

# Memory bias in patients with hypochondriasis and somatoform pain disorder

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## Abstract

**Objective:** A memory bias enhances memory for disorder congruent information. The experimental evaluation of such biases in somatoform disorders may improve our understanding of these disorders. **Method:** Immediate and delayed free recall as well as recognition for positive, negative, pain, and neutral word stimuli were studied in 28 patients with somatoform disorders (hypochondriasis and/or pain disorder patients) and 14 patients without somatoform disorders. **Results:** Somatoform patients recalled fewer

positive words and their criteria for recognition of negative and pain words were less conservative than in patients without somatoform disorders. In addition, patients with comorbid hypochondriasis and somatoform pain disorder showed an enhanced immediate recall of pain words. **Conclusion:** The memory biases found in this study support cognitive theories of somatoform disorders. They may contribute to the development and maintenance of somatoform disorders. © 2002 Elsevier Science Inc. All rights reserved.

*Keywords:* Hypochondriasis; Memory bias; Pain disorder; Recall; Recognition; Somatoform disorders

## Introduction

The experimental examination of cognitive biases significantly contributed to our understanding of anxiety disorders and depression [1–3]. These patients have attentional biases in favour of stimuli referring to their specific disorder [4,5]. Interpretational biases [6] lead them to misinterpret these stimuli as more relevant or more severe. The covariation bias phenomenon [7,8] refers to the fact that patients expect that disorder specific stimuli will be followed by aversive consequences (e.g., pain) although the actual covariation between stimuli and consequences is random. Moreover, memory biases [9,10] attracted considerable research interests. That anxious and depressed patients are better able to remember disorder-relevant information supports cognitive theories like the network theory of mood and memory introduced by Bower [11] or Beck's schema theory [12].

Cognitive distortions are also assumed to play an important role in the development and maintenance

of somatoform disorders, especially hypochondriasis [13–16], and also pain disorder [17]. Ample evidence is available for cognitive and memory biases in clinical samples of pain patients [18–23]. With respect to the memory bias, Pearce et al. [18] found that pain patients compared to controls recalled more pain words and less neutral words immediately after the presentation of a mixed list of words from an audio tape. Of note, the groups did not differ regarding the recall of negative words that did not refer to pain. Thus, the bias is specific to material relevant to the disorder. These effects were attenuated but still observable in a delayed recall test. A pain-specific memory bias was also found in children with pain who were presented with a list of pain-sensory, pain-affective and neutral words in a self and another person reference condition [24].

Edwards et al. [20] examined the specificity of this effect across diagnostic subgroups by comparing pain patients with or without depression, depressed patients without pain and healthy controls. They presented all groups with lists of adjectives referring to the sensory quality of pain. Only pain patients with minimal or no depressive symptoms had a recall bias in favour of sensory pain adjectives. Depressed patients did not show this bias. A more recent study made it possible to analyse

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this effect in more detail [19]. Here, another factor was introduced by asking participants to endorse statements as descriptors of themselves or their best friends. Depressed pain patients showed a memory bias for negative pain words, but only for those that were classified as self-referential.

Experimental studies on hypochondriasis mainly focused on attentional (e.g., Refs. [25–28]) or interpretational biases (e.g., Refs. [29,30]). To our knowledge, only two studies [26,31] examined memory biases associated with hypochondriasis, and both reported equivocal results. Durso et al. [31] studied undergraduates scoring high or low on the MMPI hypochondriasis subscale regarding memory biases for health-related and non-health-related information. They related this health information to the participants themselves, a close friend (as reported by the study participant) or an unknown person (information provided by the experimenter). Higher scores on hypochondriasis did not affect memory performance for health-related information. But patients with higher scores tended to confuse the source of the information. More recently, Brown et al. [26] did not find strong support for their initial hypothesis that hypochondriacal patients show a bias favouring the perception of difficult-to-read health-related words. However, memory for health related words was better in both of their patient groups, which were hypochondriacal in-patients and hypochondriacal out-patients who had been referred for Holter monitoring.

The goal of the present study was to compare memory biases of patients with hypochondriasis and/or pain disorder. Based on previous findings in pain patients [18,20], we expected somatoform pain patients to better recall pain words than other negative words or positive words. Furthermore, we set out to explore differences between pain patients and hypochondriacal patients. Whereas hypochondriacal patients are concerned about their health (e.g., having cancer or having allergies), they should not have experienced excessive chronic pain associated with their disorder. This consideration and the extant evidence for a specificity of this bias to pain disorder leads us to assume that hypochondriacal patients should not have a memory bias for pain words. Because hypochondriasis, on the other hand, is characterised by anxiety about health, catastrophising cognitions and negative affect (e.g., Refs. [15,16]), we expected these patients to exhibit poorer memory performance for positive stimulus words and enhanced memory for a broad variety of negative stimulus words.<sup>1</sup> This general valence effect was not expected in pain patients.

<sup>1</sup> Based on the Brown et al. [26] findings, it would have been interesting to also examine health-related words. However, this study was published after data collection for the present study was completed.

## Method

### Participants

Forty-two patients of a general medicine practice were examined. Twenty eight patients were diagnosed with a somatoform disorder. Fourteen of which had hypochondriasis and/or somato pain disorder (HH and SP), six hypochondriasis only (HH-only) and eight-form pain disorder only (SP-only). Fourteen patients of the same general medicine practice who had no somatoform disorder were selected as a patient control group (PC). DSM-IV diagnoses for somatoform disorders were made by the experimenter (who was at this time blind regarding the results of the memory tests) on the basis of a structured interview using the International Diagnostic Check List (IDCL; Ref. [32]). The IDCL is a semistructured WHO instrument for assessment of ICD-10 and DSM IV diagnostic criteria which provides symptoms and their characteristics; specification of inclusion and exclusion criteria, and decision rules necessary to make diagnoses.

The four groups did not differ significantly in age [ $F(3,38) = 1.4$ , ns], sex ratio [ $\chi^2(3) = 2.3$ , ns] and education level [ $\chi^2(3) = 2.7$ , ns]. Mean age of the four groups and sex ratio is reported in Table 1.

All patients were recruited from a private general medicine practice and were referred for further diagnostic assessment if they met the following criteria. (1) Patients recruited for the somatoform disorder groups were required to have a minimum of six practice visits within the last 3 months because of bodily complaints (e.g., cardiovascular complaints, dizziness) and/or pain symptoms (e.g., abdominal pain, low back pain), both without clear organic cause, and the practice physician suspected hypochondriasis and/or pain disorder. (2) Patients for the control group were required to have one or two practice visits within 3 months because of a well-defined minor complaint (e.g., cold), and/or a prescheduled routine examination without acute complaints (e.g., blood pressure measurement) and the practice physician suspected that practice visits were not related to a somatoform disorder.

Informed consent was obtained from 45 patients. They were contacted by the experimenter and invited to participate in the experiment. However, three patients were excluded from the analysis because the diagnostic interview revealed that they did not have hypochondriasis and/or pain disorder, but another somatoform disorder.

### Psychometric assessment

Psychometric assessment consisted of several disorder specific scales and some instruments for the description of general psychopathology. The *Bodily Complaints Scale* (BL; “Beschwerdenliste” [33]) was used for assessment of hypochondriacal complaints. The BL is a self-rating scale of subjective impairment mainly caused by bodily complaints. To specifically assess somatization symptoms, the

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