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Author

Szymanski, Kamil

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Relationship of time perception with working memory and number sense using gaussian process regression

Kamil Szymanski

SWPS University of Social Sciences and Humanities, Wrocław, Lower Silesia, Poland

Abstract

Time is one of the most fundamental phenomena in our universe. From the cognitive perspective, it is interesting how we perceive time. To verify the most common cognitive model of time perception (the Scalar Expectancy Theory) time reproduction experiment was conducted. Participants underwent a standard number sense procedure (comparing the number of dots). Next, they were asked to memorise some random letters. Afterwards, a face picture (neutral, happy, angry, fearful) was displayed for 400-1600 ms. After that, participants were asked to reproduce the string of letters and the picture's duration by pressing the space key. The final stage of the study was data modelling using Gaussian Process Regression. The results showed inconsistency with the previous results on the relationship between emotion and time perception. The relationship of memory overload with time perception may have been found.