

A Computational Modeling Approach to Understanding Gender Differences in the Iowa Gambling Task

Kaileigh A. Byrne
Texas A&M University

Darrell A. Worthy
Texas A&M University

Abstract: Several studies have found gender differences in Iowa Gambling Task (IGT) performance in which males typically outperform females. However, the precise mechanism that underlies this effect remains unclear, and prior modeling efforts have been unable to pinpoint specific gender differences in behavioral aspects of the IGT. Our results replicated the behavioral gender difference finding and showed that females select the disadvantageous Deck B more than males. We fit the data with versions of the Expectancy Valence and Prospect Valence Learning models that included a parameter to account for participants' perseverative tendencies. The addition of this parameter to the models led to a substantial improvement in the fit to the data. An examination of the best fitting parameter differences suggests that females give greater weight to recent events than males, which may lead females to discount the large, infrequent losses given by Deck B more and select that option more frequently.