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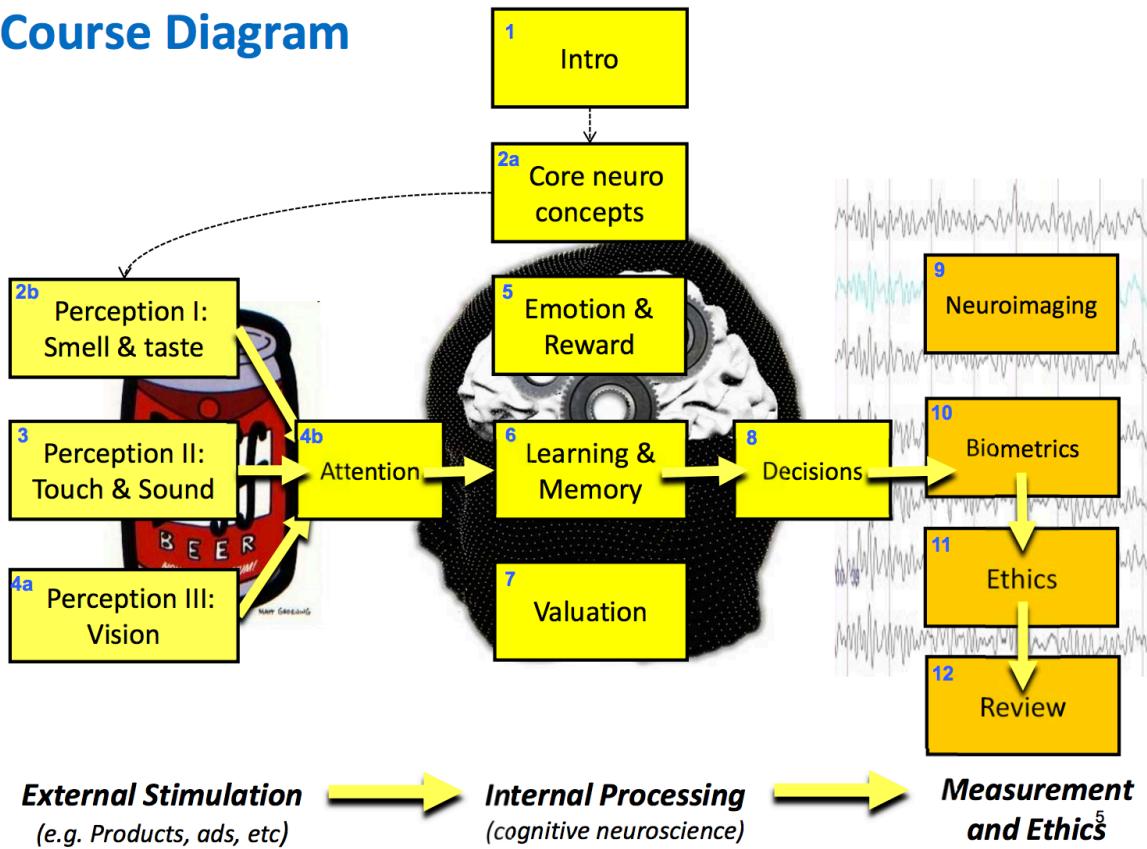
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## Neuromarketing Toolkit/Course Diagram

The course is structured in the following setting:

Cognitive Neuroscience	Neuroeconomics (Neuroscience)	Psychophysiology
how your brain works, functions, memory, sensory inputs, processes of brain	DM, value equation, reward circuitry	how your bodily changes reflect mental changes/internal processes – EEG and FMRI – inferences on emotion, based on changes in physical forms

# Course Diagram



## Neuromarketing Background in Consumer Research

### Limitations of Consumer Research

- Thought processes that occur largely 'beneath the surface' influence decisions
- Awareness and ability to reflect on thought processes that influence behaviour is limited
- Self-reported influences on decisions may not reflect actual decision factors

### Contemporary Marketing Issues (FACC)

- Fragmentation (media) - mass audience is gone
- Ad avoidance - savvy consumers avoid ads using adblock etc.
- Control (media) - consumers control exposure
- Clutter - message attention is low

### Neuromarketing Implications

#### 1. Theoretical Insight

Enhance economic theory of decision-making and consumer behaviour theory by examining specific mental processes underlying consumer behaviour

#### 2. Marketing Research Insight

Examine regional brain responses that underpin consumer behaviour to inform marketing decision-making

## Core “Neuro” Concepts (The Brain)

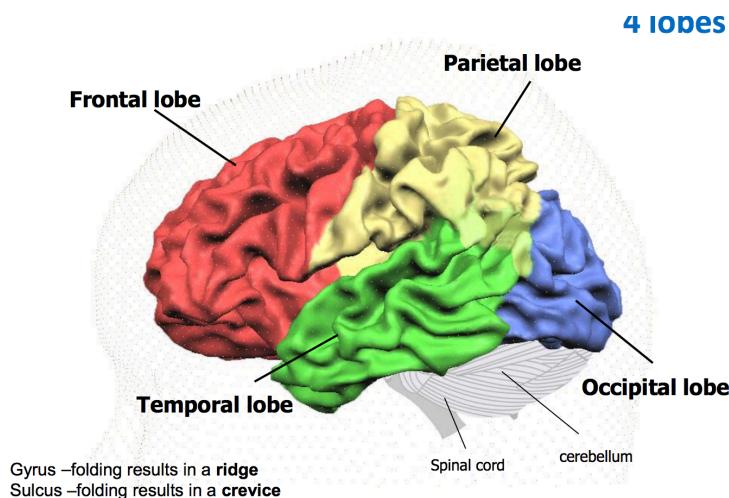
- Brain is modular: areas are **specialized** for different processes
- Some areas have **multiple functions**
- **Neural networks** that support complex behaviour

### Importance of the Frontal Lobe

- Processes smell and taste
- Integrates outputs from other brain regions
- Complex processing of thinking/feeling/making decisions
- Moderates emotional signals [LINK Reward Circuit]

### Perception & Sensory Inputs

- Provide intrinsic and extrinsic cues for products [LINK Value Equation]
- All sensory inputs linked to the reward circuit [LINK Reward Circuit]
- Occur in **cortical regions** of the brain: Surface of the brain, lobes



### Olfaction (smell)

Associated Brain Regions: Frontal Lobe

Cues: Intrinsic

- Does not pass through the thalamus (attention gateway), connects directly to the cortex
  - No control over smells you perceive → cannot consciously direct attention away or to an odour
  - **More direct link to autobiographical memory formation (hippocampus)**
  - Marketing implication: exercise control over sensory experience of consumers → generate approach behaviour → familiarity → brand preference → purchase behaviour

## Gustation (taste)

Associated Brain Regions: Frontal Lobe

Cues: Intrinsic

- Smell affects taste before and after [LINK Multimodal Encoding]
- Provides intrinsic cues for products → confirms/denies information from extrinsic cues (price, appearance)

### Marketing Implications: Sampling

## Touch

Associated Brain Regions: Parietal Lobe

Cues: Intrinsic

- **Need for Touch (NFT)** – the consumer's need to touch products. Can be:
  - I. **Instrumental NFT**: diagnostic for decision-making
  - II. **Autotelic NFT**: for fun seeking

**Products have a high or low diagnostic power of touch** (LINK to NFT in consumer side of equation)
- Interpersonal touch → **reduced perceived risk in decision-making** eg. *Male gambling more when female touches them*
- Attitudes → “endowment effect” (holding the product enhances sense of ownership)

### Marketing Implications:

Having a “try me” button on products will assist consumers in making a purchase decision and will present an endowment effect.

## Heading (sound)

Associated Brain Regions: Temporal Lobe

Cues: Intrinsic & Extrinsic

- Auditory Perception
  - As a **context**: meaning processed without explicit attention given to it. Can also infer emotional states

*Eg. “cocktail party effect” when you are conscious of music being played in background (low involvement processing) Music volume and dynamics, tonality and texture can infer emotional states*
  - As a **branding device**: sound logo of 3-5 notes [LINK Multimodal encoding]

*Eg. Hearing McDonalds sound can evoke positive emotional states associated with that memory*
  - **Product specific**: used to evaluate products as an intrinsic cue of quality

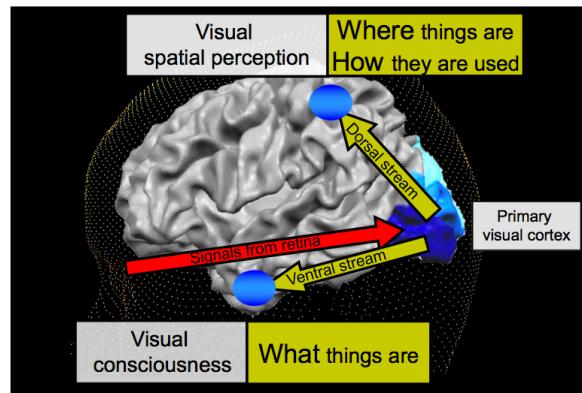
### Marketing Implications:

Sound in all applications can be used to influence emotional states of consumers and contribute to product value

## Sight (vision)

Associated Brain Regions: Occipital Lobe

Cues: Intrinsic & Extrinsic



- 2 Visual Systems – strongly linked to perception
  1. "**What system**"- **ventral stream** - feature recognition, physical structure of objects - good at recognising specific shapes  
Marketing implication: product and logo design should be distinct
  2. "**Where system**"- **dorsal stream** - emotion perception, location of features in the visual field (THINK dorsal driving)

Both systems feed from the **primary visual cortex**

Marketing Implications:

Visually salient cues need to be used in context of branding Eg. Apple's 1984 TV commercial – Apple logo is the only stimulus with bright colours

## Multimodal Encoding

- Multiple sensory projecting onto experience → in working memory longer → more neurons firing together → more likely to form long term memory strand [LINK to LTM]

Marketing Implication:

- Make use of **sensory branding** via multimodal sensory cues to strengthen memory trace associations with the brand and increase accessibility, repetition, etc.

## Attention

### Spotlight of Attention

- **Selective attention** involves the selection of a subset of sensory stimuli for further processing
- The **frontal lobe** processes parts within your **consciousness**
- Stimuli in **spotlight of attention** passed on for higher processing.

### Types of Attention