INDRAPRASTHA INSTITUTE of INFORMATION TECHNOLOGY DELHI

A computational approach to study control of movements in healthy and clinical population

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Abstract: In a dynamic environment, our ability to inhibit unwanted action in the face of uncertainty makes our behaviour flexible. We tracked eye-movements of healthy humans to study inhibitory control. We designed a computational model, called cancellable rise-to-threshold (CRTT) model, wherein a stochastic process rising to a threshold to trigger a movement was attenuated by a sudden stop-signal. The detectability of the stop-signal determined the strength of attenuation (1). Based on this model, we developed a method to assess both proactive (i.e. strategic postponement of action initiation in anticipation of stopping) and reactive (i.e. slowness in action preparation) control (2). Our collaborators in France, recruited Tourette Syndrome patients (TSP) to perform a manual countermanding task. We found that TSP primarily rely on their intact proactive control to compensate for their compromised reactive control. In this presentation, the physiological feasibility of our model and its implication in neuroscience will also be discussed.

Date: 30 September 2020, Wed **Time: 04:00 – 5:30 pm** **Google Meet: https://meet.google.com/uki-tsdo-jfn**