INVESTIGATING HOW BOTTOM-UP AND TOP-DOWN SYSTEMS RELATE TO ALCOHOL USE AND ALCOHOL USE DISORDER

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ABSTRACT

Background. Dual-systems models propose that alcohol use disorder (AUD) is the result of an interplay between reward sensitivity and behavioral undercontrol. These risk processes are hypothesized to contribute to non-additive interaction effects, and it is assumed that each confers distinct risk for AUD.

Methods. Participants were members of a national twin registry based in Australia, and a longitudinal sample of college students first enrolled at the University of Missouri in the early 1990s. Participants provided information related to their alcohol use and personality. Measures of reward sensitivity (alcohol expectancies, sensation seeking) and behavioral control were used to assess bottom-up and top-down systems, respectively. Analyses focused on the genetic and developmental overlap of these risk factors for alcohol use and alcohol use disorder.

Conclusions. Behavioral undercontrol accounted for little genetic or developmental variation in alcohol outcomes, beyond what was accounted for by reward sensitivity, suggesting it does not increase liability for AUD apart from potential interactions with reward sensitivity. The current study, however, also found limited support for such interaction effects. These findings have implications for etiological models and intervention efforts.