Experiment HP-19: Lexical Decision Task

Equipment Required

PC or Mac Computer

IXTA, USB cable, power supply

2 – EM -220 Event Markers **OR**

1 – RPD-400 4-Button Response Pad (optional)

Sensor Setup

1. Locate the EM-220 Event Markers and plug them into the Channel EM1 and EM2 inputs on the back of the IXTA.
2. **OR** locate the RPD-400 4-Button Response Pad. Plug the connector in the RPD and into the Digital Input on the back of the IX-TA.

Figure HP-19-S1: RPD-320 plugged into the back of the TA. If using the event markers, plug them into the EM ports as shown by the yellow arrow.

iWorx Lab

Experiment HP-19: Lexical Decision Task

General Directions:

All Tests will follow the same directions.

- Subjects will be shown a series of 25 two letter sequences, one above the other
  - For each trial, a fixation box will be shown for 1 second
  - The stimulus pair will be shown for 2 seconds
  - The screen will go blank for 1 second
- Subjects must press the appropriate response key within that time period.
  - After the stimulus is shown:
    - the subject will press the event marker (EM1) in their right hand, or the letter "A" on the response pad, for "**YES**" if both of the letter pairs is a word
    - the subject will press the event marker (EM2) in their left hand, or the letter "D" on the response pad, for "**NO**" if the letter pairs are not words

Exercise 1: Test 1 – Word-Pseudoword (Non-word) Pairs

Procedure

Warning: In this exercise, it is important to remember to press the event marker in the correct hand for answering YES or NO. Right hand = YES; left hand = NO. If using the response pad, D = YES: A = NO.

1. Click on the Record button.
2. Click the **Test1** sequence on the toolbar and run the macro to begin the sequence of stimulus pairs.
3. Follow the general directions as outlined above.
4. After the twenty-five stimuli have been shown, click Stop to halt recording.
5. Click on the Save button to save the data file.
6. Let your subject rest for a minute or so before moving on to **Exercise 2**.

IworX Sample Lab

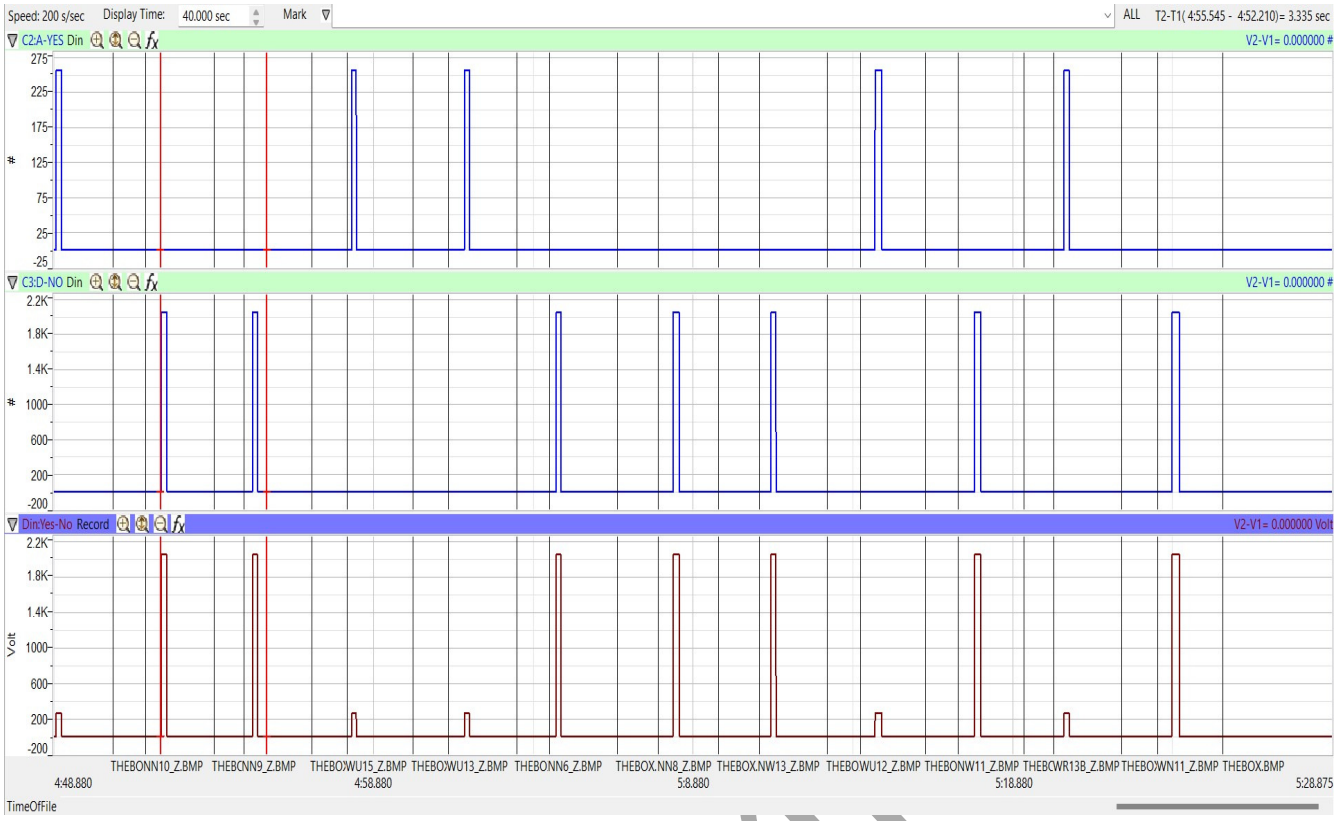

Figure HP-19-L1: Sample of what the data may look like.

Data Analysis

**Data Analysis is completed in the Main window.

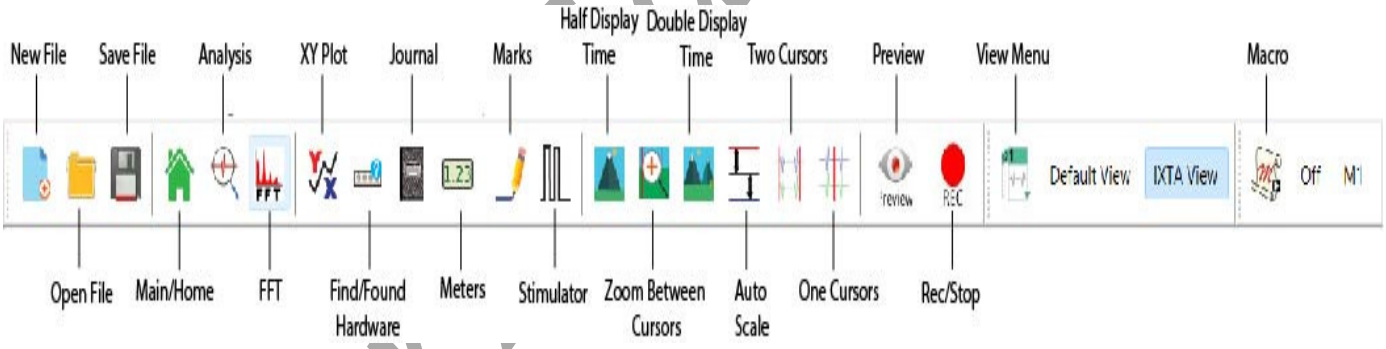

Figure HP-19-L2: LabScribe toolbar.

WORDS:

1. Click the Double Display time button until approximately <u>10 responses</u> show on the screen.
2. Move one red cursor line to the mark made when the STIMULUS was shown and the 2nd to the start of the click of the event marker or response pad.
   - The stimuli will be labeled:

Working

- NN – non-word pairs
- NW – non-word above
- WN – word above
- WR – words related
- WU – words not related

3. Look at T2-T1 (upper right corner) and record that number.
4. Repeat for the next 9 word pair stimuli.
5. Repeat the procedure for the next 15 word pairs.
6. Enter the data into the table on the next page.

Note if the subject answered correctly.

Questions:

1. What was the mean reaction time of the subject for this set of stimuli?
2. What was the mean reaction time for the Non-Word above stimuli? The Word above stimuli?
3. What was the total percentage correct for all the stimuli? Percent error?

Exercises 2 (Related/Non-Related Words) and 3 (Mixed stimuli):

Procedure

Repeat the same directions from Exercise 1.

Data Analysis

Repeat the same directions from Exercise 1.

Questions:

1. What was the overall mean reaction time of the subject when the stimuli were both words?
2. What was the mean reaction time of the subject for all related words stimuli?
3. What was the mean reaction time of the subject for all non-related words stimuli?
4. What was the mean reaction time for the 3 categories when mixed stimuli were shown in Exercise 3?
5. What could cause a difference in reaction times for each of the 3 categories when they were mixed (Exercise 3) vs the mean reaction times in Exercises 1 and 2.
6. What was the percent error for each of the above?

Iworx Sample Lab

Table HP-19-L1 – Recation Times for Exercises 1, 2 and 3

Stimulus	Reaction Time (sec) TEST 1		Reaction Time (sec) TEST 2		Reaction Time (sec) TEST 3		
	Non-word above	Word above	Related Words	Non-Related Words	Non-Words	Mixed	Words
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
Mean							
Overall Mean							

IworX Sample Lab