Innovation in the food and drink industry: Neuromarketing in practice & the benefits of using implicit tools
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- Neuropsychologist.
- Chairman Mindlab International.
- Author: *Impulse: Why We Do What We Do Without Knowing Why We Do It!* &
- *The Brain Sell: When Science Meets Shopping.*
- Co-author: *Fat Planet.* To be published April 2015.
• Adjunct assistant professor, University of Calgary.
• Research focus in impulse control & hedonic motivation.
• Co-investigator Hudson Institute Obesity Solutions Initiative report: Better For You Foods: It’s Just Good Business.
• Co Author Lose it Right & Fat Planet.
Topics to be Covered

• Why use neuromarketing?
• Reward Centres in the Brain: Wanting vs. Liking
• Using neuromarketing to influence consumer choice
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Power 20 watts  
Speed 1,000 petaflops

Power 9.9 million watts  
Speed 10 petaflops
Explicit: Conscious
Implicit: Non-conscious
Dual Process Theory

Implicit
Unconscious
Fast
Low energy
Impulsive
Gullible
Emotion driven

Explicit
Conscious
Slow
High energy
Sceptical
Logical
Rational
• Taste attributes processed 195 milliseconds faster than health attributes.
• Health considerations lag behind health considerations when making choices
• Self-control enhanced by speeding up processing of health information.
WHODUNNIT?
Did you notice the 21 changes?
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Three Components of Eating Motivation: Hedonic, Homeostatic and Impulsive Choices

• Homeostatic regulation, relatively tight: Weight gain of 0.5 kg per year: Average adult consumes about 900,000 kcal per year, with a 3,500 kcal surplus.
• Hedonic motivation illustrated by the surge in Global Obesity rates.
• Impulsive Decisions are encouraged.
• Food cues to target emotional and cognitive brain function can be exploited by neuromarketing tools.
Three Components of Eating Motivation: Hedonic, Homeostatic and Impulsive Choices

- Overeating
- Impulsive Urge and Availability
- Palatability and Energy Density
- Heightened Motivational Drive
- Pleasure and Reward

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The Decision to Eat

- fMRI, MRI, PET, EEG allow researchers to explore biological basis for eating motivation.
- Dopamine function & brain volume play pivotal roles in determining individual differences
- Sensitivity to reward plays central role in overeating & hedonic eating decisions.

Figure 1: Dynamic Distributed neurobehavioural vulnerability model of eating behaviour in obesity.
Food Reward: The Neural Basis for Eating Decisions

Neuro imaging studies show clear differences between lean and obese in response to:
• Visual Stimuli, Taste/Olfactory cues, Food Ingestion
• Dopamine Function & Structural Differences

Berridge’ Theory of Incentive Salience
• Dual process model of reward suggests two components: affective experience (Liking) versus motivational drive (‘wanting’)
• Distinct neural mechanisms for both correlated

Measurement of wanting corresponds with motivation
‘Liking’ and ‘Wanting’ Food Reward
‘Liking’ and ‘Wanting’ Food Reward

• Liking and wanting typically occur quasi-simultaneously and are very difficult to separate for human reactions.

• Measurement of wanting corresponds with motivation, provides greater insight into consumer behaviour.
Overlapping yet Distinct Neural Circuitry for Human Liking vs. Wanting

Image from George, 2013. Control of Craving by the Prefrontal Cortex. PNAS. Slides for Teaching.
Strategies for Shifting Health Behaviour
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“The trouble with market research is that people don't think how they feel, they don't say what they think and they don't do what they say.”
“Most of our thought is unconscious – that is, fundamentally inaccessible to our direct, conscious introspection. Most everyday thinking occurs too fast and at too low a level in the mind to be accessible. Most cognitions happen backstage.” George Lakoff & Rafael Nunez
Implicit Association Testing

• Implicit feelings are key to consumer decision making

• IAT by passes what people think to identify how they feel.

• Assess differences between simple preference & actual desire.

• Data collected online, using larger sample sizes at lower cost.

• Uses accuracy & response times to measure associations, attitudes & decision-making
Measuring gut feelings
‘Wanting’ can be intense without even expecting future ‘liking’

Reward

‘Like’ ‘Want’ ‘Learn’

Dopamine ‘wanting’

Wanting measure

Liking measure
Distinguishing Liking from Wanting: Relevance to Neuromarketing
Differences in Preferences, Differences in Implicit Wanting

- Positive association between explicit food preference & implicit food wanting (predicted).
- Implicit Wanting function of individual differences - more challenging to understand.
- Understanding Implicit Wanting is key

Data taken from Leitch, M.A. 2010. Anticipatory Food Cues elicit greater implicit wanting and greater impulsivity in participants with high TFEQ-D scores
Implicit Bias for High vs. Low Calorie Foods

Major Barrier:

• The ‘Unhealthy Food is Tasty Food’ belief and habit is hard to break!
• Caloric density of food is a major determinant of healthy participants’ willingness to pay for food items.
• Reward value of a food based on caloric content, acquired through experience.
• If high calorie foods command the greatest value in the market place, is a shift towards healthier lower calorie foods possible?
Marketing, Communications & Advertising

- Present health communications and measure the short term impact on attitudes and associations with a product or brand

- Track attitudes towards products and brands over time to test effectiveness of marketing and advertising campaigns
FAT PLANET
Why the world has become obese

David Lewis
Margaret Leitch

To be published April 2015

Mindlab
Intelligent Insights
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Distinguishing Liking from Wanting: Relevance to Neuromarketing II: Determining Differences in Liking and Wanting with Healthy Females

Study Design:

- Contact with Experimenter
- Assess self-reported eating style
- If eligible, contacted

First Trial:
- Either in Anticipatory Condition or Control
- Selection of Food Reward
- Complete Impulsivity Tests, and Liking Wanting Paradigm to assess implicit desire for foods either high/low sweet, and high/low savoury

Second Trial:
- 10-14 waiting period
- Participants finish impulsivity tests and retake the Liking/Wanting
- Measure differences between first and second test

N= 40 healthy females, BMI 20-23, no history of eating disorders
References

3. Ibid