Models of similarity in intertemporal choice

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Abstract: The hyperbolic model has dominated studies of intertemporal choice. Rubenstein (2003) and Leland (2002), however, suggested that similarity of reward amounts or time delays may drive temporal preferences. I tested several similarity-based models of temporal preferences, including a variant of Gonzalez-Vallejo's (2002) proportional difference model, using standard intertemporal choice tasks (e.g., choosing between 12 in 36 days or 18 in 51 days). Additionally, I collected participants' similarity judgments for the amounts and delays used in the intertemporal choice task (e.g., rating the similarity of 12 and 18). The proportional difference model predicted the data and generalized across tasks as well as the hyperbolic model did. In further support of this model, the difference between similarity ratings of amounts and delays was highly predictive of intertemporal choices. Thus, similarity provides an interesting and, importantly, a process-based explanation of temporal preferences.