

MISQ Archivist

Is There a Genetic Basis for Information Search Propensity? A Genotyping Experiment

Glenn J. Browne and Eric A. Walden

Abstract

In this work we explore the question of whether there is a genetic basis for people's different propensities to search for information. Specifically, we test whether the rs1044396 polymorphism—one variation in the cholinergic receptor nicotinic alpha 4 (CHRNA4) gene—is a reliable predictor of propensity to search for information. A sample of 205 subjects performed an information search task and then donated genetic material, which was analyzed. Using these data we found that the rs1044396 polymorphism is associated with both search duration and the amount of information searched, contributing a genetic explanation for a portion of propensity to search for information. People with the C:C version of rs1044396 gathered 25% more information but spent 13% less time on each piece of information than people with T-alleles before making a decision. Thus, the amount of information that people gather and the temporal cost of gathering that information have a strong genetic component, which has implications for internet search strategies, information use, and information systems design.

Keywords: NeuroIS, information search, information systems, genetics, systems design, decision making, human genetic markers, rs1044396 polymorphism, cholinergic receptor nicotinic alpha 4, internet addiction