Obsessive-compulsive tendencies are related to seeking proxies for internal states in everyday life

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ABSTRACT

Background and Objectives: In recent years we have proposed and investigated the Seeking Proxies for Internal States (SPIS) model of obsessive-compulsive disorder (OCD), which postulates that deficient access to internal states is a key feature of the disorder. According to this model, rules and rituals that often characterize people with OCD can be understood as proxies for deficiently accessible internal states. Here we compliment this earlier experimental work by examining whether reliance on proxies for internal states in everyday life is associated with OCD.

Methods: We developed an inventory for assessing reliance on proxies in everyday life and examined its relationship with obsessive-compulsive tendencies in two internet panel studies. The internal states included hunger, enjoyment, interpersonal liking, preferences, a sense of understanding, and intuitions about correct solutions to problems. The proxies included one's own behavior, the opinion of others, and objective indices such as grades and elapsed time since eating.

Results: In both studies, participants with obsessive-compulsive tendencies reported relying more on external, discernible proxies for a variety of internal states. These results remained significant after controlling for concurrent anxiety and depression.

Limitations: Our inventory is by necessity limited in its sampling of internal states and proxies and further correlational and experimental studies will be needed to examine additional areas of application, such as decision making and interpersonal liking.

Conclusions: These results are consistent with and expand the Seeking Proxies for Internal States (SPIS) model and may have implications for understanding and treating individual with OCD.

1. Introduction

Obsessive Compulsive Disorder (OCD) is defined by the presence of obsessions (recurrent and persistent thoughts, urges, or impulses that the individual attempts to ignore, suppress, or neutralize) and/or compulsions (repetitive behaviors or mental acts that the individual feels driven to perform; American Psychiatric Association, 2013). However, there are many other features that have been found to characterize people with OCD. Obsessive-compulsive individuals tend to intensively monitor their thoughts and actions (Riesel, Endrass, Auerbach, & Kathmann, 2015; Yoris et al., 2017). Their behavior is often governed by rigid rules and procedures (American Psychiatric Association, 2013). They experience pervasive doubts (Dar, 2004; Samuels et al., 2017) and difficulty in making decisions (Frost & Shows,1992; Sarig, Dar, & Liberman, 2012). The complex phenomenology of OCD poses challenging questions for psychologists trying to

understand it: What is the psychological mechanism that creates and maintains this complex phenomenology? What do these phenomena have in common? Do they serve a similar function?

Building on previous models of OCD (e.g., Boyer & Liénard, 2006; Shapiro, 1965; Summerfeldt, 2004; Szechtman & Woody, 2004), we recently proposed a comprehensive model of OCD, which we termed Seeking Proxies for Internal States (SPIS; Lazarov, Dar, Oded, & Liberman, 2010; Liberman & Dar, 2009). According to the SPIS model, a core feature of OCD is impaired access to internal states, which drives people with OCD to seek and rely on more easily discernible indices or "proxies" for those states. Internal states in this model are defined broadly, encompassing emotions and preferences as well as bodily states and sensations. For example, a person with OCD might find it difficult to gage his love for his girlfriend, and might use the length of their phone calls as an index for his feelings towards her. Another obsessive-compulsive (OC) person may review how long she has slept in order to infer how tired she is.

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A number of theoretical accounts have postulated that OC individuals have reduced confidence in their memory and other cognitive functions, such as perception and decision making (Cartwright-Hatton & Wells, 1997; Nedeljkovic & Kyrios, 2007). The SPIS model builds on these accounts and extends them in two important ways: First, it postulates that OC individuals have difficulty accessing their *internal states* rather than their *cognitive functions*. Not all internal states are cognitive functions, and not all cognitive functions are internal states. For example, feeling love is not a cognitive function, and according to the SPIS model, people high in OC tendencies would have impaired access to their own feeling of love. Being conscious of the content of one's thoughts, on the other hand, is a cognitive function but is not an internal state, and the SPIS model predicts that OC tendencies would not be associated with reduced access to the content of one's thoughts. Second, we propose that OCD is characterized not only by reduced access to (and/or increased doubt in) internal states, but also by seeking proxies for these deficiently accessible internal states, as we now turn to elaborate.

When in need of information that they cannot readily access, people often use indirect indices, or in our terms, proxies for that information. For example, academic excellence is difficult to estimate, and therefore university administrators use the number of published papers or the number of citations as proxies for academic excellence. We propose that people with OCD likewise seek proxies for deficiently accessible internal states and that rules and rituals serve as such proxies. For example, a person who does not know if s/he understands what she reads might test her own memory of the text in order to decide on that question. As another example, a person who lacks a sense of which movies she likes, might develop a rule to always prefer European to American movies.

Unlike goals with clear end-states, goals with vague end-states do not afford a clear stopping signal. For example, action towards the goal of filling-up gas in one's car naturally terminate when the gas tank is full. But when should a person stop washing her hands, or securing her house? It has been proposed that in order to terminate this type of actions, people often rely on feeling satisfied with what they have done (Liberman & Dar, 2009; Szechtman & Woody, 2004). Lacking access to their own state of satisfaction, however, might make it difficult for people with OCD to stop such actions, and drive them to develop rituals, which are fixed scripts with prescribed stopping rules. For example, instead of stopping when s/he feels that s/he washed enough, a person with OCD might develop a washing ritual that involves using hot water, applying soap three times and letting the water run for 30 s each time.

The SPIS model suggests, then, that to the extent that stopping an action is not governed by an easily discernible criterion (e.g., the gas tank is full) but rather by an internal state (e.g., the sense of having done enough), people with OCD would find it difficult to stop that action and would develop rituals and arbitrary stopping rules. Notably, the classic OCD domains of cleanliness, safety and morality often present people with avoidance goals that tend to have vague end-points. The SPIS model predicts, however, that a difficulty to stop and reliance on rules and rituals would manifest not only in these domains but also in many other goal-directed actions, inasmuch as stopping those actions requires reliance on internal states. The present article compliments our earlier experimental work by examining the SPIS theory in the context of such common, everyday-life experiences of seeking proxies for internal states.

Thus far, the SPIS model has been tested in the laboratory, with controlled experimental situations that introduced a need to access internal states. For example, a series of studies in our laboratory used biofeedback as a proxy for the internal states of relaxation and muscle tension. Lazarov, Dar, Liberman, and Oded (2012) asked participants to attain different levels of forearm muscle tension both with and without the aid of biofeedback. As predicted, high OC participants were as accurate as low OC participants in producing the designated muscle tension levels when biofeedback was available, but performed significantly less well without the biofeedback. Similar results were obtained when relaxation rather than muscle tension was used as the internal state to be achieved (Lazarov et al., 2010).

Other studies showed that OC tendencies were related to reliance on relevant but false feedback in judging internal states. In Lazarov et al. (2011, Study 1), high and low OC participants were instructed to relax their forearm muscles while viewing false pre-programmed putative "biofeedback" on their muscle tension. Each participant underwent two successive phases of false feedback, one indicating gradual increase and one indicating gradual decrease in muscle tension. Following each phase, participants rated their perceived muscle tension. As predicted, high OC participants were significantly more influenced than low OC participants by the false biofeedback in evaluating their own muscle tension, indicating that they relied more on the (false) biofeedback proxy in gaging this internal state. Similar results were obtained when relaxation was the target internal state (Lazarov et al., 2010). Importantly, even more pronounced results were obtained with clinical OCD participants who were compared to both anxiety disorders and non-clinical controls (Lazarov, Liberman, Hermesh, & Dar, 2014). In both procedures, anxiety disorder participants did not differ from the non-clinical controls, demonstrating that reliance on proxies for internals states is specific to OCD and not attributable to anxiety.

Finally, a recent series of studies by Dar, Lazarov, and Liberman (2016) examined the relationships between OC tendencies and performance on the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, Caruso, & Sitarenios, 2003; Palmer, Gignac, Manocha, & Stough, 2005). As predicted, OC tendencies were associated with lower scores on the Experiential area of the MSCEIT, which relies on access to experienced emotions, but not on the Strategic area, which relies on semantic knowledge about emotions.

The work described above examined internal states that lend themselves to laboratory investigation of causal effects. Indeed, with both the biofeedback procedures and the MSCEIT we found that an experimental manipulation that undermined people's confidence in their internal states produced a pattern of results resembling that of people high in OC tendencies (for biofeedback-aided relaxation see Lazarov et al., 2011; for biofeedback-aided muscle tensing see Lazarov et al., 2012; for MSCEIT see Dar et al., 2016, Study 3). But the construct of internal states is obviously broader and more clinically relevant than is captured in these studies, encompassing a rich variety of behaviors, sensations, emotions and preferences. Based on clinical experience, we believe that people high in OC tendencies struggle with a wide variety of internal states: a difficulty to access their own feelings of love, their esthetic preferences, their level of enjoyment during vacations, the sense of understanding what they have read. We thus set to explore whether seeking proxies for such personally important internal states in one's everyday-life experiences would be related to OC tendencies. To that end, we compiled a list of internal states, and tested the hypothesis that seeking proxies for these states would be related to OC tendencies. More specifically, we hypothesized that OC tendencies would predict reliance on