psyc3122 lecture 2

Attitude measurement
Intro to the planned behaviour model
& the assignment

next week: Understanding decision-making

Overview of today

- Discussion of book chs 1-3
- Review of last week
- Intro to the planned behaviour model
  - & the assignment
- Attitude measurement
  - Why it's not boring
  - The evolution of paper & pencil measures
  - Behavioural measures
  - Psychophysiological measures
  - Implicit measures
Review

- What is an attitude?
  - States of readiness
  - Affect
  - Likes and dislikes
  - Serve different functions
  - Most useful model (maybe!):
    - Attitude object + (semantic information) cognition + (like dislike) affect + (approach avoid) behaviour

Introduction to the Planned Behaviour Model

- Theory of reasoned action (Fishbein & Ajzen, 1975)

- Theory of planned behaviour (Ajzen, 1985)

- basic assumption - people systematically use available information when making behavioural decisions
Theory of reasoned action

intention - a subjective estimate of the probability that one will perform a certain behaviour.

attitude - how favourable or unfavourable a person feels toward the behaviour.

subjective norm - perceived social pressure to perform or not to perform the behaviour.
Main points

- intention is the immediate predictor of behaviour
- personal (attitude) and social (sub. norm) variables predict intention
  - strength of effect of two variables will vary depending on behaviour and population
  - relative strength of effects determines which factor/s should be targeted in interventions

Theory of reasoned action

Heterosexual males’ preferred safe sex strategy (Gallois, Terry et al., 1993)

Heterosexual females’ preferred safe sex strategy (Gallois, Terry et al., 1993)
Theory of reasoned action

- Behavioural beliefs
  - X
  - Outcome evaluations
- Normative beliefs
  - X
  - Motivation to comply
- Attitude
- Subjective Norm
  - Intention
  - Behaviour

Main points ctd

- attitude and sub. norm assumed to be belief-based
  - need to understand salient costs and benefits & referents
  - beliefs used to explain variation in behavioural choice
  - should be targeted in interventions
- effects of socio-demographic and personality variables assumed to be mediated through beliefs
Analysis of beliefs underlying attitudes

Perceived benefits of volunteering

Analysis of beliefs underlying subjective norm

Perceived normative support for volunteering
Theory of planned behaviour

- Theory of reasoned action (TRA) developed for use with volitional behaviours
- to allow prediction of non-volitional behaviours, need to take into account both intentions and the controllability of the behaviour (Ajzen)
- use perceived behavioural control (PBC) as proxy measure of actual control
- whether PBC --> behaviour contingent on:
  - behaviour not being under volitional control
  - measure of PBC being accurate
- PBC proposed to also influence intention
- beliefs also predict PBC

Theory of planned behaviour

[Diagram showing the relationship between attitude, subjective norm, intention, and behavior with nodes and arrows indicating the flow of influence]
Theory of planned behaviour

- Behavioural beliefs
  - Perceived presence or absence of factors that will facilitate or impede performance of the behaviour
- Normative beliefs
  - Perceived power of control factor to facilitate or impede performance of the behaviour
- Subjective Norm
- Intention
- Control beliefs
- Perceived power

Analysis of beliefs underlying PBC

Control beliefs: Likelyhood ratings
Overview & strengths of TRA/TPB

- strengths of the models:
  - focus on both psychological & social determinants of behavioural choice
  - clearly articulate beliefs that contribute to formation of these factors --> direct relevance to design of interventions
  - generalisable to a range of different domains
  - able to accommodate context- and population-specific factors
  - clear guidelines for measurement

Using TPB data for interventions

- Identify beliefs that differ between intenders and non-intenders for targeted campaigns
  - challenging false beliefs
  - increasing the prevalence of true beliefs
- Identify the relative strength of each variable in target populations to know how to approach
  - Perceptions of costs and benefits / attitude
  - Barriers / control
  - Social support / norms
Theory of planned behaviour

- Behavioural beliefs
- Outcome evaluations
- Subjective beliefs
- Normative beliefs
- Motivation to comply
- Control beliefs
- Perceived power

Attitude

Subjective Norm

Intention

Behaviour

Perceived Behavioural Control

Heaps of good info on the web – check out Ajzen’s web site
http://www.people.umass.edu/aizen/pdf/tpb.measurement.pdf

Your study’s simplified design:

- Attitude
- Subjective Norm
- Perceived Behavioural Control

Intention to ??? Cool DV

Cool IV

NB – two common issues – cool DV has to be planned (not, e.g., sneezing) and cool IV has to be social psychological
assessment

- In the tutorials this week, you will further discuss the TPB and work on choosing a topic with your tutor’s assistance
  - The tutors must approve your choice!
    - You will choose your preferred behaviour (dependent variable) to do a TPB study on + 2 fallback choices
    - You will be thoughtfully considering the relationship between attitudes to your behaviour, subjective norms, perceived behavioural control and intentions
    - Plus one more independent variable that is relevant to your behaviour and which you think might predict intentions over and above the TPB
    - You will choose your preferred IV for each DV you submit, plus 2 fallback choices
Attitude measurement

Scaling
- Likert’s Method of Summated Ratings
- Osgood’s Semantic Differential
- One Item Scales

Why it’s not boring:
- Because of what it’s used for
- Because of what it means about consciousness
- Because of what it means about understanding others and yourself

Behavioural Indicators
- Head Movement
- Eye Contact
- The lost letter technique

Physiological Indicators
- Galvanic Skin Response
- Pupillary Response
- Facial Electromyography (EMG)
- Muscle Activity: Corrugator = Frown
  Zygomatic = Smile

Implicit measures
- The IAT (implicit attitudes test)
- The GNAT (Go/No-Go Association Task)

Scaling

Scales focus on a continuum from very negative to very positive attitudes. Their goal is to determine where on the continuum the attitudes of individuals fall.

Measures can have 20-30 questions on one attitude object.
Likert’s Method of Summated Ratings

- Does not require that judges first sort the items
- Respondents indicate the extent to which they agree or disagree with a statement.
- Items usually have five (or seven) response options: strongly agree, moderately agree, neither agree nor disagree, moderately disagree, and strongly disagree.
- A value ranging from -2 to +2 [1 to 5] is associated with these options.
- A person’s score is the sum [or average] of the values of the options they picked across all items
- Some items are reverse coded.
- To ensure scale homogeneity, only items that correlate well with the total score (in scale development) are kept.

2. Likert Scale

For each statement, check the extent to which you agree.
1. I believe that the church is the greatest institution in America today.
   (+2) ___ strongly agree
   (+1) ___ moderately agree
   (0) ___ neutral
   (-1) ___ moderately disagree
   (-2) ___ strongly disagree

2. The church represents shallowness, hypocrisy, and prejudice.
   (-2) ___ strongly agree
   (-1) ___ moderately agree
   (0) ___ neutral
   (+1) ___ moderately disagree
   (+2) ___ strongly disagree
Osgood’s Semantic Differential

- An attitude scale which includes various subscales that measure the connotative meaning of the attitude object.
- These subscales are bipolar and respondents are asked to check along the line between the two bipolar opposites: (e.g. good____________________bad).
- A score consists of the average of the ratings.

➤ This approach is based on the idea that there are three elements of meaning to all concepts: evaluation (good/bad), potency (strong/weak) and activity (active/passive).
➤ The first of these (evaluation) is directly relevant to attitudes, so by using scales that are defined at each end by purely evaluate opposites, one can measure attitudes towards any object.

3. Semantic Differential Scale

Rate how you feel about the church on each of the scales below:

<table>
<thead>
<tr>
<th></th>
<th>good</th>
<th>+2</th>
<th>+1</th>
<th>0</th>
<th>-1</th>
<th>-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>unfavorable</td>
<td></td>
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<tr>
<td>favorable</td>
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<tr>
<td>pleasant</td>
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<tr>
<td>negative</td>
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<tr>
<td>neutral</td>
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</tbody>
</table>

(e.g. good____________________bad)
Thermometer Scales

- Good psychometric reasons for using several items
- But often a single item does the trick.
- E.g., how positively or negatively one feels about the attitude object
- Or e.g. “thermometer scale” where one is asked to indicate on a scale from 0 to 100 how warmly one feels towards the attitude object.
  - One-item scales are often used in surveys and in experiments because they do a sufficiently good job of measuring attitudes, and they avoid redundancy.

One item wonders...

4. One-Item Rating Scale

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much do you like the church?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>not at all</td>
<td>very much</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How many items?

- The more items on a scale, the more reliable (replicable) the measurement.
  - many items reduce the chances that the attitude score is due to error.
- Too many items can focus on different aspects of the attitude and may, therefore, not be “homogeneous”.
  - The scale will no longer be measuring just one concept, but two or more!
- This is particularly relevant when considering attitudes in terms of the tripartite model Cognition + Affect + Behaviour
  - Next week we will explore at great length theory & data about when attitudes (defined as liking an attitude object) diverge from behaviour
- This week we focus on a dominant model: the TPB
- But first let’s consider an alternative viewpoint – the need for non-obtrusive measures
Behavioural measures

Head movement – when people listen to messages they agree with, they tend to move their heads vertically (nod) more than horizontally (shake).

Eye Contact – If two people like each other, they will make more eye contact than if they do not like each other.
- Affiliative Conflict Theory (Equilibrium Theory) - people who like each other are more intimate and engage in more intimate behaviours like eye contact.
- Cue to honesty ("shiftyness")
- Cultural differences make behavioural measures vulnerable to mis-interpretation
  - Head nodding in Bulgaria
  - Gender differences in 'leadership'
  - Cultural / race differences in ‘trustworthiness’ ‘pushiness’

The Lost Letter Technique

- An indirect attitude measure introduced by Milgram.
- ‘planted’ stamped, addressed envelopes in public places so that they appeared to have been ‘lost’
- letters addressed to different organizations including UNICEF and Nazi groups.
- Counted all the envelopes that he received in his mailbox (all the mail was addressed to him).
- According to Milgram, the number of letters received for each organization reflected the general attitude of the population towards that organization. The higher the mailing rate, the more favorable the attitude.
- An aggregate attitude measure, but useful in countries where attitudes are suppressed?
Psychophysiology

Galvanic Skin Response (GSR):
- a drop in the resistance of the skin to the passage of a weak electric current, indicative of emotion or physiological arousal.
- usually measured in the palm of the hand
  - pleasant words like ‘love’ presented to participants: GSRs were greater than to neutral.
  - Same type of responses seen with unpleasant words (e.g. ‘rape’)
  - neutral words like ‘chair’: GSRs remained neutral.

The problem with the GSR: no way to distinguish between a positive and negative reaction,
  ➢ so it is not a good indicator of attitudes.
- Fear, anger, startle response, orienting response and sexual feelings may all produce similar GSR responses.

Psychophysiological measures

Pupil dilation:
Does the size of a person’s pupils reflect an attitude? Do pupils dilate in order to allow more information “to enter the eyes” for a liked than a disliked attitude object? (Hess, 1965)

- pupillary responses of pedophiles to pictures of nude adult women and girls compared to the pupillary responses of regular criminals (Attwood & Howell, 1971).
  ➢ pedophiles’ eyes dilated more when they viewed the pictures of nude girls compared to nude women. The control group (other criminals) showed the opposite reaction.
- Other studies have failed to replicate these results.
- Pupil responds to other features of stimuli other than positive or negative attitudes (cognitive effort ⇒ dilation).
Smile!

Facial Electromyographic Recording (EMG):
- an electrical recording of muscle activity in the facial region obtained by placing electrodes on the face.
- In many studies, the electrical activity measured is that produced by the muscles needed to smile and frown.
  - muscles needed to smile = zygomatic muscles
  - those needed to frown = corrugator muscles.
- The facial EMG recording is used to detect subtle smiles and frowns imperceptible to the human eye.
- Groovy studies show that pro-attitudinal messages activate people’s zygomatic muscles whereas counter-attitudinal messages activate people’s corrugator muscles.
Other groovy study e.g.

- Ensari et al. (2004):
  - People give self-report views on outgroups who have or have not ostensibly insulted them whilst hooked up for facial EMG.
  - When insulted, self-report and facial EMG converge to indicate dislike of target.
  - Without insult, results diverge:
    - Self-report -> favourable evaluation of target.
    - Facial EMG -> unfavourable evaluation.

And translation to applications:

- Benedek & Hazlett (2005):
  - Using facial EMG measures combined with verbal and performance measures to provide feedback in the software design process on the user’s emotional state.
  - Study 1: 16 participant’s emotional responses while they passively viewed mock ups of proposed new operating system features.
  - Study 2: emotional responses of 15 participants while they actively used one of two versions of a media player.
What does it all mean?

- “real” attitudes and “fake” attitudes?
  - Psychophysiological measures are “real”?
- Ambivalent attitudes?
  - Sometimes experience ‘approach-avoidance’ conflict
  - Few things are wholly good or bad
  - Brain organizes / orders messy network
  - Express one side only?
- Conscious and unconscious attitudes
  - Repression, denial of socially punished feelings
- Explicit and implicit attitudes
  - Awareness + control = explicit
  - Not just repression – also unconscious learning, e.g. 41
The Implicit Attitude Test

(1) Lexical Decision Task


- Focus on “+” (200 msec)

- Blank screen (300 msec)

- Primed with (200 msec):
  - “White”
  - “Black” or
  - “XXXXX”

- Then shown a word or a non-word (on screen until they indicate whether it is a word or not)

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The IAT

- 12 nonwords

- 36 words

- 144 trials

<table>
<thead>
<tr>
<th>Items stereotypic of blacks</th>
<th>Non-stereotypic items</th>
<th>Items stereotypic of whites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARMING</td>
<td>Appealing</td>
<td>Amorous</td>
</tr>
<tr>
<td>RELIGIOUS</td>
<td>Delightful</td>
<td>Intelligent</td>
</tr>
<tr>
<td>CHEERFUL</td>
<td>Favorable</td>
<td>Successful</td>
</tr>
<tr>
<td>ATHLETIC</td>
<td>Desirable</td>
<td>Educated</td>
</tr>
<tr>
<td>EXPRESSIVE</td>
<td>Likeable</td>
<td>Responsible</td>
</tr>
<tr>
<td>MUSICAL</td>
<td>Pleasant</td>
<td>Wealthy</td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POOR</td>
<td>Disturbing</td>
<td>Exploitative</td>
</tr>
<tr>
<td>DISHONEST</td>
<td>Horrible</td>
<td>Materialistic</td>
</tr>
<tr>
<td>VIOLENT</td>
<td>Irritating</td>
<td>Stuffy</td>
</tr>
<tr>
<td>STUPID</td>
<td>Offensive</td>
<td>Uptight</td>
</tr>
<tr>
<td>LAZY</td>
<td>Repulsive</td>
<td>Greedy</td>
</tr>
<tr>
<td>THREATENING</td>
<td>Upsetting</td>
<td>Selfish</td>
</tr>
</tbody>
</table>
What do you get?

1. The Stereotypic Prejudice Index
   - The average facilitation score when:
     - the prime was “white” and the words was from the positive white stereotype (“White” → “Wealthy”) and,
     - the prime was “black” and the words was from the negative black stereotype (“Black” → “Threatening”)

   [These RTs should be fast because of the s-type consistent prime]

What do you get? cont’d

2. The Generalized Prejudice/Positive Index
   - The average facilitation score when the prime was “white” and the word was positive (regardless of s-type relevance)

3. The Generalized Prejudice/Negative Index
   - The average facilitation score when the prime was “black” and the word was negative (regardless of s-type relevance)

   But what about other semantic learning for the cues?
IAT results

- Often get scores that don’t correlate with explicit attitude measures
- Sometimes don’t seem to correlate with anything in particular
  - In some studies correlate with unconsciously controlled behaviour (e.g., non-verbal body language to outgroup target) while explicit correlate with controlled (e.g., discriminatory preferences in hiring)

IAT vs GNAT

- Heaps of interesting info on the web for the IAT
  https://implicit.harvard.edu/implicit/demo/index.jsp
- Nowadays superseded by Go/No-Go Association Task (GNAT)
  - Uses signal detection theory to deal with question of base-rates, false alarms vs misses
  - But can also be adopted to deal w/ response latency
- Heaps of interesting info on GNAT on web:
  http://projectimplicit.net/nosek/gnat/
Attitude measurement summary

- The development of scales:
  - From behavioural continuum to cognitive continuum to evaluative continuum (and back)
  - Likert and Osgood vs single-score, single item
  - Behavioural, psychophysiological, implicit measures
    - Attitudes are not always unidimensional
    - They are not always conscious
    - Sometimes they are not expressed explicitly
    - Cognition, affect, and behaviour can diverge
- Next week: Understanding Decision-making
  - Read chapter 10

- Tutes start this week!
  - Be sure to attend to choose your assignment topic
  - Plus see the groovy att meast prac