Tutorial 2: Word Priming Experiment

PSY310: Lab in Psychology

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GitHub link:
https://github.com/SmitinambiarAU/experiments.git

Introduction :

In psychology priming, experiments are commonly conducted to study the unconscious encoding of memory and the organization of the information in the memory. Such experiments provide a brief of how the stimulus can affect the procedure and retrieval of related information without conscious awareness. In such experiments, the words are fragmented in a way wherein the participants are required to finish the words as soon as possible.
Priming experiments also improve the implicit memory of people which suggests that the information can be encoded and retrieved unconsciously. Plus it also shows that when we encounter a stimulus it can activate the related concepts in our memory which would be familiar with the word.

Method

Participants :

A student carried out the experiment as a part of the PSY310 Lab in Psychology at Ahmedabad University.

Materials and Procedure :

We performed the word priming experiment through Psycho.Py software. We first divided the investigation into two phases: the study phase and the test phase. Then we prepared two Excel sheets named: study_words and test_words respectively. In the first Excel sheet study_words, we wrote the random words to memorize for the participants, and on the second sheet test_words, we prepared fragmented words which included words we mentioned on the first sheet and some random words.

We then prepared trial_1 wherein we added the test as a part of stimuli that would show study words which is 5 words. We also added or slider containing a 5 rating scale wherein the first represents "Familiar" and the fifth represents " Unfamiliar". This 1st test duration is 8 sec wherein participants click towards the familiar and Unfamiliar scale.

The test_2 we prepared included the test as a part of stimuli with the test_words file as a conditioning file. The test words file contains 10 words in the form of fragmented words. This 2nd test duration is 10 seconds wherein participants would guess the words. At the end of the experiment, the participants would click submit the words to complete the experiment.

Important: the number of loops for 1st and 2nd experiments is 5 and 1 loops respectively.

Data Collection:-

The data was collected from 4 individuals/peers of the student.

Results and Discussion:-

The results as done by the 4 participants were filtered and only the columns which were essential to our experiment were kept. We then compared the results to the actual words from the study list that were identified correctly and which were not. We also calculated the priming score which as follows :

No of trials	10
Words correctly identified from the study list (A)	4
Words correctly identified but not from the study list (B)	3
Proportion of A	0.8
Proportion of B	0.6
Priming score	0.2

In our data analysis, we need to calculate the prime score:-

Prime score = proportion hit from the study list/proportion hit for nonprimed words

$$= 4/5$$

$$= 0.8$$

Proportion of hit from non-primed list (Y) = number of instances where the word NOT from the training set was reported correctly in the test phase/total number of NON-PRIMED words presented in the test phase

$$= 7/5$$
$$= 0.6$$

In the end the prime score $= 0.8\text{-}0.6$
$$= 0.2$$

We can add two to four distinct subsets of experiments to this study to make it more intriguing. In two studies, the fragmented words belong to a specific set or genre, and in the other two sets, the fragmented words are at random. Using 2n loops, we can add about 50 new words. The following set. There needs to be a break. As a result, the complexity will rise, and we may compare the prime scores to learn more about the fragment words problem and the priming effect.