in cognitive interviews: The case of verbal reports. In S. Presser, J. Rothgeb, M. Couper, J. Lessler, E. Martin, J. Martin & E. Singer (Eds.) *Questionnaire Development, Evaluation and Testing Methods*. New York: John Wiley and Sons, pp. 67-88.

Crutcher, R. J. (1994) Telling what we know: The use of verbal report methodologies in

- psychological research. *Psychological Science*, 5, 241-244.
- Payne, J. W. (1994). Thinking aloud: Insights into information processing. *Psychological Science*, 5, 241-248.
- Wilson, T. D. (1994). The proper protocol: Validity and completeness of verbal reports. *Psychological Science*, 5, 249-252.

Recommended Reading

- Beatty, P. 2004. The Dynamics of Cognitive Interviewing. In Presser, Stanley, Jennifer M. Rothgeb, Mick P. Couper, Judith T. Lessler, Elizabeth Martin, Jean Martin and Eleanor Singer, Eds. *Methods for Testing and Evaluating Survey Questionnaires*. New York: John Wiley & Sons (45-66).
- Blair, J., Conrad, F., Ackerman, A.C. & Claxton, G. (May, 2006). The Effect of Sample Size on Cognitive Interview Findings. *Proceedings of the American Statistical Association, Section on Survey Research Methods*. Alexandria, VA: American Statistical Association.
- Russo, J., Johnson, E. & Stephens, D. (1989). The validity of verbal protocols. *Memory and Cognition*, 17, 759-769.
- TR&R (2000). Chapter 11, "Impact of Cognitive Models on Survey Measurement."
- Willis, G. (2005) *Cognitive interviewing: A tool for improving questionnaire design*. Thousand Oaks, CA: SAGE.
- Wilson, T., LaFleur, S. & Anderson, D. (1996). The validity and consequences of verbal reports about attitudes. In Schwarz, N. and Sudman, S. (Eds.) *Answering Questions: Methodology for Determining the Cognitive and Communicative Processes in Survey Research*. San Francisco: Jossey-Bass, pp. 91-114.
- Wilson, T. & Schooler, J. (1991). Thinking too much: Introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology*, 60, 181-192.

December 11: Final Exam Due