**The Internet as Learning Technology**

- Rapid access to vast amounts of information
- Research consumer goods, health, politics, news, trivia
- Involves self-directed learning and decision-making

**Question:** How long does it take plastic to biodegrade?

> “Different kinds of plastic can degrade at different times, but the average time for a plastic bottle to completely degrade is at least 450 years. It can even take some bottles 1000 years to biodegrade!”

**Challenges of Online Search**

- Many information seekers employ ineffective strategies
- Information is not necessarily neutral (e.g., advertising)
- Many issues have multiple, conflicting arguments

**Question:** Is it safe to buy and drink bottled water?

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**The “Bottled Water Study”**

**Example Research Questions**

- How do search behaviors influence web search stance?
- How does search stance influence decision making?

**Method Overview** ($n = 109$ adult participants)

- Pre-search choice task on bottled water products
- Brief (10-12 minute) Internet search (screen capture)
- Post-search choice task using same product options

**Search Query Categories**

- Product: “mineral water,” “Aquafina,” “tap water”
- Environment: “biodegrade,” “leaching,” “recycling”
- Analysis: “versus,” “best,” “research,” “myths”

**Website Types**

- Aggregator: theme-based blogs and editorials
- Commercial: product sales or marketing
- Forums: public ask-and-answer
- Information: fact-based resources with citations
- News: established journalism credentials and sources

**Stance Dimensions** (positive, neutral, or negative)

- Economic: expense vs. cost-effective, convenience
- Environmental: pollution vs. recycling technologies
- Health: chemical leaching vs. purification, safety

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**Search, Stance, and Choice**

- Searches were superficial; few queries targeted underlying background knowledge or analysis of information
- Most commonly visited websites were commercial (33%) and aggregator (25%); most likely to be biased

**Multinomial Logit Regression**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Coefficient (SE)</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Price</td>
<td>-0.44 (.03)</td>
<td>&lt; .001</td>
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<tr>
<td>Attribute x Stance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountain Spring</td>
<td>-0.42 (0.24)</td>
<td>.084</td>
</tr>
<tr>
<td>Natural Artesian</td>
<td>-0.30 (0.21)</td>
<td>.149</td>
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<tr>
<td>Plant-based</td>
<td>0.46 (0.21)</td>
<td>.029</td>
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<tr>
<td>Post-consumer</td>
<td>0.12 (0.25)</td>
<td>.633</td>
</tr>
<tr>
<td>No Purchase</td>
<td>-1.02 (0.32)</td>
<td>.002</td>
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</tbody>
</table>

- Participants preferred cheaper options
- Positive stance $\rightarrow$ preference for plant-based plastic
- Positive stance $\rightarrow$ preference for buying bottled water

**Summary and Future Questions**

- Search strategies influence quality of sites viewed $\rightarrow$ holistic search stance $\rightarrow$ consumer choice and preference
- Demonstrates importance of “digital information literacy”
- What is “learned” from each site that influences stance?
- How do prior knowledge, reading ability, or prior attitudes interact with search behaviors and site stance?
- What kinds of advertising and persuasive arguments most contribute to holistic search stance and decision making?