

# behaviour centered design

*Assess*

*Build*

*Create*

*Deliver*

*Evaluate*

Robert Aunger  
Val Curtis  
Sian White  
Ben Tidwell

- introduction



Public health

Self-help



Marketing

Product design



City planning



Behaviour  
change is  
hard?



WORK

HOME

PLAY

SLEEP



# Psychological mismatch



Highly rewarding behaviours  
have become unhealthy



Healthy behaviours are not  
rewarding



# Trade-offs (Temporal imbalance)



Behaviours	Short Term (Rewards)	Long Term (Benefits)
Unhealthy	++	--
Healthy	--	++

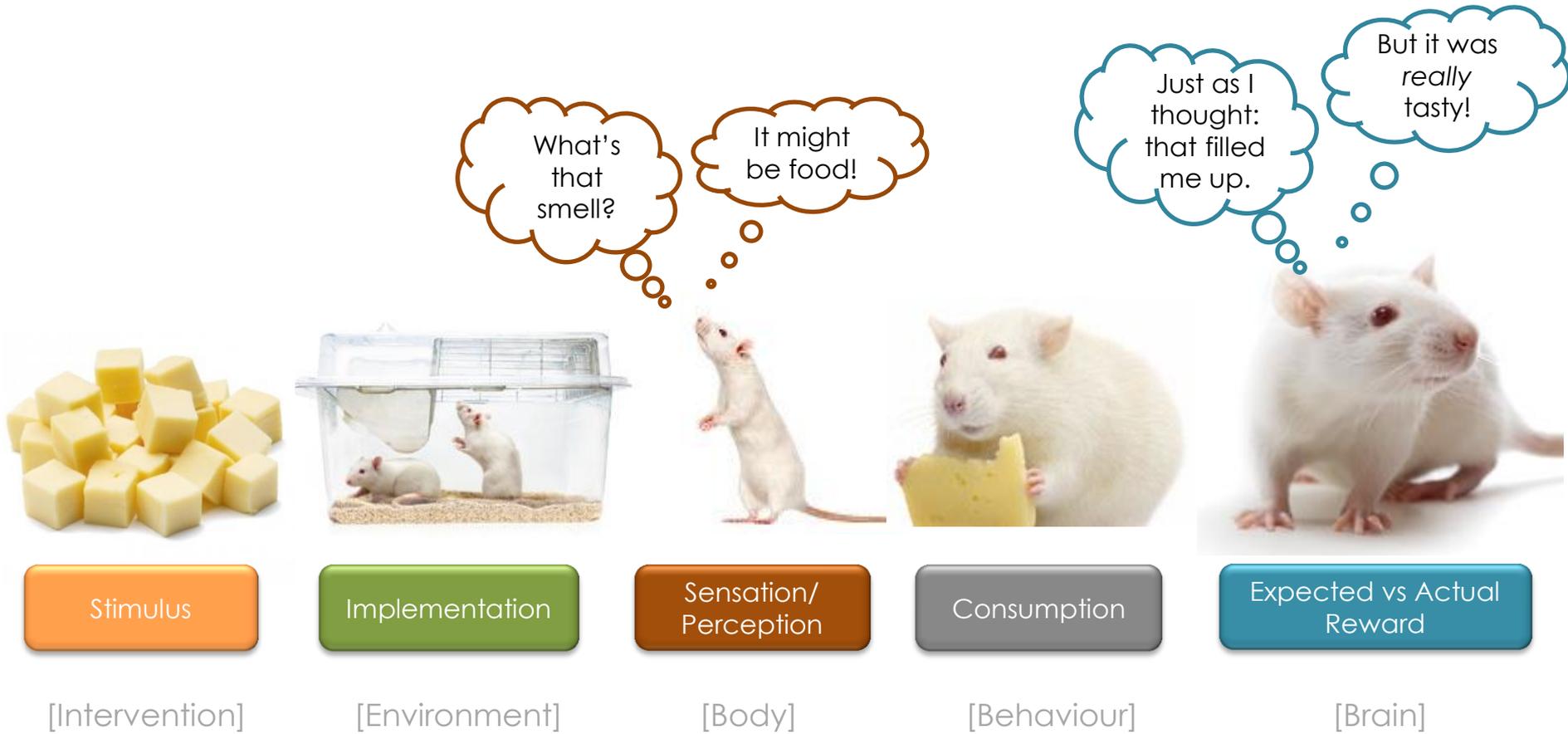
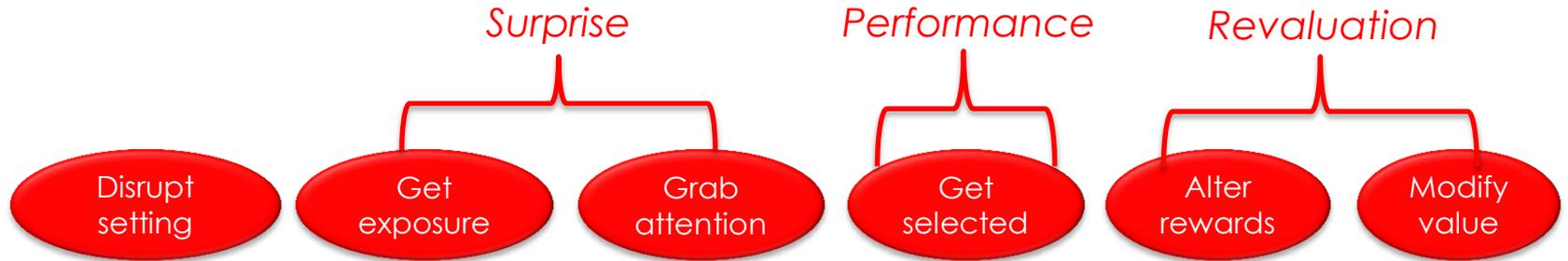
...but executive function is weak/limited

# Claim

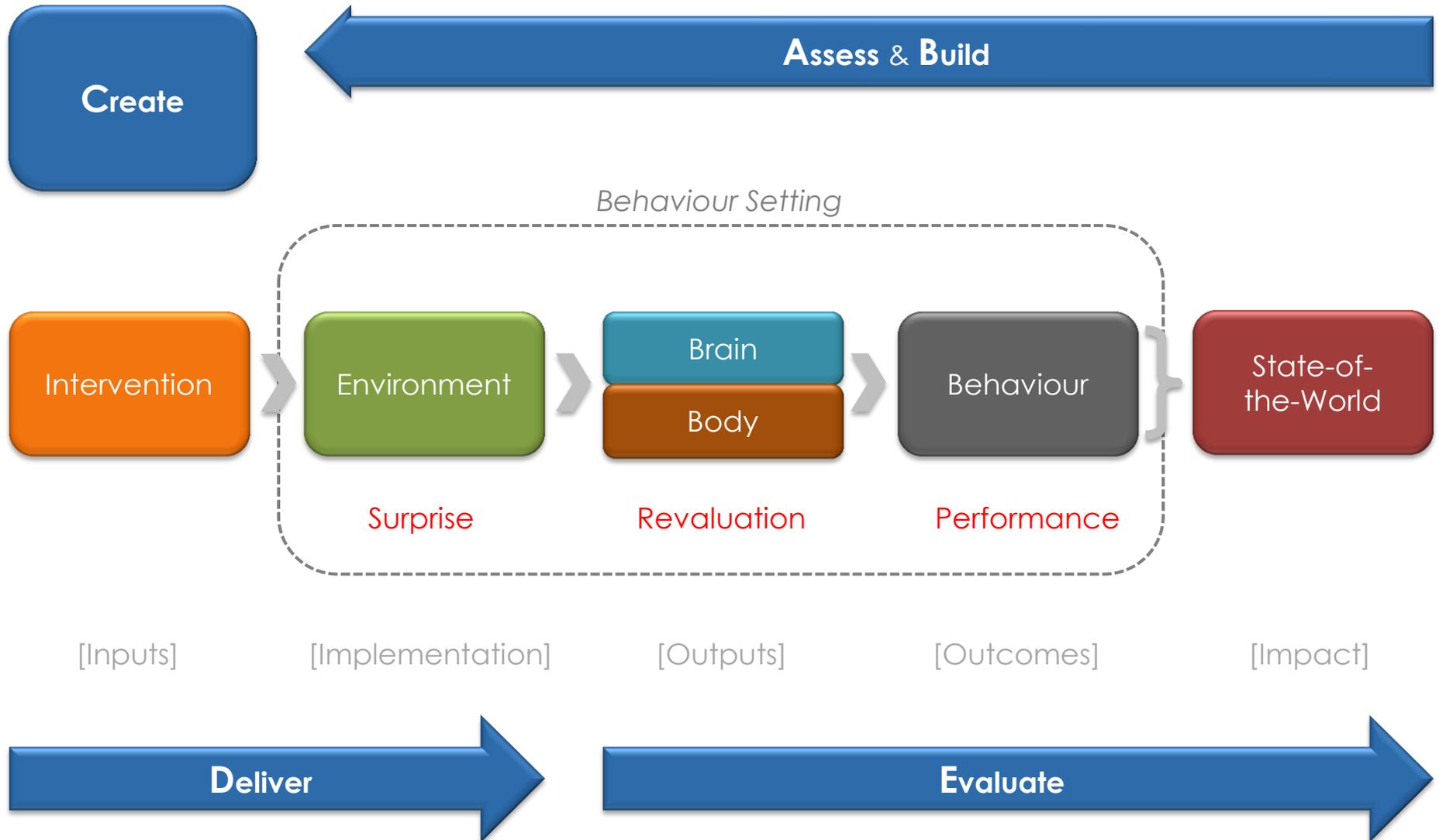
Behaviour change is only necessary when  
'natural' learning doesn't occur

## Reinforcement Learning Video

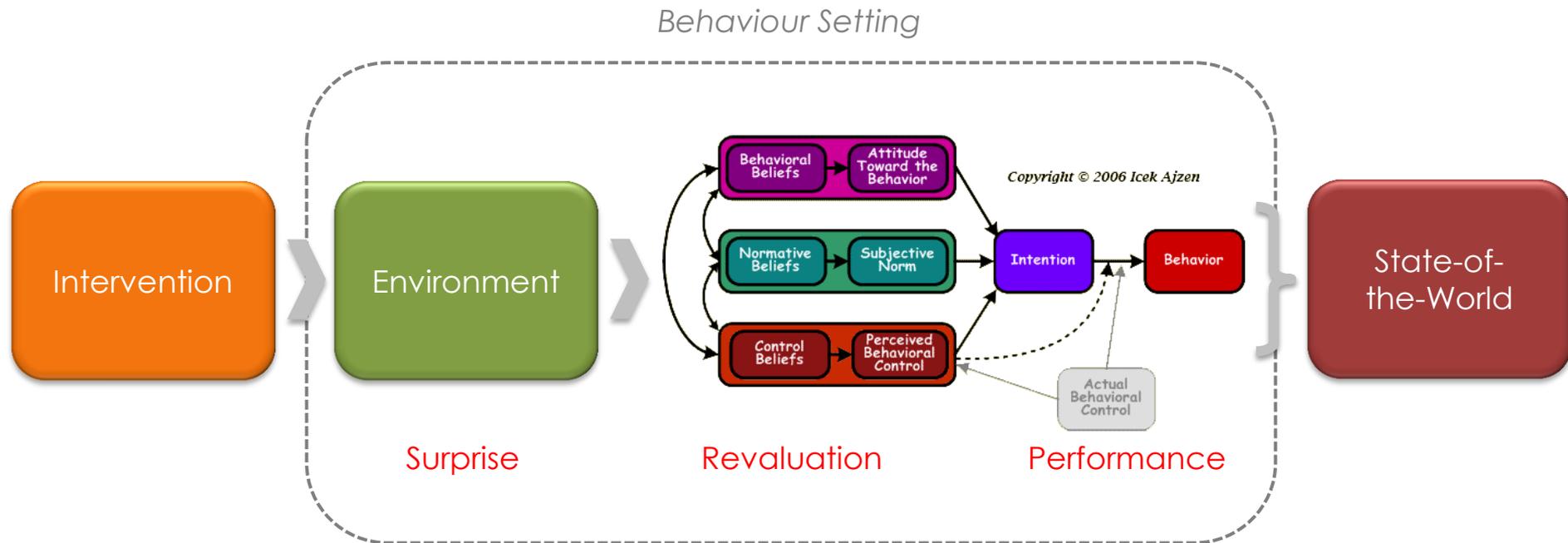
# Reinforcement learning



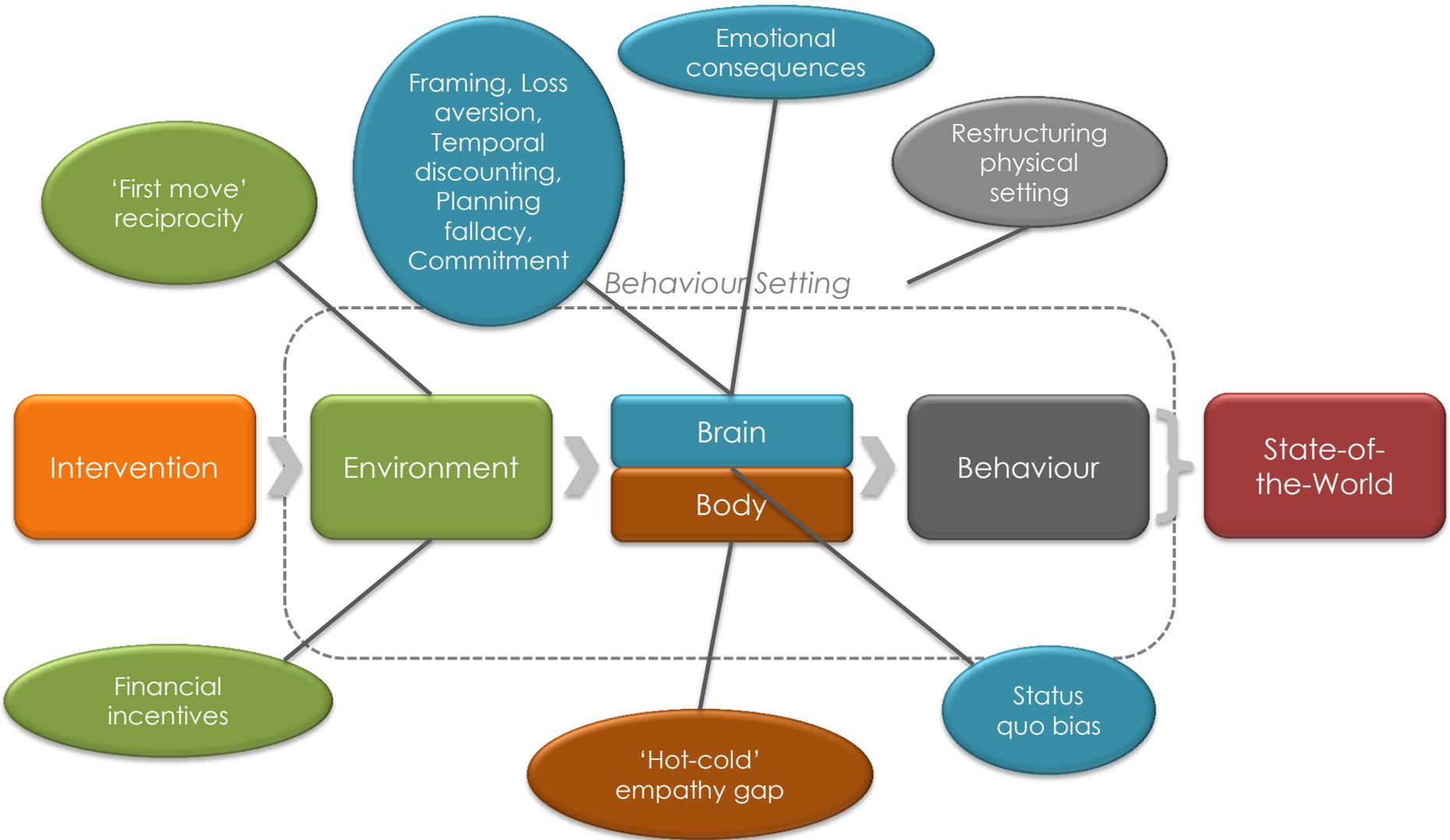
# BCD Program Process Model



# Theory of Planned Behaviour



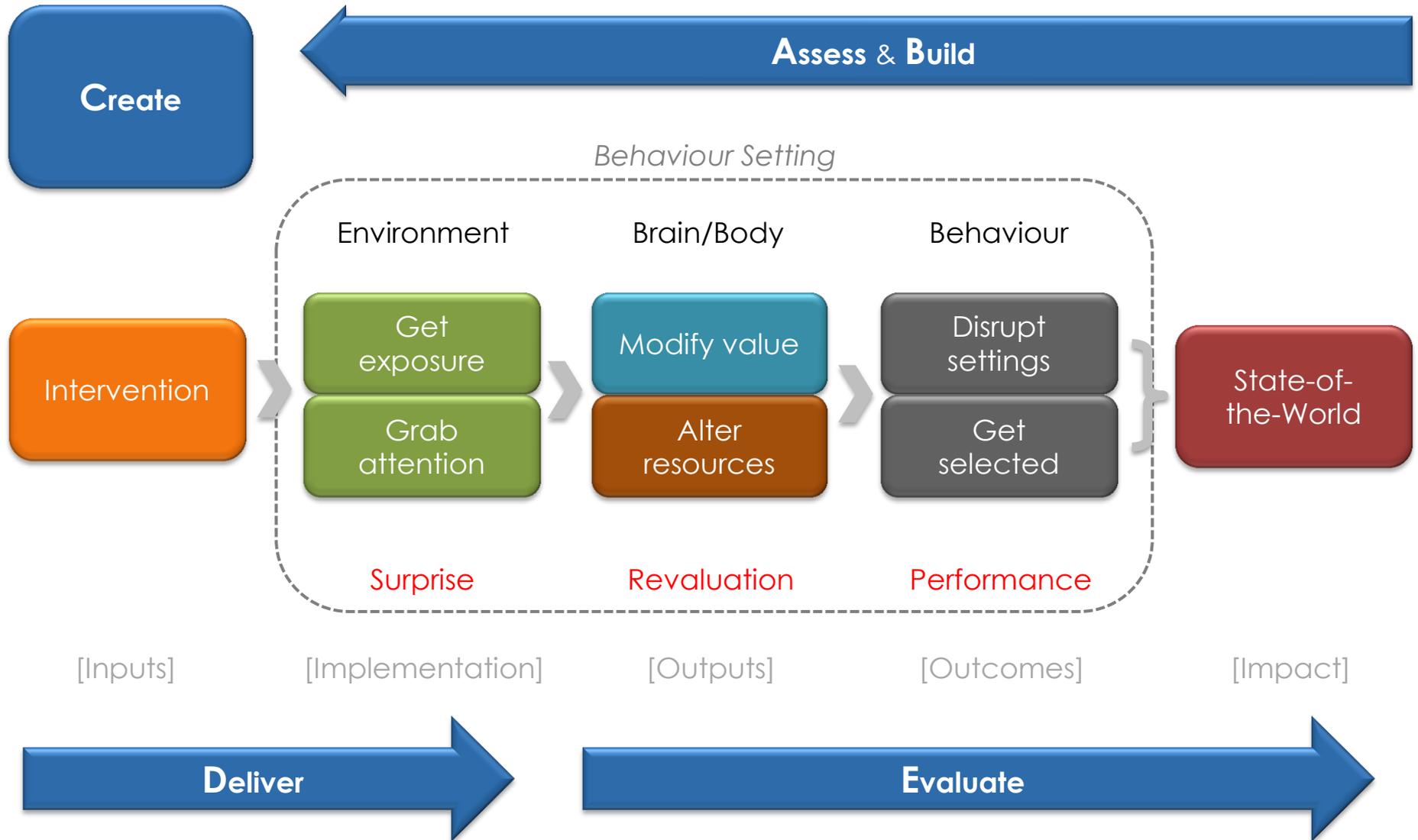
# Behavioural economic tactics



(e.g., Thaler and Sunstein, 2008; Ariely, 2009, etc.)

- the BC challenge

# BCD BC Challenge Process Model



# Create Surprise



GET EXPOSURE



GRAB ATTENTION

# Cause Revaluation

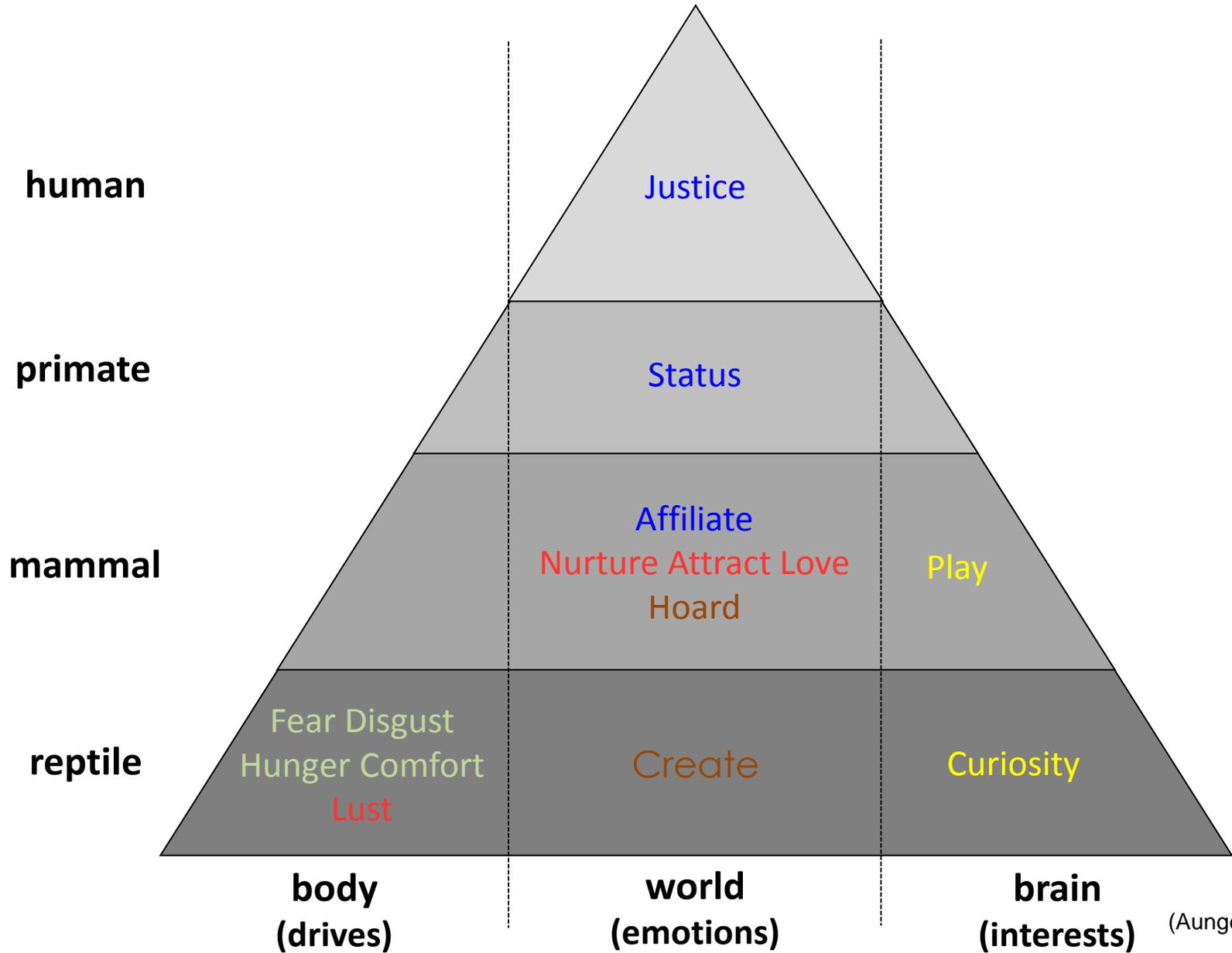


ALTER REWARDS



MODIFY VALUE

# Human Motives





Modifying Value Video

# Facilitate Performance



DISRUPT SETTING

**“This can't be Lifebuoy...**

*“... because it smells too good. I could always smell Lifebuoy coming a mile away!”*

*“Jane, I'm trying to tell you. This is new Lifebuoy. That old 'medicine' smell is gone.”*

*“But this smells so wonderful! I'd swear it was some high-priced beauty soap or something.”*

*“Look. Read the name yourself: L-I-F-E-B-U-O-Y!”*

*“Well, it sure smells good. But how about...” \**

**\*... How about B.O. protection?** Good question, Jane! But don't let Lifebuoy's new beauty-soap fragrance fool you! You're safer from B.O. than ever before.

You see, we found a brand new deodorizer for Lifebuoy called Puralin. And Puralin changed Lifebuoy completely. Gave it a new coral-pink color. A new beauty-soap fragrance. And a brand-new kind of B.O. protection—*bath-to-bath* protection.

That's because Puralin stays with your skin long *after* you bathe. You can't see it, feel it or smell it, but Puralin is there—protecting you against offending for as long as 3 days. That's longer than most of us need!

Get new Lifebuoy now, at its down-to-earth price. Use it in your daily bath. You'll *lose* Lifebuoy's new fragrance and protection—or you get your money back from Lever Brothers!

**New Beauty-Soap Fragrance!  
New Bath-to-Bath B.O. Protection  
—Thanks to Puralin!**

A vintage advertisement for Lifebuoy soap. The top half features a woman in profile, wearing a white headscarf and red lipstick, looking at a hand holding a bar of coral-pink Lifebuoy soap. The bottom half contains text describing the new fragrance and B.O. protection. A small image of a Lifebuoy soap bar is shown at the bottom right.

GET SELECTED

Stage

Role/  
Script/  
Norms

Infrastructure

Competencies

Routine

Prop

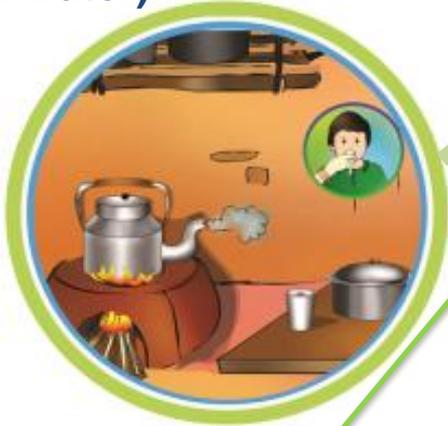


# Food Hygiene Trial: Multiple BC in Nepal



# Targeted five key food hygiene behaviours (in sequential order)

5. Water and milk treatment (boil milk and water)



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



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

Five key prioritized food hygiene behaviours

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



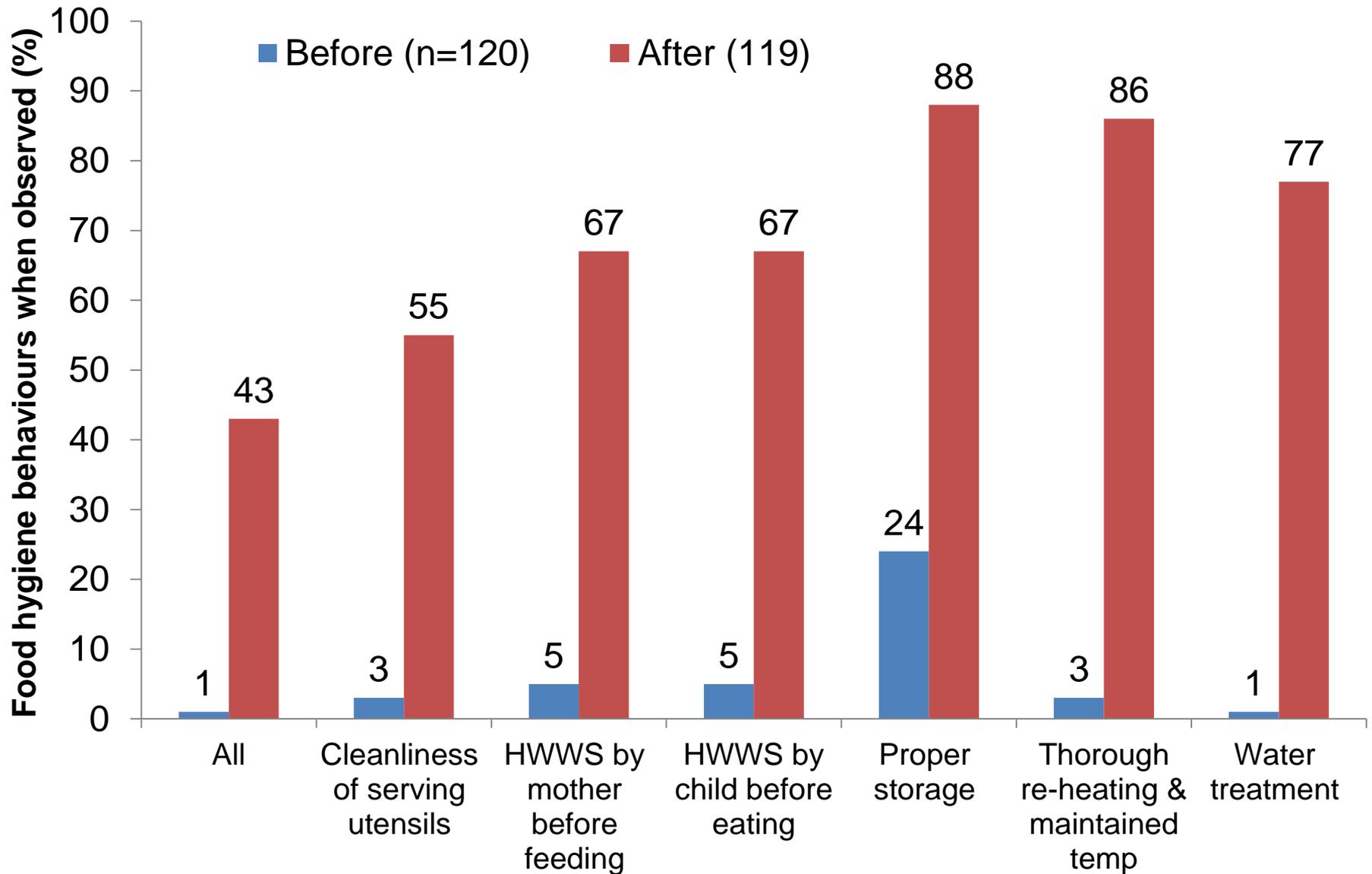
3. Proper storage of cooked food in container with tight lid



# Food Hygiene Trial: Multiple BC in Nepal

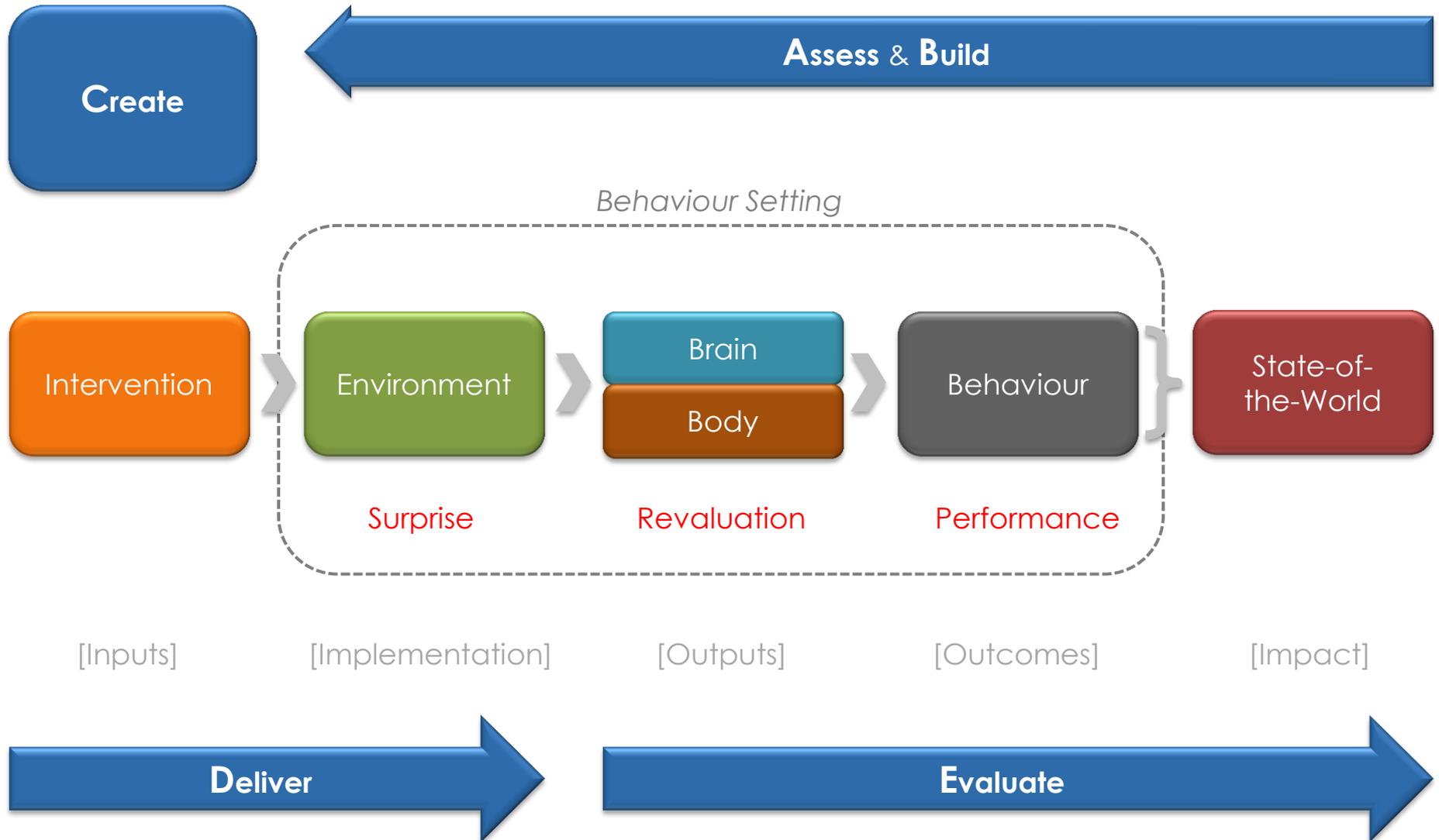


# Prevalence of key food hygiene behaviours – intervention arm (before – after)



- program  
development  
process

# BCD Program Process Model



A

A1

A2

A3

Formative  
Research  
Plan

Assess

Inception

Background/  
evidence  
review

Framing  
Workshop

# Inception meeting

- Engage/  
Align  
stakeholders
- Get  
institutional  
buy-in

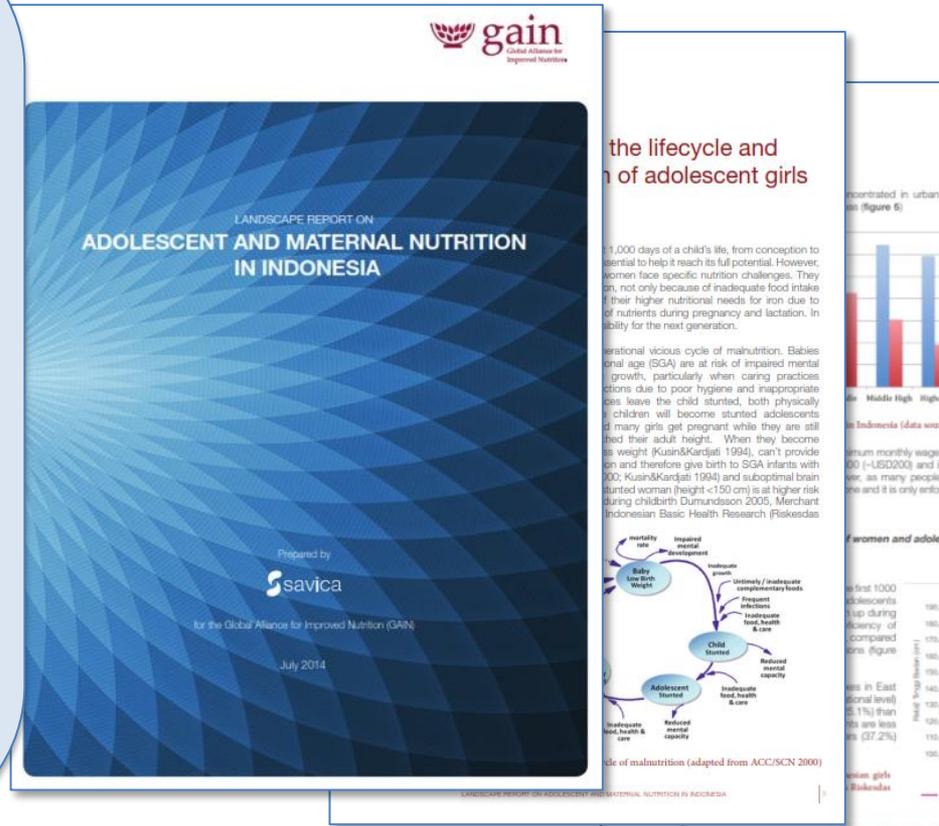


# Review the literature

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



B

B1

B2

B3

B4

Theory of change/  
Creative Brief

Build

Develop FR  
protocol

Field  
research

Analysis  
and  
reporting

Creative  
Workshop

# Daily script

Symptoms  
- an outbreak  
- Daily activities / RUCAC  
- available and available  
- can not be the input  
- and how.

1. To create a list  
- Scoping  
- available and available  
- can not be the input  
- and how.

2. To create a list  
- Scoping  
- available and available  
- can not be the input  
- and how.

3. To create a list  
- Scoping  
- available and available  
- can not be the input  
- and how.

4. To create a list  
- Scoping  
- available and available  
- can not be the input  
- and how.

Kodance



Bungkus  
kayu

Mandi  
sore

Sajian  
ke  
willing  
Sajian

Baca Wacana  
Nabi dan Rasul  
Mekah  
Rahmat + kasih  
kepada  
Rasul

Makan  
mulut  
Aks. magis  
Nabi + Rasul + Rasul  
Rasul



To never get a disease in my life

To always feel safe for the rest of my life

So others will always be fair and honest with me.

To never get a disease in my life

To always feel safe for the rest of my life

So others will always be fair and honest with me.

To always be loved by the (wo)man of my life

So others will always look up to and admire me

So no one will ever be able to ~~touch~~ physically hurt me.

To always be loved by the (wo)man of my life

So others will always look up to and admire me

So no one will ever be able to ~~touch~~ physically hurt me.

To be sure that my kids will always be happy and successful in life

That I will always be beautiful

So that I will never feel hungry ever again.

To be sure that my kids will always be happy and successful in life

That I will always be beautiful

So that I will never feel hungry ever again.

So that I will always be prepared and ready for any situation.

That I will always be able to learn new skills easily.

So that I can always make or build whatever I need

So that I will always be prepared and ready for any situation.

That I will always be able to learn new skills easily.

So that I can always make or build whatever I need

To always be desired by (wo)men

That I will always be able to find out what is going on and have access to information.

So that others will always like me and be my friends

To always be desired by (wo)men

That I will always be able to find out what is going on and have access to information.

So that others will always like me and be my friends

# Body Image

Kurang Populer



# 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:

	1. EBF	2. HWWS	3. ORS + Zinc
<b>Households</b>	Mothers of babies under 6 months who still EBF	All old enough to feed selves from family pot and go to toilet unassisted Household heads (men & grandmothers)	Mothers of children 1-59 months Household heads (men & grandmothers)
<b>Clinic staff &amp; health workers</b>	Health workers who promote EBF (?)		Health workers, clinicians, pharmacists
<b>Private pharmacies</b>			Owners, dispensers
<b>Shops, soap sellers</b>		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.

C

C1

C2

C3

Delivery  
Plan

Create

Concept  
generation

Prototype  
Testing

Material  
production

# Professional Creativity



centre of gravity

JWT

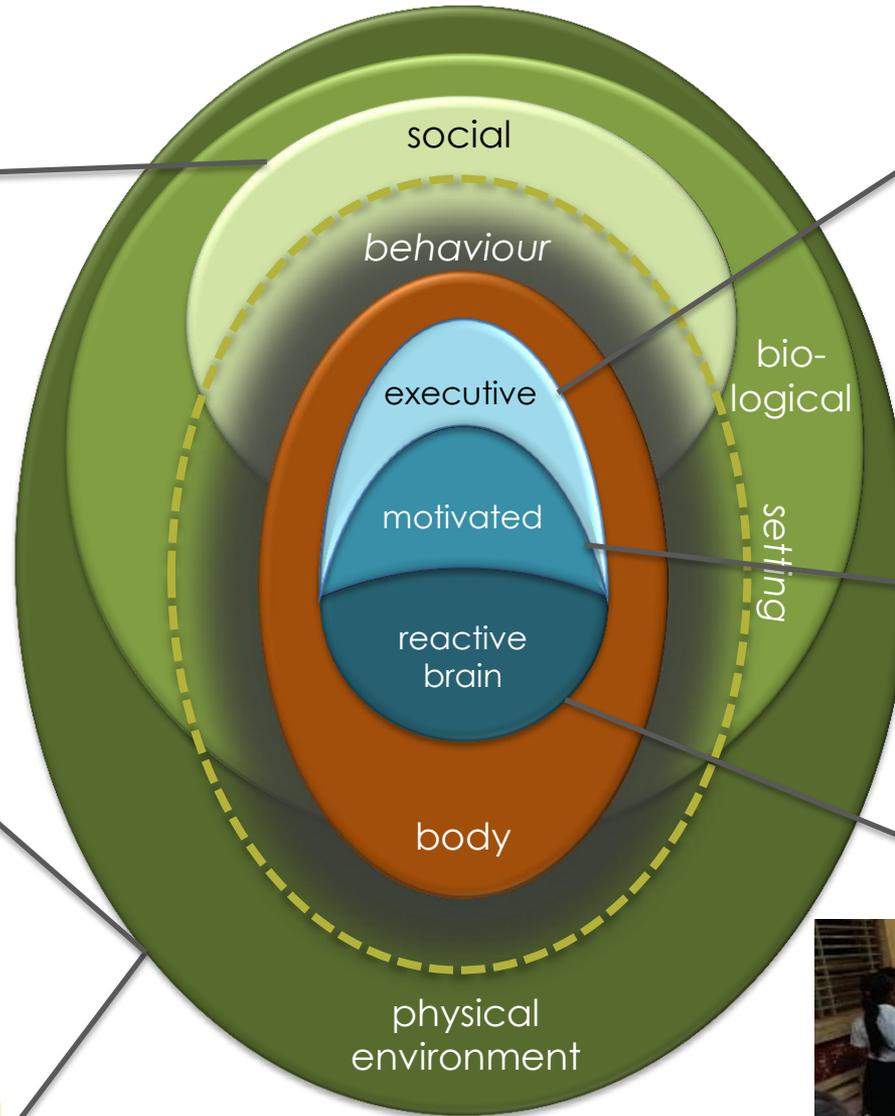


grey  
healthcare  
group



**DDB**<sup>o</sup>  
ENEMIES OF THE ORDINARY

# Types of intervention



# Baduta Creative Process

- Over 4 month period:
  - 16 adverts on TVCs
  - 6 adverts on community events/materials
  - $\cong$  25 international Skype calls



Aerobics



Doctor 'chat'



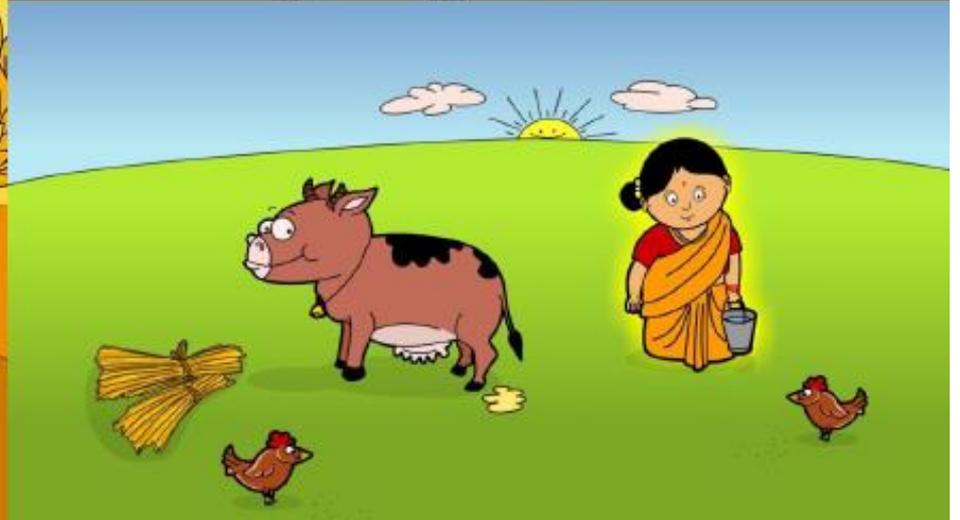
Baby/dad crawling race



Poster idea



# Pre-test ideas



D

D1

D2

D3

Delivery  
Report

Deliver

Roll-Out

Monitor

Adapt

E

E1

E2

E3

Dissemination/  
Learning  
Plan

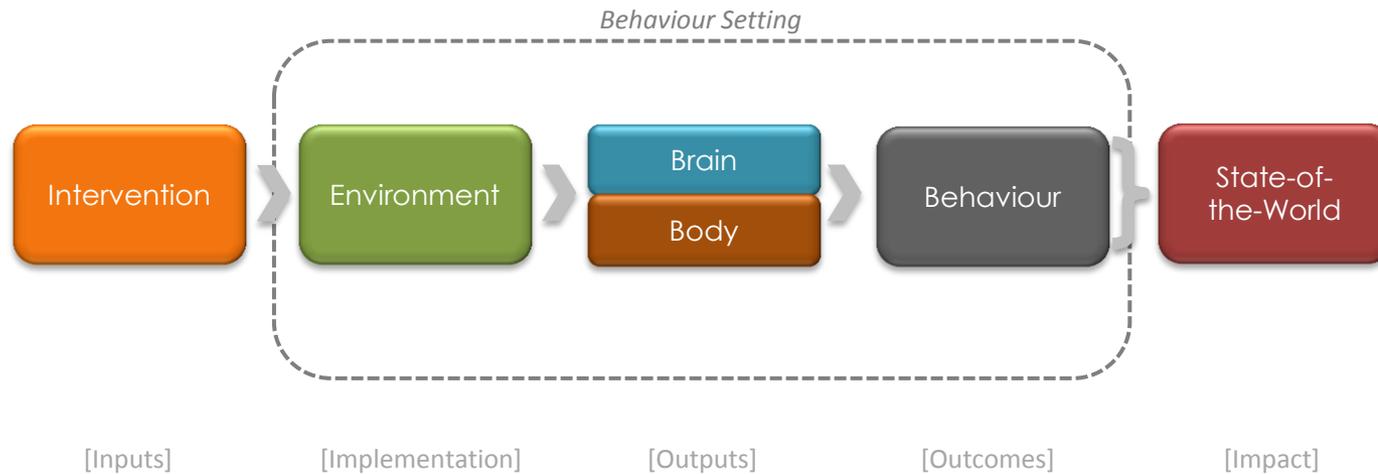
Evaluate

Process  
Analysis

Outcome  
Analysis

Evaluation  
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



## Articles

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

Adam Biran, Wafiq Peter Schmidt, Khushi Samikr Varshachergien, Dhanya Rajaraman, Raju Kumar, Kati Greenland, Baraji Gopalan, Robert Aungmye, Vai Curtis

#### Summary

**Background** Diarrhoea and respiratory infections are the two biggest causes of child death globally. Handwashing with soap could substantially reduce diarrhoea and respiratory infections, but prevalence of adequate handwashing is low. We tested whether a scalable village-level intervention based on emotional drivers of behaviour, rather than knowledge, could improve handwashing behaviour in rural India.

**Methods** The study was done in Chittoor district in southern Andhra Pradesh, India, between May 24, 2011, and Sept 10, 2012. Eligible villages had a population of 700–2000 people, a state-run primary school for children aged 8–13 years, and a preschool for children younger than 5 years. 14 villages (clusters) were selected, stratified by population size (<1200 vs >1200), and randomly assigned in a 1:1 ratio to intervention or control (no intervention). Clusters were enrolled by the study manager. Random allocation was done by the study statistician using a random number generator. The intervention included community and school-based events incorporating an animated film, skits, and public pledging ceremonies. Outcomes were measured by direct observation in 20–25 households per village at baseline and at three follow-up visits (6 weeks, 6 months, and 12 months after the intervention). Observers had no connection with the intervention and observers and participant households were told that the study was about domestic water use to reduce the risk of bias. No other masking was possible. The primary outcome was the proportion of handwashing with soap at key events (after defecation, after cleaning a child's bottom, before food preparation, and before eating) at all follow-up visits. The control villages received a shortened version of the intervention before the final follow-up round. Outcome data are presented as village-level means.

**Findings** Handwashing with soap at key events was rare at baseline in both the intervention and control villages. At 6 weeks' follow-up, handwashing with soap at key events was more common in the intervention villages (19% (SD 21) vs 4% (2) difference 15%, *p*=0.005). At the 6-month follow-up, handwashing with soap was 37% (SD 7) in the intervention group versus 6% (3) in the control group (*p*=0.02). At the 12-month follow-up visit, after the control villages had received the shortened intervention, handwashing with soap was 29% (SD 9) in the intervention group and 29% (13) in the control group.

**Interpretation** This study shows that substantial increases in handwashing with soap can be achieved in rural India through an intervention based on emotional drivers.

**Funding** Wellcome Trust, SHARE.

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#### Introduction

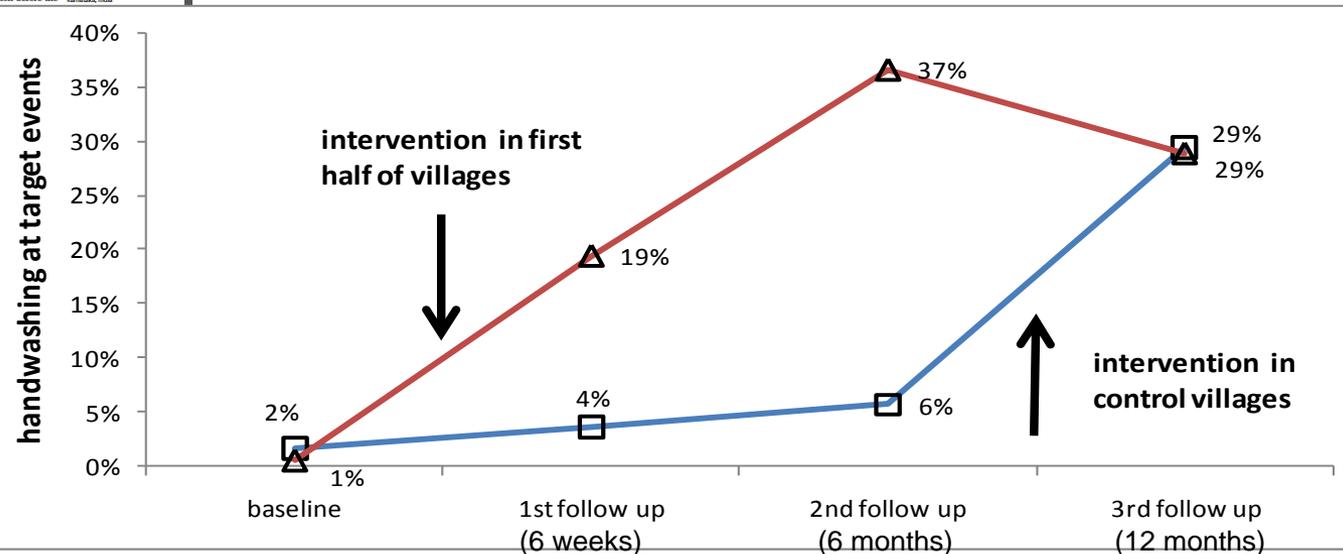
Improved hand hygiene has the potential to reduce morbidity and mortality from infections spread by faecal-oral routes and person-to-person contact. Infections preventable by improved hand hygiene include gastrointestinal infections,<sup>1,2</sup> respiratory infections,<sup>3,4</sup> trachoma,<sup>5</sup> fetal neonatal infections,<sup>6</sup> and possibly worm infections.<sup>7</sup> Diarrhoea and respiratory infections remain the two most important causes of child death globally.<sup>8</sup> Improved hand hygiene can also improve child development and school attendance.<sup>9,10</sup> Hygiene promotion has been suggested to be one of the most cost-effective interventions for prevention of infectious diseases.<sup>11</sup>

Knowledge about the health benefits of handwashing is widespread. For example, 92% of respondents in Kenya

know that germs on hands cause diarrhoea.<sup>12</sup> Studies in several countries including China,<sup>13</sup> Bangladesh,<sup>14</sup> and Kenya<sup>15</sup> on 29% of participants washed their hands after defecation or toilet use. Even in the US, where water is conveniently available and clean, handwashing remains suboptimal.<sup>16</sup> Several social cognitive models explain health behaviours. These models suggest that behaviour change might need communication of information, and that beliefs about target behaviour are important drivers of behaviour change.<sup>17,18</sup> These data on underlying handwashing practices

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# Process Evaluation

View	Intervention	Control
HWWS is good manners	84%	21%
HWWS protects children	63%	2%
HWWS leads to success in life	30%	0%
Everybody around here WHWS	35%	8%



# 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**

# BCD Materials

1. [WWW.EHG/BehaviourCentredDesign](http://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>

3. SuperAmma Indian handwashing campaign (2013) (including films)

<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=slG8oW4Xdzg>

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>