

July 11, 2008

NOTE TO THE REVIEWER OMB No. 1220-0141
OF: Cognitive and Psychological Research

FROM: Jennifer Edgar
Research Psychologist
Office of Survey Methods Research (OSMR)
SUBJECT: Submission of Materials for the *Web Survey Design*
Eye Tracking Study

Please accept the enclosed materials for approval under the OMB clearance package “Cognitive and Psychological Research.” In accordance with our agreement with OMB, I am submitting a brief description of the research, and the materials to be used in the research.

The total estimated respondent burden hours for the study are 15 hours.

If there are any questions regarding this project, please contact Jennifer Edgar at (202) 691-7528.

I. Introduction

This study has several research objectives, each will be investigated using eye tracking technology. The first objective is to investigate the impact of the layout of response options on respondent behavior in self-administered forms. Numerous studies have demonstrated context effects (Tourangeau, Rips & Raskinski, 2000; Couper, Conrad & Tourangeau, 2004, 2007; etc.), and it is clear that the way response options are presented can have an impact on response. We seek to explore these findings using eye tracking data, to the presentation of response options impacts the way respondents look at them; for example if they spend more time looking at the response options when they're presented horizontally, or if they seem to skip some options when presented vertically.

The second research objective seeks to explore respondent eye movement in relation to a progress indicator. Although there are mixed results from past research on the impact of progress indicators (i.e., Conrad, Couper, Tourangeau & Baker, 2003; Heerweghk, 2004), they are generally recommended when designing web surveys (Dilman, Tortora & Bowker, 1999). We seek to explore this recommendation, to identify when and for how long respondents look at progress indicators, and if the presence of a progress indicator affects respondents' perception of survey length.

Finally, we will investigate a few general survey designs, aimed at using respondents' eye movements to add insight into survey design principles. The designs include a survey question formatted in a grid to see how respondents interact with the headings, questions and format in general; questions with similar stems and response options to see if respondents' eye movements change as they move through the series, and questions with long lists of response options to see if there is evidence that respondents skim later items in the lists, or stop looking once they have found their response. We will also use questions with 'other' response options to see if respondents spend more or less time looking at response options when an "other" option is offered. A few questions with long lists of response options will be included, to investigate the possibility that respondents stop looking at the list of options once they've selected one. The last question investigates respondent's eye behavior for a series of similar questions, looking to see if they spend the same amount of time looking at the earlier questions as later ones, or if it appears they start to skim the later questions.

In summary, using eye tracking data we will investigate the following questions:

1. What impact does formatting of response options (i.e. horizontal, vertical or drop down lists) have on respondent visual behavior?

2. How do respondents interact visually with progress indicators?
3. How do respondents scan and look at questions presented in a grid?
4. Does the presence of an ‘other’ response option change the amount of time respondents spend looking at the list of options?
5. For long list of response options, do respondents look at the entire list of options or do they stop looking once they’ve selected an option?
6. In a series of similar questions, do respondents spend the same amount of time looking at the early and late questions?

II. Data Collection Methodology

Procedure

Thirty respondents will be recruited from the OSMR database and brought into the cognitive lab. They will be randomly assigned one of six survey versions, as shown in Table 1. The survey versions are shown in Appendix A.

For each of the survey versions, respondents will be randomly assigned a version with or without an “other” response option to the relevant questions.

Table 1. Sample Sizes by Survey Design

	Progress Indicator	No Progress Indicator
Horizontal responses	5	5
Vertical responses	5	5
Drop down Responses	5	5

Respondents will be informed that they are in the lab to answer a survey about a range of general topics. They will also be told that we will be measuring their eye movements as they work on the computer, in order to evaluate the formatting of the survey. Respondents will be calibrated on the eye tracker and the survey website will then load automatically. The researcher will leave the room as the respondent completes the survey.

Once respondent have finished the survey, they will be given a debriefing questionnaire designed to evaluate their perceptions of the survey (Attachment B).

Survey Questions

The survey questions were selected with the intention of being relevant to all respondents, as well as having the design or layout features needed to answer the research questions. Most questions were chosen from the 2008 General Social Survey, and the remaining

were either written specifically for this project or adapted from on-going BLS surveys such as the Consumer Expenditure Survey or the Current Population Survey. In addition, a few demographic questions were included to gather background data on the respondents.

Analysis

Eye tracking data will be analyzed in multiple ways to explore each of the research questions. Table 2 shows the list of research questions and the eye tracking data that will be used to investigate them.

Table 2. Eye Tracking Data to be used to evaluate research questions.

Research Question	Eye Tracking Data
1. What impact does formatting of response options (i.e. horizontal, vertical or drop down lists) have on respondent visual behavior?	<ul style="list-style-type: none"> ▪ How long respondents look at response options, compared across versions
2. How do respondents interact visually with progress indicators?	<ul style="list-style-type: none"> ▪ Summary of times looked at progress indicator across respondents ▪ Comparison of AOI by time spent in survey across respondents
3. How do respondents scan and look at questions presented in a grid?	<ul style="list-style-type: none"> ▪ Use gaze replay and hot spot analysis to qualitatively describe behavior
4. Does the presence of an ‘other’ response option change the amount of time respondents spend looking at the list of options?	<ul style="list-style-type: none"> ▪ How long respondents look at response options compared across versions
5. For long list of response options, do respondents look at the entire list of options or do they stop looking once they’ve selected an option?	<ul style="list-style-type: none"> ▪ Using the gaze replay, code if/when respondents stopped looking at list and compare coded gaze replays across versions
6. In a series of similar questions, do respondents spend the same amount of time looking at the early and late questions?	<ul style="list-style-type: none"> ▪ How long respondents look at each individual question in the series, time spent in each compared per person

IV. Burden Hours

This study will take place in the cognitive lab, and will involve up to 30 respondents, and they are expected to be in the lab completing both the survey and debriefing form for approximately thirty minutes. The total estimated respondent burden hours for the study are 15 hours.

V. Data Confidentiality

Respondents will be informed as to the voluntary nature of the study. Respondents will also be informed that the study will be used to add to general survey methodology knowledge. Information related to this study will not be released to the

public in any way that would allow identification of individuals except as prescribed under the conditions of the Privacy Act Notice. A copy of the consent form is included as Attachment C.

VI. Attachments

<u>Attachment A:</u>	Survey Versions
<u>Attachment B:</u>	Debriefing Questionnaire
<u>Attachment C:</u>	Consent Form
<u>Attachment D</u>	References

Attachment A: Survey Questions

(Note: Response options for questions 1 through 5 will be formatted either horizontally, vertically, or in a drop down box, depending on the treatment condition)

1. On the whole, how satisfied are you with the work you do – would you say you are very satisfied, moderately satisfied, a little dissatisfied, or very dissatisfied?

Very satisfied.....1
Moderately satisfied.....2
A little dissatisfied.....3
Very dissatisfied.4

2. We are interested in how people are getting along financially these days. So far as you and your family are concerned, would you say that you are pretty well satisfied with your present financial situation, more or less satisfied, or not satisfied at all?

Pretty well satisfied.....1
More or less satisfied.....2
Not satisfied at all.....3

3. During the last few years, has your financial situation been getting better, getting worse, or has it stayed the same?

Getting better.....1
Getting worse.....2
Stayed the same.3

4. Compared with American families in general, would you say your family income is – far below average, below average, average, above average, or far above average?

Far below average.....1
Below average.....2
Average3
Above average.....4
Far above average.....5

5. Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not to happy?

Very happy.....1
Pretty happy.....2
Not too happy.....3

6. Which answer comes closest to how often you do the following things...

	Almost every day	Once or twice a week	Several times a month	About once a month	Several times a year
Arrive late to work					
Arrive early to work					
Work longer than your scheduled shift					
Use earned vacation leave					
Use earned sick leave					

7. Thinking about your local government, would you say that it should take measures to improve traffic?

- Yes
- No

7a. Thinking about your local government, would you say that it should take measures to improve living conditions?

- Yes
- No

7b. Thinking about your local government, would you say that it should take measures to improve the health care system?

- Yes
- No

8. Thinking about your state government, would you say that it should take measures to improve traffic?

- Yes
- No

8a. Thinking about your state government, would you say that it should take measures to improve living conditions?

- Yes
- No

8b. Thinking about your state government, would you say that it should take measures to improve the health care system?

- Yes
- No

9. Thinking about your federal government, would you say that it should take measures to improve traffic?

- Yes
- No

9a. Thinking about your federal government, would you say that it should take measures to improve living conditions?

- Yes
- No

9b. Thinking about your federal government, would you say that it should take measures to improve the health care system?

Yes

No

10. Thinking about local private organizations, would you say that they should take measures to improve traffic?

Yes

No

10a. Thinking about your local private organizations, would you say that they should take measures to improve living conditions?

Yes

No

10b. Thinking about your local private organizations, would you say that they should take measures to improve the health care system?

Yes

No

(Note: the presence of an “other” options for questions 12 through 14 will vary depending on the treatment condition)

11. What is your marital status?

Married

Widowed

Divorced

Separated

Never married

Other specify

12. What is the highest level of school you have completed or the highest degree you have obtained?

Less than high school

High school

Some college

Associates degree

Bachelors degree

Master's degree

Professional degree

Other

13. Which of the following categories best describes the job in which you received the most earnings during the last 12 months?

Teacher

Administrative support, including clerical

Sales, retail

Sales, business goods and services

Technician

Protective service

Private household service

Machine operator, assembler, inspector

Transportation operator

Handler, helper, laborer

Mechanic, repairer, precision production

Armed Forces

Other

14. How long have you been employed in your current position?

Less than one year

- One to two years
- Three to five years
- Six to ten years
- Eleven to twenty years
- More than twenty years
- Other

15. During the last year, which best describes your employment situation:
- Employee of a private-for-profit company or business or of an individual, for wages, salary or commissions
 - Employee of a private-not-for-profit, tax exempt or charitable organization
 - Local government employee
 - State government employee
 - Federal government employee
 - Self employed in own not incorporated business, professional practice or farm
 - Self employed in own incorporated business, professional practice or farm
 - Working without pay in family business or farm

16. Which of the following types of health insurance or health coverage plans are you currently covered by:
- Insurance through current or former employer or union
 - Insurance purchased directly through an insurance company
 - Medicare, for people 65 or older, or those with certain disabilities
 - Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability
 - VA
 - TRICARE or other military health care
 - Indian health service
 - Some other type of health insurance

17. Which best describes your primary residence?
- A mobile home
 - A one-family house detached from any other house
 - A one-family house attached to one or more houses
 - A building with 2 apartments
 - A building with 3 or 4 apartments
 - A building with 5 to 9 apartments
 - A building with 10 to 19 apartments
 - A building with 20 to 49 apartments
 - A building with 50 or more apartments
 - Boat, RV, van, etc.

18. Do you own a home computer?
- Yes
 - No (skip to end of survey)

19. How often do you use your home computer?
- At least once a day
 - 2-3 times a week
 - 4-6 times a week
 - Once a week
 - Less than once a week

20. At home, what do you use the computer for (check all that apply)
- Browsing the internet

Emailing
Word processing
Playing games
Other

Attachment B: Debriefing Questionnaire

Please answer the following questions about the survey you just completed.

1. How long do you feel this survey was?

1	2	3	4	5
Far too short	Too short	Just right	Too long	Far too long

2. How long do you think it took you to complete the survey: _____

3. How easy or difficult was the survey to complete?

1	2	3	4	5
Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult

4. How interesting were the survey questions to you?

1	2	3	4	5
Very interesting		Neither interesting nor un-interesting		Not at all interesting

5. How useful did you find the progress indicator to be? [insert graphic]

1	2	3	4	5
Very useful	Useful	Neither useful nor non-useful	Non-useful	Very non-useful

Attachment C: Consent Form

Consent Form

The Bureau of Labor Statistics (BLS) is conducting research to increase the quality of BLS surveys. This study is intended to suggest ways to improve the procedures the BLS uses to collect survey data.

The BLS, its employees, agents, and partner statistical agencies, will use the information you provide for statistical purposes only and will hold the information in confidence to the full extent permitted by law. In accordance with the Confidential Information Protection and Statistical Efficiency Act of 2002 (Title 5 of Public Law 107-347) and other applicable Federal laws, your responses will not be disclosed in identifiable form without your informed consent. The Privacy Act notice on the back of this form describes the conditions under which information related to this study will be used by BLS employees and agents.

During this research you may be audio and/or videotaped, or you may be observed. If you do not wish to be taped, you still may participate in this research.

We estimate it will take you an average of 60 minutes to participate in this research (ranging from 50 minutes to 70 minutes). Your participation in this research project is voluntary, and you have the right to stop at any time. If you agree to participate, please sign below.

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. OMB control number is 1220-0141, and expires 02/28/09.

I have read and understand the statements above. I consent to participate in this study.

Participant's signature

Date

Participant's printed name

Researcher's signature

OMB Control Number: 1220-0141
Expiration Date: 02/28/09

PRIVACY ACT STATEMENT

In accordance with the Privacy Act of 1974, as amended (5 U.S.C. 552a), you are hereby notified that this study is sponsored by the U.S. Department of Labor, Bureau of Labor Statistics (BLS), under authority of 29 U.S.C. 2. Your voluntary participation is important to the success of this study and will enable the BLS to better understand the behavioral and psychological processes of individuals, as they reflect on the accuracy of BLS information collections. The BLS, its employees, agents, and partner statistical agencies, will use the information you provide for statistical purposes only and will hold the information in confidence to the full extent permitted by law. In accordance with the Confidential Information Protection and Statistical Efficiency Act of 2002 (Title 5 of Public Law 107-347) and other applicable Federal laws, your responses will not be disclosed in identifiable form without your informed consent. The BLS may release individually identifiable information to individuals designated as agents of the BLS in accordance with Public Law 107-347 to perform exclusively statistical activities. Individuals designated as agents of the BLS may be imprisoned for not more than 5 years or fined not more than \$250,000 or both for any knowing and willful disclosure of respondent information to unauthorized persons. Such designated agents may include individuals from other sponsoring agencies; to contractors, grantees, and their employees or volunteers who are working on this study for the BLS and who need access to the information; or to the National Archives and Records Administration or the General Services Administration for records management purposes. Under written agreements to protect the confidentiality and security of individually identifiable information, the BLS may provide individually identifiable information to other researchers designated as agents of the BLS to conduct statistical research projects that further the mission and functions of the BLS.

Attachment D: References

Couper, M., Conrad, F., & Tourangeau, R., (2007). Visual context effects in web surveys. *Public Opinion Quarterly*, 71: 623-634.

Conrad, F., Couper, M., Tourangeau, R., & Baker, R. (2003). Use and non-use of clarification features in web surveys, Presented at the American Association for Public Opinion Research Annual Conference, Nashville TN.

Couper, M., Tourangeau, R., & Kenyon, K. (2004). Picture this! An analysis of visual effects in web surveys. *Public Opinion Quarterly*, 68(2): 255-266.

Dillman, D., Tortora, R. D., & Bowker D. (1999) Principles for conducting web surveys. Obtained April 17, 2008 from www.sesrc.wsu.edu/dillman/papers/websurveyppr.pdf

Heerweghk (2004). Using progress indicators in web surveys. Paper presented at the annual meeting of the American Association for Public Opinion Research, Phoenix, Arizona.

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The Psychology of Survey Response*. Cambridge, UK: Cambridge University Press.