ELSEVIER

Anxiety Disorders
20 (2006) 580–596

JOURNAL OF Anxiety Disorders

Reality monitoring and motor memory in checking-prone individuals

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Abstract

Studies concerning reality monitoring and motor memory abilities in checkers have provided mixed results. The aim of this study was to re-examine this question by asking 75 undergraduate students to perform, watch the experimenter perform, imagine themselves performing, imagine the experimenter performing, or verbally repeat different daily actions. Two groups were created (checking-prone and nonchecking-prone subjects) based on participants' checking subscores on the revised version of the Obsessive–Compulsive Inventory. First, results suggested that checking-prone subjects have a poorer motor memory than nonchecking-prone participants. Second, our data indicated that checking-prone participants confused actions they had performed with actions the experimenter had performed more often than nonchecking-prone participants. In other words, checking-prone participants remembered events from an observer's viewpoint. Finally, our findings suggest that dissociation could be a mediating variable between some of the reality monitoring abilities and checking.

Keywords: OCD; Checking; Motor memory; Reality monitoring

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0887-6185/$ – see front matter
doi:10.1016/j.janxdis.2005.08.001

1. Introduction

Clinical observations suggest that individuals with obsessive–compulsive disorders (OCD), in particular those with checking rituals, are often unsure about whether they have performed an action or not. This pathological doubt has been attributed, at least in part, to memory dysfunctions (see the meta-analytic review by Woods, Vevea, Chambless, & Bayen, 2002). From this perspective, studies on checkers have demonstrated deficits in visual and visuospatial memory (e.g., Bouvard & Cottraux, 1997; Tallis, Pratt, & Jamani, 1999), but not in verbal memory (e.g., MacDonald, Antony, Macleod, & Richter, 1997; Radomsky & Rachman, 1999).

Some studies have also examined checkers' memory for actions and in particular their ''reality monitoring'' abilities, that is, their capacity to discriminate between perceived and imagined events (Johnson & Raye, 1981). More specifically, the reality monitoring deficit hypothesis assumes that checking patients are not sure whether they have performed or only imagined performing an action (e.g., closing the door). This doubt leads them to check in order to ensure that they really have performed the action. Existence of a motor memory deficit and a reality monitoring deficit in checkers was studied in particular by Ecker and Engelkamp (1995). These authors postulated, as did Reed (1977, 1985), that clinical checking might be due to OCD patients' more impersonal quality of action memory. That is, according to Reed, OCD patients tend to remember actions from the perspective of a nonparticipant observer and tend to rely more on visual imagery, whereas normally (i.e., in non-OCD individuals) one tends to emphasize subjective experience and to rely on images from all modalities, including kinesthetic. Ecker and Engelkamp presume that such impersonal quality of memories is due, in part, to a deficit in encoding or retrieving motor/kinesthetic information that might lead to a difficulty in distinguishing memories of actions performed from memories of imagined actions (i.e., a reality monitoring deficit).

Based upon these hypotheses, Ecker and Engelkamp (1995) administered an action-based task to a group of 24 frequent checkers with OCD, 24 high-checking controls and 48 low-checking controls. Participants were asked to learn actions (e.g., opening a book) presented in different modalities: they had either to perform the action (motor condition), to imagine themselves performing the action (imagined-motor condition), to watch the experimenter perform the action (visual condition), or to repeat the action verbally (verbal condition). Participants were then tested on a free recall and recognition test. In this study, OCD checkers showed poorer free recall of motor-encoded actions than low-checking controls. Furthermore, OCD checkers confused motor- and imagined-motor-encoded actions more frequently than low-checking controls, suggesting a reality monitoring deficit. Such confusion was correlated with the Maudsley Obsessional-Compulsive Inventory checking subscale (MOCI, Hodgson & Rachman, 1977). In conclusion, Ecker and Engelkamp's study suggested that checkers have motor memory and reality monitoring deficits.