Evolutionary tendencies: The potential role of a high-calorie bias in food spatial memory on eating behaviour

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Strategic Communication
Introduction

- High-calorie spatial memory bias:

- Maintain a positive energy balance during periods of food shortage
"Demonstrate the existence of a bias in spatial (location) memory for high-calorie foods"

$H_1$: Individuals display a greater overall accuracy in spatial memory for high-calorie foods—regardless of subjective evaluations or personal familiarity with foods.
Methods: Study Design

- 88 participants
  - 68% Female
  - Age 23.7 ± 2.7
  - BMI 22.5 ± 2.2

- 2 \((\text{Caloric Density: High vs Low}) \times 2\) \((\text{Taste: Sweet vs Savoury})\) crossover

  - Spatial memory task in 4 conditions (Allan & Allan, 2013)

- Standardized images from \textit{Food Pics} database (Blechert et al., 2014)
Methods: Spatial Memory Task (Encoding)

12 food items per condition (e.g. High-calorie--Sweet)
Methods: Spatial Memory Task (Recall)

12 (randomly-presented) food items
Methods: Spatial Memory Accuracy

“Pointing Error”: Distance ($D$) between true and indicated food stall location.

*Lower $D$ = higher spatial memory accuracy
Results Study 1: Bias(es) in Human Food Spatial Memory

Figure 1. Spatial memory accuracy (mean ± SE) in pixels ($D$) between true and indicated food locations. A lower $D$ value denotes a greater associated spatial memory accuracy.

Regardless of Demographics, Desirability, or Familiarity with foods Controlling for Encoding Time did not eliminate findings
Results: Desirability

- A higher rated *Desirability* corresponded to a lower “pointing error”

\[ B = -0.45 \text{ (SE = .11); } F(1,4124) = 17.809, p < .001 \]

Additional motivational component of food spatial memory
Conclusions & Future Research

- **High-calorie** and **savoury-taste** biases in human food spatial memory
  - Independent of demographics, subjective evaluations, and familiarity with foods
  - (Partially) automatic in nature

- **Desirability** an “explicit” predictor of food spatial memory accuracy
  - Both “automatic” implicit and explicit processes shape food spatial memory and eating behaviour

- More research needed!
LAAT DE OERMENS IN JE LOS

Wageningen University & Research - Kies jij dezelfde voeding als je voorouders?
Thank you for listening!

Any questions?

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