

Lecture Notes – Introduction and Questionnaire Design

This Week

- Introduction.
- Defining some terms.
- Writing good questions.
- Developing a questionnaire package.
- Administering questionnaires.

Introduction: Two Activities that are Central to Psychology

- Measurement:
 - How do we measure psychological constructs?
 - Factor structure (measures unidimensionality). {psychometric properties}
 - Reliability. {psychometric properties}
 - Validity. {psychometric properties}
- Prediction:
 - How do we make our predictions as accurate as possible.
 - Most employed to make predictions = multiple regression.
- Bivariate correlation is starting point for both activities.

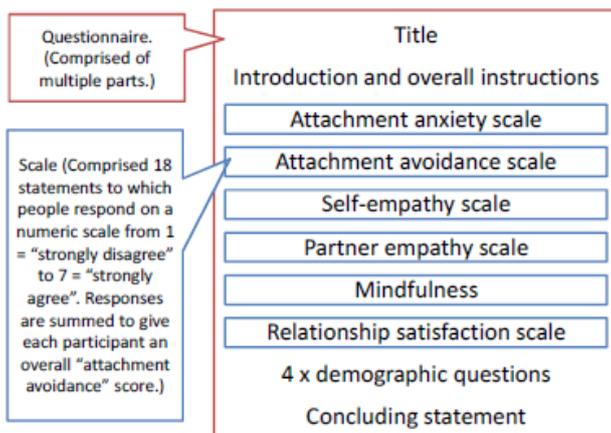
- “Prediction is a central, indeed nearly ubiquitous, activity of psychologists. Many clinical decisions, such as treatment selection, depend on predictions. Psychologists, or at least applied psychologists, are, therefore, obliged to know as much as possible about how to make good predictions.”

Some Terminology

- Scale vs questionnaire.
- Constructs vs indicators vs items/questions.

Scale vs Questionnaire

- James Clarke: 2011 Honours student.
- Predicting relationship satisfaction (*criterion variable*) using (1) attachment anxiety, (2) attachment avoidance, (3) perceived self empathy, (4) perceived partner empathy, (5) mindfulness, and some demographic variables (*predictor variables*).
- Developed an online *questionnaire* containing *scales* to measure each of these *constructs*.



Attachment Avoidance Scale

Some items require reverse-coding prior to summing.	1	2	3	4	5	6	7	
	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree	No response
I am very comfortable being close to romantic partners	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't feel comfortable opening up to romantic partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I prefer not to get too close to romantic partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get uncomfortable when a romantic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- One of two “subscales” of the

Experiences in Close Relationships Inventory – Revised.

- 18 items in total. Higher scores (e.g., agree to strongly agree) reflect higher levels of avoidance.

Constructs vs Indicators vs Items/Questions

- Attachment Anxiety.
- Attachment Avoidance.
- Empathy.
- Mindfulness.
- Relationship satisfaction.
- Intelligence.
- Love.
- Extraversion.

- All psychological constructs.

- Cannot be directly observed.

- Must be inferred from things which can be directly observed (e.g., behaviour, self-reports, etc.).

- Indicators.

Measuring ‘Extraversion’

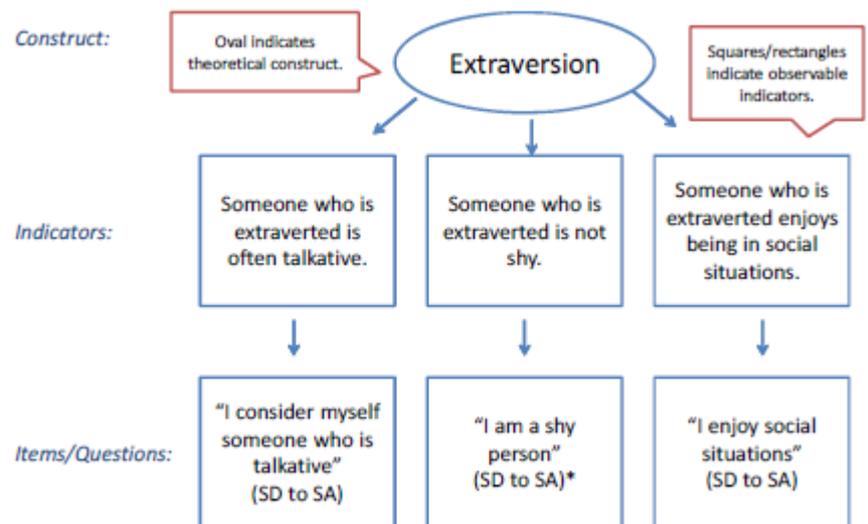
- Signs of ‘extraversion’:

- Talkative.
- Full of energy.
- Not shy.
- Enjoys social situations.
- Enthusiastic.

- You infer ‘extraversion’ from these indicators.

- If someone displays these characteristics consistently, we call them “extraverted”.

- We have *constructed* our notion of ‘extraversion’.



* Requires Reverse-coding

Questionnaire = Self-Report

- Questionnaires are often called “self-report” measures.

- They ask people to “self-report” about their:

- attitudes
- values
- beliefs
- behaviours
- personal characteristics
- knowledge
- experiences
- expectations
- etc.

Open-Ended vs Fixed-Choice

Open-Ended Questions

- What do you consider to be the best feature or features of living in the Shire of Buninyong?
- Values/uses:
 - Exploratory research. Allow researcher to collect a broad range of data; generate new directions etc.
 - Do not constrain respondents to a limited set of pre-determined response options.
 - Provide respondents with the freedom/scope to express complexity, diversity, nuance...
 - Allow respondents to answer in own words. Provide unique perspectives. Build rapport.
- Drawbacks/problems:
 - Time-consuming to answer (respondents may not bother); time consuming to analyse.
 - Responses can be ambiguous and difficult to sort/analyse.
 - Can be messy. Respondents can easily get 'off-topic'.

Fixed-Choice Questions

- If you had to choose *just one*, which of the following do you consider to be the best feature of living in the Shire of Buninyong? (Please tick one.)
- Values/uses:
 - Generate quantitative data suitable for statistical analysis.
 - *Should* be very little room for ambiguous responses, or responses that are difficult to categorise.
 - Quick and easy to administer and analyse.
 - Keep respondents 'on-topic'.
- Drawbacks/problems:
 - Force respondents to choose from a limited range of response options, which may not capture the nature or complexity of their true attitudes/behaviours etc.
 - May not have catered for all possible responses.
 - Pre-testing/research required to ensure that response options are relevant, appropriate and inclusive.

Types of Fixed-Choice Questions

- 1. Forced choice.
- 2. Numerical or Likert type.
- 3. Graphic or semantic differential.

1. Forced-Choice

- Circle the adjective from each pair that best describes Buninyong.
 - 1. Buninyong is cheap/expensive.
 - 2. Buninyong is ugly/beautiful.

I-E Scale (Rotter, 1966)

- Rotter, J. B. (1966). Generalised expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80, 1-28.

- *Internal locus of control*: Tendency to take personal responsibility for consequences of ones behaviour.

- I failed the exam because I didn't study.

- *External locus of control*: Tendency to attribute consequences of ones behaviour to external factors like luck, fate, or the influence of 'powerful others'.

- I failed the exam because the lecturer hates me.

Select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true, rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief. Obviously there are no right or wrong answers.

- | | | |
|---|----|--|
| 1. <input checked="" type="checkbox"/> Many of the unhappy things in people's lives are partly due to bad luck. | OR | <input checked="" type="checkbox"/> People's misfortunes result from the mistakes they make. ✓ |
| 2. <input checked="" type="checkbox"/> Becoming a success is a matter of hard work; luck has little or nothing to do with it. ✓ | OR | <input checked="" type="checkbox"/> Getting a good job depends mainly on being in the right place at the right time. |
| 3. <input checked="" type="checkbox"/> Sometimes I can't understand how teachers arrive at the grades I get. ✓ | OR | <input checked="" type="checkbox"/> There is a direct connection between how hard I study and the grades I get. |



2. Numerical

False	True	(-2) (1) _____ strongly disagree	strongly disagree	1	2	3	4	5	strongly agree
<input checked="" type="checkbox"/> (0)	<input type="checkbox"/> (1)	(-1) (2) _____ disagree							
<input type="checkbox"/> (0)	<input checked="" type="checkbox"/> (1)	(0) (3) <input checked="" type="checkbox"/> neutral	strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	strongly agree
<input checked="" type="checkbox"/> (0)	<input type="checkbox"/> (1)	(1) (4) _____ agree							
		(2) (5) _____ strongly agree							

Socialised Medicine Attitude Scale

- A compulsory health program will produce a healthier and more productive population.
Strongly disagree 1 2 3 4 5 strongly agree
- A compulsory health program is necessary because it brings the greatest good to the greatest number of people.
Strongly disagree 1 2 3 4 5 strongly agree
- The quality of medical care under the system of private practice is superior to that under a system of compulsory health insurance.
Strongly disagree 1 2 3 4 5 strongly agree

Reversing

- 1 -> 5, 2 -> 4, 3 remains 3, 4 -> 2, 5 -> 1.
- Done in Transform > Recode in SPSS (not by hand!).
- Higher scores reflect a more positive attitude towards socialised medicine.
- Lower scores reflect a more positive attitude towards socialised medicine.

Some Considerations

- How many response options?
- Provide a mid-point?
- Include both negatively and positively worded items (to identify acquiescent response sets)?
- Label every response option, or only the anchors?
Strongly disagree 1 2 3 4 5 strongly agree
- What labels should be used?
 - "Strongly agree" to "strongly disagree".
 - "Very true of me" to "not at all true of me".
 - "Never" to "always".

3. Graphic or Semantic Differential

Ugly	_____ X _____	Beautiful	Ugly	_____ X _____	Beautiful
				(-3) (-2) (-1) (0) (+1) (+2) (+3)	
Cheap	_____ X _____	Expensive	Cheap	_____ X _____	Expensive
				(-3) (-2) (-1) (0) (+1) (+2) (+3)	

Response Formats

- Standards that apply to response formats for all fixed choice questions:
 - Accurate.
 - Exhaustive.
 - Mutually exclusive.
 - Uni-dimensional.
 - Variability.

Response Formats: Accurate

- Incorrect:
 - How satisfied are you with your meal?
 - Strongly agree.
 - Agree.
 - Disagree.
 - Strongly disagree.
- Correct:
 - How satisfied are you with your meal?
 - Very satisfied.

- Satisfied.
- Dissatisfied.
- Very dissatisfied.

Response Formats: Exhaustive

- Incorrect:
 - What brand of mobile phone do you currently use?
 - Apple.
 - Blackberry.
 - Nokia.
- Correct:
 - What brand of mobile phone do you currently use?
 - Apple.
 - Blackberry.
 - Nokia.
 - Motorola.
 - HTC.
 - Other.
 - [But what if they currently use more than one (e.g. work vs personal)?]

Response Formats: Mutually Exclusive

- What is your current employment status?
 - Student.
 - Unemployed.
 - Part-time employment.
 - Full-time employment.
 - Retired.
- What if you're working AND a student? Retired AND a student? Etc.

Response Formats: Uni-Dimensional

- Incorrect:
 - The service at this restaurant is:
 - Very reliable.
 - Reliable.
 - Unacceptable.
 - Very unacceptable.
- Correct:
 - The service at this restaurant is:
 - Very reliable.
 - Reliable.
 - Unreliable.
 - Very unreliable.

Response Formats: Variability

- Incorrect:
 - What do you think of the campus landscaping?
 - The worst I've ever seen.
 - Somewhere between the best and worst.
 - The best I've ever seen.
- Correct:
 - On a scale from 1 to 10, where 1 represents the worst landscaping that you've ever seen, and 10 represents the best landscaping that you've ever seen, how would you rate the landscaping on this campus?

Pictures as Response Options



Writing Questions: Pitfalls

- 1. Avoid slang/jargon/abbreviations.
- 2. Avoid vague or ambiguous wording.
- 3. Avoid double-barrelled questions.
- 4. Avoid leading questions.
- 5. Avoid loaded questions.
- 6. Avoid complex grammar and negative wording. Write for your intended audience.

1. Avoid Slang/Jargon/Abbreviations

St. Fl's (the patron saint of nuyas)?

State Teachers' Finance Union?

St Francis University?

Southern Tenant Farmers' Union?

~~STFU~~ customer service staff are:

2. Avoid Vague or Ambiguous Wording

- Poor:

- Do you frequently find yourself feeling really irritated? YES / NO

- Better?

- How frequently do you find yourself feeling really irritated?

- | | |
|--|---|
| <input type="checkbox"/> 1 More than once a month. | <input type="checkbox"/> 1 More than once an hour. |
| <input type="checkbox"/> 2 Every 1 to 2 months. | <input type="checkbox"/> 2 More than once a day. |
| <input type="checkbox"/> 3 Every 3 to 6 months. | <input type="checkbox"/> 3 More than once a week. |
| <input type="checkbox"/> 4 Every 6 to 12 months. | <input type="checkbox"/> 4 More than once a month. |
| <input type="checkbox"/> 5 Less than once a year. | <input type="checkbox"/> 5 More than once every 6 months. |
| | <input type="checkbox"/> 6 Every 6 to 12 months. |
| | <input type="checkbox"/> 7 Less than once per year. |

Asking "How Frequently...?"

- Use an open response format, even when the behaviour being asked about is *unambiguous* (Schwarz, 1999).
- How many hours of television do you watch on an average day? _____ hours

3. Avoid Double-Barrelled Questions

- Poor:

- 1. I am a lovable and capable person. TRUE / FALSE
- 2. Buninyong is a beautiful and conveniently located shire. TRUE / FALSE

- Better:

- 1. I am a lovable person. TRUE / FALSE
- 2. I am a capable person. TRUE / FALSE
- 1. I am a lovable person. SD 1 2 3 4 5 SA
- 2. I am a capable person. SD 1 2 3 4 5 SA

4. Avoid Leading Questions

~~Most Nobel Prize winning scientists~~ ^{Do you} believe that global warming is primarily caused by the activities of humans? ~~Do you?~~

"What do you believe to be the primary cause of global warming?"

5. Avoid Loaded Questions

- Poor:

- When was the last time you smoked marijuana?

- Better:

- Have you ever smoked marijuana? YES/NO

- If YES, when did you last smoke marijuana?

- | | |
|--|---|
| <input type="checkbox"/> Today | <input type="checkbox"/> 7 to 28 days ago |
| <input type="checkbox"/> Yesterday | <input type="checkbox"/> 1 to 6 months ago |
| <input type="checkbox"/> 3 to 7 days ago | <input type="checkbox"/> More than 6 months ago |

6. Avoid Complex Grammar and Negative Wording. Write for Your Intended Audience.

Students should ~~not~~ be required to take exams.

strongly disagree 1 2 3 4 5 strongly agree

Putting It All Together

- Questionnaire: A document used for collecting information from participants.
- Must be clear and professional.
- Will contain a title, sub-headings and instructions for each section.
- Questionnaire title and introductory text.
 - The Attitude Toward War Scale
 - This is a study of attitudes toward war. Below you will find a number of statements expressing various degrees of attitudes toward war or tendencies to act in case of war.
- Clear instructions for each set of questions.
 - Please indicate in the first set of parentheses, designated by Roman numeral I, your agreement, disagreement, or doubt. Put a check mark (✓) if you agree with the statement, put a minus sign (-) if you disagree with the statement...
- Item ordering.
 - Interesting questions first.
 - Sensitive questions later.
 - General questions prior to specific questions.
 - Demographics at the end.
- Pilot test everything.
- Package questionnaire with a separate participant information sheet.

Participant Information Sheet

- Allows for *informed* consent.
 - "Respect for human beings involves giving due scope to people's capacity to make their own decisions. In the research context, this normally requires that participation be the result of a choice made by participant."
 - NH&MRC
- Must comply with the requirements specified by Curtin HREC and NH&MRC:
- Look at some examples before preparing one.
- Written in plain English (suitable for 12 year old reading age).
- Full project title.
- Who you are (qualifications and affiliations).
- Purpose of research.
- What participation involves.
- Benefits and risks of participation.
- Right to withdraw (i.e., participation is voluntary).
- How data will be used; how it will be stored.
- Procedures to protect confidentiality or anonymity.
- If/how participants will be informed of results of study.
- Contact information.
- Ethics approval details.

Perspectives on Popular Media Project: Participant Information Sheet

- Our names are Grace, Tara and Ben, and we are fourth year Psychology students at Curtin University. As part of our course, we are completing a research project examining how women respond to popular media.
- To do this, we're asking females aged 17 to 25 to fill-in a short online questionnaire. This questionnaire should take no longer than 15 minutes to complete, and includes questions about how you think and feel about yourself, about the media you consume, and about some of your regular behaviours.
- Your participation in our study is completely voluntary, and at no time will we be able to identify you based on your questionnaire responses. The questionnaire is completely confidential, with all records being stored in a secure electronic format by our research supervisors in the School of Psychology and Speech Pathology. Access to these records will be restricted to us and our supervisors. It will be assumed that if you do complete and submit your questionnaire, you have consented to the data you provide being used in our research, the outcomes of which will be summarised in our dissertations, and may also be presented at academic conferences and/or in articles published in academic journals, or used for teaching purposes. There are no foreseeable risks associated with participating in this research.
- If you require further information about any aspect of this research, please contact Grace at grace@student.curtin.edu.au or our research supervisor, Peter Allen on (08) 9266 2554. For a summary of our results please return to this page (<http://psych.curtin.edu.au/research/Bpsych/media.cfm>) after October 2010.
- This study has been approved under Curtin University's process for lower-risk Studies (Approval Number XXX-XXX). This process complies with the National Statement on Ethical Conduct in Human Research (Chapter 5.1.7 and Chapters 5.1.18-5.1.21). For further information on this study contact the researchers named above or the Curtin University Human Research Ethics Committee. c/- Office of Research and Development, Curtin University, GPO Box U1987, Perth 6845 or by telephoning 9266 9223 or by emailing hrec@curtin.edu.au.

Questionnaire Administration

- Face-to-face.
- Telephone.
- Postal mail.
 - i.e., paper based.
- Online.

Face-to-Face and Telephone

- Can establish rapport.
- Researcher can clarify questions.
- Expensive and time-consuming.
- Lack of perceived anonymity > socially desirable responding.
- Can be difficult to access people (e.g., lack of land-lines; security buildings etc.).

Mail Questionnaires

- Self-administered, usually without presence of researcher.
- No opportunities to clarify questions, or ensure that all questions are answered.
- But, no opportunities for interviewer bias either!
- Provide respondents with greater sense of anonymity (more honest/candid responses).
- Much more economical than F2F and phone methods.

Online Questionnaires: Some Benefits

- Cheap and timely access to large samples.
 - Power.
- Difficult to access samples (e.g., Hildebrandt et al., 2006).
- Heterogeneous samples.
- Avoid manual data entry.
 - Still need to do the data screening though!
- Reduced social desirability.
- No interviewer bias.
- Automatic branching.

Online Questionnaire: Some Challenges

- Representative samples?
- Low response rates.
- High dropout rates.
- Multiple and mischievous submissions.
- Technical constraints.
- Contextual unknowns.

Honest/Accuracy of Self-Report Data

- Evaluation apprehension, self-presentation and social desirability.
- 94% of college professors rate themselves as "above average".

In Conclusion

- Questionnaires provide an efficient way of gathering lots of data.
 - But, there are many factors that need to be considered when preparing a good questionnaire.
- Questionnaire data are shaped by (a) what you ask; and (b) how you ask it.

Roper Starch Worldwide/AJC Survey

- 22% of Americans doubt that the Holocaust occurred; another 12% not sure.
- "Does it seem possible or does it seem impossible to you the Nazi extermination of the Jews never happened?"
 - Ambiguous terminology (impossible; extermination).
 - Double negatives.
- "Do you doubt that the Holocaust actually happened or not?"
 - 9% doubted the Holocaust occurred; another 4% unsure.
- Questionnaires provide an efficient way of gathering lots of data.
 - But, there are many factors that need to be considered when preparing a good questionnaire.
- Questionnaire data are shaped by (a) what you ask; and (b) how you ask it.
- If possible: use (a) a multimodal approach plus (b) methodological triangulation.