

How Privacy-Related Behavior is Induced by the Behavioral Activation and Inhibition Systems

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Human behavior is often acted out through non-voluntary actions, which are sometimes emotion-based—originating from the amygdala—and are characterized as either approach behaviors (i.e., behavioral activation system, or BAS) or avoidance behaviors (i.e., behavioral inhibition system, or BIS) (Elliot and Church 1997; Elliot and Harackiewicz 1996; Elliot and Covington 2001). The behavior originates in one of three areas within the amygdala as a signal relating to the motivational significance of objects recognized by sensory processes: 1) corticomedial amygdala, which processes appetitive behavior (i.e., approach); 2) basolateral amygdala, which processes inhibitory behavior (i.e., avoidance); and 3) central nucleus, which organizes the output from the amygdala.

Approach behaviors are characterized by a motivation to experience positive affect whereas avoidance behaviors are characterized by a motivation to not experience negative affect (Elliot 1999). Much of these behaviors are developed through the priming of the human mind through human experience and resultant affect (Carver and Scheier 1998; Carver and White 1994; Gray 1987; Harmon-Jones and Allen 1997). This leads to an efficient behavioral system in which the decision to engage in approach or avoidance behavior originates in a non-conscious section of the brain.

Information sharing requires an individual to share (i.e., approach) or not to share (i.e., avoidance) information. To study the subconscious mechanisms involved in information sharing, we use electroencephalogram (EEG), galvanic skin response (GSR), Tobii eye tracking tools, and facial recognition software. It is hypothesized that an individual who is willing to share information engages in approach behavior and will experience positive affect; individuals who are not willing to share information engage in avoidance behavior and will experience negative affect. Participants include students enrolled in undergraduate courses at a Midwestern university.

Prior to the study, participants fill out a pre-survey questionnaire that captures demographics as well as various control variables, such as handedness (Chapman and Chapman 1987), brain disorders (e.g., psychiatric disorders, neurological disorders, brain traumas), and eye color and complications. Handedness and various disorders may influence neurological function, even beyond what is considered normal. Participants then engage in two scenarios in which they are asked to share

information: 1) sharing personal information in Facebook and 2) sharing private information in Amazon.com. During each scenario, participants are asked to share both highly sensitive information (e.g., credit card number, bank account balance, types of personal debt) and low sensitive information (e.g., gender, first and last name, home address). Participants are randomly assigned to one of four conditions, each containing a different scenario order: Facebook or Amazon first and high or low sensitive information first.

Results of the study shed light on how the BAS and BIS are involved in subconscious decision making for privacy-related contexts. Specifically, because many decisions are dependent on the reflexive system of the mind (Lieberman 2007), especially in routine situations, the amygdala is responsible for deciding whether to engage in or avoid the sharing of personal information. The usage of automatic mechanisms for behavior are important in alleviating resources within the mind and allow for quicker responses (Camerer et al. 2005).

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