Hick's Law in the Random-Dot Motion Task

Leendert van Maanen
University of Amsterdam

Eric-Jan Wagenmakers
University of Amsterdam

Abstract: In a series of experiments we studied whether Hick's law is present in the random-dot motion task (RDM). Hick's law is the very strong experimental finding in multiple-choice research that mean response time increases with the logarithm of the number of response options. In the RDM task participants have to indicate from a group of moving dots what the dominant direction of movement is. We studied how response times in this task increased as a function of the number of alternative directions of movement presented to the participants. Using a computational model, we show that Hick's law is present, but only if the relative distance between the alternative directions of movement is taken into account.