Portfolio

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About Me

Education

B.Sc. Behavioral Neuroscience, UBC
M.A. Cognitive Science, UBC
Ph.D. Behavioral Science/Cognitive Science, UBC (expected 2022)

Web: https://yuluo.psych.ubc.ca/

Collaborators:
Case 1
Providing immediate feedback to improve sorting accuracy in student residences

Case 2
Implementing pictorial warnings to reduce plastic waste

Case 3 (in progress)
Using carbon labels to promote low-carbon food choices

Theoretical work
Conducting a meta-analysis to examine the efficacy of behavioral interventions

https://www.ypppt.com/
Case 1

Providing immediate feedback improves recycling and composting accuracy (Luo et al., 2019)

Collaborator:

UBC Sustainability Team
Problem

How can we prevent recycling contamination?
Solution - Feedback

Wrong!
This should go to Garbage
Field Experiment Design

Game Building

Control Building
Timeline

Baseline | Intervention | Post-intervention

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Play the Sorting Game!

Scan the code to play or visit http://you.gift/xxxxxx
Results

Game building < Control building
Case 2

Reducing plastic waste by visualizing marine consequences (Luo et al., under review)

Collaborators:

KPMG Vancouver
Ocean Wise Conservation Association
Problem

How can we keep plastics out of our ocean?
Solution – Pictorial Warnings
Field Experiment Design

Control

Signage only

Animal

Pledge
Field Experiment Design

- Signage only
- Pledge
- Control
- Animal
Timeline

Baseline | Intervention | Post-intervention

[Images of plastic containers and utensils with recycling information]
Results

Animal condition showed the largest decline from baseline to intervention.
Follow-up
Impact
Case 3

Using climate-friendly food label to promote low-carbon food purchasing (in progress)

Collaborators:

UBC SEEDS Program
UBC Food Services
Problem

How can we promote low-carbon food choices?
Solution – Carbon Labels

Most climate friendly. The best option!

Somewhat climate friendly. A good option.

Least climate friendly. Less good option.
Field Experiment Design

AL PESTO
Pesto, prosciutto cotto, mozzarella, gorgonzola, artichokes and pickled tomato
13.5

PESTO POLLO
Pesto, roasted chicken, mozzarella, artichokes and pickled mushroom
13.5

MARGHERITA
Classic tomato, basil and bocconcini
12.5

VEGAN FEATURE
Classic tomato, basil and bocconcini
12.5
Planned Analysis

July - August 2020

VS

July - August 2021
Potential Impact
Theoretical Work

A meta-analytic cognitive framework of nudge and sludge (Luo, Soman, & Zhao, under review)
Problem

How are cognitive processes involved in behavioral interventions?
### Definitions

| **Attention** | Using bottom-up features (e.g., color, size) to increase or decrease the salience of an option |
| **Perception** | Framing the content of information to influence the conscious interpretation of the information |
| **Memory** | Using encoding cues or retrieval cues to alter behaviors |
| **Effort** | Changing cognitive or physical ease associated with an option |
| **Intrinsic motivation** | Influencing one's inherent interests toward an option in the absence of external factors |
| **Extrinsic motivation** | Imposing external rewards or punishments to alter behaviors |
Examples

<table>
<thead>
<tr>
<th>Cognitive Processes</th>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>Highlighting with red color</td>
</tr>
<tr>
<td>Perception</td>
<td>Benefit framing</td>
</tr>
<tr>
<td>Memory</td>
<td>Reminder (e.g., promoting college enrollment)</td>
</tr>
<tr>
<td>Effort</td>
<td>Auto-enrollment plan, defaults</td>
</tr>
<tr>
<td>Intrinsic motivation</td>
<td>Social norm (e.g., promoting donation)</td>
</tr>
<tr>
<td>Extrinsic motivation</td>
<td>Financial incentives</td>
</tr>
</tbody>
</table>
Meta-analysis

Identification

Articles identified through database searching
(n=3575)

Web of Science (n=1113)
PubMed (n=431)
PsycInfo (n=611)
Business Source Ultimate (n=604)
PsycExtra (n=12)
Proquest (n=226)
Google Scholar (n=578)

Screening

Articles remained after removing duplicates
(n=2457)

Articles removed after title and abstract analysis
(n=1783)

Eligibility

Full-text articles assessed for eligibility
(n=674)

Articles removed after full-text review
(n=491)

Laboratory study (n=118)
Mixed intervention (n=71)
Not RCT (n=132)
Self-reported (n=170)

Included

Articles and effect sizes included in the meta-analysis
(n=179, k=222)

Articles removed due to incomplete data
(n=4)
Results

Effort-based interventions are the most effective

***p<.001
THANK YOU!

Questions?