**The Word Association Experiment**

**Specification**

1. **How does it Work?**

The User fills in on screen in the data of the respondent and the User, and the date of the experiment.

A list of 50 stimulus words is displayed on screen one word at a time.

There are 50 words in the list. These are fixed.

The word is read out by the User (U)

As soon as the word is read out, U starts a timer pressing Enter.

The respondent (R) gives a reply to the word. U presses Enter again, and the timing of the response in recorded in fifths of a second is recorded.

U then types the word in a box next to the stimulus word

U then records any unusual responses, we call complex indicators (by clicking mouse) from a displayed checklist. Here is the checklist:

**Complex Indicators**

**PRT**: Prolonged reaction time (above the median of the first and second 50 words.

**Re**: Blank or incorrect reproductions (mimic, facial expressions, laughing, head /hand movements.. )

**B**: Body reactions

**MS**: Mishearing or not understanding stimulus word (recorded in ‘other’ on template)

**RSW**: Repetition of stimulus word

**So**: Sound reactions, rhyming, interjections, exclamations, meaningless reactions (recorded in ‘other’ on template)

**MW**: Multiple word responses MW (recorded in ‘other’ on template)

**F**:Failure: No association before 200/5 seconds F (recorded in ‘Repro’ on template)

**S**:Stereotypes: Same reply to more than three stimulus words, including reproductions (recorded in ‘other’ on template)

**P:**Perseveration: Emotional reaction of stimulus word carried through to following reactions. (recorded in ‘other’ on template)

U then calls up the next stimulus word by pressing NEXT WORD button

The process is repeated for the 50 words.

When the 50 word list is completed the U presses a ‘first run completed’ button.

U repeats the test as before, giving the stimulus word only this time the response is not timed. When the U reads out the stimulus word, the R the R tries to reproduce the initial response given and the reply is recorded, alongside the initial response. If the word is the same as that initially given, then nothing entered.

The test is complete once the second run has finished. Note that another complex indicator is recorded if the second time around response word is different to the first run.

The report should be printable and stored for sending in an electronic format to the R.

1. **What features are required?**

If U makes an error, for example, misspelling a word, it must be possible for this to be corrected after the test has been given.

Response Times are given in one fifth of a second.

The median is calculated and words with more than 2 Complex Indicators (CIs) are listed separately.

This is all now pretty clear when you look at the algorithm/process and template below.

**Algorithm/Process**

**ROUND 1**

**1.**

**The stimulus words are read out and response words are given**

**The response times are recorded in fifths of a second**

**When all 50 are completed the median is calculated**

**2**

**Response words above the median are awarded 1 point (we call these points ‘complex indicator s’ or CIs**

**Response words with no response (Failed) are given 2 points. This rarely occurs.**

**Points scored are marked on the template in the PM column with a 1 (or if Failed, a 2)**

**3.**

**The U will add other points during the experiment by observing reactions to the stimulus word from the checklist and clicking them. Each time this is done a point is worded and marked on the template as Body, Sound (So) or Other. They are automatically entered onto the template, sorted and coded as as per the example below.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N | Stimulus Word | Reac-tion Time 5ths | Reac-tion Time Sec. | Reaction | Repro | Body | CI Types |  | |  |  |  | Type | |
| Over PM | Re | | So | Other | CIs | F | E |
| 1 | play | 11 | 2.22 | F 1,1 | What | B1, |  | Re1 | So1 | | MS1, RSW1  MW1  S 1  P1 | 1 | x |  |
| 2 | mouth | 19 | 3.76 | dentist |  |  | 1 |  |  | |  | 1 |  | x |
| 3 | free | 21 | 4.13 | pleasure | joyful |  | 1 | 1 |  | | P1 | 3 | x |  |

**PRT**: Prolonged reaction time (above the median of the first and second 50 words.

**Re**: Blank or incorrect reproductions (mimic, facial expressions, laughing, head /hand movements.. )

**B**: Body reactions

**MS**: Mishearing or not understanding stimulus word (recorded in ‘other’ on template)

**RSW**: Repetition of stimulus word (recorded in ‘other’ on template)

**So**: Sound reactions, rhyming, interjections, exclamations, meaningless reactions (recorded in ‘other’ on template)

**MW**: Multiple word responses MW (recorded in ‘other’ on template)

**F**:Failure: No association before 200/5 seconds F (recorded in ‘Reaction’ ’ on template)

**S**:Stereotypes: Same reply to more than three stimulus words, including reproductions (recorded in ‘other’ on template)

**P:**Perseveration: Emotional reaction of stimulus word carried through to following reactions. (recorded in ‘other’ on template)

**ROUND 2**

**4.**

**The stimulus word is read again, in a second run**

**RESPONSE TIMES AND OTHER REACTIONS ARE NOT RECORDED DURING THIS RUN. WE ARE ONLY LOOKING TO SEE IF THE R REMBERS THEIR ORIGINAL RESPONSE.**

**If the new response is different or blank then 1 point is awarded. This is recorded in the Re column**

**5.**

**The complete list of response words and reproductions is reviewed, and where there are three words the same a point is given to each word. These go onto the template under ‘Other’.**

**7. The experiment is nearly complete, but allowance must be made for U to go back and**

**a) correct data entry mistakes**

**b) look at the test results and record perseverations. This cannot be done automatically. These are marked and go onto the template under ‘Other’. 1 point is given to each marked word (in ‘other’ column).**

**c) look at the test results and record factual and egocentric types. This cannot be done automatically. These are marked and go onto the template under ‘Other’. NO POINTS ARE GIVEN TO THESE MARKINGS.**

**8.**

**The points for each stimulus word are added up horizontally and the total marked in the CI columns**

**Report**

**1 The completed template**



|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N | Stimulus Word | Reac-tion Time 5ths | Reac-tion Time Sec. | Reaction | Repro | Body | CI Types |  | | |  |  |  | Type | |
| Over PM | Re | | So | | Other | CIs | F | E |
| 1 | play | 11 | 2.22 | joyful | Fun |  |  | 1 |  | | |  | 1 | x |  |
| 2 | mouth | 19 | 3.76 | dentist |  |  | 1 |  |  | | |  | 1 |  | x |
| 3 | free | 21 | 4.13 | pleasure | joyful |  | 1 | 1 |  | | | P1 | 3 | x |  |
| 4 | car | 25 | 5.03 | movement | travel |  | 1 | 1 |  | | |  | 2 | x |  |
| 5 | make | 61 | 12.13 | creation |  |  | 1 |  |  | | |  | 1 | x |  |
| 6 | friendly | 23 | 4.34 | communication |  |  | 1 |  |  | | |  | 1 | x |  |
| 7 | stupid | 72 | 14.48 | learning |  | 1 | 1 |  |  | | |  | 2 | x |  |
| 8 | together | 15 | 3.08 | family |  |  |  |  |  | | |  |  | x |  |
| 9 | go | 20 | 3.54 | action | move |  | 1 | 1 |  | | |  | 2 | x |  |
| 10 | habit | 20 | 4.07 | tradition |  |  | 1 |  |  | | |  | 1 | x |  |
| 11 | new | 13 | 2.50 | exciting |  |  |  |  |  | | |  |  | x |  |
| 12 | tree | 17 | 3.37 | solitaire |  |  | 1 |  |  | | |  | 1 |  | x |
| 13 | kiss | 10 | 2.04 | pleasure |  |  |  |  |  | | |  |  | x |  |
| 14 | finger | 14 | 2.89 | pointing |  |  |  |  |  | | |  |  | x |  |
| 15 | sad | 20 | 4.02 | A phase like a period of time | sometimes |  | 1 | 1 |  | | | MW1,P1 | 4 |  | x |
| 16 | knife | 19 | 3,85 | pain | danger |  | 1 | 1 |  | | |  | 2 |  | x |
| 17 | dance | 50 | 9.93 | Green fields, meadow | shoes |  | 1 | 1 |  | | | MW1`S1 | 4 |  | x |
| 18 | choice | 18 | 3.68 | immediate | connection |  | 1 | 1 |  | | |  | 2 | x |  |
| 19 | naked | 19 | 3.79 | human |  |  | 1 |  |  | | |  |  | x |  |
| 20 | plain | 100 | 20.01 | Which plain ?boring | field |  | 1 | 1 |  | | | MS 1, MW1 S1 | 4 | x |  |
| 21 | learn | 31 | 6.25 | curiosity | lifelong |  | 1 | 1 |  | | |  |  | x |  |
| 22 | pity | 50 | 9.94 | compassion |  |  | 1 |  |  | | |  |  | x |  |
| 23 | weak | 14 | 2.51 | strength | strong |  |  | 1 |  | | |  | 1 | x |  |
| 24 | boss | 14 | 2,52 | leader |  |  |  |  |  | | |  |  | x |  |
| 25 | wait | 19 | 3.53 | patience |  |  | 1 |  |  | | |  | 1 | x |  |
| 26 | family | 12 | 4.26 | togetherness |  |  |  |  |  | | |  |  | x |  |
| 27 | sick | 13 | 2.30 | rarely | sometimes |  |  | 1 |  | | |  | 1 |  | x |
| 28 | cat | 14 | 2.86 | soft |  |  |  |  |  | | |  |  | x |  |
| 29 | pray | 18 | 3.60 | meditation |  |  | 1 |  |  | | |  |  | x |  |
| 30 | wages | 19 | 3.81 | wealth | salary |  | 1 | 1 |  | | |  | 2 | x |  |
| 31 | old | 14 | 2.89 | generation |  |  |  |  |  | | |  |  | x |  |
| 32 | fight | 18 | 3.58 | confusion | fear |  | 1 | 1 |  | | |  | 2 | x |  |
| 33 | glass | 28 | 5.46 | water |  |  | 1 |  |  | | |  | 1 | x |  |
| 34 | marry | 10 | 1.97 | together |  |  |  |  |  | | |  |  | x |  |
| 35 | guilt | 17 | 3.33 | sadness | reflection |  |  | 1 |  | | |  | 1 | x |  |
| 36 | work | 13 | 2.64 | pleasure |  |  |  |  |  | | |  |  | x |  |
| 37 | proudt | 6 | 2.50 | mother |  |  |  |  |  | | |  |  |  | x |
| 38 | fear | 19 | 3.78 | height |  |  | 1 |  |  | | |  | 1 |  | x |
| 39 | red | 14 | 2.77 | shoes |  |  |  |  |  | | |  |  |  | x |
| 40 | water | 28 | 5.53 | lake |  |  | 1 |  |  | | |  | 1 | x |  |
| 41 | hurt | 15 | 2.99 | listen |  |  |  |  |  | | |  |  |  | x |
| 42 | flower | 13 | 2.50 | field |  |  |  |  |  | | | S1 | 1 | x |  |
| 43 | evil | 13 | 2.69 | few | religion |  |  | 1 |  | | |  | 1 | x |  |
| 44 | party | 11 | 2,24 | fun |  |  |  |  |  | | |  |  | x |  |
| 45 | fly | 17 | 3.35 | asia | travel |  |  | 1 |  | | |  | 1 |  | x |
| 46 | death | 15 | 2.93 | natural |  |  |  |  |  | | |  |  |  | x |
| 47 | clean | 21 | 4.20 | enjoyable | pleasant |  | 1 | 1 |  | | |  | 2 | x |  |
| 48 | try | 18 | 3.50 | focus | experiment |  | 1 | 1 |  | | |  | 2 | x |  |
| 49 | sin | 13 | 2,60 | religion |  |  |  |  |  | | |  |  | x |  |
| 50 | home | 14 | 2.89 | village |  |  |  |  |  | | |  |  | x |  |

Calculated Median: 17.5 fifths of a second

**2**

**List of words with 2 or more points, high to low**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15 | sad | 20 | 4.02 | A phase like a period of time | sometimes |  | 1 | 1 |  | MW1,P1 | 4 |  |  |
| 20 | plain | 100 | 20.01 | Which plain ?boring | field |  | 1 | 1 |  | MS 1, MW1 S1 | 4 |  |  |
| 17 | dance | 50 | 9.93 | Green fields, meadow | shoes |  | 1 | 1 |  | MW1`S1 | 4 |  |  |
| 3 | free | 21 | 4.13 | pleasure | joyful |  | 1 | 1 |  | P1 | 3 |  |  |
| 4 | car | 25 | 5.03 | movement | travel |  | 1 | 1 |  |  | 2 |  |  |
| 7 | stupid | 72 | 14.48 | learning |  | 1 | 1 |  |  |  | 2 |  |  |
| 9 | go | 20 | 3.54 | action | move |  | 1 | 1 |  |  | 2 |  |  |
| 16 | knife | 19 | 3,85 | pain | danger |  | 1 | 1 |  |  | 2 |  |  |
| 18 | choice | 18 | 3.68 | immediate | connection |  | 1 | 1 |  |  | 2 |  |  |
| 30 | wages | 19 | 3.81 | wealth | salary |  | 1 | 1 |  |  | 2 |  |  |
| 32 | fight | 18 | 3.58 | confusion | fear |  | 1 | 1 |  |  | 2 |  |  |
| 47 | clean | 21 | 4.20 | enjoyable | pleasant |  | 1 | 1 |  |  | 2 |  |  |
| 48 | try | 18 | 3.50 | focus | experiment |  | 1 | 1 |  |  | 2 |  |  |

3

**List of Stereotypes**

Field

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17 | dance | 50 | 9.93 | Green fields, meadow | shoes |  | 1 | 1 |  | MW1`S1 | 4 |  | x |
| 20 | plain | 100 | 20.01 | Which plain ?boring | field |  | 1 | 1 |  | MS 1, MW1 S1 | 4 | x |  |
| 42 | flower | 13 | 2.50 | field |  |  |  |  |  | S1 | 1 | x |  |

4.

**Factual and Egocentric Responses**

Factual responses 28 and Egocentric (relating primarily to personal experience) responses 12

(Columns F and E)

**Front Page of Report Display for feedback to R**

For the R, the front page of the report is best displayed in landscape as a bar chart of response times with a line showing the median.

The stimulus word and 2 response words (first and second run) are displayed at the bottom of each bar.