

Hungry for light: The effects of ego depletion on light preferences

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Introduction

Acts of self-control can temporarily deplete one's mental and physical resources - a mental state coined 'ego-depletion' by Baumeister and colleagues (2007). Self-control refers to the capacity to change one's behaviour according to standards and can, for example, involve resisting impulses and temptations.

Subjective vitality, or the positive feeling of having energy available to the self is generally considered the subjective counterpart of ego-depletion/strength. Interestingly, research has shown that lighting can positively influence vitality (Partonen & Lönnqvist, 2000) and as such perhaps help overcome ego-depletion.

In the present research we wanted to test whether being depleted influences lighting preference. Unlike stress or physical fatigue, people may not even be consciously aware of a diminished self-regulation strength, but still regulate self-control capacity unconsciously (Muraven, 2006). We therefore wanted to test whether light preference follows the same logic as our digestive-appetitive system: When we need food, we develop a healthy appetite and get hungry; When we feel depleted, do we develop a preference for more intense or activating light settings, in other words, do we get hungry for light?

Method

Lighting preferences were assessed in two between-groups experiments (N = 40 each). One experiment investigated the preferred amount of light - illuminance - the other explored the preferred color of the white lighting, i.e. color temperature (CCT).

We employed an adaptation period of 10 minutes under 500 lux, 4000K at eye level. During the adaptation period, participants completed a questionnaire measuring

chronotype, sleep quality, and mental and physical effort expended one hour prior to the experiment. Participants were then asked to adjust the lighting so that they would perform optimally on a subsequent attention task. The light was then readjusted to baseline conditions (500 lux at 4000K).

Next, participants engaged in either a depleting or a non-depleting task (as used in Hagger, et al., 2010). As manipulation check, they completed short self-report measures of alertness and mood. Subsequently, they set their preferred light setting for the second time. In the first experiment, participants could adjust the illuminance level; in the second experiment they could adjust CCT.

Lastly, participants completed the Attention Network Task, a questionnaire probing their evaluation of the lighting, and their beliefs concerning the effect of lighting on performance and mood.

Results

Data collection is currently in progress. The results will be presented at the conference.

Acknowledgement

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