



The Emotional Quality of Situation Models and The Impact of Language Associated with Concentration

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Abstract

In a recent review of the literature, Zwaan (2025) discusses advances in situation-model research. Situation models are mental models formed during comprehension (Radvansky and Copeland, 2004). Comprehension of everyday events relies heavily on the proper construction of situation models. Our comprehension of everyday events often has an emotional quality, and this is heavily rooted in the language tags we use when describing (i.e., writing about) our everyday experiences. The affective quality of situation models has not been heavily researched. The current study provides insight into the emotional (affective) quality of situation models formed from life events, focusing on a time when the person had to recall a time when they had to think hard (concentrate) to solve a problem. The person's level of negativity toward having to concentrate also correlates with certain words associated with the concept of concentration.

The questions for this study were administered through Qualtrics, a software system designed to facilitate the online delivery of research surveys. Participants (N= 107) wrote a short narrative story about a time when they had to think hard or concentrate (to solve a problem in their life). This allowed the primary investigator to look at characteristics of situation models that students formed from past events when they had to concentrate. Each short essay was scored on a scale of 1 to 100 on how negative the tone or style of writing was regarding having to concentrate on solving the problem. Participants also provided the subjective ratings of their preferences for seven common English words associated with concentration. In addition, participants were asked to provide basic demographic information about themselves (i.e., age, sex, year in college). Results showed differences in the median preference score rating (on a Likert scale) for these seven close associates of 'concentration' (1 being low and 7 being high): 'Rumination' and 'Deliberation' (median rating = 4), 'Focusing', 'Engrossed', and 'Contemplation' (median rating = 5, 'Reasoning' and 'Logic' (median rating = 6). An Analysis of Variance was conducted on the seven words that are close associates of concentration and the negativity level of the written essays about concentrating to solve a problem, yielding a significant result, $F(7, 97) = 3.01$, $MS = 7456$, $p < .01$. A multiple regression analysis was conducted on the seven words that are close associates of concentration and the negativity level of the written essays about concentrating to solve a problem. It yielded interesting results. The word 'deliberation' was rated



4th World Conference on **Psychology** and **Behavioral Sciences**

London, UK

15 - 17 May 2026

favorably by participants who wrote negatively about having to concentrate $t = 4.0$, $p. < .001$. In contrast, the words 'engrossed' and 'reasoning' were rated unfavorably by participants who wrote negatively about having to concentrate ($t = -1.99$, $p. = .05$ and $t = -2.44$, $p. < .05$, respectively). This research supports Zwaan's (2025) conclusion that we understand the emotional components of events and situations in our lives through language.

Future research will investigate the emotional impact of situation models and language when utilizing artificial intelligence to solve problems.

Keywords: memory, cognition, mental-models, situation-models, concentration