Can a virtual supermarket bring realism into the lab?  
The use of a virtual supermarket to simulate grocery shopping behaviour

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**OBJECTIVE**

*Can real-life shopping behavior be better captured in a lab environment when virtual reality techniques are used?*

Comparison of consumer behaviour in a choice task between:
1. a **brick-and-mortar** supermarket
2. a representation in **virtual reality**
3. a representation using **pictures**

**ADVANTAGES OF VIRTUAL REALITY**

- **Cost-efficiency**: not dependent on complex implementation processes
- High level of **control** over the virtual choice environment
- High level of **flexibility** in changing the environment
- High level of **realism** of this choice environment

“An innovative and unique research tool with great potential in the study of food choice behaviour” (Waterlander et al., 2012)

**CHOOSING THE BENCHMARK**

Prior research used sales levels as a benchmark (Burke et al., 1992; Campo et al., 1999). Various sources for differences between real life and virtual reality are then lumped together. The current study focuses on the added value of virtual reality specifically. Real-life situations are matched to laboratory conditions to control for sources of difference unrelated to virtual reality. The virtual store is also compared to a pictorial simulation, to assess effects of added realism by the virtual store.

**VARIABLES OF INTEREST**

This study explores effects on (a) amount of products selected, (b) type of products selected, (c) amount of money spent, and (d) responses to in-store price promotions, and (e) responses to display characteristics.

**THE VIRTUAL SUPERMARKET**


**RESULTS & DISCUSSION**

- **Fruit & vegetables**: More inclined to buy, to variety seeking and more responsive to price promotions in lab conditions than in physical store.

<table>
<thead>
<tr>
<th>Picture condition</th>
<th>Virtual store</th>
<th>Physical store</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of people buying on sale, fruit &amp; vegetables</td>
<td>40</td>
<td>10</td>
</tr>
</tbody>
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- **Biscuits**: More inclined to buy and to variety seeking in lab conditions than in physical store. Marginally more likely to buy from left and top of the display in the picture condition vs. the physical store; virtual store vs. physical store not different.

<table>
<thead>
<tr>
<th>Picture condition</th>
<th>Physical store</th>
<th>Virtual store</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of products chosen, biscuits</td>
<td>2</td>
<td>1</td>
</tr>
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</table>

- **Milk**: Virtual store better represented amount of products bought than picture condition. More variety seeking in lab conditions. Percentage of people buying from the top shelf is high in picture condition compared to physical store, with virtual store in between.

<table>
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<th>Picture condition</th>
<th>Virtual store</th>
<th>Physical store</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of people buying from top shelf, milk</td>
<td>30</td>
<td>20</td>
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**Summarizing:**

In the lab, people buy more products and more variety than in the physical store. For one category virtual reality diminishes this effect. Virtual reality also diminishes differences in responses to display characteristics.

**CONCLUSIONS**

Using a virtual supermarket, compared to pictures:
- Increases perceptions of habitual buying by participants
- May diminish the tendency to buy more than in a physical store (1 out of 3 categories in this study)
- Diminishes tendencies to buy more from top and left shelves compared to a physical store
- Does not diminish increased variety seeking compared to physical store

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