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## Chapter 20: What do interviewers learn? Changes in interview length and interviewer behaviors over the field period. Appendix 20

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Chapter 20: What do interviewers learn?

Changes in interview length and interviewer behaviors over the field period

Appendix 20

Kristen Olson and Jolene Smyth

Full book reference:

Olson, K., J. D. Smyth, J. Dykema, A. L. Holbrook, F. Kreuter, B. T. West. 2020. *Interviewer Effects from a Total Survey Error Perspective*. Boca Raton: CRC Press.

**Appendix 20A**

Full Model Coefficients and Standard Errors Predicting Count of Questions with Individual Interviewer Behaviors, Two-level Multilevel Poisson Models with Number of Questions Asked as Exposure Variable, WLT1 and WLT2

### Analytic strategy

We estimate hierarchical two-level random intercept models accounting for the clustering of respondents ( $i$ ) within interviewers ( $j$ ) (e.g., (Raudenbush & Bryk, 2002). For the interviewer behaviors, we estimate two-level Poisson models with a log link and a random intercept due to interviewers ( $u_{0j} \sim N(0, \sigma_I^2)$ ), with the number of questions asked to each respondent as the exposure variable. These models are estimated using the `mepoisson` procedure in Stata 15.1.

$$\text{Log}(IwBehaviors)_{ij} = \gamma_{00} + \beta_1 \text{Ln}(IwOrder)_{ij} + \beta_p \text{Controls}_{pij} + u_{0j} \quad \text{Eq. 20.1}$$

For interview length, we estimate a two-level linear model using the `mixed` procedure in Stata 15.1 with a random intercept due to interviewers ( $u_{0j} \sim N(0, \sigma_I^2)$ ). The interview behaviors are grand-mean centered and included as separate groups (standardized, inefficiency, nonstandardized) and then combined into a single model.

$$\text{Length}_{ij} = \gamma_{00} + \beta_1 \text{Ln}(IwOrder)_{ij} + \beta_2 IwBehaviors_{ij} + \beta_p \text{Controls}_{pij} + u_{0j} + \varepsilon_{ij} \quad \text{Eq. 20.2}$$

Table A20A.1 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Exact Question Reading with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Exact Question Reading                                      | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | 0.017      | 0.014     | 0.001      | 0.007     |
| Overall experience = 1+ year                                | -0.341*    | 0.162     | -0.101*    | 0.040     |
| Interviewer Cooperation Rate (Centered)                     | 0.025      | 0.045     | 0.000      | 0.004     |
| Respondent sex = female                                     | -0.022     | 0.022     | 0.006      | 0.012     |
| Respondent age (centered)                                   | -0.002*    | 0.001     | 0.000      | 0.000     |
| Respondent education = HS degree or less                    | -0.038     | 0.026     | 0.004      | 0.014     |
| Respondent race = nonwhite                                  | -0.023     | 0.018     | -0.002     | 0.007     |
| Respondent employment = FT or PT employed                   | 0.069*     | 0.027     | -0.020     | 0.013     |
| Family income (8 categories)                                | 0.002      | 0.006     | 0.007*     | 0.003     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | 0.002      | 0.026     | -0.015     | 0.015     |
| 3   | 0.030      | 0.037     | -0.028     | 0.020     |
| 4   | -0.022     | 0.046     | -0.024     | 0.024     |
| 5 and more  | -0.038     | 0.054     | -0.002     | 0.025     |
| R has children at home                                      | 0.000      | 0.036     | -0.008     | 0.017     |
| R engaged in volunteer activity during last 12 months       | 0.011      | 0.022     | -0.003     | 0.012     |
| Interview completed at first contact                        | 0.001      | 0.030     | -0.024     | 0.023     |
| Number of call attempts                                     | 0.001      | 0.008     | -0.005     | 0.004     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | -0.063+    | 0.037     | -0.006     | 0.022     |
| Weekend day   | -0.067+    | 0.038     | -0.001     | 0.017     |
| Item nonresponse rate (centered)                            | -0.004     | 0.003     | -0.003     | 0.002     |
| Ever refused  | 0.070      | 0.045     | -0.021     | 0.028     |
| Skip triggered due to follow-up questions on computer usage | 0.109****  | 0.031     | -0.013     | 0.017     |
| Number of answer changes                                    | -0.012     | 0.013     | -0.004     | 0.008     |
| Interviewer race = nonwhite                                 | 0.023      | 0.131     | 0.026      | 0.038     |
| Interviewer sex = female                                    | -0.013     | 0.136     | -0.050     | 0.040     |
| Interviewer shift = weekday evening                         | 0.393*     | 0.179     | 0.009      | 0.040     |
| Version B of Questionnaire                                  |            |           | -0.125**** | 0.033     |
| Cell phone interview  |            |           | 0.027      | 0.015     |
| Intercept   | -0.779**** | 0.200     | -0.228**** | 0.049     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.067      | 0.023     | 0.006      | 0.002     |
| LR test for variance components                             | 399.85     | ****      | 99.86      | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1379.01   |           | -2812.88   |           |
| Wald Chi2   | 120.27     | ****      | 40.28      | +         |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.2 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Nondirective Probes with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Nondirective Probes   | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | 0.020      | 0.023     | -0.033*    | 0.015     |
| Overall experience = 1+ year                                | 0.168*     | 0.078     | -0.019     | 0.094     |
| Interviewer Cooperation Rate (Centered)                     | -0.040+    | 0.021     | 0.000      | 0.009     |
| Respondent sex = female                                     | -0.056     | 0.037     | -0.032     | 0.026     |
| Respondent age (centered)                                   | 0.008****  | 0.001     | 0.005****  | 0.001     |
| Respondent education = HS degree or less                    | 0.101*     | 0.041     | 0.041      | 0.030     |
| Respondent race = nonwhite                                  | 0.162****  | 0.025     | 0.058****  | 0.014     |
| Respondent employment = FT or PT employed                   | -0.218**** | 0.046     | -0.052+    | 0.030     |
| Family income (8 categories)                                | 0.011      | 0.011     | -0.016*    | 0.007     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.055     | 0.043     | 0.027      | 0.034     |
| 3   | -0.025     | 0.063     | -0.009     | 0.046     |
| 4   | -0.075     | 0.088     | 0.118*     | 0.053     |
| 5 and more  | -0.063     | 0.094     | 0.125*     | 0.054     |
| R has children at home                                      | 0.019      | 0.067     | -0.008     | 0.038     |
| R engaged in volunteer activity during last 12 months       | 0.027      | 0.037     | -0.087**   | 0.027     |
| Interview completed at first contact                        | -0.110*    | 0.051     | 0.082+     | 0.050     |
| Number of call attempts                                     | -0.022     | 0.015     | 0.020*     | 0.010     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.039      | 0.059     | 0.092*     | 0.046     |
| Weekend day   | -0.157*    | 0.062     | -0.005     | 0.037     |
| Item nonresponse rate (centered)                            | 0.017****  | 0.004     | 0.022****  | 0.004     |
| Ever refused  | -0.002     | 0.077     | 0.213****  | 0.059     |
| Skip triggered due to follow-up questions on computer usage | -0.060     | 0.046     | 0.000      | 0.037     |
| Number of answer changes                                    | 0.077****  | 0.021     | 0.030+     | 0.017     |
| Interviewer race = nonwhite                                 | 0.065      | 0.062     | -0.270**   | 0.089     |
| Interviewer sex = female                                    | 0.116+     | 0.065     | -0.104     | 0.096     |
| Interviewer shift = weekday evening                         | -0.028     | 0.085     | 0.045      | 0.094     |
| Version B of Questionnaire                                  |            |           | -0.202*    | 0.080     |
| Cell phone interview  |            |           | 0.008      | 0.033     |
| Intercept   | -1.931**** | 0.125     | -1.629**** | 0.111     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.010      | 0.005     | 0.034      | 0.011     |
| LR test for variance components                             | 11.74      | ***       | 132.83     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1182.67   |           | -2278.92   |           |
| Wald Chi2   | 285.32     | ****      | 240.93     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.3 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Adequate Verification with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Adequate verification                                       | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | 0.020      | 0.026     | -0.051**   | 0.016     |
| Overall experience = 1+ year                                | 0.313      | 0.439     | -0.060     | 0.353     |
| Interviewer Cooperation Rate (Centered)                     | -0.104     | 0.123     | 0.004      | 0.033     |
| Respondent sex = female                                     | -0.017     | 0.038     | -0.016     | 0.027     |
| Respondent age (centered)                                   | 0.003+     | 0.001     | -0.001     | 0.001     |
| Respondent education = HS degree or less                    | -0.055     | 0.045     | 0.015      | 0.033     |
| Respondent race = nonwhite                                  | 0.109****  | 0.027     | 0.070****  | 0.014     |
| Respondent employment = FT or PT employed                   | 0.013      | 0.048     | -0.071*    | 0.030     |
| Family income (8 categories)                                | -0.019+    | 0.011     | 0.005      | 0.007     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | 0.168****  | 0.044     | 0.111**    | 0.036     |
| 3   | 0.090      | 0.071     | 0.099*     | 0.048     |
| 4   | 0.249**    | 0.092     | 0.245****  | 0.055     |
| 5 and more  | 0.160+     | 0.092     | 0.123*     | 0.058     |
| R has children at home                                      | -0.152*    | 0.074     | -0.068+    | 0.038     |
| R engaged in volunteer activity during last 12 months       | 0.026      | 0.039     | -0.089**   | 0.028     |
| Interview completed at first contact                        | 0.125*     | 0.054     | 0.079      | 0.055     |
| Number of call attempts                                     | -0.005     | 0.017     | 0.028**    | 0.010     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | -0.179**   | 0.069     | 0.003      | 0.051     |
| Weekend day   | 0.141*     | 0.056     | 0.007      | 0.041     |
| Item nonresponse rate (centered)                            | -0.004     | 0.005     | 0.002      | 0.005     |
| Ever refused  | 0.142+     | 0.084     | 0.107      | 0.065     |
| Skip triggered due to follow-up questions on computer usage | -0.005     | 0.051     | -0.073+    | 0.041     |
| Number of answer changes                                    | 0.036      | 0.022     | 0.023      | 0.017     |
| Interviewer race = nonwhite                                 | 0.482      | 0.356     | -0.234     | 0.331     |
| Interviewer sex = female                                    | -0.401     | 0.370     | -0.368     | 0.357     |
| Interviewer shift = weekday evening                         | -0.369     | 0.488     | 0.133      | 0.350     |
| Version B of Questionnaire                                  |            |           | 0.636*     | 0.296     |
| Cell phone interview  |            |           | 0.021      | 0.034     |
| Intercept   | -2.503**** | 0.532     | -2.239**** | 0.320     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.501      | 0.168     | 0.544      | 0.155     |
| LR test for variance components                             | 1319.54    | ****      | 2226.43    | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1204.53   |           | -2379.92   |           |
| Wald Chi2   | 67.53      | ****      | 104.42     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.4 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Appropriate Clarification with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Appropriate clarification                                   | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | 0.091+     | 0.050     | -0.034     | 0.061     |
| Overall experience = 1+ year                                | -0.197     | 0.133     | -0.077     | 0.139     |
| Interviewer Cooperation Rate (Centered)                     | 0.015      | 0.038     | 0.002      | 0.013     |
| Respondent sex = female                                     | 0.066      | 0.075     | 0.109      | 0.106     |
| Respondent age (centered)                                   | 0.000      | 0.003     | -0.002     | 0.004     |
| Respondent education = HS degree or less                    | -0.116     | 0.091     | -0.240+    | 0.136     |
| Respondent race = nonwhite                                  | -0.016     | 0.060     | 0.083      | 0.055     |
| Respondent employment = FT or PT employed                   | -0.109     | 0.090     | 0.040      | 0.120     |
| Family income (8 categories)                                | 0.017      | 0.021     | 0.034      | 0.027     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.024     | 0.089     | 0.054      | 0.149     |
| 3   | -0.001     | 0.127     | 0.100      | 0.188     |
| 4   | -0.076     | 0.163     | 0.209      | 0.213     |
| 5 and more  | -0.138     | 0.185     | 0.252      | 0.219     |
| R has children at home                                      | 0.050      | 0.128     | -0.008     | 0.148     |
| R engaged in volunteer activity during last 12 months       | 0.062      | 0.075     | 0.085      | 0.112     |
| Interview completed at first contact                        | 0.023      | 0.103     | 0.040      | 0.212     |
| Number of call attempts (centered)                          | 0.001      | 0.029     | 0.050      | 0.040     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | -0.164     | 0.130     | 0.212      | 0.183     |
| Weekend day   | -0.188     | 0.134     | 0.192      | 0.142     |
| Item nonresponse rate (centered)                            | -0.006     | 0.010     | 0.006      | 0.018     |
| Ever refused  | -0.136     | 0.167     | 0.034      | 0.255     |
| Skip triggered due to follow-up questions on computer usage | 0.046      | 0.104     | -0.028     | 0.168     |
| Number of answer changes                                    | 0.012      | 0.043     | 0.256****  | 0.060     |
| Interviewer race = nonwhite                                 | -0.083     | 0.109     | -0.410**   | 0.139     |
| Interviewer sex = female                                    | -0.049     | 0.114     | 0.170      | 0.139     |
| Interviewer shift = weekday evening                         | 0.142      | 0.148     | -0.158     | 0.149     |
| Version B of Questionnaire                                  |            |           | -0.135     | 0.117     |
| Cell phone interview  |            |           | 0.045      | 0.135     |
| Intercept   | -3.352**** | 0.237     | -5.076**** | 0.343     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.024      | 0.016     | 0.010      | 0.025     |
| LR test for variance components                             | 6.40       | **        | 0.19       |           |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -718.94    |           | -763.24    |           |
| Wald Chi2   | 22.22      |           | 60.23      | ***       |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001



Table A20A.5 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Appropriate Feedback with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Appropriate feedback  | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.010     | 0.015     | -0.035**** | 0.009     |
| Overall experience = 1+ year                                | -0.007     | 0.361     | -0.339*    | 0.173     |
| Interviewer Cooperation Rate (Centered)                     | -0.100     | 0.101     | 0.018      | 0.016     |
| Respondent sex = female                                     | -0.067**   | 0.024     | -0.005     | 0.015     |
| Respondent age (centered)                                   | 0.004****  | 0.001     | 0.003****  | 0.001     |
| Respondent education = HS degree or less                    | 0.012      | 0.028     | -0.033+    | 0.018     |
| Respondent race = nonwhite                                  | 0.059***   | 0.018     | 0.017*     | 0.008     |
| Respondent employment = FT or PT employed                   | -0.117**** | 0.029     | -0.061**** | 0.017     |
| Family income (8 categories)                                | 0.004      | 0.007     | -0.007+    | 0.004     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.028     | 0.028     | -0.041*    | 0.019     |
| 3   | -0.103*    | 0.042     | -0.024     | 0.026     |
| 4   | -0.095+    | 0.055     | -0.015     | 0.031     |
| 5 and more  | 0.013      | 0.059     | -0.004     | 0.032     |
| R has children at home                                      | 0.004      | 0.041     | 0.020      | 0.022     |
| R engaged in volunteer activity during last 12 months       | -0.023     | 0.024     | -0.046**   | 0.015     |
| Interview completed at first contact                        | 0.059+     | 0.032     | 0.031      | 0.030     |
| Number of call attempts (centered)                          | 0.014      | 0.009     | 0.005      | 0.006     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.098**    | 0.037     | -0.035     | 0.031     |
| Weekend day   | -0.100*    | 0.040     | -0.018     | 0.022     |
| Item nonresponse rate (centered)                            | 0.009**    | 0.003     | 0.012****  | 0.002     |
| Ever refused  | -0.005     | 0.054     | 0.057      | 0.037     |
| Skip triggered due to follow-up questions on computer usage | 0.033      | 0.031     | -0.022     | 0.022     |
| Number of answer changes                                    | 0.061****  | 0.014     | 0.039****  | 0.010     |
| Interviewer race = nonwhite                                 | 0.198      | 0.293     | 0.072      | 0.162     |
| Interviewer sex = female                                    | 0.273      | 0.304     | 0.079      | 0.175     |
| Interviewer shift = weekday evening                         | -0.434     | 0.402     | 0.092      | 0.171     |
| Version B of Questionnaire                                  |            |           | 0.324*     | 0.145     |
| Cell phone interview  |            |           | -0.009     | 0.019     |
| Intercept   | -1.223**   | 0.436     | -0.926**** | 0.158     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.342      | 0.113     | 0.130      | 0.037     |
| LR test for variance components                             | 1962.67    | ****      | 1709.37    | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1437.58   |           | -3003.37   |           |
| Wald Chi2   | 185.08     | ****      | 227.24     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.6 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Stuttering During Question Reading with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Stuttering during q'n reading                               | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.201**** | 0.039     | -0.201**** | 0.025     |
| Overall experience = 1+ year                                | 1.079****  | 0.234     | -0.348     | 0.300     |
| Interviewer Cooperation Rate (Centered)                     | -0.119+    | 0.063     | -0.001     | 0.028     |
| Respondent sex = female                                     | -0.111+    | 0.065     | 0.018      | 0.047     |
| Respondent age (centered)                                   | -0.002     | 0.002     | 0.000      | 0.002     |
| Respondent education = HS degree or less                    | 0.007      | 0.075     | -0.228**** | 0.059     |
| Respondent race = nonwhite                                  | -0.042     | 0.055     | 0.003      | 0.026     |
| Respondent employment = FT or PT employed                   | -0.043     | 0.080     | 0.000      | 0.053     |
| Family income (8 categories)                                | -0.018     | 0.018     | -0.003     | 0.012     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.066     | 0.077     | 0.057      | 0.061     |
| 3   | -0.017     | 0.109     | 0.153+     | 0.080     |
| 4   | 0.006      | 0.153     | 0.109      | 0.097     |
| 5 and more  | -0.190     | 0.170     | 0.085      | 0.102     |
| R has children at home                                      | 0.010      | 0.113     | -0.082     | 0.066     |
| R engaged in volunteer activity during last 12 months       | 0.070      | 0.067     | 0.055      | 0.049     |
| Interview completed at first contact                        | -0.002     | 0.093     | 0.147      | 0.095     |
| Number of call attempts (centered)                          | 0.029      | 0.028     | 0.003      | 0.018     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | -0.019     | 0.108     | 0.053      | 0.090     |
| Weekend day   | -0.067     | 0.098     | 0.080      | 0.071     |
| Item nonresponse rate (centered)                            | -0.010     | 0.009     | 0.011+     | 0.007     |
| Ever refused  | -0.250     | 0.152     | 0.275*     | 0.124     |
| Skip triggered due to follow-up questions on computer usage | -0.090     | 0.084     | 0.042      | 0.073     |
| Number of answer changes                                    | 0.030      | 0.039     | 0.023      | 0.029     |
| Interviewer race = nonwhite                                 | 0.658****  | 0.183     | 0.402      | 0.281     |
| Interviewer sex = female                                    | 0.053      | 0.191     | -0.386     | 0.303     |
| Interviewer shift = weekday evening                         | -0.634*    | 0.252     | -0.063     | 0.297     |
| Version B of Questionnaire                                  |            |           | 0.070      | 0.251     |
| Cell phone interview  |            |           | 0.047      | 0.058     |
| Intercept   | -3.428**** | 0.317     | -2.819**** | 0.294     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.111      | 0.045     | 0.377      | 0.111     |
| LR test for variance components                             | 64.64      | ****      | 591.60     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -816.36    |           | -1719.42   |           |
| Wald Chi2   | 86.70      | ****      | 117.81     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.7 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Disfluencies with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Disfluencies  | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.062**   | 0.018     | -0.058**** | 0.012     |
| Overall experience = 1+ year                                | 0.724**    | 0.239     | 0.174      | 0.199     |
| Interviewer Cooperation Rate (Centered)                     | -0.130+    | 0.067     | -0.018     | 0.019     |
| Respondent sex = female                                     | -0.090**   | 0.029     | -0.005     | 0.021     |
| Respondent age (centered)                                   | 0.004****  | 0.001     | 0.001      | 0.001     |
| Respondent education = HS degree or less                    | -0.016     | 0.034     | -0.025     | 0.025     |
| Respondent race = nonwhite                                  | 0.081****  | 0.022     | 0.025*     | 0.011     |
| Respondent employment = FT or PT employed                   | -0.059     | 0.036     | 0.004      | 0.024     |
| Family income (8 categories)                                | -0.014+    | 0.008     | -0.006     | 0.005     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | 0.027      | 0.034     | 0.001      | 0.028     |
| 3   | 0.107*     | 0.050     | 0.000      | 0.037     |
| 4   | 0.047      | 0.072     | 0.025      | 0.042     |
| 5 and more  | 0.006      | 0.073     | -0.013     | 0.046     |
| R has children at home                                      | -0.060     | 0.053     | 0.004      | 0.030     |
| R engaged in volunteer activity during last 12 months       | 0.037      | 0.029     | -0.014     | 0.022     |
| Interview completed at first contact                        | 0.079+     | 0.041     | 0.072+     | 0.041     |
| Number of call attempts (centered)                          | 0.004      | 0.012     | 0.005      | 0.008     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | -0.012     | 0.052     | 0.026      | 0.040     |
| Weekend day   | 0.023      | 0.047     | 0.043      | 0.031     |
| Item nonresponse rate (centered)                            | 0.004      | 0.004     | 0.014****  | 0.003     |
| Ever refused  | -0.050     | 0.063     | 0.126*     | 0.050     |
| Skip triggered due to follow-up questions on computer usage | -0.028     | 0.038     | 0.033      | 0.032     |
| Number of answer changes                                    | 0.020      | 0.018     | 0.055****  | 0.013     |
| Interviewer race = nonwhite                                 | 0.118      | 0.193     | 0.055      | 0.187     |
| Interviewer sex = female                                    | -0.158     | 0.200     | -0.568**   | 0.202     |
| Interviewer shift = weekday evening                         | -0.238     | 0.264     | 0.278      | 0.197     |
| Version B of Questionnaire                                  |            |           | 0.329*     | 0.167     |
| Cell phone interview  |            |           | 0.030      | 0.026     |
| Intercept   | -1.686**** | 0.293     | -1.605**** | 0.185     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.146      | 0.049     | 0.172      | 0.049     |
| LR test for variance components                             | 700.14     | ****      | 1601.59    | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1248.83   |           | -2744.33   |           |
| Wald Chi2   | 120.17     | ****      | 99.83      | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.8 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Pleasant Talk with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Pleasant talk   | WLT1       |           | WLT 2   |           |
|---|------------|-----------|---------|-----------|
|   | Coef.      | Std. Err. | Coef.   | Std. Err. |
| Log(Order)  | -0.086     | 0.096     | -0.098  | 0.051     |
| Overall experience = 1+ year                                | -0.024     | 0.412     | -0.296  | 0.272     |
| Interviewer Cooperation Rate (Centered)                     | -0.157     | 0.108     | -0.001  | 0.025     |
| Respondent sex = female                                     | 0.134      | 0.165     | 0.148   | 0.090     |
| Respondent age (centered)                                   | 0.001      | 0.006     | 0.012   | 0.003     |
| Respondent education = HS degree or less                    | 0.393*     | 0.178     | -0.066  | 0.111     |
| Respondent race = nonwhite                                  | 0.102      | 0.111     | 0.139   | 0.045     |
| Respondent employment = FT or PT employed                   | -0.389*    | 0.193     | 0.068   | 0.104     |
| Family income (8 categories)                                | 0.085+     | 0.046     | 0.057   | 0.024     |
| HH size (ref=1 person)                                      |            |           |         |           |
| 2   | -0.837**** | 0.199     | -0.019  | 0.115     |
| 3   | -0.479+    | 0.246     | -0.006  | 0.155     |
| 4   | -1.058**   | 0.406     | 0.037   | 0.191     |
| 5 and more  | -0.586     | 0.389     | -0.073  | 0.199     |
| R has children at home                                      | 0.283      | 0.279     | -0.016  | 0.137     |
| R engaged in volunteer activity during last 12 months       | 0.169      | 0.156     | -0.110  | 0.092     |
| Interview completed at first contact                        | -0.037     | 0.198     | 0.195   | 0.179     |
| Number of call attempts (centered)                          | 0.089      | 0.058     | 0.002   | 0.035     |
| Time of day interview completed                             |            |           |         |           |
| Weekend evening   | 0.099      | 0.233     | -0.207  | 0.191     |
| Weekend day   | 0.278      | 0.217     | -0.045  | 0.126     |
| Item nonresponse rate (centered)                            | 0.006      | 0.018     | 0.033   | 0.012     |
| Ever refused  | -0.162     | 0.322     | 0.230   | 0.212     |
| Skip triggered due to follow-up questions on computer usage | -0.249     | 0.200     | -0.359  | 0.126     |
| Number of answer changes                                    | 0.152+     | 0.090     | 0.188   | 0.057     |
| Interviewer race = nonwhite                                 | -0.538     | 0.331     | -0.217  | 0.259     |
| Interviewer sex = female                                    | 1.052**    | 0.341     | 0.318   | 0.276     |
| Interviewer shift = weekday evening                         | -0.290     | 0.458     | -0.702  | 0.276     |
| Version B of Questionnaire                                  |            |           | 0.841   | 0.228     |
| Cell phone interview  |            |           | -0.179  | 0.110     |
| Intercept   | -5.040**** | 0.610     | -4.856  | 0.351     |
| Variance components   |            |           |         |           |
| Interviewer   | 0.279      | 0.137     | 0.241   | 0.094     |
| LR test for variance components                             | 27.34      | ****      | 69.99   | ****      |
| Model Fit Statistics  |            |           |         |           |
| Log likelihood  | -361.93    |           | -996.08 |           |
| Wald Chi2   | 71.00      | ****      | 112.49  | ****      |
| # respondents   | 435        |           | 896     |           |
| # interviewers  | 19         |           | 26      |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.9 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Any Task-Related Feedback with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Any task-related feedback                                   | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.151*    | 0.061     | -0.052     | 0.035     |
| Overall experience = 1+ year                                | 0.651*     | 0.286     | -0.066     | 0.280     |
| Interviewer Cooperation Rate (Centered)                     | -0.354**** | 0.078     | -0.031     | 0.026     |
| Respondent sex = female                                     | 0.051      | 0.109     | -0.090     | 0.062     |
| Respondent age (centered)                                   | 0.001      | 0.004     | 0.003      | 0.002     |
| Respondent education = HS degree or less                    | 0.145      | 0.121     | 0.000      | 0.074     |
| Respondent race = nonwhite                                  | 0.052      | 0.089     | 0.025      | 0.034     |
| Respondent employment = FT or PT employed                   | -0.016     | 0.128     | 0.068      | 0.069     |
| Family income (8 categories)                                | 0.031      | 0.031     | -0.020     | 0.016     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.074     | 0.121     | -0.068     | 0.080     |
| 3   | -0.108     | 0.179     | -0.060     | 0.109     |
| 4   | -0.725     | 0.286     | 0.047      | 0.124     |
| 5 and more  | -0.245     | 0.285     | -0.020     | 0.132     |
| R has children at home                                      | 0.115      | 0.198     | 0.065      | 0.089     |
| R engaged in volunteer activity during last 12 months       | -0.016     | 0.108     | -0.011     | 0.064     |
| Interview completed at first contact                        | 0.017      | 0.149     | 0.001      | 0.121     |
| Number of call attempts (centered)                          | 0.005      | 0.042     | -0.017     | 0.024     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | -0.229     | 0.207     | -0.087     | 0.122     |
| Weekend day   | -0.087     | 0.189     | -0.095     | 0.089     |
| Item nonresponse rate (centered)                            | 0.018      | 0.013     | 0.043****  | 0.009     |
| Ever refused  | -0.254     | 0.234     | 0.098      | 0.144     |
| Skip triggered due to follow-up questions on computer usage | 0.022      | 0.138     | 0.028      | 0.090     |
| Number of answer changes                                    | 0.292****  | 0.055     | 0.185****  | 0.037     |
| Interviewer race = nonwhite                                 | -0.027     | 0.224     | -0.388     | 0.267     |
| Interviewer sex = female                                    | 1.012****  | 0.229     | -0.136     | 0.286     |
| Interviewer shift = weekday evening                         | 0.836**    | 0.294     | -0.141     | 0.282     |
| Version B of Questionnaire                                  |            |           | 0.750**    | 0.240     |
| Cell phone interview  |            |           | -0.004     | 0.079     |
| Intercept   | -5.097**** | 0.420     | -3.771**** | 0.298     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.138      | 0.064     | 0.314      | 0.106     |
| LR test for variance components                             | 31.11      | ****      | 176.37     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -525.42    |           | -1297.15   |           |
| Wald Chi2   | 81.13      | ****      | 79.44      | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.10 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Laughter with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Laughter  | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.162**** | 0.043     | -0.084**** | 0.024     |
| Overall experience = 1+ year                                | -0.223     | 0.435     | -1.166**** | 0.280     |
| Interviewer Cooperation Rate (Centered)                     | -0.113     | 0.124     | 0.037      | 0.025     |
| Respondent sex = female                                     | 0.065      | 0.072     | 0.103*     | 0.041     |
| Respondent age (centered)                                   | 0.008**    | 0.003     | 0.004**    | 0.001     |
| Respondent education = HS degree or less                    | 0.099      | 0.086     | -0.041     | 0.050     |
| Respondent race = nonwhite                                  | 0.100+     | 0.054     | 0.041+     | 0.022     |
| Respondent employment = FT or PT employed                   | -0.179*    | 0.085     | -0.087+    | 0.046     |
| Family income (8 categories)                                | 0.046*     | 0.020     | 0.022*     | 0.010     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.287**** | 0.082     | 0.065      | 0.054     |
| 3   | -0.434**** | 0.117     | 0.087      | 0.073     |
| 4   | -0.732**** | 0.184     | 0.071      | 0.086     |
| 5 and more  | -0.554**   | 0.189     | 0.060      | 0.087     |
| R has children at home                                      | 0.158      | 0.125     | 0.084      | 0.059     |
| R engaged in volunteer activity during last 12 months       | -0.002     | 0.071     | 0.013      | 0.042     |
| Interview completed at first contact                        | 0.132      | 0.100     | -0.157+    | 0.080     |
| Number of call attempts (centered)                          | -0.018     | 0.028     | -0.010     | 0.016     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.194+     | 0.104     | 0.127      | 0.080     |
| Weekend day   | -0.041     | 0.114     | -0.081     | 0.059     |
| Item nonresponse rate (centered)                            | 0.013      | 0.009     | -0.011     | 0.008     |
| Ever refused  | 0.064      | 0.155     | -0.143     | 0.095     |
| Skip triggered due to follow-up questions on computer usage | 0.545****  | 0.102     | -0.006     | 0.063     |
| Number of answer changes                                    | 0.219****  | 0.038     | 0.138****  | 0.026     |
| Interviewer race = nonwhite                                 | 0.140      | 0.358     | -0.402     | 0.264     |
| Interviewer sex = female                                    | 1.337****  | 0.370     | 0.020      | 0.275     |
| Interviewer shift = weekday evening                         | -0.637     | 0.496     | -0.297     | 0.270     |
| Version B of Questionnaire                                  |            |           | 1.327****  | 0.232     |
| Cell phone interview  |            |           | -0.210**** | 0.051     |
| Intercept   | -4.217**** | 0.556     | -3.225**** | 0.266     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.466      | 0.185     | 0.303      | 0.097     |
| LR test for variance components                             | 148.76     | ****      | 703.56     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -865.11    |           | -1956.08   |           |
| Wald Chi2   | 151.40     | ****      | 204.73     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.11 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Minor Changes in Question Reading with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Minor changes in question wording                           | WLT1      |           | WLT 2      |           |
|---|-----------|-----------|------------|-----------|
|   | Coef.     | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | 0.032+    | 0.018     | 0.050*     | 0.020     |
| Overall experience = 1+ year                                | 0.371+    | 0.193     | 0.289*     | 0.130     |
| Interviewer Cooperation Rate (Centered)                     | -0.028    | 0.054     | 0.018      | 0.012     |
| Respondent sex = female                                     | 0.048+    | 0.027     | -0.098**   | 0.032     |
| Respondent age (centered)                                   | 0.002+    | 0.001     | 0.003*     | 0.001     |
| Respondent education = HS degree or less                    | 0.075*    | 0.032     | -0.041     | 0.039     |
| Respondent race = nonwhite                                  | 0.048*    | 0.021     | -0.032+    | 0.018     |
| Respondent employment = FT or PT employed                   | 0.138**** | 0.033     | 0.108**    | 0.037     |
| Family income (8 categories)                                | 0.004     | 0.008     | -0.041**** | 0.008     |
| HH size (ref=1 person)                                      |           |           |            |           |
| 2   | 0.034     | 0.032     | 0.078+     | 0.044     |
| 3   | -0.046    | 0.046     | 0.129*     | 0.057     |
| 4   | 0.018     | 0.063     | 0.147*     | 0.067     |
| 5 and more  | 0.053     | 0.064     | 0.106      | 0.071     |
| R has children at home                                      | 0.018     | 0.047     | 0.113*     | 0.046     |
| R engaged in volunteer activity during last 12 months       | -0.006    | 0.027     | -0.055+    | 0.033     |
| Interview completed at first contact                        | 0.022     | 0.038     | -0.028     | 0.065     |
| Number of call attempts (centered)                          | 0.008     | 0.011     | 0.007      | 0.012     |
| Time of day interview completed                             |           |           |            |           |
| Weekend evening   | 0.100*    | 0.046     | 0.092      | 0.063     |
| Weekend day   | 0.074+    | 0.044     | -0.032     | 0.046     |
| Item nonresponse rate (centered)                            | -0.002    | 0.004     | -0.001     | 0.006     |
| Ever refused  | -0.067    | 0.059     | -0.055     | 0.076     |
| Skip triggered due to follow-up questions on computer usage | -0.060+   | 0.036     | 0.099*     | 0.049     |
| Number of answer changes                                    | 0.019     | 0.016     | 0.024      | 0.023     |
| Interviewer race = nonwhite                                 | -0.048    | 0.156     | -0.155     | 0.124     |
| Interviewer sex = female                                    | -0.053    | 0.162     | 0.033      | 0.132     |
| Interviewer shift = weekday evening                         | -0.360+   | 0.214     | 0.007      | 0.131     |
| Version B of Questionnaire                                  |           |           | 1.381****  | 0.111     |
| Cell phone interview  |           |           | -0.096*    | 0.041     |
| Intercept   | 2.306**** | 0.240     | 0.571****  | 0.151     |
| Variance components   |           |           |            |           |
| Interviewer   | 0.094     | 0.032     | 0.065      | 0.021     |
| LR test for variance components                             | 461.92    | ****      | 167.65     | ****      |
| Model Fit Statistics  |           |           |            |           |
| Log likelihood  | -1415.47  |           | -2483.54   |           |
| Wald Chi2   | 69.72     | ****      | 258.79     | ****      |
| # respondents   | 435       |           | 896        |           |
| # interviewers  | 19        |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.12 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Major Changes in Question Reading with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Major changes in question wording                           | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.050+    | 0.028     | 0.036*     | 0.017     |
| Overall experience = 1+ year                                | 0.096      | 0.270     | 0.436****  | 0.120     |
| Interviewer Cooperation Rate (Centered)                     | 0.059      | 0.075     | -0.008     | 0.011     |
| Respondent sex = female                                     | 0.043      | 0.046     | 0.030      | 0.028     |
| Respondent age (centered)                                   | 0.003      | 0.002     | -0.001     | 0.001     |
| Respondent education = HS degree or less                    | -0.079     | 0.053     | 0.063+     | 0.034     |
| Respondent race = nonwhite                                  | -0.024     | 0.036     | 0.024      | 0.016     |
| Respondent employment = FT or PT employed                   | -0.197**** | 0.056     | 0.187****  | 0.033     |
| Family income (8 categories)                                | -0.005     | 0.013     | -0.010     | 0.007     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.024     | 0.054     | 0.026      | 0.038     |
| 3   | 0.032      | 0.075     | 0.023      | 0.049     |
| 4   | 0.067      | 0.105     | 0.020      | 0.058     |
| 5 and more  | 0.140      | 0.111     | -0.068     | 0.062     |
| R has children at home                                      | -0.010     | 0.082     | -0.023     | 0.041     |
| R engaged in volunteer activity during last 12 months       | -0.025     | 0.046     | 0.034      | 0.030     |
| Interview completed at first contact                        | 0.045      | 0.066     | 0.089      | 0.057     |
| Number of call attempts (centered)                          | -0.012     | 0.019     | 0.024*     | 0.011     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.064      | 0.075     | -0.083     | 0.056     |
| Weekend day   | 0.063      | 0.071     | 0.007      | 0.042     |
| Item nonresponse rate (centered)                            | 0.025****  | 0.006     | 0.015**    | 0.005     |
| Ever refused  | 0.050      | 0.101     | 0.045      | 0.068     |
| Skip triggered due to follow-up questions on computer usage | -0.030     | 0.059     | -0.035     | 0.042     |
| Number of answer changes                                    | -0.001     | 0.027     | 0.010      | 0.020     |
| Interviewer race = nonwhite                                 | 0.002      | 0.219     | -0.315**   | 0.114     |
| Interviewer sex = female                                    | 0.293      | 0.227     | 0.456****  | 0.124     |
| Interviewer shift = weekday evening                         | -0.222     | 0.301     | -0.064     | 0.120     |
| Version B of Questionnaire                                  |            |           | -0.245*    | 0.101     |
| Cell phone interview  |            |           | -0.088*    | 0.036     |
| Intercept   | -2.311**** | 0.340     | -2.441**** | 0.136     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.183      | 0.064     | 0.057      | 0.018     |
| LR test for variance components                             | 276.32     | ****      | 198.40     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1044.28   |           | -2279.65   |           |
| Wald Chi2   | 90.28      | ****      | 111.33     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001



Table A20A.13 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Directive Probes with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| Directive probes  | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | 0.100*     | 0.042     | -0.087*    | 0.039     |
| Overall experience = 1+ year                                | 0.112      | 0.122     | 0.118      | 0.162     |
| Interviewer Cooperation Rate (Centered)                     | -0.034     | 0.034     | 0.018      | 0.016     |
| Respondent sex = female                                     | -0.113+    | 0.065     | -0.056     | 0.068     |
| Respondent age (centered)                                   | 0.015****  | 0.003     | 0.011****  | 0.002     |
| Respondent education = HS degree or less                    | 0.247**    | 0.073     | 0.097      | 0.079     |
| Respondent race = nonwhite                                  | 0.222****  | 0.043     | 0.125****  | 0.035     |
| Respondent employment = FT or PT employed                   | -0.230**   | 0.084     | -0.229**   | 0.078     |
| Family income (8 categories)                                | 0.005      | 0.019     | -0.047**   | 0.017     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | 0.038      | 0.079     | -0.092     | 0.087     |
| 3   | 0.152      | 0.113     | 0.025      | 0.118     |
| 4   | 0.403**    | 0.152     | 0.083      | 0.140     |
| 5 and more  | 0.410**    | 0.156     | 0.180      | 0.140     |
| R has children at home                                      | -0.012     | 0.118     | 0.010      | 0.103     |
| R engaged in volunteer activity during last 12 months       | -0.177**   | 0.068     | 0.097      | 0.071     |
| Interview completed at first contact                        | -0.215*    | 0.092     | -0.141     | 0.118     |
| Number of call attempts (centered)                          | -0.064*    | 0.026     | 0.091****  | 0.024     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.064      | 0.104     | -0.300     | 0.142     |
| Weekend day   | -0.318**   | 0.113     | 0.010      | 0.092     |
| Item nonresponse rate (centered)                            | 0.018*     | 0.008     | 0.073****  | 0.008     |
| Ever refused  | -0.020     | 0.137     | -0.042     | 0.137     |
| Skip triggered due to follow-up questions on computer usage | -0.009     | 0.084     | -0.180*    | 0.089     |
| Number of answer changes                                    | 0.130****  | 0.035     | 0.107      | 0.045     |
| Interviewer race = nonwhite                                 | -0.061     | 0.098     | -0.679**** | 0.160     |
| Interviewer sex = female                                    | 0.086      | 0.103     | -0.013     | 0.174     |
| Interviewer shift = weekday evening                         | -0.215     | 0.137     | 0.008      | 0.171     |
| Version B of Questionnaire                                  |            |           | -0.170     | 0.140     |
| Cell phone interview  |            |           | 0.107      | 0.088     |
| Intercept   | -3.159**** | 0.213     | -3.061**** | 0.230     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.021      | 0.014     | 0.085      | 0.034     |
| LR test for variance components                             | 5.86       | **        | 48.30      | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -905.96    |           | -1328.25   |           |
| Wald Chi2   | 204.73     | ****      | 316.14     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20A.14 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Inadequate Verification with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2

| <b>Inadequate verification</b>                              | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.176**** | 0.036     | -0.106**** | 0.030     |
| Overall experience = 1+ year                                | 0.322      | 0.210     | 0.152      | 0.232     |
| Interviewer Cooperation Rate (Centered)                     | -0.026     | 0.058     | -0.005     | 0.022     |
| Respondent sex = female                                     | -0.004     | 0.060     | -0.090+    | 0.053     |
| Respondent age (centered)                                   | 0.004+     | 0.002     | 0.005**    | 0.002     |
| Respondent education = HS degree or less                    | 0.139*     | 0.067     | 0.012      | 0.064     |
| Respondent race = nonwhite                                  | 0.127**    | 0.043     | 0.047      | 0.029     |
| Respondent employment = FT or PT employed                   | -0.107     | 0.074     | -0.049     | 0.061     |
| Family income (8 categories)                                | -0.018     | 0.017     | -0.018     | 0.014     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.045     | 0.071     | 0.063      | 0.069     |
| 3   | 0.186+     | 0.098     | -0.118     | 0.098     |
| 4   | -0.061     | 0.147     | -0.137     | 0.113     |
| 5 and more  | 0.214      | 0.139     | -0.035     | 0.116     |
| R has children at home                                      | 0.035      | 0.104     | 0.109      | 0.079     |
| R engaged in volunteer activity during last 12 months       | -0.135*    | 0.061     | -0.069     | 0.055     |
| Interview completed at first contact                        | 0.054      | 0.082     | -0.215*    | 0.101     |
| Number of call attempts (centered)                          | 0.085***   | 0.024     | 0.031      | 0.020     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.172+     | 0.093     | -0.073     | 0.099     |
| Weekend day   | 0.034      | 0.091     | -0.155+    | 0.079     |
| Item nonresponse rate (centered)                            | 0.018*     | 0.007     | 0.005      | 0.009     |
| Ever refused  | -0.163     | 0.125     | -0.216+    | 0.119     |
| Skip triggered due to follow-up questions on computer usage | -0.015     | 0.077     | 0.006      | 0.078     |
| Number of answer changes                                    | -0.001     | 0.036     | 0.088*     | 0.035     |
| Interviewer race = nonwhite                                 | 0.051      | 0.168     | -0.504*    | 0.220     |
| Interviewer sex = female                                    | -0.074     | 0.175     | -0.082     | 0.236     |
| Interviewer shift = weekday evening                         | -0.298     | 0.233     | 0.203      | 0.232     |
| Version B of Questionnaire                                  |            |           | 0.806****  | 0.197     |
| Cell phone interview  |            |           | 0.102      | 0.067     |
| Intercept   | -2.540**** | 0.282     | -3.269**** | 0.251     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.099      | 0.038     | 0.214      | 0.067     |
| LR test for variance components                             | 83.81      | ****      | 255.51     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -984.23    |           | -1538.64   |           |
| Wald Chi2   | 109.87     | ****      | 84.63      | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

| Table A20A.15 Coefficients and Standard Errors from Multilevel Poisson Regression Models Predicting Number of Questions with Interruptions with Total Number of Questions Asked to Each Respondent as an Exposure Variable, WLT1 and WLT2 |            |           |            |           |
|---|------------|-----------|------------|-----------|
| <b>Interruptions</b>  | WLT1       |           | WLT 2      |           |
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.046+    | 0.028     | -0.069**   | 0.023     |
| Overall experience = 1+ year  | 0.065      | 0.192     | -0.220     | 0.136     |
| Interviewer Cooperation Rate (Centered)   | -0.041     | 0.054     | 0.020      | 0.013     |
| Respondent sex = female   | 0.007      | 0.046     | 0.023      | 0.040     |
| Respondent age (centered)   | 0.009****  | 0.002     | 0.009****  | 0.001     |
| Respondent education = HS degree or less  | 0.089+     | 0.052     | -0.122*    | 0.048     |
| Respondent race = nonwhite  | 0.194****  | 0.031     | 0.026      | 0.022     |
| Respondent employment = FT or PT employed   | -0.110*    | 0.056     | -0.116*    | 0.046     |
| Family income (8 categories)  | 0.015      | 0.013     | -0.015     | 0.010     |
| HH size (ref=1 person)  |            |           |            |           |
| 2   | -0.030     | 0.053     | -0.065     | 0.051     |
| 3   | -0.172*    | 0.078     | -0.040     | 0.069     |
| 4   | -0.264*    | 0.114     | -0.091     | 0.085     |
| 5 and more  | 0.003      | 0.113     | 0.041      | 0.085     |
| R has children at home  | 0.018      | 0.085     | 0.110+     | 0.060     |
| R engaged in volunteer activity during last 12 months   | -0.027     | 0.045     | -0.043     | 0.041     |
| Interview completed at first contact  | 0.025      | 0.062     | 0.045      | 0.076     |
| Number of call attempts (centered)  | 0.028      | 0.018     | 0.049**    | 0.015     |
| Time of day interview completed   |            |           |            |           |
| Weekend evening   | -0.041     | 0.075     | 0.017      | 0.076     |
| Weekend day   | 0.073      | 0.069     | -0.104+    | 0.058     |
| Item nonresponse rate (centered)  | 0.017**    | 0.006     | 0.025****  | 0.006     |
| Ever refused  | -0.115     | 0.100     | -0.035     | 0.091     |
| Skip triggered due to follow-up questions on computer usage   | 0.069      | 0.059     | 0.001      | 0.056     |
| Number of answer changes  | 0.153****  | 0.026     | 0.102****  | 0.026     |
| Interviewer race = nonwhite   | -0.297+    | 0.156     | -0.340**   | 0.129     |
| Interviewer sex = female  | 0.297+     | 0.161     | 0.206      | 0.138     |
| Interviewer shift = weekday evening   | -0.260     | 0.214     | -0.081     | 0.135     |
| Version B of Questionnaire  |            |           | 0.053      | 0.114     |
| Cell phone interview  |            |           | -0.084+    | 0.050     |
| Intercept   | -2.331**** | 0.251     | -2.409**** | 0.163     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.089      | 0.032     | 0.069      | 0.023     |
| LR test for variance components   | 137.52     | ****      | 112.70     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1389.70   |           | -2383.97   |           |
| Wald Chi2   | 206.49     | ****      | 212.76     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

**Appendix 20B**

Full Model Coefficients and Standard Errors Predicting Interview Length with Sets of Interviewer Behaviors, Two-level Multilevel Linear Models, WLT1 and WLT2

Table A20B.1 Coefficients and Standard Errors from Multilevel Linear Regression Models Predicting Total Duration, No Interviewer Behaviors, WLT1 and WLT2

| Interview length – no behaviors                             | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.443*    | 0.193     | -0.855**** | 0.104     |
| Overall experience = 1+ year                                | 0.686      | 0.917     | -0.087     | 0.710     |
| Interviewer Cooperation Rate (Centered)                     | -0.517*    | 0.255     | -0.063     | 0.067     |
| Respondent sex = female                                     | -0.755*    | 0.301     | -0.294+    | 0.176     |
| Respondent age (centered)                                   | 0.054****  | 0.012     | 0.034****  | 0.006     |
| Respondent education = HS degree or less                    | 0.018      | 0.352     | -0.447*    | 0.211     |
| Respondent race = nonwhite                                  | 1.030****  | 0.243     | 0.423****  | 0.100     |
| Respondent employment = FT or PT employed                   | 0.719+     | 0.372     | 1.282****  | 0.203     |
| Family income (8 categories)                                | 0.031      | 0.086     | -0.097*    | 0.045     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.969**   | 0.360     | 0.127      | 0.231     |
| 3   | -0.701     | 0.513     | 0.387      | 0.309     |
| 4   | -0.882     | 0.679     | 0.813*     | 0.366     |
| 5 and more  | -0.141     | 0.741     | 1.049**    | 0.379     |
| R has children at home                                      | 0.123      | 0.524     | -0.495+    | 0.259     |
| R engaged in volunteer activity during last 12 months       | 0.575+     | 0.307     | -0.091     | 0.184     |
| Interview completed at first contact                        | -0.488     | 0.421     | -0.051     | 0.340     |
| Number of call attempts (centered)                          | 0.011      | 0.121     | 0.085      | 0.068     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.250      | 0.512     | -0.403     | 0.339     |
| Weekend day   | -1.165*    | 0.495     | -0.105     | 0.254     |
| Item nonresponse rate (centered)                            | 0.119**    | 0.040     | 0.165****  | 0.030     |
| Ever refused  | -0.631     | 0.646     | -0.091     | 0.425     |
| Skip triggered due to follow-up questions on computer usage | 1.052**    | 0.400     | 0.050      | 0.259     |
| Number of answer changes                                    | 0.737****  | 0.177     | 0.792****  | 0.121     |
| Interviewer race = nonwhite                                 | -0.900     | 0.741     | -0.131     | 0.670     |
| Interviewer sex = female                                    | 1.402+     | 0.771     | 0.906      | 0.721     |
| Interviewer shift = weekday evening                         | -1.251     | 1.014     | -0.230     | 0.707     |
| Version B of Questionnaire                                  |            |           | 1.344*     | 0.596     |
| Cell phone interview  |            |           | 1.898****  | 0.223     |
| Intercept   | 12.590**** | 1.296     | 13.454**** | 0.807     |
| Variance components   |            |           |            |           |
| Interviewer   | 1.828      | 0.721     | 2.009      | 0.623     |
| Residual  | 8.195      | 0.568     | 6.166      | 0.296     |
| LR test for variance components                             | 49.32      | ****      | 149.13     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1091.77   |           | -2117.77   |           |
| Wald Chi2   | 110.85     | ****      | 310.07     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20B.2 Coefficients and Standard Errors from Multilevel Linear Regression Models Predicting Total Duration, Including Standardized Interviewer Behaviors, WLT1 and WLT2

| Interview length – standardized behaviors                   | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.627**** | 0.144     | -0.688**** | 0.089     |
| Overall experience = 1+ year                                | 0.418      | 1.092     | 0.555      | 0.814     |
| Interviewer Cooperation Rate (Centered)                     | -0.299     | 0.301     | -0.103     | 0.076     |
| Respondent sex = female                                     | -0.515*    | 0.225     | -0.232     | 0.150     |
| Respondent age (centered)                                   | 0.023      | 0.009     | 0.017**    | 0.005     |
| Respondent education = HS degree or less                    | -0.197     | 0.265     | -0.412*    | 0.180     |
| Respondent race = nonwhite                                  | 0.296      | 0.187     | 0.226**    | 0.085     |
| Respondent employment = FT or PT employed                   | 0.886**    | 0.299     | 0.897****  | 0.184     |
| Family income (8 categories)                                | -0.026     | 0.064     | -0.072+    | 0.039     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.749**   | 0.269     | -0.005     | 0.197     |
| 3   | -0.541     | 0.381     | 0.331      | 0.263     |
| 4   | -0.520     | 0.504     | 0.403      | 0.313     |
| 5 and more  | 0.221      | 0.551     | 0.596+     | 0.323     |
| R has children at home                                      | 0.014      | 0.389     | -0.525*    | 0.220     |
| R engaged in volunteer activity during last 12 months       | 0.360      | 0.228     | 0.182      | 0.157     |
| Interview completed at first contact                        | -0.213     | 0.316     | -0.292     | 0.289     |
| Number of call attempts (centered)                          | 0.059      | 0.090     | 0.011      | 0.058     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | -0.025     | 0.385     | -0.587*    | 0.289     |
| Weekend day   | -0.421     | 0.372     | -0.105     | 0.216     |
| Item nonresponse rate (centered)                            | 0.050+     | 0.030     | 0.089**    | 0.026     |
| Ever refused  | -0.391     | 0.481     | -0.715*    | 0.363     |
| Skip triggered due to follow-up questions on computer usage | 0.885**    | 0.306     | 0.005      | 0.220     |
| Number of answer changes                                    | 0.415      | 0.133     | 0.565****  | 0.104     |
| Interviewer race = nonwhite                                 | -1.270     | 0.879     | 0.335      | 0.763     |
| Interviewer sex = female                                    | 0.970      | 0.915     | 1.006      | 0.822     |
| Interviewer shift = weekday evening                         | -1.104     | 1.206     | -0.542     | 0.804     |
| Version B of Questionnaire                                  |            |           | 0.992      | 0.696     |
| Cell phone interview  |            |           | 1.862****  | 0.190     |
| # questions with exact reading (centered)                   | 0.007      | 0.020     | -0.004     | 0.014     |
| # questions with adequate probes (centered)                 | 0.400****  | 0.032     | 0.299****  | 0.025     |
| # questions with adequate verification (centered)           | 0.015      | 0.025     | 0.028      | 0.018     |
| # questions with adequate clarification (centered)          | 0.410****  | 0.081     | 0.481****  | 0.104     |
| # questions with adequate feedback (centered)               | 0.083****  | 0.019     | 0.082****  | 0.013     |
| Intercept   | 13.688**** | 1.388     | 13.503**** | 0.836     |
| Variance components   |            |           |            |           |
| Interviewer   | 2.847      | 1.114     | 2.733      | 0.848     |
| Residual  | 4.463      | 0.311     | 4.429      | 0.213     |
| LR test for variance components                             | 74.48      | ****      | 177.09     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -968.47    |           | -1977.16   |           |
| Wald Chi2   | 536.57     | ****      | 760.31     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20B.3 Coefficients and Standard Errors from Multilevel Linear Regression Models Predicting Total Duration, Including Inefficiency Interviewer Behaviors, WLT1 and WLT2

| Interview length – inefficiency behaviors                   | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.211     | 0.178     | -0.706**** | 0.096     |
| Overall experience = 1+ year                                | -0.466     | 1.149     | 0.323      | 0.681     |
| Interviewer Cooperation Rate (Centered)                     | -0.126     | 0.316     | -0.066     | 0.064     |
| Respondent sex = female                                     | -0.671*    | 0.272     | -0.392*    | 0.161     |
| Respondent age (centered)                                   | 0.042****  | 0.011     | 0.028****  | 0.006     |
| Respondent education = HS degree or less                    | -0.047     | 0.317     | -0.383*    | 0.193     |
| Respondent race = nonwhite                                  | 0.777****  | 0.220     | 0.335****  | 0.091     |
| Respondent employment = FT or PT employed                   | 0.608+     | 0.333     | 1.006****  | 0.186     |
| Family income (8 categories)                                | 0.007      | 0.077     | -0.121**   | 0.041     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.727*    | 0.326     | 0.021      | 0.210     |
| 3   | -0.551     | 0.463     | 0.288      | 0.281     |
| 4   | -0.283     | 0.614     | 0.689*     | 0.333     |
| 5 and more  | 0.306      | 0.663     | 1.001**    | 0.344     |
| R has children at home                                      | 0.064      | 0.468     | -0.557*    | 0.236     |
| R engaged in volunteer activity during last 12 months       | 0.426      | 0.275     | -0.071     | 0.167     |
| Interview completed at first contact                        | -0.700+    | 0.377     | -0.103     | 0.309     |
| Number of call attempts (centered)                          | -0.009     | 0.109     | 0.087      | 0.061     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | -0.023     | 0.459     | -0.486     | 0.308     |
| Weekend day   | -1.238**   | 0.443     | -0.093     | 0.231     |
| Item nonresponse rate (centered)                            | 0.107**    | 0.036     | 0.138****  | 0.028     |
| Ever refused  | -0.452     | 0.579     | -0.246     | 0.387     |
| Skip triggered due to follow-up questions on computer usage | 0.748*     | 0.364     | 0.015      | 0.236     |
| Number of answer changes                                    | 0.502      | 0.163     | 0.552****  | 0.112     |
| Interviewer race = nonwhite                                 | -0.917     | 0.913     | -0.228     | 0.641     |
| Interviewer sex = female                                    | 0.689      | 0.961     | 1.532*     | 0.699     |
| Interviewer shift = weekday evening                         | -0.883     | 1.247     | -0.404     | 0.679     |
| Version B of Questionnaire                                  |            |           | 0.209      | 0.575     |
| Cell phone interview  |            |           | 2.040****  | 0.203     |
| # questions with stutters during reading (centered)         | -0.026     | 0.070     | 0.017      | 0.040     |
| # questions with any disfluencies (centered)                | 0.142****  | 0.030     | 0.090****  | 0.018     |
| # questions with pleasant talk (centered)                   | 0.360*     | 0.142     | 0.243****  | 0.069     |
| # questions with task-related feedback (centered)           | 0.198      | 0.124     | 0.134*     | 0.063     |
| # questions with laughter (centered)                        | 0.295****  | 0.054     | 0.210****  | 0.030     |
| Intercept   | 13.667**** | 1.478     | 13.860**** | 0.755     |
| Variance components   |            |           |            |           |
| Interviewer   | 2.980      | 1.134     | 1.841      | 0.584     |
| Residual  | 6.480      | 0.451     | 5.074      | 0.244     |
| LR test for variance components                             | 78.63      | ****      | 126.98     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -1046.69   |           | -2031.69   |           |
| Wald Chi2   | 239.02     | ****      | 565.54     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

Table A20B.4 Coefficients and Standard Errors from Multilevel Linear Regression Models Predicting Total Duration, Including Nonstandardized Interviewer Behaviors, WLT1 and WLT2

| Interview length – nonstandardized behaviors                | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.382*    | 0.156     | -0.733**** | 0.088     |
| Overall experience = 1+ year                                | 0.796      | 0.674     | 0.246      | 0.634     |
| Interviewer Cooperation Rate (Centered)                     | -0.450*    | 0.183     | -0.093     | 0.059     |
| Respondent sex = female                                     | -0.561*    | 0.241     | -0.279+    | 0.149     |
| Respondent age (centered)                                   | 0.026**    | 0.010     | 0.019****  | 0.005     |
| Respondent education = HS degree or less                    | -0.355     | 0.283     | -0.313+    | 0.179     |
| Respondent race = nonwhite                                  | 0.394*     | 0.198     | 0.334****  | 0.084     |
| Respondent employment = FT or PT employed                   | 0.863**    | 0.299     | 1.431****  | 0.178     |
| Family income (8 categories)                                | 0.027      | 0.069     | -0.068+    | 0.038     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.911**   | 0.286     | 0.220      | 0.195     |
| 3   | -0.793+    | 0.410     | 0.438+     | 0.261     |
| 4   | -0.961+    | 0.546     | 0.879**    | 0.310     |
| 5 and more  | -0.628     | 0.593     | 0.869**    | 0.320     |
| R has children at home                                      | 0.211      | 0.417     | -0.616**   | 0.219     |
| R engaged in volunteer activity during last 12 months       | 0.752**    | 0.246     | -0.083     | 0.155     |
| Interview completed at first contact                        | -0.265     | 0.337     | 0.008      | 0.288     |
| Number of call attempts (centered)                          | -0.004     | 0.098     | 0.000      | 0.057     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.296      | 0.409     | -0.287     | 0.287     |
| Weekend day   | -0.911*    | 0.398     | -0.009     | 0.215     |
| Item nonresponse rate (centered)                            | 0.068*     | 0.032     | 0.099****  | 0.026     |
| Ever refused  | -0.275     | 0.515     | -0.004     | 0.359     |
| Skip triggered due to follow-up questions on computer usage | 0.749*     | 0.319     | 0.098      | 0.219     |
| Number of answer changes                                    | 0.401**    | 0.142     | 0.639****  | 0.102     |
| Interviewer race = nonwhite                                 | -0.431     | 0.535     | 0.349      | 0.596     |
| Interviewer sex = female                                    | 0.880      | 0.559     | 0.829      | 0.642     |
| Interviewer shift = weekday evening                         | -0.932     | 0.742     | -0.210     | 0.627     |
| Version B of Questionnaire                                  |            |           | 1.247*     | 0.540     |
| Cell phone interview  |            |           | 1.882****  | 0.189     |
| # questions with minor changes during reading (centered)    | -0.081**** | 0.021     | -0.009     | 0.019     |
| # questions with major changes during reading (centered)    | -0.060     | 0.040     | -0.069**   | 0.024     |
| # questions with directive probes (centered)                | 0.360****  | 0.054     | 0.368****  | 0.048     |
| # questions with inappropriate verification (centered)      | 0.135**    | 0.044     | 0.041      | 0.041     |
| # questions with interruptions (centered)                   | 0.288****  | 0.027     | 0.325****  | 0.022     |
| Intercept   | 12.501**** | 0.969     | 12.686**** | 0.709     |
| Variance components   |            |           |            |           |
| Interviewer   | 0.899      | 0.395     | 1.597      | 0.493     |
| Residual  | 5.186      | 0.361     | 4.383      | 0.210     |
| LR test for variance components                             | 27.08      | ****      | 159.72     | ****      |
| Model Fit Statistics  |            |           |            |           |
| Log likelihood  | -990.31    |           | -1966.20   |           |
| Wald Chi2   | 437.51     | ****      | 795.61     | ****      |
| # respondents   | 435        |           | 896        |           |
| # interviewers  | 19         |           | 26         |           |

Note: +p&lt;.10, \*p&lt;.05, \*\*p&lt;.01, \*\*\*p&lt;.001, \*\*\*\*p&lt;.0001



Table A20B.5 Coefficients and Standard Errors from Multilevel Linear Regression Models Predicting Total Duration, Including All Interviewer Behaviors, WLT1 and WLT2

| Interview length – all behaviors                            | WLT1       |           | WLT 2      |           |
|---|------------|-----------|------------|-----------|
|   | Coef.      | Std. Err. | Coef.      | Std. Err. |
| Log(Order)  | -0.441**   | 0.139     | -0.607**** | 0.082     |
| Overall experience = 1+ year                                | 0.218      | 0.775     | 0.739      | 0.634     |
| Interviewer Cooperation Rate (Centered)                     | -0.226     | 0.209     | -0.107+    | 0.059     |
| Respondent sex = female                                     | -0.539*    | 0.210     | -0.266*    | 0.135     |
| Respondent age (centered)                                   | 0.017*     | 0.008     | 0.010*     | 0.005     |
| Respondent education = HS degree or less                    | -0.485*    | 0.248     | -0.314+    | 0.162     |
| Respondent race = nonwhite                                  | 0.188      | 0.174     | 0.206**    | 0.077     |
| Respondent employment = FT or PT employed                   | 1.313****  | 0.351     | 0.623*     | 0.306     |
| Family income (8 categories)                                | -0.028     | 0.059     | -0.088*    | 0.035     |
| HH size (ref=1 person)                                      |            |           |            |           |
| 2   | -0.585*    | 0.251     | -0.050     | 0.184     |
| 3   | -0.621+    | 0.356     | 0.254      | 0.240     |
| 4   | -0.394     | 0.472     | 0.451      | 0.284     |
| 5 and more  | 0.068      | 0.512     | 0.490+     | 0.292     |
| R has children at home                                      | 0.013      | 0.358     | -0.620**   | 0.198     |
| R engaged in volunteer activity during last 12 months       | 0.528*     | 0.214     | 0.085      | 0.142     |
| Interview completed at first contact                        | -0.099     | 0.292     | -0.066     | 0.261     |
| Number of call attempts (centered)                          | 0.050      | 0.085     | -0.010     | 0.052     |
| Time of day interview completed                             |            |           |            |           |
| Weekend evening   | 0.141      | 0.356     | -0.439     | 0.261     |
| Weekend day   | -0.512     | 0.347     | -0.022     | 0.194     |
| Item nonresponse rate (centered)                            | 0.033      | 0.028     | 0.070**    | 0.024     |
| Ever refused  | -0.141     | 0.445     | -0.398     | 0.328     |
| Skip triggered due to follow-up questions on computer usage | 0.889**    | 0.292     | 0.035      | 0.201     |
| Number of answer changes                                    | 0.245+     | 0.126     | 0.476****  | 0.094     |
| Interviewer race = nonwhite                                 | -0.734     | 0.612     | 0.573      | 0.596     |
| Interviewer sex = female                                    | 0.251      | 0.646     | 0.947      | 0.648     |
| Interviewer shift = weekday evening                         | -1.235     | 0.835     | -0.194     | 0.627     |
| Version B of Questionnaire                                  |            |           | 0.701      | 0.553     |
| Cell phone interview  |            |           | 1.874****  | 0.172     |
| # questions with exact reading (centered)                   | -0.042     | 0.035     | 0.077*     | 0.037     |
| # questions with adequate probes (centered)                 | 0.309****  | 0.032     | 0.216****  | 0.024     |
| # questions with adequate verification (centered)           | -0.004     | 0.024     | 0.012      | 0.017     |
| # questions with adequate clarification (centered)          | 0.311****  | 0.075     | 0.326**    | 0.095     |
| # questions with adequate feedback (centered)               | 0.009      | 0.018     | 0.030*     | 0.012     |
| # questions with stutters during reading (centered)         | -0.055     | 0.062     | 0.123*     | 0.048     |
| # questions with any disfluencies (centered)                | 0.016      | 0.026     | -0.014     | 0.016     |
| # questions with pleasant talk (centered)                   | 0.267*     | 0.111     | 0.207****  | 0.059     |
| # questions with task-related feedback (centered)           | 0.267**    | 0.097     | 0.041      | 0.054     |
| # questions with laughter (centered)                        | 0.096*     | 0.045     | 0.098****  | 0.026     |
| # questions with minor changes during reading (centered)    | -0.101**   | 0.037     | 0.063      | 0.040     |
| # questions with major changes during reading (centered)    | -0.068     | 0.046     | -0.011     | 0.040     |
| # questions with directive probes (centered)                | 0.224****  | 0.049     | 0.306****  | 0.044     |
| # questions with inappropriate verification (centered)      | 0.098*     | 0.039     | 0.090*     | 0.038     |
| # questions with interruptions (centered)                   | 0.115****  | 0.028     | 0.169****  | 0.023     |
| Intercept   | 13.338**** | 1.027     | 13.312**** | 0.714     |

Variance components

|                                 |         |       |          |       |
|---------------------------------|---------|-------|----------|-------|
| Interviewer                     | 1.237   | 0.538 | 1.594    | 0.518 |
| Residual                        | 3.768   | 0.263 | 3.555    | 0.171 |
| LR test for variance components | 37.23   | ****  | 123.52   | ****  |
| Model Fit Statistics            |         |       |          |       |
| Log likelihood                  | -925.91 |       | -1874.85 |       |
| Wald Chi2                       | 735.26  | ****  | 1179.68  | ****  |
| # respondents                   | 435     |       | 896      |       |
| # interviewers                  | 19      |       | 26       |       |

Note: +p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001, \*\*\*\*p<.0001

**Appendix 20C**

Mediation Models for Each Individual Interviewer Behavior

**Table A20C.1 Indirect, Direct And Total Effect of each Interviewer Behavior on Interview Length through Interview Order, Work and Leisure Today 1**

|                                    | Individual behaviors |               |              |                                     | Groups of behaviors |               |              |                                     | All behaviors   |               |              |                                     |
|------------------------------------|----------------------|---------------|--------------|-------------------------------------|---------------------|---------------|--------------|-------------------------------------|-----------------|---------------|--------------|-------------------------------------|
|                                    | Indirect effect      | Direct effect | Total effect | Proportion of total effect mediated | Indirect effect     | Direct effect | Total effect | Proportion of total effect mediated | Indirect effect | Direct effect | Total effect | Proportion of total effect mediated |
| <b>Standardized</b>                |                      |               |              |                                     |                     |               |              |                                     |                 |               |              |                                     |
| <b>Interviewing Behaviors</b>      |                      |               |              |                                     |                     |               |              |                                     |                 |               |              |                                     |
| Exact question reading             | 0.0050               | -0.4656       | -0.4606      | -1.1%                               | 0.0025              | -0.6301       | -0.6276      | -0.4%                               | -0.0138         | -0.4457       | -0.4595      | 3.0%                                |
| Nondirective probes                | 0.1019               | -0.5818       | -0.4799      | -21.2%                              | 0.0845              | -0.6301       | -0.5456      | -15.5%                              | 0.1001          | -0.4457       | -0.3456      | -29.0%                              |
| Exact verification                 | 0.0245               | -0.4820       | -0.4575      | -5.4%                               | 0.0019              | -0.6301       | -0.6282      | -0.3%                               | -0.0001         | -0.4457       | -0.4458      | 0.0%                                |
| Appropriate clarification          | 0.1094               | -0.5740       | -0.4646      | -23.5%                              | 0.0564              | -0.6301       | -0.5737      | -9.8%                               | 0.0377          | -0.4457       | -0.4080      | -9.2%                               |
| Appropriate feedback               | -0.0289              | -0.4344       | -0.4632      | 6.2%                                | -0.0284             | -0.6301       | -0.6585      | 4.3%                                | 0.0032          | -0.4457       | -0.4425      | -0.7%                               |
| <b>Inefficiency Behaviors</b>      |                      |               |              |                                     |                     |               |              |                                     |                 |               |              |                                     |
| Stuttering during question reading | -0.0610              | -0.3999       | -0.4609      | 13.2%                               | 0.0145              | -0.2183       | -0.2038      | -7.1%                               | 0.0099          | -0.4457       | -0.4358      | -2.3%                               |
| Disfluencies                       | -0.1554              | -0.2991       | -0.4544      | 34.2%                               | -0.0305             | -0.2183       | -0.2488      | 12.3%                               | -0.0103         | -0.4457       | -0.4561      | 2.3%                                |
| Pleasant talk                      | -0.0273              | -0.4313       | -0.4586      | 5.9%                                | 0.0100              | -0.2183       | -0.2083      | -4.8%                               | 0.0112          | -0.4457       | -0.4345      | -2.6%                               |
| Task-related feedback              | -0.0793              | -0.3804       | -0.4597      | 17.3%                               | -0.0257             | -0.2183       | -0.2440      | 10.5%                               | -0.0303         | -0.4457       | -0.4761      | 6.4%                                |
| Laughter                           | -0.1301              | -0.3297       | -0.4598      | 28.3%                               | -0.0541             | -0.2183       | -0.2724      | 19.9%                               | -0.0205         | -0.4457       | -0.4662      | 4.4%                                |
| <b>Nonstandardized Behaviors</b>   |                      |               |              |                                     |                     |               |              |                                     |                 |               |              |                                     |
| Minor changes in question reading  | -0.0050              | -0.4556       | -0.4606      | 1.1%                                | -0.0083             | -0.3978       | -0.4061      | 2.0%                                | -0.0357         | -0.4457       | -0.4814      | 7.4%                                |
| Major changes in question reading  | -0.0137              | -0.4470       | -0.4607      | 3.0%                                | 0.0028              | -0.3978       | -0.3950      | -0.7%                               | -0.0078         | -0.4457       | -0.4536      | 1.7%                                |
| Directive probes                   | 0.1472               | -0.6171       | -0.4699      | -31.3%                              | 0.1144              | -0.3978       | -0.2835      | -40.3%                              | 0.0447          | -0.4457       | -0.4011      | -11.1%                              |
| Inadequate verification            | -0.1359              | -0.3228       | -0.4587      | 29.6%                               | -0.0753             | -0.3978       | -0.4732      | 15.9%                               | -0.0371         | -0.4457       | -0.4829      | 7.7%                                |
| Interruptions                      | -0.0801              | -0.3835       | -0.4636      | 17.3%                               | -0.0879             | -0.3978       | -0.4858      | 18.1%                               | -0.0285         | -0.4457       | -0.4742      | 6.0%                                |

Note: Each line represents a model where the individual behavior is examined as a mediator for interview order on interview length. The “individual behaviors” models include only one interviewer behavior. The “groups of behaviors” models include all of the other behaviors in the group as control variables. The “all behaviors” models include all of the other behaviors as control variables. All models control for respondent and interviewer characteristics.

**Table A20C.2 Indirect, Direct And Total Effect of each Interviewer Behavior on Interview Length through Interview Order, Work and Leisure Today 2**

|                                    | Individual behaviors |               |              |                                     | Blocks of behaviors |               |              |                                     | All behaviors   |               |              |                                     |
|------------------------------------|----------------------|---------------|--------------|-------------------------------------|---------------------|---------------|--------------|-------------------------------------|-----------------|---------------|--------------|-------------------------------------|
|                                    | Indirect effect      | Direct effect | Total effect | Proportion of total effect mediated | Indirect effect     | Direct effect | Total effect | Proportion of total effect mediated | Indirect effect | Direct effect | Total effect | Proportion of total effect mediated |
| <b>Standardized</b>                |                      |               |              |                                     |                     |               |              |                                     |                 |               |              |                                     |
| <b>Interviewing Behaviors</b>      |                      |               |              |                                     |                     |               |              |                                     |                 |               |              |                                     |
| Exact question reading             | -0.0003              | -0.8530       | -0.8533      | 0.0%                                | -0.0001             | -0.6847       | -0.6847      | 0.0%                                | -0.0019         | -0.6060       | -0.6080      | 0.3%                                |
| Nondirective probes                | -0.0833              | -0.7645       | -0.8478      | 9.8%                                | -0.0056             | -0.6847       | -0.6903      | 0.8%                                | -0.0120         | -0.6060       | -0.6180      | 1.9%                                |
| Exact verification                 | -0.0266              | -0.8230       | -0.8495      | 3.1%                                | -0.0102             | -0.6847       | -0.6948      | 1.5%                                | -0.0030         | -0.6060       | -0.6090      | 0.5%                                |
| Appropriate clarification          | -0.0128              | -0.8346       | -0.8474      | 1.5%                                | -0.0031             | -0.6847       | -0.6878      | 0.5%                                | -0.0036         | -0.6060       | -0.6097      | 0.6%                                |
| Appropriate feedback               | -0.1223              | -0.7276       | -0.8499      | 14.4%                               | -0.0613             | -0.6847       | -0.7459      | 8.2%                                | -0.0224         | -0.6060       | -0.6285      | 3.6%                                |
| <b>Inefficiency Behaviors</b>      |                      |               |              |                                     |                     |               |              |                                     |                 |               |              |                                     |
| Stuttering during question reading | -0.0565              | -0.7954       | -0.8519      | 6.6%                                | -0.0044             | -0.7068       | -0.7112      | 0.6%                                | -0.0254         | -0.6060       | -0.6314      | 4.0%                                |
| Disfluencies                       | -0.1002              | -0.7462       | -0.8464      | 11.8%                               | -0.0145             | -0.7068       | -0.7214      | 2.0%                                | -0.0008         | -0.6060       | -0.6069      | 0.1%                                |
| Pleasant talk                      | -0.0320              | -0.8214       | -0.8534      | 3.8%                                | -0.0012             | -0.7068       | -0.7080      | 0.2%                                | -0.0032         | -0.6060       | -0.6092      | 0.5%                                |
| Task-related feedback              | -0.0276              | -0.8267       | -0.8543      | 3.2%                                | -0.0061             | -0.7068       | -0.7129      | 0.9%                                | -0.0014         | -0.6060       | -0.6075      | 0.2%                                |
| Laughter                           | -0.0658              | -0.7851       | -0.8509      | 7.7%                                | -0.0222             | -0.7068       | -0.7290      | 3.0%                                | -0.0040         | -0.6060       | -0.6100      | 0.7%                                |
| <b>Nonstandardized Behaviors</b>   |                      |               |              |                                     |                     |               |              |                                     |                 |               |              |                                     |
| Minor changes in question reading  | 0.0067               | -0.8600       | -0.8533      | -0.8%                               | -0.0033             | -0.7329       | -0.7361      | 0.4%                                | 0.0019          | -0.6060       | -0.6042      | -0.3%                               |
| Major changes in question reading  | -0.0021              | -0.8512       | -0.8533      | 0.2%                                | -0.0192             | -0.7329       | -0.7521      | 2.6%                                | -0.0005         | -0.6060       | -0.6065      | 0.1%                                |
| Directive probes                   | -0.0402              | -0.8081       | -0.8483      | 4.7%                                | -0.0105             | -0.7329       | -0.7434      | 1.4%                                | -0.0042         | -0.6060       | -0.6102      | 0.7%                                |
| Inadequate verification            | -0.0342              | -0.8198       | -0.8540      | 4.0%                                | -0.0085             | -0.7329       | -0.7413      | 1.1%                                | -0.0199         | -0.6060       | -0.6260      | 3.2%                                |
| Interruptions                      | -0.0762              | -0.7803       | -0.8565      | 8.9%                                | -0.0540             | -0.7329       | -0.7869      | 6.9%                                | 0.0167          | -0.6060       | -0.5893      | -2.8%                               |

Note: Each line represents a model where the individual behavior is examined as a mediator for interview order on interview length. The “individual behaviors” models include only one interviewer behavior. The “groups of behaviors” models include all of the other behaviors in the group as control variables. The “all behaviors” models include all of the other behaviors as control variables. All models control for respondent and interviewer characteristics.