Nature Human Behavior

Dr. Stavroula Kousta

*Chief Editor*

Christoph Scheffel

Differential and Personality Psychology

Telefon: 0351 463-40336

Telefax: 0351 463-36993

E-Mail: christoph\_scheffel@tu-dresden.de

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Dear Dr. Kousta,

we would like to submit the *Stage 1 Registered Report* titled “Estimating individual subjective values of emotion regulation strategies” for consideration in *Nature Human Behaviour*.

We present the evaluation of a new paradigm for determining individual subjective values of demand levels of cognitive effortful tasks. More concrete, the present study involves the determination of subjective values of emotion regulation strategies. In emotion regulation flexibility, the choice of the right strategy is an important aspect of goal achievement and adaptive behavior. To describe choice behavior and individual differences in emotion regulation choice better, we want to determine individual subjective values of emotion regulation strategies. We therefore adapt an existing paradigm by Westbrook and colleagues (2013). However, the paradigm was only partly suitable because it linked the easiest demand level with the highest subjective value. The paradigm was changed in a way that it allows to determining subjective values without assuming that the objectively easiest level is preferred and for effortful tasks whose levels have no objective order of difficulty. The suitability of the new paradigm is to be answered on the basis of two research questions. The first question, covered in a separate Registered Report, is to investigate whether paradigm can depict individual differences in the preference of n-Back task accurately. The second question is to determine subjective values in the the context of an emotion regulation. Furthermore, we are interested in prediction of subjective values by measures of efficiency and effort, as well as the prediction of choice behavior by subjective values.

To investigate both properties rigorously, both research questions are covered in separate Registered Reports that we have submitted concurrently. Here we present the Registered Report for the first research question, which is of great interest for fields such as psychology, economics, and cognitive science, offering an effective and adaptable way to assess the preference for cognitive effort with different rewards. We not only adapt and replicate the original paradigm with a larger sample, but apply Specification Curve Analysis to verify our results regarding alternative decisions in preprocessing steps.

Following Stage 1 acceptance in principle of both Reports, we will collect the data over a span of three months, and analyse the data and write the Stage 2 Report within four to six weeks, resulting in a total project duration of about four to five months. Depending on how the Covid-19 pandemic impacts the feasibility of data collection in the lab, this estimation can vary.

We hereby confirm that all necessary support and approvals are in place for the study to commence immediately. We agree to share the raw data, study materials, and analysis code openly on the Open Science Framework (OSF). We agree to register the approved protocol publicly available preprint on the Open Science Framework following Stage 1 acceptance in principle. We agree to *Nature Human Behaviour* publishing a short summary under a section Withdrawn Registrations, should we choose to withdraw our paper.

Thank you very much for considering our manuscript.

Sincerely,

Christoph Scheffel

Corresponding author