

Bureau of Engraving and Printing Tactile Cues Study: Final interview Protocol

INTRODUCTION

Thank you for agreeing to meet with us today. Let me tell you what this is about.

I work at Westat, a research company in Maryland. We conduct research on many different topics for various government agencies. This particular project is for the U.S. Bureau of Engraving and Printing, the federal government agency responsible for printing the paper money we use in this country.

The Bureau of Engraving and Printing is planning to add symbols to paper money so that blind people can use their sense of touch to tell apart the different bills, that is, determine whether the bill is a \$5, \$10, or \$20 bill for example. They are still doing research, trying to find the best way to make these symbols. They are studying different materials and methods for making those symbols – *Westat is helping them with this, and that's why we have invited you here today.*

I'll be asking you to handle different bills with symbols on them and we'll see how well you can tell different bills apart, and things like that, okay?

Any questions, so far?

INFORMED CONSENT

Before we get into that, I should make you aware of a few things.

- First, I want to assure you that everything we cover in the interview will be treated as Non Public Information – I doubt that we'll be getting into anything very personal, but regardless only a few people actually working on the project will have access to the information you share with us today, and we won't be using your name in any reports. This information will however be subject to the Freedom of Information Act.
- Obviously, your participation in this study is completely voluntary, and you can decide to end the interview at any time.
- If it's OK with you, we would like to audio-record the interview, just so that we can review it later if needed – this is very helpful to us in analyzing the results. The recordings will be destroyed by June, 2014.
- *One/two of my coworkers and some of our colleagues from the Bureau of Engraving and Printing are observing the interview, to see for themselves how people are reacting to the different kinds of symbols being considered.*

- We expect this to take about half an hour and you will get \$45 as a reimbursement for any expenses you may have had.

Today I have with me many bills with symbols on them. The symbols are in the form of rectangles in the upper-left corner of the bill, which you can feel with your fingers. I have several different sets of these bills. These sets differ with respect to how the rectangles were made. You are going to help us study an important question—what is the best way to make these symbols that will go on the bills?

INTRODUCTION TO RESPONDENT TASKS

In all tasks, bills are always presented with the symbols up and to the respondent's left side.

So what I'm going to do is run you through a series of tasks with these test bills. For each task, we'll do it several times because I'm going to be handing you different bills and asking you questions about them. Before we start the tasks...

- Here is one of the bills we will be using (*3 symbols*). You should feel three small rectangles in the upper left-corner. Now here is another one (*two symbols separated*). You should feel two rectangles, but spaced apart. In addition to the rectangles you'll feel in the upper-left corner, you'll notice a label that we've stuck on the right-hand side. That's just a label that makes it easier for me to tell the bills apart, but you can ignore it.
- In many of the tasks, I'll be asking you to hold a bill for a certain number of seconds (like 5 seconds or 3 seconds). When we do this, we'll start with you holding the bill the exact same way each time. This involves holding the bill with your right hand between thumb and forefinger (*pause for R to get into this position*), and with your left-hand the thumb and forefinger is in the lower corner of the bill, away from the rectangles. And we'd like you to keep the bill up off of the table. This is what we call the starting position, okay?
- I'm using an electronic timer to keep track of the number of seconds. You'll hear it make one beep when I start the timer and then repeated beeps when the time is up. And when you hear that your time is up, I'd like for you to immediately drop the bill on the table, and I'll move it out of the way before handing you another bill. So let's practice - I have the timer set for 3 seconds (*start timer*).
- As we go through these tasks, it may feel a lot like a test. But understand that we're not testing you - we're testing these sets of bills we have. Some of these tasks may seem very easy, some may be harder. We expect people may make mistakes - this is actually what will help determine which set of bills is best.

The test bills are arranged on the table in front of the interviewer in this way:

| | | |
|-----|-----|--------------------------------|
| A1 | B1 | C1 |
| A1M | B1M | C1M (if 2-dollar bill is used) |
| A2 | B2 | C2 |
| A3 | B3 | C3 |
| A4 | B4 | C4 |
| A2S | B2S | C2S |
| | R1 | |

R1 means a new \$1 bill with no tactile cues.

NOTE: If at any point R starts feeling the bill before the time interval begins, pause and say:

Stop, please. You are starting a little too quickly. Please don't start feeling the bill until you hear the beep signaling that I started the timer.

NOTE: If at any point R is still feeling the bill after the time interval ends, pause and say:

I noticed you continued feeling the bill for a little bit beyond the 3/5 seconds. It's important for the study that you drop the bill immediately when you hear the repeated beeps, okay?

Task 1: Introductory task to familiarize the respondents with the banknotes and testing process

***ENTER 5 SECONDS INTO TIMER*

For this first task, I'll give you a bill to hold in the starting position. You will use your fingers to find the symbols. After 5 seconds, I'd like you to drop the bill and tell me whether or not the bill had any rectangles on it. All right? Let's start - here's the first bill.

[Make sure R is in the correct starting position for each trial]

Did the bill have any rectangles on it? (Please say 'yes' if the bill has any rectangles, no matter how many, say 'no' if the bill has no rectangles on it at all).

| | Correct | Incorrect |
|-----|---------|-----------|
| A4 | ● | ● |
| A2S | ● | ● |
| R1 | ● | ● |
| B2 | ● | ● |
| C1 | ● | ● |
| R1 | ● | ● |

Task 2: Banknotes one at a time, 5 seconds: accuracy

****ENTER 5 SECONDS INTO TIMER**

In this task, I'll be handing you different bills. Each of these bills will have 1, 2, 3, or 4 rectangles on it, or it may have no rectangles at all on it. If it has 2 rectangles, they may be close together or spaced apart. You'll drop the bill after 5 seconds and tell me how many rectangles are on it.

Here's the first bill. How many rectangles were on it?

[Make sure R is in the correct starting position for each trial]

| | Correct | Incorrect |
|-----|---------|-----------|
| B2S | ● | ● |
| R1 | ● | ● |
| C4 | ● | ● |
| B4 | ● | ● |
| C1 | ● | ● |
| C2S | ● | ● |
| B1 | ● | ● |
| C2 | ● | ● |
| A1 | ● | ● |
| A3 | ● | ● |
| C3 | ● | ● |
| A2 | ● | ● |
| A2s | ● | ● |
| B3 | ● | ● |
| B2 | ● | ● |
| A4 | ● | ● |

Task 3: Banknotes one at a time, 3 seconds: accuracy

****ENTER 3 SECONDS INTO TIMER**

This task will be much like the last one, only this time you'll drop the bill after 3 seconds. Then tell me how many rectangles are on it, okay?

[Make sure R is in the correct starting position for each trial]

How many rectangles were on it?

| | Correct | Incorrect |
|-----|---------|-----------|
| A3 | ● | ● |
| C4 | ● | ● |
| C2S | ● | ● |
| A2s | ● | ● |
| B4 | ● | ● |
| C1 | ● | ● |
| B3 | ● | ● |
| C2 | ● | ● |
| A2 | ● | ● |
| B1 | ● | ● |
| A1 | ● | ● |
| B2S | ● | ● |
| C3 | ● | ● |
| A4 | ● | ● |
| B2 | ● | ● |
| R1 | ● | ● |

Task 4: Banknotes two at a time, preference

****NO TIMING ON THIS TASK**

For this task, I will hand you two bills, one after the other. Now these two bills will have the same number of rectangles on them, but there are differences between them. In each pair, the rectangles on one bill should stand out a little more compared to the other bill. Each time I'd like for you to tell me which bill has rectangles that stand out more: the first, or the second. The differences may be very slight, but if you're not sure please give me your best guess, okay? *(The two bills have the same number and placement of symbols, but the substance used to make the symbols is different.)*

I will not use the timer.

Which one had rectangles that stand out more? [do not accept "same" answers]

| | | First | Second |
|-----|-----|-------|--------|
| C2 | A2 | ● | ● |
| A2S | B2S | ● | ● |
| C3 | B3 | ● | ● |
| B1 | C1 | ● | ● |
| A3 | C3 | ● | ● |
| B4 | A4 | ● | ● |
| A2 | C2 | ● | ● |
| A1 | B1 | ● | ● |
| C4 | B4 | ● | ● |
| C3 | A3 | ● | ● |
| B3 | A3 | ● | ● |
| B2S | C2S | ● | ● |

Task 5: Banknotes one at a time, number of rectangles: speed

This task is a bit different. I'm going to put a stack of bills in front of you. What I'd like for you to do is pick up one bill at a time. Feel the bill any way you like, but do not hold the bill against the table. Then tell me how many rectangles are on the bill. Do this, one bill after another, until you reach the last bill in the stack. I'd like you to do this as quickly as you can, but I need you to be accurate too, okay? After each stack I'll ask you to rate how easy or difficult it was.

All right then, say the word "Go" when you are ready to begin. When you say "Go," I will start timing you and you should pick up the first bill.

(Do this 4 times: the first is a practice trial, then once for each tactile cue type. Time each stack separately. Start the timer the moment that the respondent says "Go." Stop the timer the moment that the respondent states the number of rectangles on the final bill in the stack. After each stack, ask the respondent to rate the difficulty on a 1-5 scale.)

| | Correct | Incorrect |
|-----|---------|-----------|
| C1 | • | • |
| C2 | • | • |
| C2S | • | • |
| C3 | • | • |
| C4 | • | • |

STACK C (practice): On a scale from 1 to 5, where 1 is very easy and 5 is very difficult, how easy or difficult was it to count the number of rectangles? _____

| | Correct | Incorrect |
|-----|---------|-----------|
| A3 | • | • |
| A4 | • | • |
| A1 | • | • |
| A2 | • | • |
| A2S | • | • |

STACK A: On a scale from 1 to 5, where 1 is very easy and 5 is very difficult, how easy or difficult was it to count the number of rectangles? _____

| | Correct | Incorrect |
|-----|---------|-----------|
| B3 | • | • |
| B2S | • | • |
| B2 | • | • |
| B1 | • | • |
| B4 | • | • |

STACK B: On a scale from 1 to 5, where 1 is very easy and 5 is very difficult, how easy or difficult was it to count the number of rectangles? _____

| | Correct | Incorrect |
|-----|---------|-----------|
| C4 | • | • |
| C2 | • | • |
| C1 | • | • |
| C2S | • | • |
| C3 | • | • |

STACK C: On a scale from 1 to 5, where 1 is very easy and 5 is very difficult, how easy or difficult was it to count the number of rectangles? _____

Task 6: Banknote Orientation

Now I will put stacks of bills in front of you again. This time, I have arranged the bills so that sometimes the rectangles are on the right, and sometimes on the left. Sometimes the rectangles are on the front of the bill, and sometimes on the back. Sometimes the rectangles are at the top of the bill, and sometimes at the bottom. Also, you'll notice that the bills have many labels on them, not just one like before. Please ignore the labels, just like you have been doing.

Here is your task: Pick up the bills from the stack one bill at a time. Find the rectangles on the bill. Then, put each bill down with the rectangles facing upward in the upper left corner. I'd like you to do this as quickly as you can, but I need you to be accurate too, okay? After each stack I'll ask you to rate how easy or difficult it was.

All right then, say the word "Go" when you are ready to begin. When you say "Go," I will start timing you and you should pick up the first bill. Okay?

(Do this 4 times: The first is a practice trial, then once for each tactile cue type. Time each stack separately. Start the timer the moment that the respondent says "Go." Stop the timer the moment that the respondent places the final bill on the table. After each stack, ask the respondent to rate the difficulty on a 1-5 scale.)

First (practice): Stack B

| | Correct | Incorrect |
|---------|---------|-----------|
| DOWN-UR | ● | ● |
| DOWN-LL | ● | ● |
| UP-UL | ● | ● |
| UP-UL | ● | ● |
| UP-LR | ● | ● |
| DOWN-UR | ● | ● |
| UP-LR | ● | ● |
| DOWN-LL | ● | ● |

STACK B: On a scale from 1 to 5, where 1 is very easy and 5 is very difficult, how easy or difficult was it to stack these bills correctly? _____

Second: Stack A

| | Correct | Incorrect |
|---------|---------|-----------|
| UP-LR | ● | ● |
| DOWN-UR | ● | ● |
| UP-UL | ● | ● |
| DOWN-LL | ● | ● |
| DOWN-UR | ● | ● |
| UP-LR | ● | ● |
| DOWN-LL | ● | ● |
| UP-UL | ● | ● |

STACK A: On a scale from 1 to 5, where 1 is very easy and 5 is very difficult, how easy or difficult was it to stack these bills correctly? _____

Third: Stack C

| | Correct | Incorrect |
|---------|---------|-----------|
| DOWN-UR | ● | ● |
| UP-LR | ● | ● |
| DOWN-LL | ● | ● |
| UP-LR | ● | ● |
| DOWN-LL | ● | ● |
| UP-UL | ● | ● |
| DOWN-UR | ● | ● |
| UP-UL | ● | ● |

STACK C: On a scale from 1 to 5, where 1 is very easy and 5 is very difficult, how easy or difficult was it to stack these bills correctly? _____

Fourth: Stack B

| | Correct | Incorrect |
|---------|---------|-----------|
| DOWN-LL | ● | ● |
| UP-LR | ● | ● |
| DOWN-UR | ● | ● |
| DOWN-UR | ● | ● |
| UP-UL | ● | ● |
| DOWN-LL | ● | ● |
| UP-LR | ● | ● |
| UP-UL | ● | ● |

STACK B: On a scale from 1 to 5, where 1 is very easy and 5 is very difficult, how easy or difficult was it to stack these bills correctly? _____

We're basically done now and I thank you for your help on this. Before you go, I need to collect a little more information about you and your household. This is information the government wants us to collect to ensure that we have interviewed blind persons from a wide range of backgrounds.

1) First, did you work for pay at any time within the past 12 months?

- YES
- NO

2) How many other people do you live with?

3) (IF NECESSARY) How many of these persons are related to you, either by blood or marriage?)

4) What is the total annual income (for you/your family) over the past year? (Please count income received from all sources, including employment, government benefits such as disability, and so on). (Please only count income received by you and persons living with you who are related by blood or marriage).

Your best guess (or a range) is fine.

TOTAL ANNUAL FAMILY INCOME: _____