

**Summary of the dissertation titled
„Need for Cognition and Well-Being”**

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Need for Cognition is a personality trait that describes an individual's inclination to seek out and enjoy cognitive effort. This disposition has been of interest to psychological research for multiple decades now, and findings show that it is related to more engagement in learning, higher self-efficacy, and higher academic achievements. However, it has long been established that effort is something that is generally avoided, so the individuals and scenarios which deviate from this general rule are of great interest to behavioural science. Finding out why effort is sought out, in which ways it is perceived differently, whether this is context-dependent, and what kind of consequences this has for everyday life—all these aspects are necessary to better understand individual differences in cognitive effort preference. This understanding has important implications for theoretical and practical applications, ranging from educational strategies and workplace dynamics to health interventions. Such interventions could maintain or increase well-being, a concept that encompasses several dimensions, including hedonic and eudaimonic well-being. Hedonic well-being refers to the pursuit of pleasure and avoidance of pain, while eudaimonic well-being centres on the pursuit of meaning, personal growth, and self-fulfilment, which requires more effort. As an investment trait, it is therefore likely that Need for Cognition is related to the kind of activities that individuals engage in to increase their well-being. The goal of this thesis is to examine the role of Need for Cognition in well-being, to shed light on the specific relationship between these two constructs and the factors and mechanisms that might be involved in it.

In *Study 1*, we reviewed over 140 studies on the association of Need for Cognition and various aspects of well-being, combining a qualitative literature review with nine meta-analyses. The meta-analyses yielded small to medium effects, showing that higher Need for Cognition was associated with reduced neuroticism, depression, anxiety, burnout, negative affect, and public self-consciousness, and increased positive affect, satisfaction, and private self-consciousness. Higher Need for Cognition fostered active, interest-driven behaviours, which enhanced knowledge acquisition, self-efficacy, and thereby self-confidence in dealing with academic, personal, and interpersonal challenges. However, under some circumstances,

the impact of Need for Cognition on well-being appeared to be dependent on third variables such as self-control or the social environment. In other situations, Need for Cognition was associated with lower well-being, suggesting the possibility of a sense of overconfidence in one's abilities and resources which leads to more noxious behaviours.

This possibility of an overestimation of one's own resources depending on Need for Cognition was further explored with preregistered analyses in *Study 2* using questionnaire data from 180 teachers from the first wave of the Covid-19 pandemic. We first replicated an analysis of possible mediators between Need for Cognition and a reduced sense of personal efficacy, an aspect of burnout. Neither self-control, nor habitual use of reappraisal or suppression as an emotion regulation strategy reached significance as a mediator, which was not in line with the findings of Grass et al. (2018) in teacher trainees. When including the years of teaching experience in the model, self-control mediated between Need for Cognition and the sense of personal efficacy, suggesting that the mechanisms that in- or decrease a teacher's burnout risk depend on the career stage. In a structural equation model we then found that teachers with higher Need for Cognition had lower burnout scores because they perceived their own resources as more fitting to their job's demands and felt less overwhelmed by these demands, while the opposite pattern was associated with higher burnout scores. A sense of boredom in the form of one's resources exceeding the demands was neither related to Need for Cognition nor to burnout scores. The perception of demands and resources fully mediated between Need for Cognition and burnout, indicating that dispositional cognitive effort investment has important protective effects for one's sense of self-efficacy, but bears the risk of overestimating oneself nonetheless.

In *Study 3* we applied these practical insights to foundational research in a Registered Report, examining how Need for Cognition affects effort discounting behaviour. We adapted an existing effort discounting paradigm by Westbrook et al. (2013) to enable the computation of subjective values for different task levels without resorting to the objective effort for reference. Online questionnaires, an in-lab working memory task with four difficulty levels, and the adapted paradigm were completed by 116 university students. We found that over a third of participants preferred a more difficult level over the easiest one, and that participants with higher Need for Cognition valued the most difficult level higher and the easiest level lower than participants with lower Need for Cognition did. The difficulty level itself and the accuracy of responses during the working memory task predicted the subjective values of the levels, while reaction time did not, a pattern that stayed consistent across 63 different data processing pipelines. An exploratory analysis showed that even though participants with higher Need for

Cognition valued difficult levels higher and found them less aversive, there were no differences in subjective effort, reaction time, or accuracy compared to participants with low Need for Cognition, which further supported the possibility of overestimation.

In conclusion, the findings of this thesis have advanced our understanding of the role of Need for Cognition in well-being. One of the main findings is the overestimation of one's own resources in individuals with high Need for Cognition, which is facilitated by an increased level of self-control and self-efficacy beliefs. This self-perception is evident both in the workplace and in a basic research paradigm. It can be assumed that the inflated perception of own resources results from differences in the type of task engagement between individuals with higher and lower Need for Cognition. Those with higher Need for Cognition engage more frequently in actual tasks, which result in an increase in resources through skills and experience. More importantly, they engage much more frequently in hypothetical tasks, which result in a perceived increase in resources even though no actual skills were tested and no actual experience was gained. This task engagement pattern promotes a heightened but less accurate sense of self-efficacy in individuals with higher Need for Cognition. In the long term, this overestimation can have a negative impact on well-being but is offset by the predominantly positive associations of Need for Cognition with various aspects of well-being. Further research can now address the question of what influences this overestimation and how it can potentially be mitigated to derive implications for theory and practice. The data and analysis code from all three studies are openly available so that others can reproduce the results, explore patterns, or test new hypotheses.