The behavioral decision-making architecture

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ABSTRACT

Decision-makers in real life often have to deal with different situational influences while making a decision. They don't know the odds of the outcome of different options and thus make their decisions under uncertainty. Moreover, most real-life situations are fast changing and dynamic, and the decision-maker doesn't always know the exact cause of a given circumstance. This intransparency and interdependency of the decision's different elements can lead to a high complexity of the situation (Schroda, 2000) and thus to a difficult decision. Potential consequences are, besides errors, cognitive biases in the decision-making process, which can lead to erroneous decisions. But why do these systematic unconscious effects occur so frequently and what makes them so robust? This paper investigates the mechanisms and processes which lead to biased decisions. Therefore, a Behavioral Decision-Making Architecture model is presented. It takes a closer look onto the interaction between the characteristics of complex situations (Schroda, 2000), the computational architecture of psychological processes (PSI theory, Dörner & Güss, 2013), and the occurrence of cognitive biases (Carter, Kaufmann & Michel, 2007) as well as their behavioral consequences in the decision-making process. The model depicts these processes and provides an approach to explain the unconscious upside (positive influence on motivational needs) of cognitive biases.

Keywords

Behavioral Decision-Making Architecture – PSI theory – Cognitive Biases – Erroneous Decisions – Real-life Decisions