

Summary of Williams et al. (1992) study: the bizarreness of dreams & fantasies

Background

- In 1997, Hobson and McCarley proposed the activation-synthesis model/hypothesis of dreaming, which is **neurobiological**. This suggests that near-random patterns of brain activation (which are the result of other processes such as memory consolidation) are combined and interpreted (synthesis) by the brain, resulting in the bizarre (and characteristic) features of dreams.
- The model helps to make sense of one of the puzzling features of dreams: that they often combine the 'day residue' of present situations and experiences with memories from years or even decades before.
- But researchers thought that the two brain states of **wakefulness (experience fantasies)** and **REM sleep (experience dreams)**, which are physiologically different, must also be cognitively (thoughts) different.

Aim

The aim of this study was to assess the bizarreness in dreams and fantasies as a way of showing support for the activation-synthesis hypothesis of dreaming.

Method

(i) Research method/design

- **Natural experiment** using the **self-report method** to gather data to compare people's experience of dreams and fantasies (IV).

(ii) Sample

- 12 students (2 male, 10 female) enrolled in a biopsychology course at Harvard University Extension School in Cambridge, Massachusetts, USA; age range was 23-45 years of age.

(iii) Apparatus/materials

- Writing equipment and paper for recording dream and fantasy reports. Hobson et al.'s (1987) Bizarreness Scale.

(iv) Procedure

- During term time, the students were asked to record, upon waking during the night and in the morning, any and all dreams remembered.
- Mental activity occurring during waking was also recorded if it met the following definition of fantasy: *apparently spontaneous mentation of a narrative and/or perceptual nature without clear links to external stimuli or conscious intention (these were then considered 'fantasies')*.
- **All dream and fantasy reports were kept in a written journal.**
- A total of 60 dreams and 60 fantasies were selected from the journals submitted by the 12 students on the basis of: (i) Length (in excess of 5 lines). (ii) The presence of descriptions of formed visual perceptions.
- Reports were divided into one sentence units and scored separately for bizarreness using a bizarreness coding scale devised by Hobson et al. (1987).

Table 6.1 Scales for categorising dreams.

Stage one: locus	Stage two: type of bizarreness		
Plot	A	Discontinuity	1
Thoughts of dreamer/ character	B	Incongruity	2
Emotion of dreamer/ character	C	Uncertainty	3
Ad hoc	D	Not bizarre	0

Williams, J. M., Rittenhouse, C., & Hobson, J.A. (1992) Bizarreness in Dreams and Fantasies: Implications for the Activation-Synthesis Hypothesis. *Consciousness and Cognition*, p.174

Stage 1= the locus of the bizarre item (where & what was happening)

Stage 2= discontinuity (suddenly stopped), an incongruity (out of place) or an uncertainty (not sure or clear).

- **Three judges** scored all **120 reports** for bizarreness after the reports had been transcribed and coded randomly to ensure unbiased scoring. Judges worked individually so **inter-rater reliability** could be determined.

Results

Judges – good inter-rater reliability = agreed about 80% of the time on both bizarreness and non-bizarre items.

Table 6.2 Mean density scores for dreams and fantasies.

Bizarreness density scores for dreams	Bizarreness density scores for fantasies
0.223	0.089

Williams, J. M., Rittenhouse, C., & Hobson, J.A. (1992) Bizarreness in Dreams and Fantasies: Implications for the Activation-Synthesis Hypothesis. *Consciousness and Cognition*, p.176.

- Bizarreness was more than twice as prevalent in dream reports than fantasy reports.
- Dreams scored higher than fantasies for: **plot discontinuity (greatest difference)**, plot incongruity, uncertainty, and thought incongruity.
- Bizarreness in dreams usually came from nearly all participants whereas bizarreness in fantasies came from only a few participants.
- Dreams were always set in remote times or places (12/12 participants) while fantasies were far more often current in both time and place (6/12 participants).

Conclusions

- Findings **support the activation-synthesis hypothesis** which predicts a **difference between REM sleep dreams and waking fantasies** (due to the difference in the neural activity of the brain between the two states).
- Dreams contain more bizarreness as well as other 'dreamy' features such as remoteness of time and place than fantasies.
- Dreams differ from fantasies in relation to the number of people involved/the remoteness of time/the remoteness of place.