

OPINION

of Prof. Stefan Mateeff, D.Sci.,

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on PhD thesis entitled “The handle orientation effect: critical attentional factors that have received little to no attention”, presented by Kiril Kostov for partial fulfilment of the requirements for a PhD degree.

I was supervisor of this thesis, but my contribution to it is minimal. The work has been entirely developed by Kiril Kostov himself and his scientific advisor Dr. Armine Janyan.

The work is aimed at investigating an interesting problem that emerged at the end of the last century. It was established that human manual responses to test objects might be significantly facilitated or hindered by task-irrelevant characteristics of the objects. There has been a large disagreement between various authors on the extent, to which grasping affordance may contribute to this effect. Motor accounts and spatial compatibility accounts competed for a more convincing explanation of the experimental findings. In the theoretical part of the thesis, Kostov presents thorough reviews of the handle orientation effect, the Simon effect and the interplay of attention. He evaluates critically the findings in the literature. These pages make a useful reading for students in the field of cognitive science and psychology. Kostov arrives to the fruitful idea to study the potential interaction between the affordance effect (called by him handle orientation effect) and the exogenous attention, triggered by low-level visual features of the stimuli. In other words, his efforts are oriented toward the critical attentional factors that have yet received little to no attention, as formulated in the title of the thesis.

I remember how years ago Kostov complained that he was not able to replicate known experimental results about the affordance effect. At that time, I tried to console him; I told him that if the experiment supports the theory, this is good, but if the experiment contradicts the theory, this may be excellent. The contradictory results led Kostov to carry out a series of six interesting experiments. He succeeded to demonstrate that the reversed compatibility effect is a stable and replicable phenomenon, which can be observed by appropriate manipulation of the experimental conditions. It was found that the factor of importance was the horizontal positioning around the center of the display. The direction of the compatibility effect was determined by the width- or area-centering of the test object. In this way, Kostov demonstrated an important perceptual characteristic of the compatibility effects, which is

unrelated to grasping affordance. To my opinion, this is a significant contribution in the field of the spatial compatibility effects.

The experimental data were obtained by sufficiently large samples of subjects, and are rigorously treated by adequate statistical analysis. An impressive distributional analysis showed that different mechanisms might underlie the performances with width and area-centered stimuli. The results obtained in this thesis are published in two papers in the journal *Cognitive Processing* and now they are cited seven times.

I like his text very much. Kostov`s English is excellent; moreover, his writing style is extremely clear and comprehensive. He was one of my best students. He defended his MSc thesis with excellent mark and now I am very happy to see this excellent thesis.

In conclusion, Kostov shows a very good understanding of the problems in the field of spatial compatibility, attention and their effects on human performance. Most importantly, he demonstrates ingenious way of thinking, planning the experiments and interpreting the results. My opinion is that the thesis definitely meets the requirements of the Cognitive Science Program for a PhD degree.

09.06.2017

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