

Contemplative Practices and the Power of the Mind

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Any discussion of the overlap and differences between meditation and hypnosis—the topic of the present issue—often involves discussion of factors such as motivation, suggestion, and the generic “power of the mind.” Oftentimes these broad terms fall under the general umbrella referred to as “willpower” (Baumeister & Tierney, 2011). Furthermore, recent discussions have explored the role of attitudes versus biology in the specific context of willpower (e.g., Gazzaniga, 2011; cf. Walton & Dweck, 2011; Baumeister & Vohs, 2011). Is willpower an innate biological fingerprint that cannot be changed or is it a learned understanding that is amenable to instruction? Nature versus nurture debates are hardly new—much seems to have already been settled, for example in the context of cognitive developmental science and attention research (Posner, Rothbart, Sheese, & Voelker, 2012)—and yet this tenor still persists and shapes many an argument. For example, whereas Walton and Dweck (2011) put forward the importance of attitude in influencing perseverance on a difficult task, Baumeister & Vohs (2011) ask whether attitudes can reduce fatigue and improve performance, even if there are limits as to how long they can fend off inevitable decline. Treating these issues as a straightforward dichotomy, however, sidesteps a real opportunity to understand the brain mechanisms that lie behind our limited ability to conform and mold our behavior in line with our wishes. Studying the nuances that both bring together and drive apart contemplative practices, for example, offers an interesting prospect onto the notion of willpower.

The idea that brain mechanisms support the control of mental events—albeit our beliefs as to the extent of this control may be illusory—has been discussed at length for more than a decade (e.g., Gazzaniga, 2011; Wegner 2002). Such accounts, however, whether obliquely (Gazzaniga 2011) or deliberately (Wegner 2002), shy away from any detailed studies describing the biological underpinnings. And yet, some of the approaches that apply neuroscience methods to understanding the mechanisms of will show that such biological mechanisms interact with and develop as a function of the social environment. Specific training, furthermore, can exert a strong influence on control networks of the brain even though limits to neural plasticity obviously exist (Rabipour and Raz, 2012).

Studies spanning imaging of the living human brain, developmental assays, genetic approaches, and specific training programs demonstrate that neural control networks are amenable to change through experience. Many forms of everyday life activity as well as expressly tailored mental exercises may work to improve self-regulation (Rabipour and Raz, 2012). Some scholars, moreover, have outlined two general forms of training that can achieve the effects (Tang & Posner, 2009). One form uses specific practice that activates the executive attention network. Such practice may be part of classroom activities (e.g., Diamond, Barnett, Thomas, & Munroe, 2007; Stevens, Lauinger, & Neville, 2009) or individual computer training (e.g., Klingberg, 2011; Rueda et al 2004; Rueda, Checa, & Cómbita, 2012; Rabipour and Raz, 2012), and often involves attention or working memory exercises. Tasks typically increase in difficulty over time, exhorting participants to improve performance. A second form of improving self-regulation consists of learning to adopt different brain states (Tang,

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Rothbart, & Posner, 2012). Randomized control studies of meditation training with young adults have shown that five days of practice produced improvement in executive attention and positive mood, and reduced stress (Tang et al., 2007). One way to explain these outcomes is through a change in connectivity between brain areas involved in self-regulation (Tang et al., 2010; Tang, Lu, Fan, Yang, & Posner, 2012; Tang, Rothbart, et al., 2012; Sheese, Rothbart, Voelker, & Posner, 2012; Posner et al., 2012). This issue of MBR explores this second form of improving self-regulation and examines some key similarities and difference between hypnosis and meditation.

Much is still unknown about the details underlying the neural networks that govern our behaviour; however, some things are clear: willpower is neither an unassailable facet of the biology nor a simple matter of attitude. Mounting findings unravel a picture that is far more multifaceted than a basic predilection for nature or nurture. The mechanisms of will arise in the operation of neural networks but both genes and social exposure shape these control networks. In spite of and especially because of their genetic basis, these networks are likely susceptible to change across the life span. Meditation—an overarching way of life—and hypnosis—a helpful tool in the armamentarium of a therapist—represent two related, but different, exemplars of self-regulation. Interest in brain training and contemplative practices is on the rise and a systematic study of self-regulation has already provided insights that pave the road to a hopeful new way towards a better life.

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