• introduction
Behaviour change is hard?
Psychological mismatch

Highly rewarding behaviours have become unhealthy

Healthy behaviours are not rewarding
Trade-offs (Temporal imbalance)

Unhealthy: ++ short term (rewards) -- long term (benefits)
Healthy: -- short term (rewards) ++ long term (benefits)

...but executive function is weak/limited
Behaviour change is only necessary when ‘natural’ learning doesn’t occur
Reinforcement Learning Video
What's that smell?

It might be food!

Just as I thought: that filled me up.

But it was really tasty!

Reinforcement learning

Surprise
- Disrupt setting
- Get exposure
- Grab attention

Performance
- Get selected
- Alter rewards
- Modify value

Revaluation

Get exposure
Grab attention

Get selected
Alter rewards
Modify value

Expected vs Actual Reward

Stimulus
Implementation
Sensation/Perception
Consumption

[Behaviour]
[Body]
[Environment]
[Intervention]
[Brain]
Theory of Planned Behaviour
Behavioural economic tactics

- 'First move' reciprocity
- Financial incentives
- 'Hot-cold' empathy gap
- 'Hot-cold' empathy gap
- Emotional consequences
- Restructuring physical setting
- Status quo bias

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(e.g., Thaler and Sunstein, 2008; Ariely, 2009, etc.)
• the BC challenge
**BCD BC Challenge Process Model**

**Create**

**Assess & Build**

**Behaviour Setting**

- Environment
  - Get exposure
  - Grab attention
- Brain/Body
  - Modify value
  - Alter resources
- Behaviour
  - Disrupt settings
  - Get selected

**State-of-the-World**

**Intervention**

- Surprise
- Revaluation
- Performance

**Inputs**

**Implementation**

**Outputs**

**Outcomes**

**Impact**

**Deliver**

**Evaluate**
Create Surprise

GET EXPOSURE

GRAB ATTENTION
Cause Revaluation

ALTER REWARDS

MODIFY VALUE
Human Motives

(From Aunger and Curtis, 2013)
Modifying Value Video
Facilitate Performance

DISRUPT SETTING

GET SELECTED
Food Hygiene Trial: Multiple BC in Nepal
Targeted five key food hygiene behaviours (in sequential order)

1. Cleanliness of child food serving utensils using ash/soap

2. Handwashing with soap before feeding child (by mother) and before eating (by child)

3. Proper storage of cooked food in container with tight lid

4. Thorough re-heating of leftover/stored food (Maintain re-heating temp at least at 70°C)

5. Water and milk treatment (boil milk and water)
Food Hygiene Trial: Multiple BC in Nepal
Prevalence of key food hygiene behaviours – intervention arm (before – after)

Food hygiene behaviours when observed (%)

- Before (n=120)
- After (119)

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>1</td>
<td>43</td>
</tr>
<tr>
<td>Cleanliness of serving utensils</td>
<td>3</td>
<td>55</td>
</tr>
<tr>
<td>HWWS by mother before feeding</td>
<td>5</td>
<td>67</td>
</tr>
<tr>
<td>HWWS by child before eating</td>
<td>5</td>
<td>67</td>
</tr>
<tr>
<td>Proper storage</td>
<td></td>
<td>88</td>
</tr>
<tr>
<td>Thorough re-heating &amp; maintained temp</td>
<td>3</td>
<td>86</td>
</tr>
<tr>
<td>Water treatment</td>
<td></td>
<td>77</td>
</tr>
</tbody>
</table>
• program development process
Assess

Inception

Background/evidence review

Framing Workshop

Formative Research Plan
Inception meeting

- Engage/Align stakeholders
- Get institutional buy-in
Review the literature

Review what is known about the target behaviour globally and in your local context.

The compilation of this information should paint a picture of the current ‘state of the world’.

The report should highlight what is known and what is unknown.
Framing Workshop
Daily script
<table>
<thead>
<tr>
<th>Desired Condition</th>
<th>Condition to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>To never get a disease in my life</td>
<td>So always feel sick for the rest of my life</td>
</tr>
<tr>
<td>To always be loved by me (woman)</td>
<td>So others will always look up to and admire me</td>
</tr>
<tr>
<td>So others will always look up to and admire me</td>
<td>So no one will ever be able to treat me physically</td>
</tr>
<tr>
<td>So no one will ever be able to treat me physically</td>
<td>So always feel the post of my life</td>
</tr>
<tr>
<td>To be sure that my kids will always be happy and I need to feel in life</td>
<td>To always be loved by me (woman)</td>
</tr>
<tr>
<td>So that I will always be beautiful</td>
<td>So that I will never feel hungry even again</td>
</tr>
<tr>
<td>So that I will always be prepared and ready for any situation</td>
<td>So that I will always be able to learn new skills easily</td>
</tr>
<tr>
<td>So that I will always be able to learn new skills easily</td>
<td>So that I will always be able to learn new skills easily</td>
</tr>
<tr>
<td>So that I can always make or build whatever I need</td>
<td>So that I can always make or build whatever I need</td>
</tr>
<tr>
<td>To always be desired by (woman) men</td>
<td>To always be desired by (woman) men</td>
</tr>
<tr>
<td>That I will always be able to find out what is going on and have access to information</td>
<td>That I will always be able to find out what is going on and have access to information</td>
</tr>
</tbody>
</table>
Body Image
Video ethnography
Creative Workshop
Insight development process
Touchpoints
Creative Brief (Kombonis)

1. STAKEHOLDERS
   - Project stakeholders are: Centre for Infectious Disease Research in Zambia (CIDRZ), Zambian Ministry of Community Development, Mother and Child Health (MCDMCH), Ministry of Health (MOH), Absolute Return for Kids (ARK). Research, behaviour change, intervention design and evaluation guidance is from the London School of Hygiene & Tropical Medicine (LSHTM).

2. BACKGROUND
   - What are the facts about diarrhoea and behaviour change?
     - Every year, Zambia’s 2.4 million children under five years of age experience over 10 million episodes of diarrhoea; more than 840,000 of these children visit a health facility at least once for diarrhoea, 63,000 will be hospitalised, and at least 15,000 will die.
   - What do we know about these behaviours now?
     - Infant feeding behaviour:
       - Mothers are able to tell you that women should exclusively breastfeed until their baby is 6 months of age, but in reality most EBF for the first month only and then gradually introduce foods (e.g., porridge) and liquids (e.g., Maheu) alongside breast milk after that. In depth research reports on the three individual behaviours are available.

3. TARGETS FOR BEHAVIOUR CHANGE
   - We want to reduce diarrhoea among under-fives in peri-urban and rural low-income households in our Lusaka Province pilot areas. This means changing behaviour among the following groups:

<table>
<thead>
<tr>
<th>Households</th>
<th>1. EBF</th>
<th>2. HWWS</th>
<th>3. ORS + Zinc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers of babies under 6 months who still EBF</td>
<td>All old enough to feed selves from family pot and go to toilet unassisted</td>
<td>Mothers of children 1-59 months</td>
<td></td>
</tr>
<tr>
<td>Household heads (men &amp; grandmothers)</td>
<td>Household heads (men &amp; grandmothers)</td>
<td>Health workers, clinicians, pharmacists</td>
<td></td>
</tr>
</tbody>
</table>

Clinic staff & health workers
- Health care providers who promote EBF (??)
- Health workers, clinicians, pharmacists

Private pharmacies
- Owners, dispensers

Shops, soap sellers
- Owners

4. INTERVENTION DESIGN PRINCIPLES:
   - Must work for rural and peri-urban settings and be scalable for the rest of Zambia.
   - All implementation must work for low/no-literacy communities.

5. (MEASURABLE) BEHAVIOURAL TASKS
   - EBF: Address ‘for the poor’ low status image of breastfeeding – e.g., aspirational role models inc. higher-status mothers, clinic workers in community to EBF, etc.
   - Piggy- back on existing early intervention- points in early month(s) before the first mouthfuls of non-breast milk are introduced and include fathers and grandmothers – i.e., clinic after birth, 6 day visit, 6 week visit, etc.

6. AGENCY DELIVERABLES & REQUIREMENTS:
   - The core agency outputs will be:
     - Signed off strategy underpinning intervention design – this will specifically help us understand how to manage doing work on three behaviours in communities within the pilot program.
Create

C

C1

C2

C3

Concept generation

Prototype Testing

Material production

Delivery Plan
Professional Creativity
Types of intervention

- Social
- Behaviour
- Executive
- Motivated
- Reactive
- Physical environment
- Setting
- Biological

Intervention types and their respective layers.
Baduta Creative Process

- Over 4 month period:
  - 16 reverts on TVCs
  - 6 reverts on community events/materials
  - ≈ 25 international Skype calls
Pre-test ideas
Deliver

D1 Roll-Out

D2 Monitor

D3 Adapt

Delivery Report
Process vs Impact

Process Evaluation

Impact Evaluation
The Story of Supermom

When you choose handwashing with soap, you choose progress.
Wall of All
Impact evaluation

Effect of a behaviour-change intervention on handwashing with soap in India (SuperAmma): a cluster-randomised trial

Abstract

Background: Handwashing and respiratory infections are the two biggest causes of child death globally. Handwashing with soap could substantially reduce diarrhoea and respiratory infections but previous work to promote handwashing behaviour has not been conclusive. A novel intervention strategy called SuperAmma, based on social cognitive theory and, knowledge about the health benefits of handwashing, was developed.

Methods: The project was done in Guntur district in the Indian state of Andhra Pradesh. Three villages were selected and the intervention was delivered by trained health workers. The intervention was based on social cognitive theory and, knowledge about the health benefits of handwashing, was developed.

Results: The intervention was delivered to 170 households in the intervention group and 144 households in the control group. The intervention had a significant effect on handwashing behaviour, with an increase of 29% in the intervention group compared to a 2% increase in the control group. The intervention also had a positive effect on the use of soap for handwashing, with a 19% increase in the intervention group compared to a 1% increase in the control group.

Conclusions: The intervention was effective in increasing handwashing behaviour and the use of soap for handwashing. The findings suggest that interventions based on social cognitive theory and, knowledge about the health benefits of handwashing, can be effective in promoting handwashing behaviour.

Impact evaluation

intervention in first half of villages

intervention in control villages

handwashing at target events

baseline 1st follow up 2nd follow up 3rd follow up

soap use for handwashing

intervention in first half of villages

intervention in control villages

(6 weeks) (6 months) (12 months)
# Process Evaluation

<table>
<thead>
<tr>
<th>View</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>HWWS is good manners</td>
<td>84%</td>
<td>21%</td>
</tr>
<tr>
<td>HWWS protects children</td>
<td>63%</td>
<td>2%</td>
</tr>
<tr>
<td>HWWS leads to success in life</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>Everybody around here WHWS</td>
<td>35%</td>
<td>8%</td>
</tr>
</tbody>
</table>
Conclusions

- BCD is a **generic framework**
- BCD is based on **strong theory** (reinforcement learning, evolutionary and ecological psychology)
- BCD process is based in **design thinking** and **creative interventions**
- BCD produces **behaviour change**
1. WWW.EHG/BehaviourCentredDesign for manual and papers: Aunger and Curtis, Kinds of Behavior, Aunger and Curtis The Anatomy of Motivation

2. Ghana handwashing ad (1990s)
   https://www.youtube.com/watch?v=w2qRcMTstzc

   http://www.superamma.org

4. Zambian multiple behaviour change campaign (2014)
   EBF: https://youtu.be/KACFLZjkg1c
   ORS: https://www.youtube.com/watch?v=sHS6fmt4MRg
   Handwashing: https://www.youtube.com/watch?v=NoOic0KjYLw

5. Indonesian child nutrition program:
   EBF: https://www.youtube.com/watch?v=sIG8oW4Xdzg
   Complementary foods: https://www.youtube.com/watch?v=opDsBbKMWCo
   Healthy snacking: https://www.youtube.com/watch?v=q2YmQzud3-8
   Social media: https://www.facebook.com/GerakanRumpiSehat?fref=ts