Mediating Factors in Learned Helplessness

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Learned helplessness from prior uncontrollable events plays a role in a variety of anxiety-related conditions, for example, depression (Kim et al., 2016). This essay investigates its motivational, emotional and goal-directed influences.

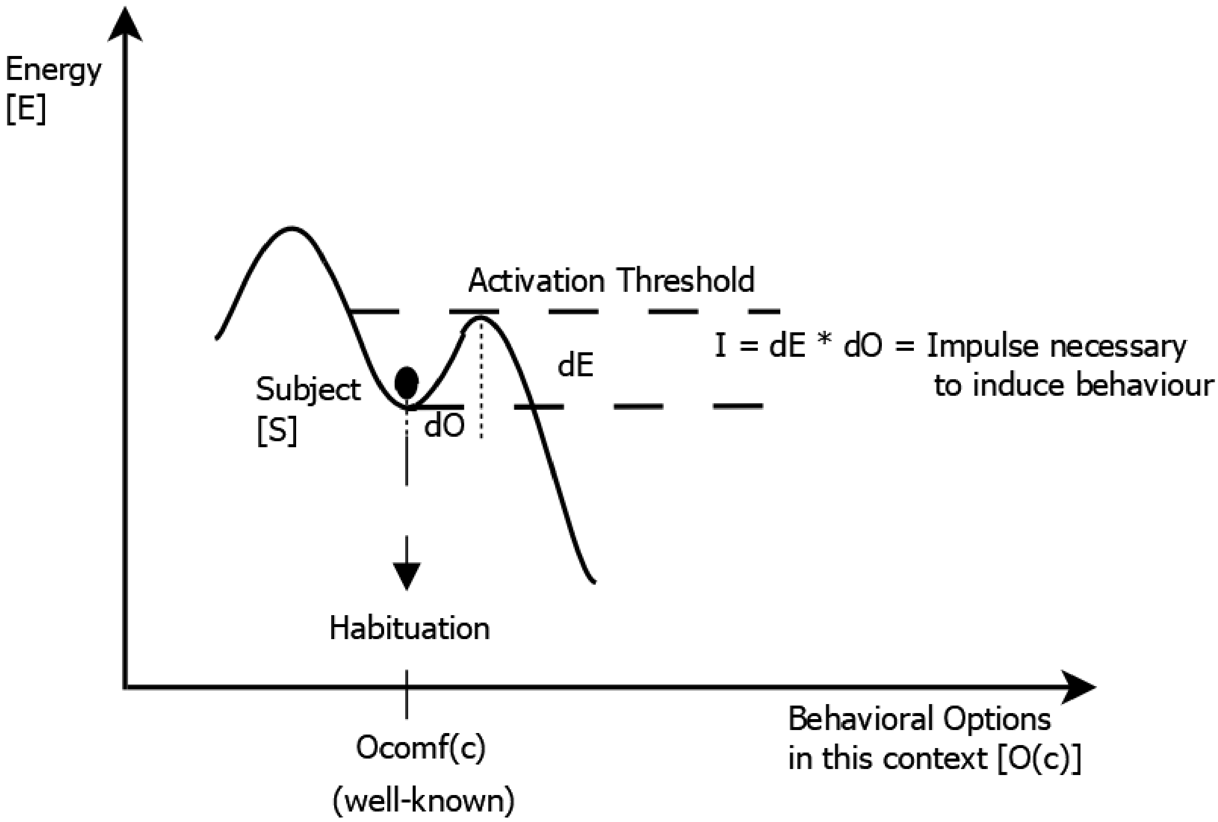
Introduction

Elaborating on Maier & Seligman's (1976) conditional outcome probability, a generalised model is used for illustration (Figure 1). Based on the energy dE that Subject S must release in one impulse[1] $I = dE * dO$, more distant behavioral options $O(c)$ are enabled in the current context c. Larger distances between target behaviour and a local point of skill and comfort $O_{comf}(c)$, require larger impulses I to enable successful escapes. I is thus dependent on activation threshold and also on behavioural distance of the escape (learned helplessness). Activation thresholds contain reformative self-control (Rosenbaum, 1989), beliefs and attitudes (Bandura et al., 2001; Dweck, 2009), behavioural distance subsumes habits and abilities.

[1] Impulse *I* is more precisely the Integral over dO of E, but the product is a close enough match for this illustration.

Figure 1

Model of Learned Helplessness



Inducing pain without chance of escape raises the activation threshold above subjects' contingencies for *dE* * *dO* (uncontrollability). The energetic minimum at comfort point O_{comf} becomes more pronounced by habituation (larger *dE*). Even with escape opportunity, subsequent pain stimuli may not be sufficient to induce required increased impulses *I* (Maier & Seligman, 1976). Large *dO*, requiring high focus, increases the necessary impulse, denoting non-automatic behaviour within the current context. External, unstable attribution (Kelley, 1971), low expectancy (Feather, 1982), and performance goal anxiety (Chiaburu, & Tekleab, 2005) may increase *dO*.

Influence of Goals

According to Higgins' (1997) regulatory focus theory (RF) goal-driven behavior is unidirectional towards one point. Preventive behavior is omnidirectional away from one or multiple points, produces hypervigilance and anxiety on the depressive spectrum, and associates with the current context. Multidirectional attempts may expend energy *dE* in multiple, failed attempts exhausting the subject. Instead, one large impulse is needed to break free from O_{comf}. Setting a goal breaks the RF, concentrates efforts towards *dO*, increases persistence, and makes it more likely that the correct impulse is enacted (Locke et al. 1981). Additionally, *dO* gradually decreases by small, unidirectional learning steps (Hamner et al., 2005). Although *dE* remains high, the necessary impulse size is reduced by self-induced shaping within the zone of proximal development (Vygotsky, 1987).

Emotional Influences

Anxiety within preventing RF disrupts schema-based learning (large distance *dO*; Kluen et al., 2017). Together with shock-induced stress it may keep the subject from learning necessary distant responses, cf. Maier & Seligman (1976) on rats. Similarly, cultures of blame disrupt organizational learning processes, promoting short sighted status protection (Dweck, 2009). Remembering previous failure, the anxiety to fail again may produce a vicious circle. Reframing may lower *dO* by emotionally reducing distance between target behaviour and O_{comf} (Lambert et al., 2012).

Motivational Influences

Focusing on learning and exploration reinforces positive affect (serotonin (5HT)-mediated pre-limbic seeking/enthusiasm; Panksepp, 1998). Learned helplessness is primarily mediated by 5HT-receptors (Strong et al., 2009). 5HT-related *experiential* self-control may become a starting point to develop less intrinsically motivated reformative self-control

(Rosenbaum, in Kennet & Keefer, 2006). Goal-setting activates the dopamine system via reward-*predictive* pathways (Yun et al., 2004). Dopamine enhances model-based behavior and may counteract 5HT-mediated freezes (Wunderlich et al, 2012).

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