Self-evaluative intrusive thoughts impede successful searching on the Internet[☆]

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Abstract

This study examined the association between self-evaluative intrusive thoughts and performance in an Internet search task. Participants performed an information search on the Internet, completed the Cognitive Interference Questionnaire [CIQ; Journal of Consulting & Clinical Psychology, 46 (1978), 102], and then responded to a self-assessment questionnaire on their search performance. Participants reported fewer self-evaluative than other task-related intrusive thoughts; however, higher levels of self-evaluative intrusions were predictive of poorer search performance. Participants who experienced more self-evaluative intrusive thoughts were also less satisfied with their search performance. Other task-related thoughts were unrelated to measures of search performance or participant satisfaction with their searches. These results are discussed in the context of information processing and self-regulatory models of cognitive interference and performance and provide one explanation for how concerns with self-evaluation can undermine performance in Internet search tasks.
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A primary Internet activity of most Web users is searching for information. Research suggests that 57% of Internet users search on the Web every day with almost a third searching more than once a day (Statistical Research, 2000). In

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absolute time, Internet users have reported spending an average of 1.5 h each week searching for information on the Web. Consistent with this pattern, a separate survey reported that Internet users ranked searching as the most important activity, rating it at 9.1 on a 10-point scale (Search Engine Watch, 2002). Given the pervasiveness of Internet searching behavior and the challenges of using computers to find information (Bloom, 1990; Kellogg & Richards, 1995) researchers have recently sought to better understand factors that affect search performance.

From an information retrieval perspective, the search for information can be understood within a framework that assumes three components (Marchionini, 1995). Two components, system content and system capabilities, emphasize features of the search environment such as the organization and representation of information in the system (system content) or a system's search features and algorithms for searching (search capabilities). While these factors certainly play a role in search performance, we are more interested in the third component that emphasizes the role that user characteristics play in the effectiveness of information searches. The user component refers to factors that the user brings to the search task, such as dispositional traits like anxiety, cognitive abilities, or previous experience.

A review of the literature on Web search behavior by Hsieh-Yee (2000) summarizes the many approaches that researchers have adopted to investigate Web search behavior. Studies have varied in their emphasis on each of the three components proposed by Marchionini (1995), but common findings based on descriptive and empirical studies suggest that search performance on the Web decreases as the cognitive demands of the task increase. For instance, Khan and Locatis (1998a, 1998b) examined how the presentation of information in Web pages influenced search efficiency and accuracy. In their research they varied the number of links per display and the presentation format of the links. Links were presented in a list format or embedded in text. Participants exhibited better search performance when displays contained fewer links and when links were presented in a list format. Both of these conditions reflect situations that reduce the information processing demands for users. Other researchers have also noted that the differential search preferences of novice and expert Web users indicate that novice searchers prefer strategies that require less cognitive load (Carlson & Kacmar, 1999; Marchionini & Shneiderman, 1993). Findings such as these underscore the point that characteristics of the task can influence search performance by altering the demands placed on cognitive processes.

Previous research has also demonstrated that characteristics of the user can influence search performance. Feelings of self-efficacy, anxiety, and cognitive abilities have all been recognized as important individual differences variables that influence performance on computer tasks (Bloom & Hautalouma, 1990; Durndell & Haag, 2002; Kellogg & Richards, 1995; Presno, 1998; Rozell & Gardner, 2000; Torkzadeh & Van Dyke, 2002). A central goal of this study was to investigate a component of anxiety—the experience of intrusive thoughts—that may impede information search behavior on the Internet. Intrusive thoughts have often been considered the cognitive component of anxiety (Sarason, 1975; Wine, 1971, 1982), and as such have also been referred to as cognitive interference (Sarason & Stoops, 1978). Consistent with