



ELSEVIER

Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

Personality and Individual Differences 37 (2004) 1341–1345

PERSONALITY AND
INDIVIDUAL DIFFERENCES

www.elsevier.com/locate/paid

Subjective sleep experiences are related to dissociation

Timo Giesbrecht *, Harald Merckelbach

*Department of Experimental Psychology, University of Maastricht, P.O. Box 616, 6200 MD,
Maastricht, The Netherlands*

Received 19 June 2003; received in revised form 25 November 2003; accepted 21 January 2004

Available online 28 February 2004

Abstract

We examined the relationship between dissociative experiences as indexed by the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) and sleep-related experiences (e.g., nightmares, recurring dreams) as measured by the Iowa Sleep Experience Survey (ISES; Watson, 2001) in an undergraduate sample ($N = 94$). In addition, we studied the link between dissociative experiences and sleeping pattern as measured by the Morningness–Eveningness Questionnaire (MEQ; Horne & Östberg, 1976). In keeping with earlier work, we found that heightened levels of dissociation are related to a raised frequency of self-reported sleep disturbances. However, dissociation was not related to individual differences in Morningness–Eveningness Schedule.

© 2004 Elsevier Ltd. All rights reserved.

Keywords: Dissociation; Sleep experiences; Morningness–eveningness

1. Introduction

The marked influence of sleep deprivation on performance and alertness has been shown by numerous studies (Jewett, Dijk, Kronauer, & Dinges, 1999). However, the issue of how individual differences in sleeping pattern and sleeping quality are related to traditional personality traits has received little attention. This is astonishing as individual differences in sleeping behaviour (e.g., frequency of nightmares and lucid dreams) are stable over time and consistent across different contexts (see for a recent study, Watson, 2003). Also, there are reliable and valid self-report measures that tap individual differences in such sleep-related experiences (Watson, 2003).

* Corresponding author.

E-mail address: t.giesbrecht@psychology.unimaas.nl (T. Giesbrecht).

Given their dreamlike properties, one might suspect a robust link between dissociative symptoms (e.g., derealization, depersonalization, and amnesia) and sleep-related experiences. In a pioneering study relying on two large student samples, Watson (2001) demonstrated this relationship by showing that dissociative experiences symptoms as measured by the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) and sleep- and dream-related experiences as indexed by the Iowa Sleep Experiences Survey (ISES; Watson, 2001, 2003) are, indeed, correlated with each other, with Pearson correlations circling around 0.50. On the basis of this finding, Watson (2001) speculated that dissociative symptoms might be fuelled by labile sleep-wake cycles, such that individuals with these symptoms easily pass from normal waking mentation to dream-like states. Clearly, this research line offers a fresh perspective on the origins of dissociative symptoms, which are commonly understood as reflecting a defensive coping style caused by a history of childhood trauma (e.g., Merckelbach & Muris, 2001). With this in mind, the current study made an attempt to replicate Watson's observation that dissociative and subjective sleep experiences are related to each other. In addition, we explored how dissociation relates to sleeping schedule as measured by the Morningness–Eveningness Questionnaire (MEQ; Horne & Östberg, 1976). Morning type respondents prefer activities during the morning. In contrast, evening type respondents are characterized by a preference for evening activities. Eveningness is associated with irregularities in sleep-wake schedules, complaints of sleep debt and excessive daytime sleepiness (Gianotti, Cortesi, Sebastiani, & Ottaviani, 2002). Thus, we expected that heightened dissociativity might be linked to eveningness.

2. Method

2.1. Participants

Participants were 94 undergraduate students enrolled at the University of Maastricht. Sixty-four of them were women. Their mean age was 21.25 years ($SD = 2.16$; range: 18–27 years).

2.2. Measures

Dissociative Experiences Scale (DES; Cronbach's $\alpha = 0.94$). The DES (Bernstein & Putnam, 1986) is a self-report scale asking respondents to indicate on 100 mm visual-analog scales to what extent they experience 28 dissociative phenomena in daily life on 100 mm visual-analog scales. Examples of such phenomena include feelings of depersonalization, derealization, and psychogenic amnesia. A subset of eight DES items forms the Dissociative Experiences Scale Taxon (DES-T; Cronbach's $\alpha = 0.82$; Waller, Putnam, & Carlson, 1996), which is thought to be especially sensitive to pathological dissociation. DES-T scores can be obtained by averaging across DES items 3, 5, 7, 8, 12, 13, 22, and 27 (e.g., Eisen & Carlson, 1998).

The Iowa Sleep Experiences Survey (ISES; Cronbach's $\alpha = 0.85$). The ISES (Watson, 2001, 2003) consists of 18 questions asking the respondent to rate the frequency of various sleep- and dream-related experiences (e.g., "A dream helped me to solve a current problem or concern.", "Lying in bed, I sense the presence of someone who actually isn't there.") on a 7 point-Likert scale (anchors: 1 = never; 7 = several times a week). The ISES contains two separate subscales that

measure general sleep experiences (15 items; Cronbach's $\alpha = 0.81$) and lucid dreaming (3 items; Cronbach's $\alpha = 0.77$), respectively. These subscales show a moderate correlation with *rs* circling around 0.40, indicating that they measure distinct, but related constructs (Watson, 2001). A mean score can be obtained by averaging across all items.

Morningness–Eveningness Questionnaire (MEQ; Cronbach's $\alpha = 0.82$; Horne & Östberg, 1976). The MEQ is commonly used to classify individual differences in sleeping schedules of respondents. Based on their answers to items like “During the first half-hour after having woken in the morning, how tired do you feel?”, respondents are categorized as belonging to one of the following five groups: definitive morningness, moderate morningness, intermediate, moderate eveningness, and definitive eveningness (Horne & Östberg, 1976).

All questionnaires were Dutch translations and have been extensively used during prior research, which yielded results highly similar to studies relying on the original English versions.

3. Results

Mean DES, ISES, and MEQ scores were 16.13 (SD = 11.33), 2.66 (SD = 0.75), and 46.78 (SD = 9.09), respectively. It is worthy of note that the mean DES score corresponds with values that previous studies reported for student samples (e.g., Merckelbach, Horselenberg, & Schmidt, 2002). Table 1 presents Pearson correlations between DES, ISES, and MEQ scores. Correlations with the subscales of the ISES are also shown.

Dissociative experiences were significantly correlated with total ISES scores and scores on its general sleep experiences subscale. However, the correlation of DES with the lucid dream subscale of the ISES reached only borderline significance ($p = 0.05$; two-tailed), while that with Morningness–Eveningness fell short of significance. Interestingly, the two ISES subscales correlated significantly with each other, while none of the ISES parameters was related to Morningness–Eveningness. The correlational pattern for the DES-T followed that of the DES. Thus, DES-T was related to ISES scores, but not to MEQ scores.

Table 1
Pearson correlations between the Dissociative Experiences Scale (DES), Morningness–Eveningness Questionnaire (MEQ), and the Iowa Sleep Experience (ISES) in an undergraduate sample ($N = 94$)

	DES	ISES	ISES GS	ISES LD	MEQ
DES	–				
ISES	0.37*	–			
ISES GS	0.38*	0.97*	–		
ISES LD	0.23	0.75*	0.56*	–	
MEQ	–0.05	0.12	–0.09	0.12	–
DES-T	0.87*	0.38*	0.38*	0.24	–0.05

Correlations involving the General Sleep Experiences Subscale of the ISES (ISES GS), the Iowa Sleep Experiences Lucid Dreaming Subscale of the ISES (ISES LD) and the Dissociative Experiences Scale Taxon (DES-T) are also shown.

* $p < 0.01$ level (two-tailed).

4. Discussion

Our findings replicate those of Watson (2001) in that we found heightened levels of dissociation to be linked to reports of sleep phenomena like narcolepsy, vivid and unusual dreams, and nocturnal experiences like waking dreams and sensing the presence of someone who is not present. Interestingly, the more pathological manifestations of dissociation (e.g., the DES-T; Waller et al., 1996) were also found to be related to these sleep experiences. However, we did not find a relationship between dissociation and lucid dreaming or evening- versus morning-oriented sleep schedules. Apparently, the link between dissociation and sleeping is quite specific, which argues against the idea that our findings are the result of a reporting bias. However, due to our relatively small and homogenous (i.e., student sample) sample the aforementioned null findings have to be interpreted with caution and require replication in larger and more diverse samples.

These findings are important because they might provide a starting point for new research avenues into the study of dissociative experiences. The received view is that dissociation serves a defensive function and is the result of exposure to traumatic events (Merckelbach & Muris, 2001). However, our results as well as those of Watson (2001, 2003) are consistent with the speculation that individual differences in sleeping behaviour might underlie dissociative experiences. Thus, high dissociators might more readily pass from normal waking into dream-like states, which might produce dissociative episodes. Of course, with the correlations obtained in the current study, it is impossible to test such causal theories. Yet, they might inspire studies in which speculations about the causal antecedents of dissociation can be fairly directly tested. For example, to the extent that a labile sleep-wake cycle produces dissociation, one would expect that sleep deprivation enhances dissociative experiences. Also, one would expect that certain EEG parameters (e.g., slow wave activity) are related to individual differences in dissociation.

The connection between sleep experiences and dissociation might also explain why dissociative phenomena are associated with both fantasy proneness and cognitive failures (Merckelbach & Muris, 2001; Merckelbach et al., 2002). Germane to this issue are studies indicating that sleep deprivation leads to decrements in alertness and performance (e.g., Jewett et al., 1999). Therefore, studies on sleep disturbances might shed a new light on the robust correlations ranging from 0.43 (Merckelbach, Muris, & Rassin, 1999) to 0.53 (Merckelbach et al., 2002) between dissociative experiences as measured by the DES and susceptibility to cognitive failures as measured by the Cognitive Failures Questionnaire (CFQ; Broadbent, Cooper, Fitzgerald, & Parkes, 1982).

Another robust correlation is that between dissociation and fantasy proneness as measured by the Creative Experiences Questionnaire (CEQ; Merckelbach, Horselenberg, & Muris, 2001), which varies from 0.48 (Merckelbach, Muris, Rassin, & Horselenberg, 2000) to 0.58 (Merckelbach et al., 1999). Fantasy proneness refers to a deep and extensive involvement in fantasy and day-dreaming (Merckelbach et al., 2001) and has been linked to dream recall (Watson, 2001). Research on neural nets suggests that regular dreaming might increase the efficiency of neural information processing. By this view, Rapid Eye Movement Sleep prevents interference between different classes of information, which some have taken to imply that we “dream to reduce fantasy” (Crick & Mitchison, 1995, p. 150). Thus, it is not too farfetched to speculate that disturbed dreaming patterns might promote rather than inhibit fantasies.

To sum up, then, the findings of Watson (2001, 2003) and those of the current study might broaden our understanding of the nature of dissociative experiences by relating them to differ-

ences in sleeping behaviour. However, one clear limitation of this research is its reliance on self-reports and non-clinical samples. Future research based on objective measures such as slow waves in resting EEG might underpin the correlation between dissociation and sleep experiences.

Acknowledgement

This study was supported by a grant from the Dutch granting organization N.W.O., Grant No. 36.01.00.29N.

References

- Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous and Mental Disease*, *174*, 727–735.
- Broadbent, D. E., Cooper, P. F., Fitzgerald, P., & Parkes, K. R. (1982). The cognitive failures questionnaire (CFQ) and its correlates. *British Journal of Clinical Psychology*, *21*, 1–16.
- Crick, F., & Mitchison, G. (1995). REM sleep and neural nets. *Behavioural Brain Research*, *69*, 147–155.
- Eisen, M. L., & Carlson, E. B. (1998). Individual differences in suggestibility: examining the influence of dissociation, absorption, and a history of childhood abuse. *Applied Cognitive Psychology*, *12*, S47–S61.
- Gianotti, F., Cortesi, F., Sebastiani, T., & Ottaviani, S. (2002). Circadian preference, sleep and daytime behaviour in adolescence. *Journal of Sleep Research*, *11*, 191–199.
- Horne, J. A., & Östberg, O. (1976). A self-assessment questionnaire to determine morningness–eveningness in human circadian rhythms. *International Journal of Chronobiology*, *4*, 97–110.
- Jewett, M. E., Dijk, D.-J., Kronauer, R. E., & Dinges, D. F. (1999). Dose-response relationship between sleep duration and human psychomotor vigilance and subjective alertness. *Sleep*, *22*, 171–179.
- Merckelbach, H., Horselenberg, R., & Muris, P. (2001). The Creative Experiences Questionnaire (CEQ): a brief self-report measure of fantasy proneness. *Personality and Individual Differences*, *31*, 987–995.
- Merckelbach, H., Horselenberg, R., & Schmidt, H. (2002). Modeling the connection between self-reported trauma and dissociation in a student sample. *Personality and Individual Differences*, *32*, 695–705.
- Merckelbach, H., & Muris, P. (2001). The causal link between self-reported trauma and dissociation: a critical review. *Behaviour Research and Therapy*, *39*, 245–254.
- Merckelbach, H., Muris, P., & Rassin, E. (1999). Fantasy proneness and cognitive failures as correlates of dissociative experiences. *Personality and Individual Differences*, *26*, 961–967.
- Merckelbach, H., Muris, P., Rassin, E., & Horselenberg, R. (2000). Dissociative experiences and interrogative suggestibility in college students. *Personality and Individual Differences*, *29*, 1133–1140.
- Waller, N. G., Putnam, F. W., & Carlson, E. B. (1996). Types of dissociation and dissociative types: a taxometric analysis of dissociative experiences. *Psychological Methods*, *1*, 300–321.
- Watson, D. (2001). Dissociation of the night: Individual differences in sleep-related experiences and their relation to dissociation and schizotypy. *Journal of Abnormal Psychology*, *110*, 526–535.
- Watson, D. (2003). To Dream, perchance to remember: Individual differences in dream recall. *Personality and Individual Differences*, *34*, 1271–1286.