**Metacognitive Instructions Facilitate the Distinctiveness Heuristic in MCI/AD**

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**BACKGROUND**
- MCI/AD patients demonstrate an intact picture superiority effect, reflected by comparable benefit as controls when studying pictures rather than words upon retrieval testing (Ally, Gold, Budson 2009).
- Memory retrieval and the distinctiveness heuristic (DH) are separate processes in which MCI/AD patients retain the ability to use DH to reject unfamiliar items (Gallo 2007). However, the DH is still impaired without guidance.
- Upon testing autobiographical recollection of Sept 11, 2001 at 2 weeks, 3 months, and 1 year after event, AD patients exhibit twice as many false memories as memory failures. MCI demonstrate comparably high rates of false memory. (Budson et al, 2004, 2007)
- Patients with MCI/AD rely upon familiarity when making recognition decisions, despite such components being degraded relative to those of healthy older controls (Budson et al 2006, Ally 2009).  
- Can the over-dependence of MCI/AD on familiarity be responsible for the prevalence of false memories in this patient population? What interventions can be used to enhance the ability of MCI/AD to “recall-to-reject” and lower false memory rates?

**METHODS**
- **Subjects:**
  - 5 healthy older adults (OC)
  - 3 patients with Mild Cognitive Impairment (MCI)
  - 2 patients with Alzheimer’s Disease (AD)
- **Design:**
  - Two Study–Test Sessions
  - The order of these conditions were consistent to prevent metacognitive interference with the simple instruction task.
  - All six lists were categorically matched - 3 vegetables per list, 3 fruits per list, etc. - to ensure consistency.
  - 6 CBs were constructed to control for object salience.
  - Subjects were explicitly told at the beginning of condition II that no items from condition I will be needed or presented.
- **Condition I**
  - Simple Instructions
  - Study: Cupboard Modality: Pictures
    - List A: 30 Items
  - Study: Grocery List Modality: Words
    - List B: 30 Items
  - Test: Shopping Modality: Pictures
    - List A & C: Reject 60 Items
    - List B: Accept 30 Items
  - Do you need to buy this item?
- **Condition II**
  - Metacognitive Instructions
  - Study: Cupboard Modality: Pictures
    - List D: 30 Items
  - Study: Grocery List Modality: Words
    - List E: 30 Items
  - Test: Shopping Modality: Pictures
    - List D & F: Reject 60 Items
    - List E: Accept 30 Items
  - Q1: Is this item familiar?
  - Q2: Was this item in your cup?
  - Q3: Do you need to buy this item?

**RESULTS**

<table>
<thead>
<tr>
<th></th>
<th>Hits</th>
<th>FR</th>
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</thead>
<tbody>
<tr>
<td>OC standard</td>
<td>51%</td>
<td>33%</td>
</tr>
<tr>
<td>MCI standard</td>
<td>53%</td>
<td>75%</td>
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<tr>
<td>AD standard</td>
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**DISCUSSION**
- The preliminary data reveal that metacognitive instructions lower false recall rates for both OC and MCI population, as expected with our hypothesis that the distinctiveness heuristic.
- While AD data is not immediately promising, initial data analysis revealed discontinuous logic for AD patients in their responses. Accordingly, instructions are now made more clear as to what the subject’s responsibilities as a shopper entailed - “impulse buys” are discouraged.
- The potential real-world applications for DH, given the contextual richness of pictures and the effect’s documented presence in MCI/AD populations, holds significant promise in reducing the false memories given the proper intervention.

**REFERENCES**

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