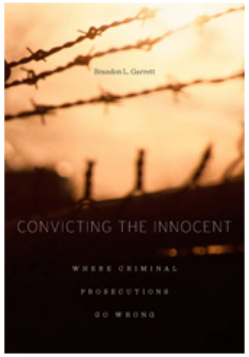
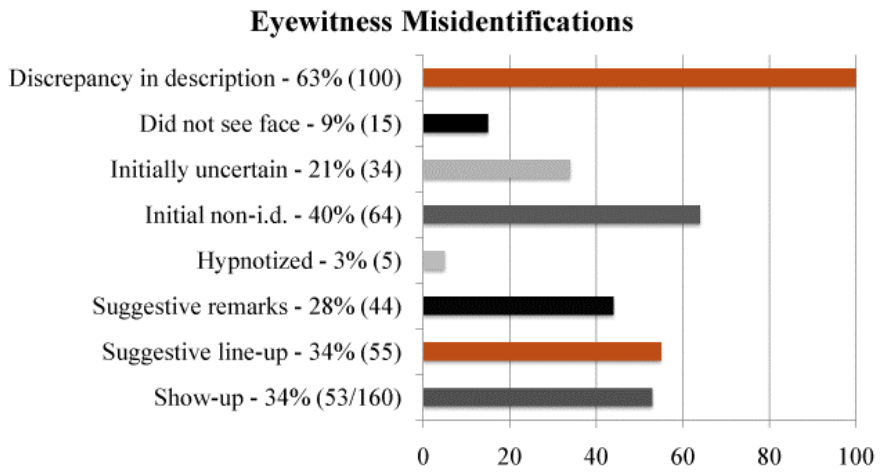


"Convicting the Innocent": Data and Materials

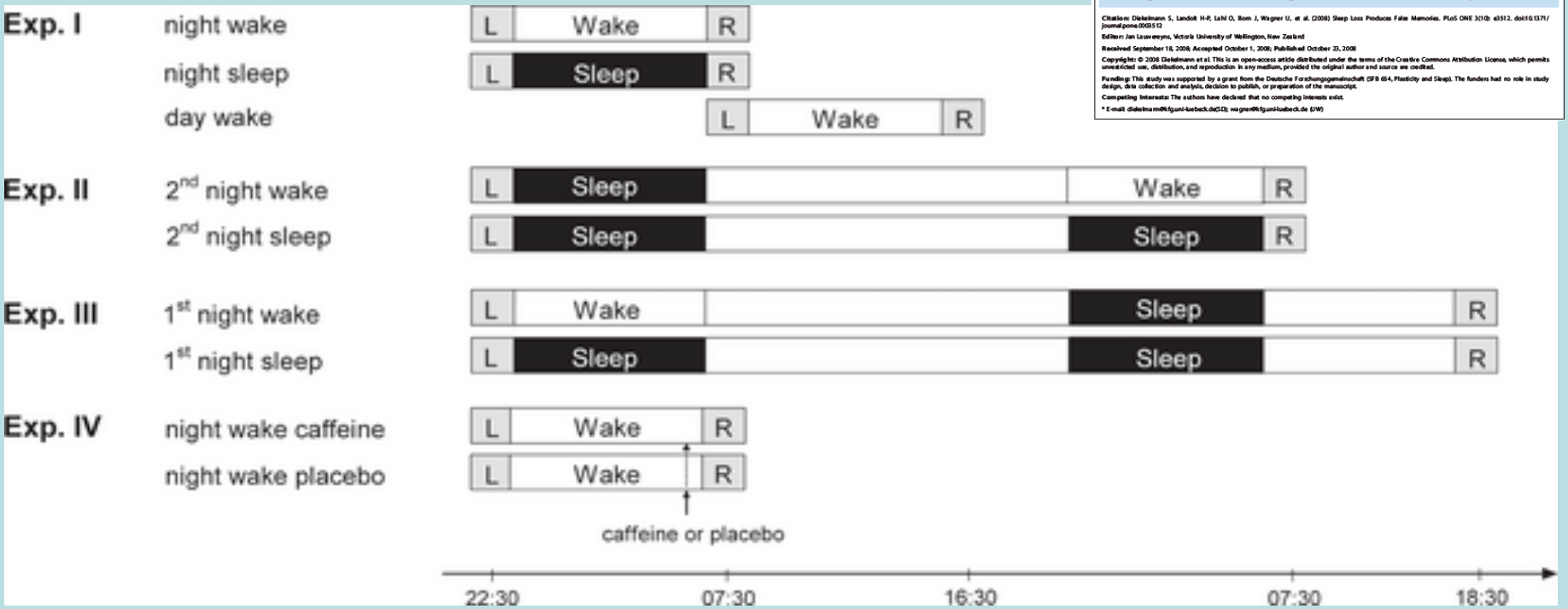
This library collection contains data and materials concerning the trials of the first 250 people exonerated by post-conviction DNA testing in the United States. This research collection was compiled in conjunction with a book by Brandon Garrett, "Convicting the Innocent: Where Criminal Prosecutions Go Wrong (2011), reporting the results of a study of these materials. The research pages contain data, research appendices and resources arranged by subject:

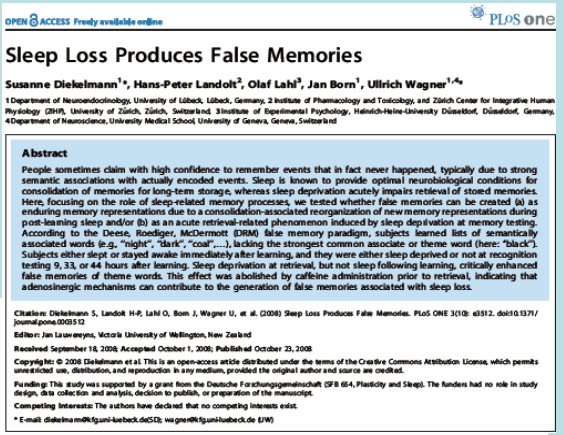
- Confessions
- Eyewitness Misidentifications
- Forensics
- Jailhouse Informants
- Defense Case at Trial
- Judging Innocence Post-Conviction
- Exoneration

Videos Related to This Research (Innocence Project Website)



- **Figure 1. Experimental design.**





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PLoS one

Sleep Loss Produces False Memories

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Abstract

People sometimes claim with high confidence to remember events that in fact never happened, typically due to strong semantic associations with actually encoded events. Sleep is known to provide optimal neurobiological conditions for consolidation of memories for long-term storage, whereas sleep deprivation acutely impairs retrieval of stored memories. Here, focusing on the role of sleep-related memory processes, we tested whether false memories can be created (a) as enduring memory representations due to a consolidation-associated reorganization of new memory representations during post-learning sleep and/or (b) as an acute retrieval-related phenomenon induced by sleep deprivation at memory testing. According to the Deese, Roediger, McDermott (DRM) false memory paradigm, subjects learned lists of semantically associated words (e.g., "night", "dark", "coal",...), lacking the strongest common associate or theme word (here: "black"). Subjects either slept or stayed awake immediately after learning, and they were either sleep deprived or not at recognition testing 9, 33, or 44 hours after learning. Sleep deprivation at retrieval, but not sleep following learning, critically enhanced false memories of theme words. This effect was abolished by caffeine administration prior to retrieval, indicating that adenosinergic mechanisms can contribute to the generation of false memories associated with sleep loss.

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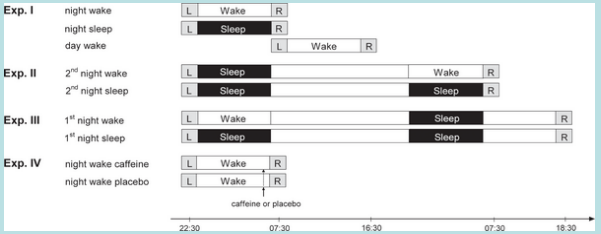
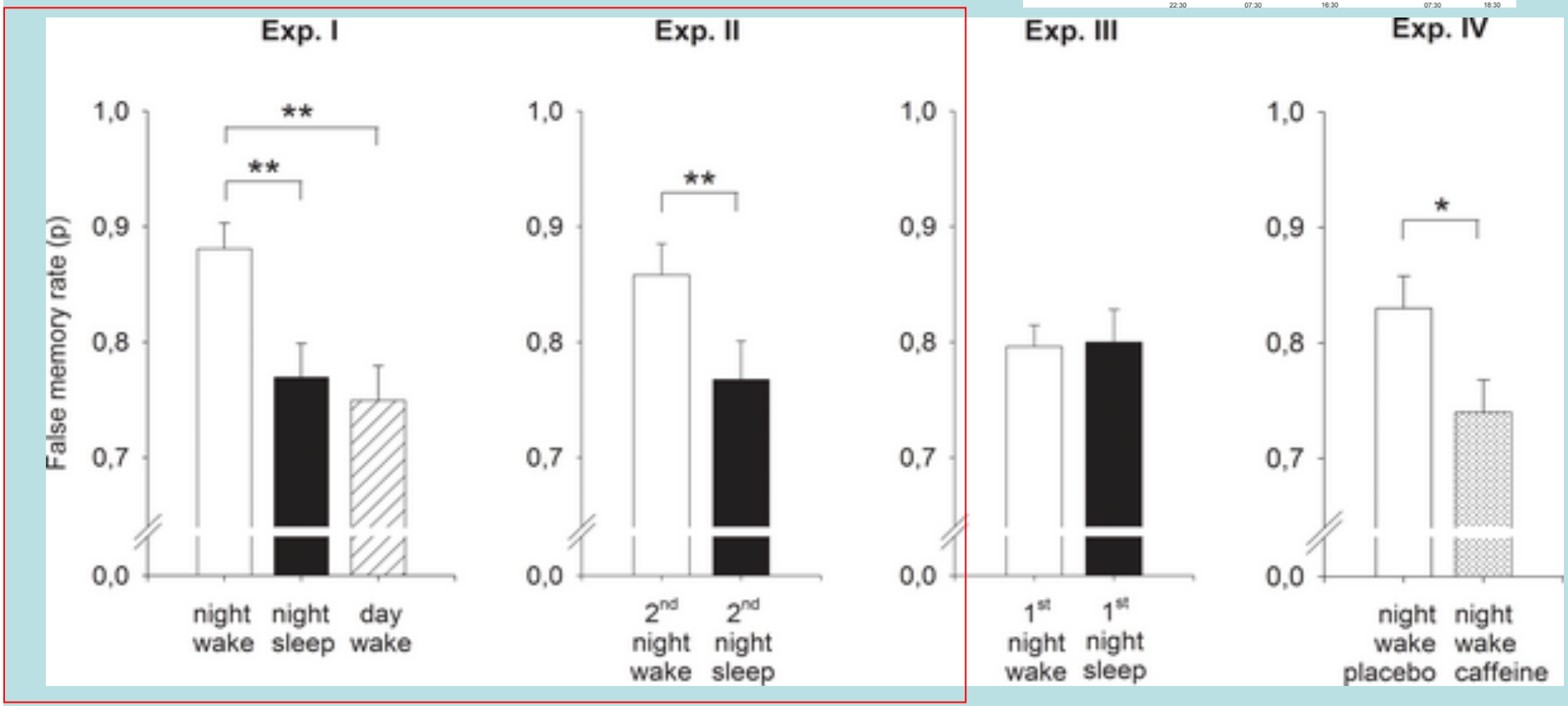
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0003512

- **Figure 2. Proportion of false memories in the recognition test.**





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Research Article

Sleep Deprivation and False Memories

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[1]Department of Psychology and Social Behavior, University of California, Irvine, and
[2]Department of Psychology, Michigan State University

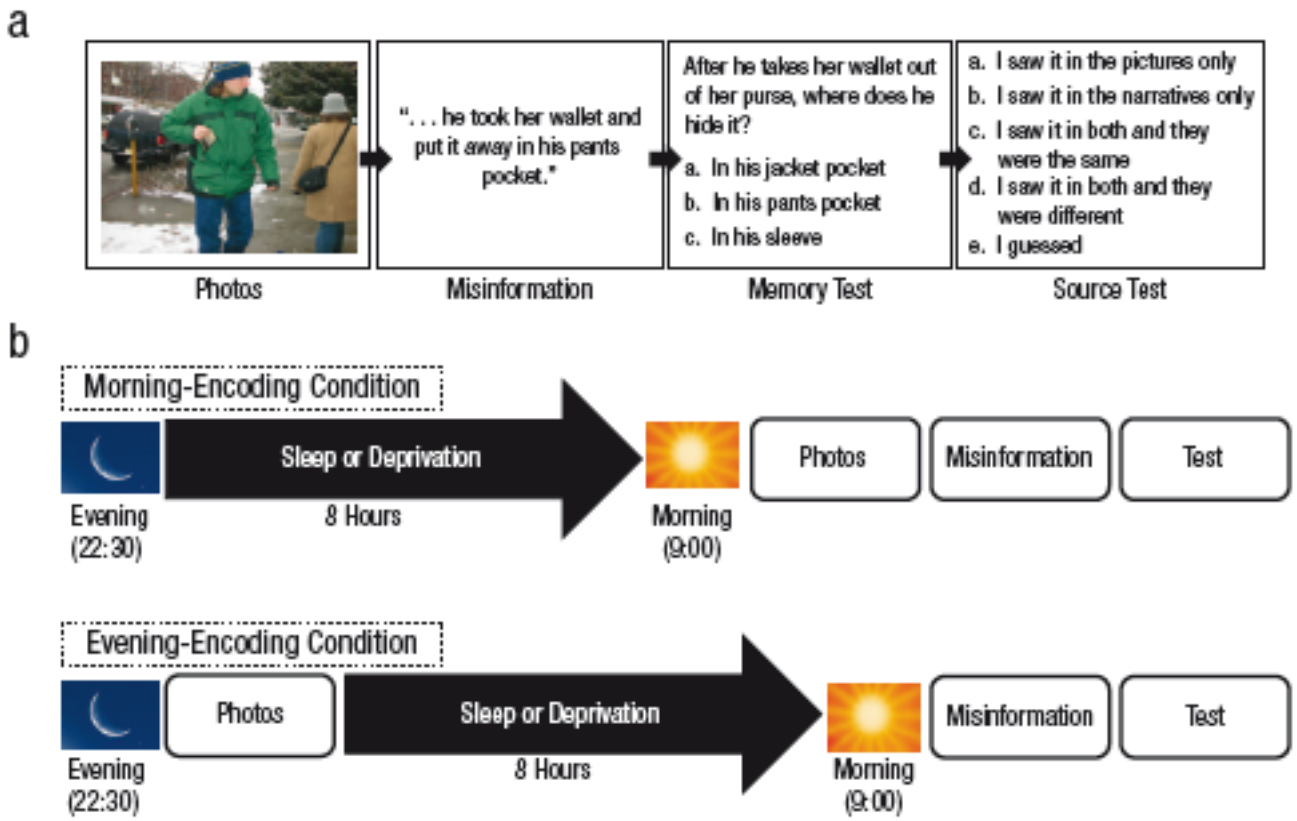

Fig. 1. Experimental procedure and design. The misinformation procedure in Experiments 1 and 2 is illustrated in (a). After viewing two sets of photographs depicting events, participants read narratives that included misinformation about the events. Later, participants took a three-alternative forced-choice test of their memory for the photographs and a source test on which they indicated where they had acquired the information they used to answer each question. In Experiment 2 (b), participants arrived at the lab in the evening to perform the misinformation procedure. Some participants completed the encoding phase (viewing photos) of the procedure in the evening, and others completed it the following morning. Within each encoding condition, some participants remained awake overnight, and others were allowed to sleep for 8 hr.

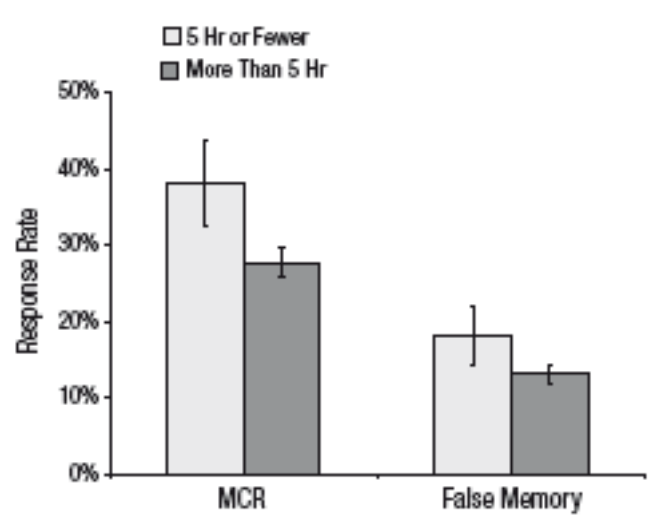

Fig. 2. Results from Experiment 1: mean misinformation-consistent response (MCR) and false memory rates in participants who had slept 5 or fewer hours the night before (restricted-sleep group) and those who had slept more than 5 hr (reference group). Error bars represent ±1 *SEM*.

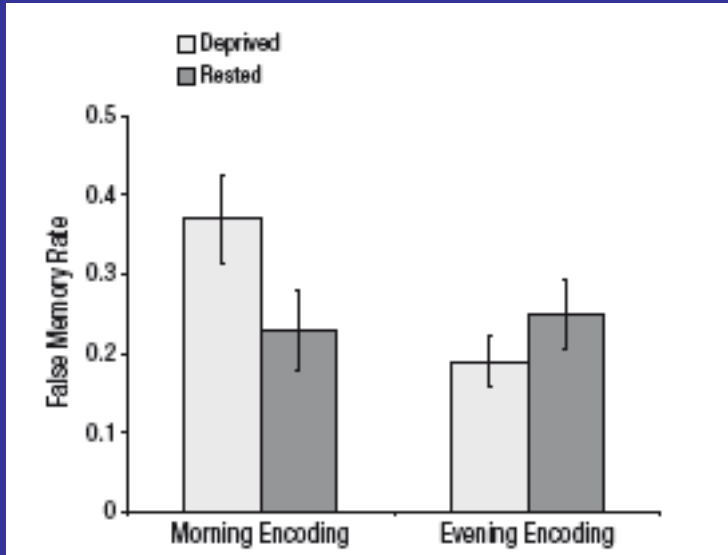

Fig. 3. Results from Experiment 2: mean false memory rates of rested and sleep-deprived participants in the two encoding conditions. Error bars represent ±1 *SEM*.

Experiment 1 provided initial evidence that restricted sleep is associated with increased false memory. Participants who reported 5 or fewer hours of sleep the night before the experiment were more likely to report that they had witnessed a news event that they did not actually see, compared with rested participants. There was also a trend for these participants to incorporate more misleading information into their memory for visual materials.

In Experiment 2, the sleep-deprived group showed greater susceptibility to false memories relative to the rested group, but only when participants were sleep deprived during all three stages of the misinformation procedure.

Science AAAS

SHARE

Slumber protects the innocent. Researchers found it easy to extract false confessions from the sleep-deprived.

Kimberly Fenn

Feeling sleepy? You may confess to a crime you didn't commit

The New Scientist article notes several cases in which a sleep-deprived suspect was later exonerated, including Damon Thibodeaux, who was wrongly imprisoned in Louisiana for 15 years. There's also Daniel Anderson of Chicago, who spent 25 years in prison for a sleep-deprived confession. Frank Sterling served more than 18 years in a New York prison after falsely confessing to raping and killing a 74-year-old woman in 1988. His confession came after 12 straight hours of interrogation. He tried to explain what he was going through to New York magazine in 2010: "They just wore me down . . . I was just so tired. Remember, I hadn't had any sleep since about 2:30 Tuesday night . . ."It's like, 'Come on, guys, I'm tired—what do you want me to do, just confess to it?' It's like, yeah—I wanted to get it over with, get home, and get some sleep . . . Eighteen years and nine months later, I finally get to go home."

Sleep deprivation and false confessions

Steven J. Frenda[a], Shari R. Berkowitz[b], Elizabeth F. Loftus[c,d,e,f,1], and Kimberly M. Fenn[g]

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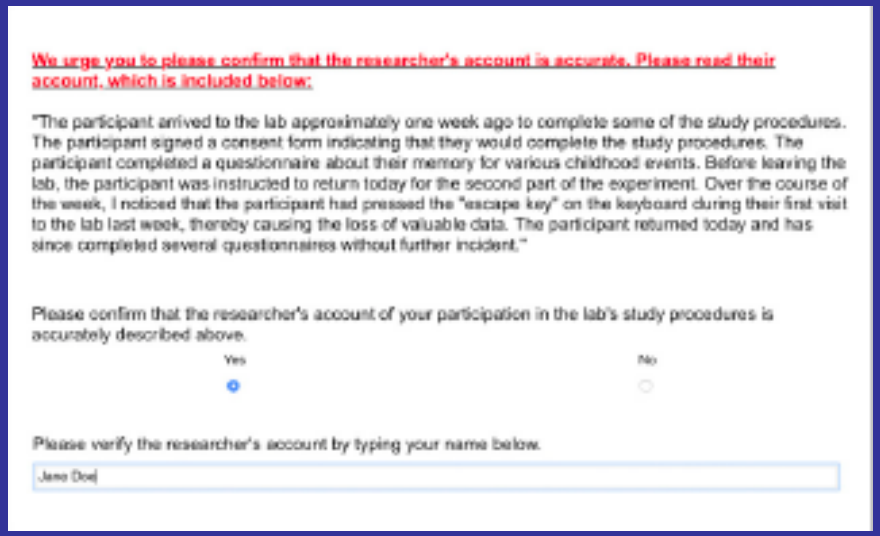
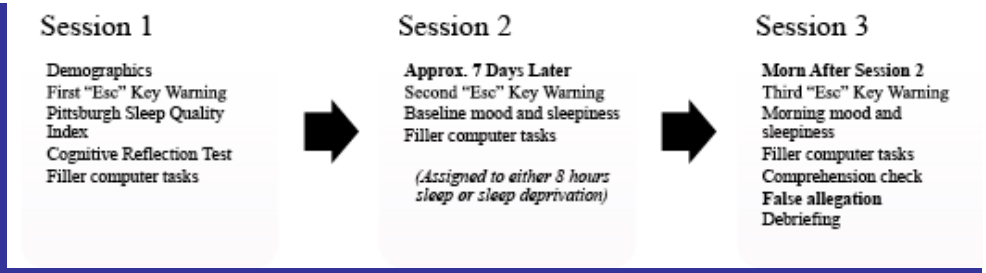
Table 1. Percentages (and raw numbers) of rested and sleep-deprived (TSD) participants who signed the statement containing a false admission of wrongdoing after the first request (left side) and both requests (right side)

False admission (first request)?	Rested	TSD	False admission (both requests)?	Rested	TSD
Yes	18% (8)	50% (22)	Yes	38.6% (17)	68.2% (30)
Refused	82% (36)	50% (22)	Refused	61.4% (27)	31.8% (14)
Total	100% (44)	100% (44)	Total	100% (44)	100% (44)





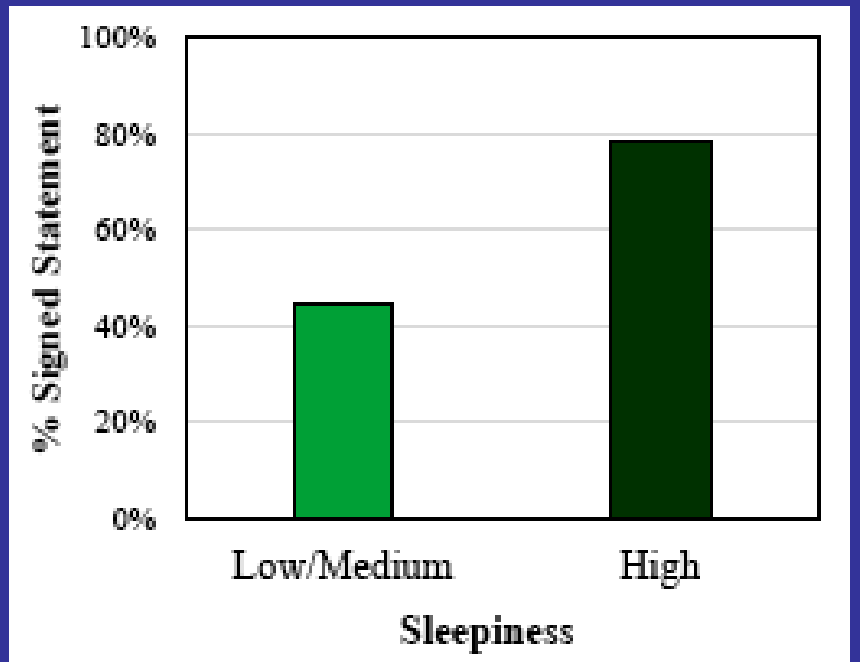


Fig. 2. Percentage of participants (collapsed across conditions) that signed the statement as a function of self-reported sleepiness by using the Stanford Sleepiness Scale. Participants who selected a 6 or 7 on the 7-point Stanford Sleepiness scale (25) were categorized as high in sleepiness, whereas participants who selected a rating of less than 6 were categorized as low/medium sleepiness. OR (95% C.I.) = 4.5 (1.5, 13.5).

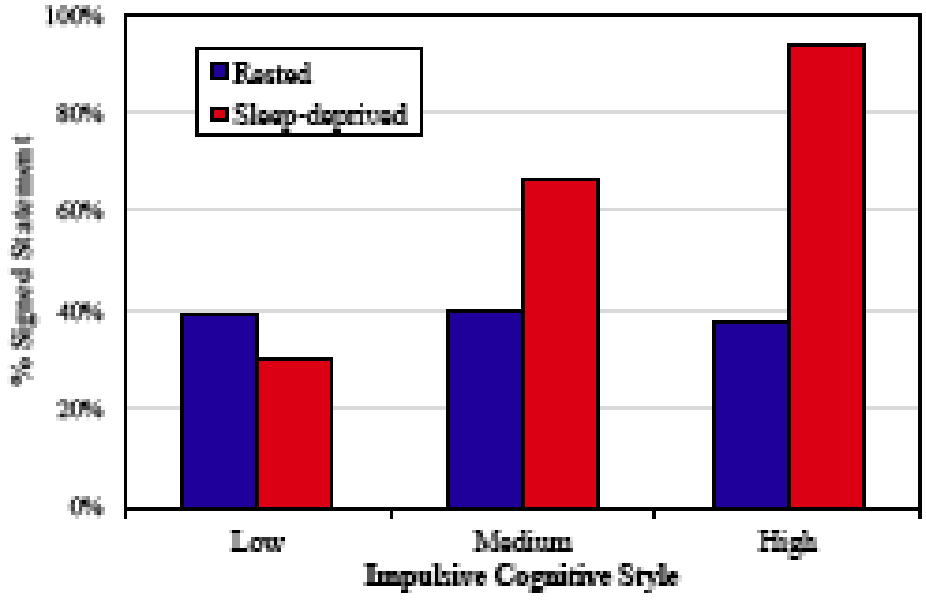


Fig. 1. Percentage of participants that signed the statement following both requests as a function of scores on the CRT.

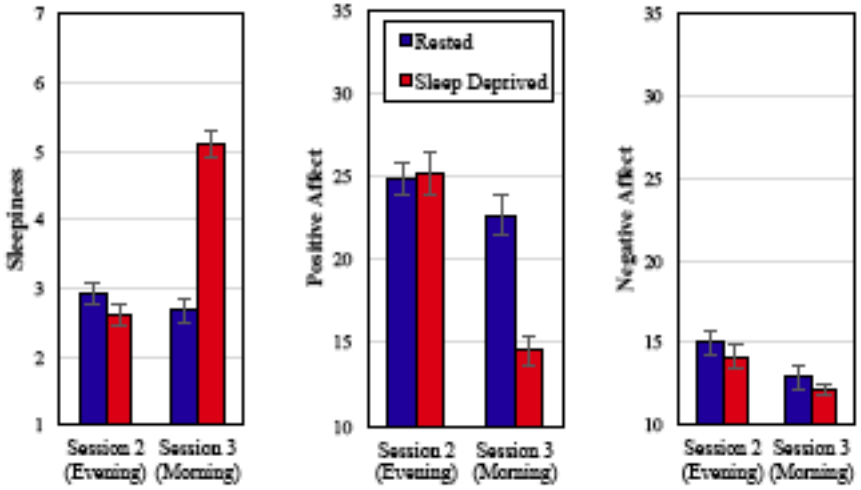


Fig. S4. Changes in self-reported sleepiness (24), as well as positive and negative affect (25) from session 2 (during which all participants were rested) to session 3 (during which participants were either rested or sleep-deprived). Sleep-deprived participants dramatically increased their sleepiness ratings, $t(43) = 10.5$, $P < 0.001$, whereas rested participants showed no change in sleepiness ratings, $P = 0.24$. Negative affect decreased for both sleep-deprived participants, $t(43) = 2.47$, $P = 0.02$, and for rested participants, $t(41) = 3.79$, $P < 0.001$. Positive affect significantly decreased for sleep-deprived participants, $t(43) = 10.39$, $P < 0.001$, and also decreased for rested participants, but here the change did not achieve statistical significance, $t(41) = 1.86$, $P = 0.07$.

Significance

False confessions occur surprisingly frequently in the context of interrogations and criminal investigations. Indeed, false confessions are thought to account for approximately 15–25% of wrongful convictions in the United States. Here we demonstrate that sleep deprivation increases the likelihood that a person will falsely confess to wrongdoing that never occurred. Furthermore, our data suggest that it may be possible to identify certain individuals who are especially likely to falsely confess while sleep deprived. The present research is a crucial step toward understanding the role of sleep deprivation in the problem of false confession and, in turn, raises complex questions about the use of sleep deprivation in the interrogation of innocent and guilty suspects.

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Sleep deprivation increases formation of false memory

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Keywords
adolescents, adults, cognitive function, false memory, memory formation, sleep deprivation

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SUMMARY
Retrieving false information can have serious consequences. Sleep is important for memory, but voluntary sleep curtailment is becoming more rampant. Here, the misinformation paradigm was used to investigate false memory formation after 1 night of total sleep deprivation in healthy young adults ($N = 58$, mean age ± SD = 22.10 ± 1.60 years; 29 males), and 7 nights of partial sleep deprivation (5 h sleep opportunity) in these young adults and healthy adolescents ($N = 54$, mean age ± SD = 16.67 ± 1.03 years; 25 males). In both age groups, sleep-deprived individuals were more likely than well-rested persons to incorporate misleading post-event information into their responses during memory retrieval ($P < 0.050$). These findings reiterate the importance of adequate sleep in optimal cognitive functioning, reveal the vulnerability of adolescents' memory during sleep curtailment, and suggest the need to assess eyewitnesses' sleep history after encountering misleading information.

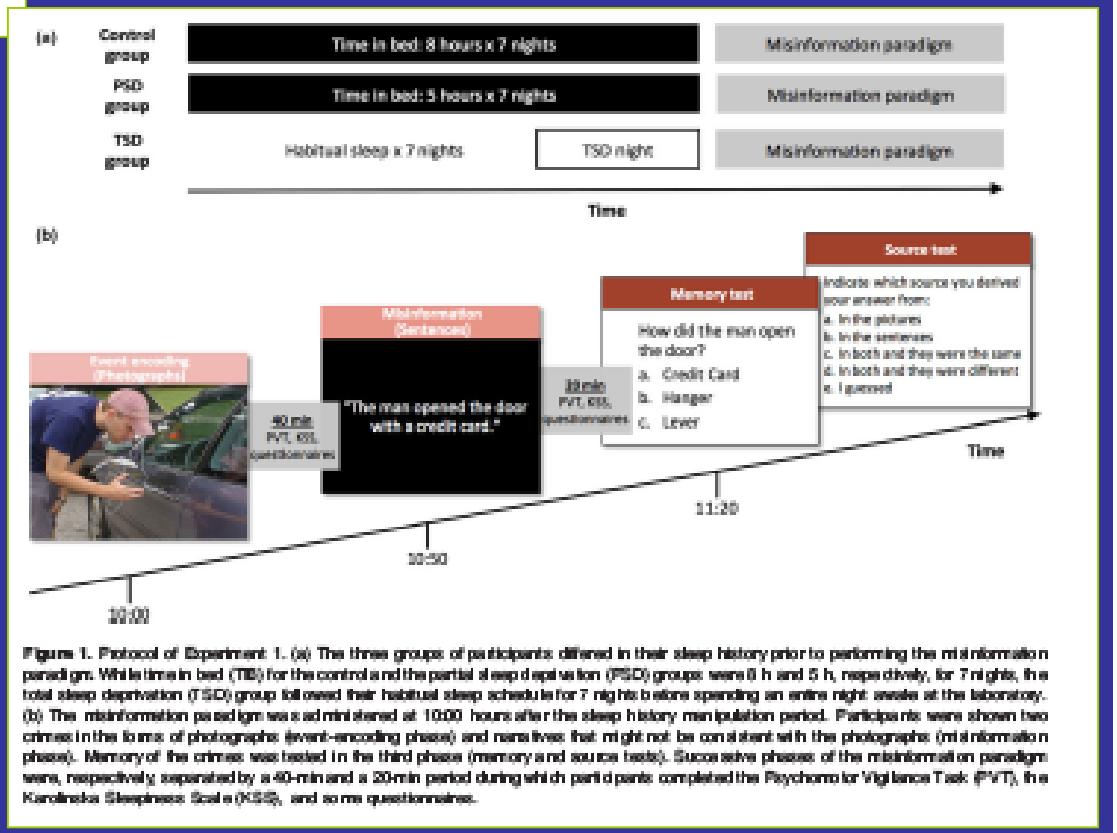
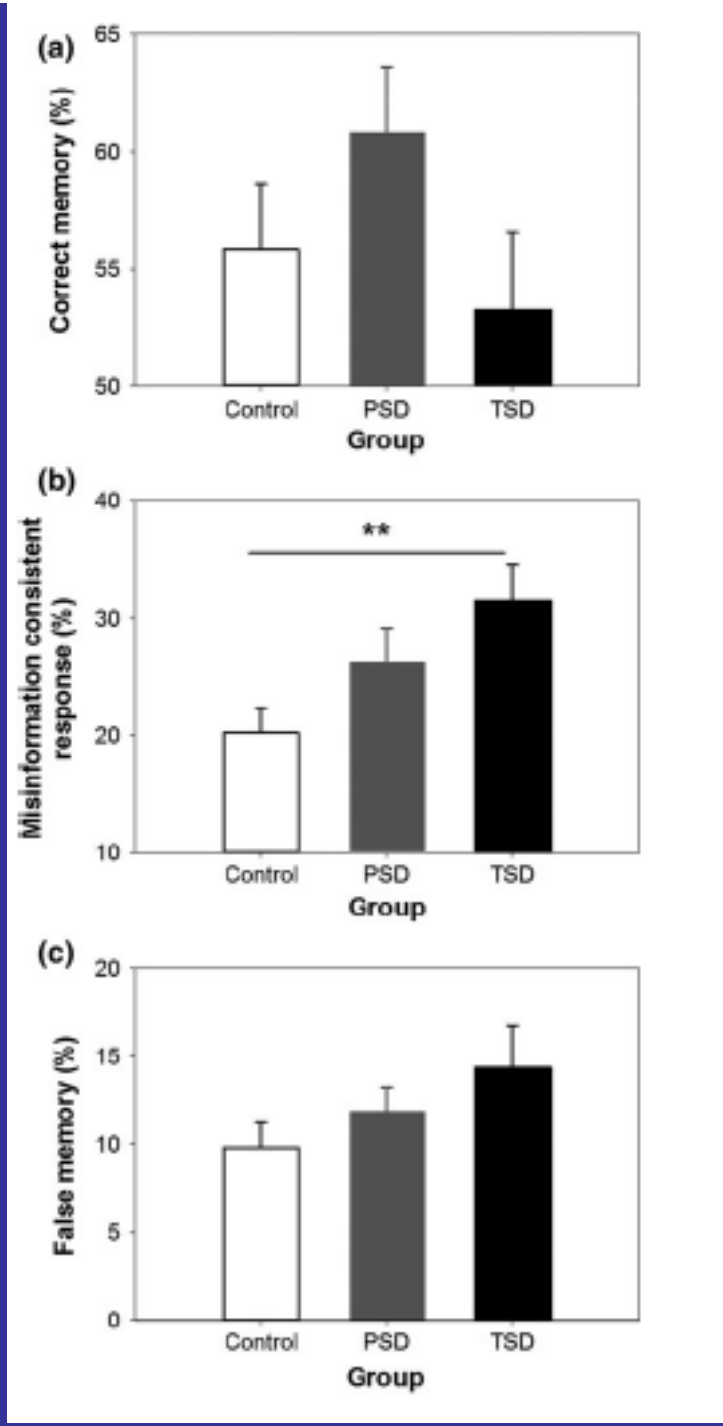
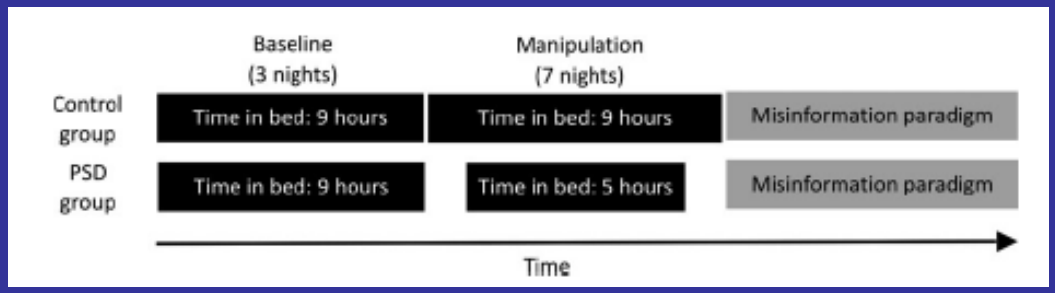


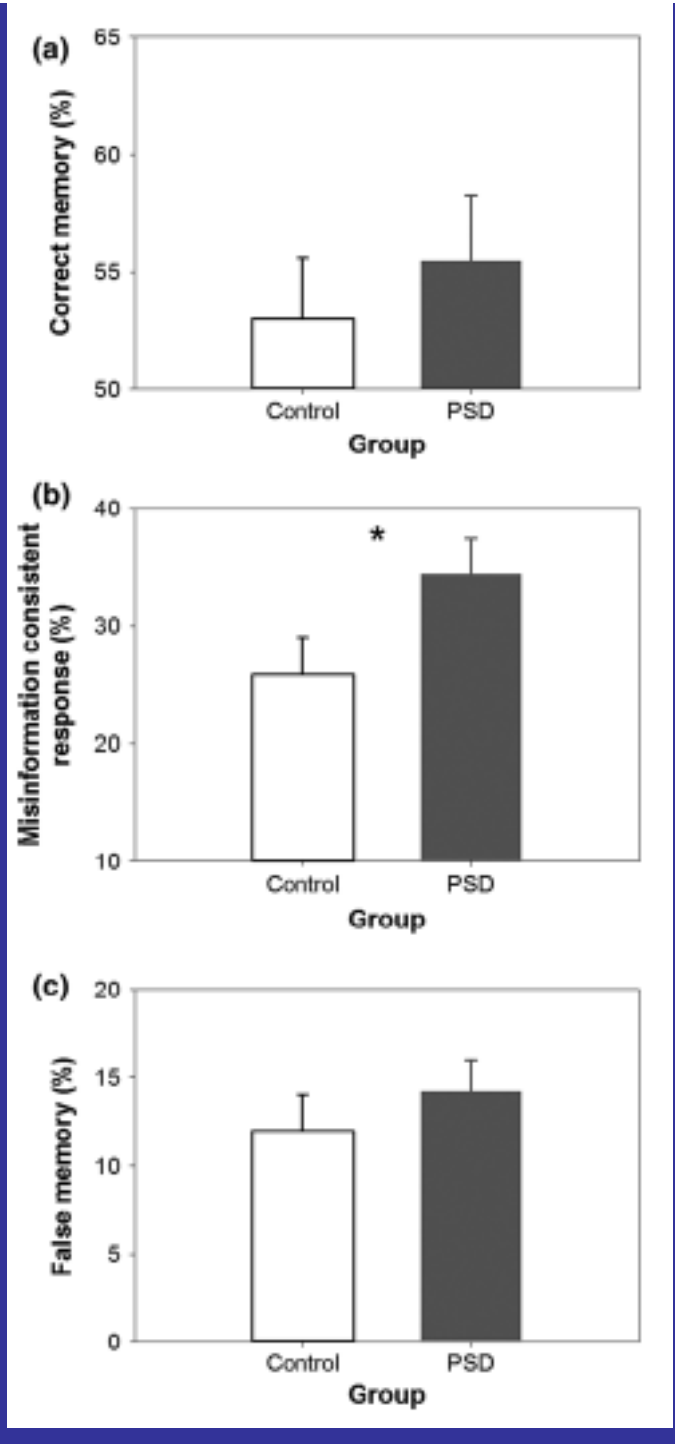
Figure 1. Protocol of Experiment 1. (a) The three groups of participants differed in their sleep history prior to performing the misinformation paradigm. While times in bed (TIB) for the control and the partial sleep deprivation (PSD) groups were 8 h and 5 h, respectively, for 7 nights, the total sleep deprivation (TSD) group followed their habitual sleep schedule for 7 nights before spending an entire night awake at the laboratory. (b) The misinformation paradigm was administered at 10:00 hours after the sleep history manipulation period. Participants were shown two crimes in the form of photographs (event-encoding phase) and narratives that might not be consistent with the photographs (misinformation phase). Memory of the crimes was tested in the third phase (memory and source tests). Successive phases of the misinformation paradigm were, respectively, separated by a 40-min and a 20-min period during which participants completed the Psychomotor Vigilance Task (PVT), the Karolinska Sleepiness Scale (KSS), and some questionnaires.



Differenze non elevate e limitate alle risposte congruenti con le misinformazioni (tendenza maggiore a incorporare false informazioni)



Anche in questo secondo esperimento, differenze non elevate e limitate alle risposte congruenti con le misinformazioni



A BRIEF HISTORY OF SLEEP DEPRIVATION AND TORTURE

JEFF MANN × OCT 25, 2012 × FEATURES