

Priming effect in children and adults psychology essay



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Priming refers to a participant's change or improvement in performance while participating in a cognitive task e. g., lexical naming task as a result of exposure to a stimulus or prior experience (McNamara & Holbrook, 2003).

Semantic priming has been a focus of research in the cognitive sciences and is commonly used as a tool for investigating aspects of perception and cognition, such as word recognition, language comprehension, and knowledge representations. On the basis of degree of semantic relatedness and separation positive and negative priming can be determined. Positive priming (PP) refers to facilitation that occurs when a participant is exposed to a stimulus that is semantically related to a prior stimulus. Negative priming (NP) is a paradigm similar to that of Positive Priming (PP) with the exception that there are stimuli to be attended and stimuli to be ignored. It refers to a slowed response identification time to a target stimulus that has been previously ignored. Measuring the priming and negative semantic priming tasks can be useful in estimating inhibitory as well as excitatory connections that influence word production. This will comment on lexical integrity and on selective attention ability of an individual. Clinically, it can be developed for assessment and intervention prospective.

Aim: To prepare reaction time measurement paradigm using DmDx software for measuring semantic positive and negative priming in children and to compare reaction time measurement with adults. In Indian, context the attempts in this direction are not reported.

Method: A total of 40 subjects were included for the study. They were divided into two groups: Group I consisted of school going children (10 boys and 10 girls) in the age range of 7 to 12 years and group II consisted of

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young adults (10 males and 10 females) in the age range of 18 to 24 years. A total of 25 line drawing pictures were used. Three experimental tasks were administered- lexical naming, positive priming and negative priming. The subjects were asked to name target pictures presented on a computer monitor which was programmed with DmDx software. The speech reaction time for naming the pictures was measured for all three experimental tasks. Reaction time in millisecond was recorded. Further data was analyzed using SPSS, t-test was administered to compare the mean reaction time between children and adults for three experimental tasks.

Results: Results showed that there was significant difference in the three experimental conditions between children and adults. The mean reaction time was slower in children compared to that of adults. Positive priming and negative priming effect was noted in both the population. The present study results are consistent with previous studies that the naming of an object is executed faster in positive condition than the negative.

Discussion: Slower reaction time for children for all three experimental tasks can be attributed to the maturational differences between the children and adults. For positive priming task (experiment 2) the reaction time was faster compared to that of negative priming task (experiment 3) in both the groups. These results may be explained on the basis of ' spreading activation process (Meyer & Schvaneveldt, 1975; Collins & Loftus, 1975). In negative priming experiment, the results showed statistically significant differences between conditions for both children and adults. These results of NP effect can be attributed with the process of ' spreading inhibition (Houghtout & Tipper, 1994) in semantic memory networks, analogous to that of ' spreading
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activation process. The slower in reaction time is because of intact spreading inhibition system. The present study methodology can be implemented to assess the negative priming effect in cognitive impaired clinical populations that reflects general failure of inhibitory processes in various clinical populations.

Conclusion: Reaction time was measured for 20 children (mean 10 years) and 20 young adults (mean 22 years) for lexical naming, positive priming and negative priming conditions (semantically ignored and control condition). Conclusively, it can be said that for all three experiments children showed slower reaction time than adults due to maturational differences. For positive priming task children showed slower reaction time than the adults was noted. For semantic negative priming task children and young adults showed a statistical significant difference for negative priming effect. This effect is explained with reference to intact selective inhibition process and information processing efficiency in both groups. The presence of faster reaction time for positive priming was due to the 'spreading activation process involvement and slower reaction time for negative priming is due to the 'spreading inhibition process. Further, study needs to be conducted with increased number of subjects to generalize the findings of the study. The methodology can be implemented to assess the cognitively impaired clinical population.