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Symposium - Improving measurement and psychological assessment

Shane Costello
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GROUP OF EIGHT AUSTRALIA

My grandmother…..and her cooking!

My grandmother…..and her cooking!

**Not her actual steak and kidney pudding*

Measurement problems

Ingredients

3 very fresh lambs' kidneys

700g/1lb 8¾oz well-marbled braising steak, trimmed, cut into 2.5cm/1in cubes

3 tbsp plain flour

salt and freshly ground black pepper

4-5 tbsp sunflower oil

1 medium onion, peeled, chopped

200ml/7¼fl oz red wine

4-5 sprigs fresh thyme

1 fresh bay leaf

500ml/18fl oz good-quality beef stock

1 tbsp tomato purée

For the suet pastry

350g/12¼oz self-raising flour

175g/6¼oz shredded suet

½ tsp fine sea salt

butter, for greasing

BBC FOOD

**Not her actual recipe either*

Theory problems

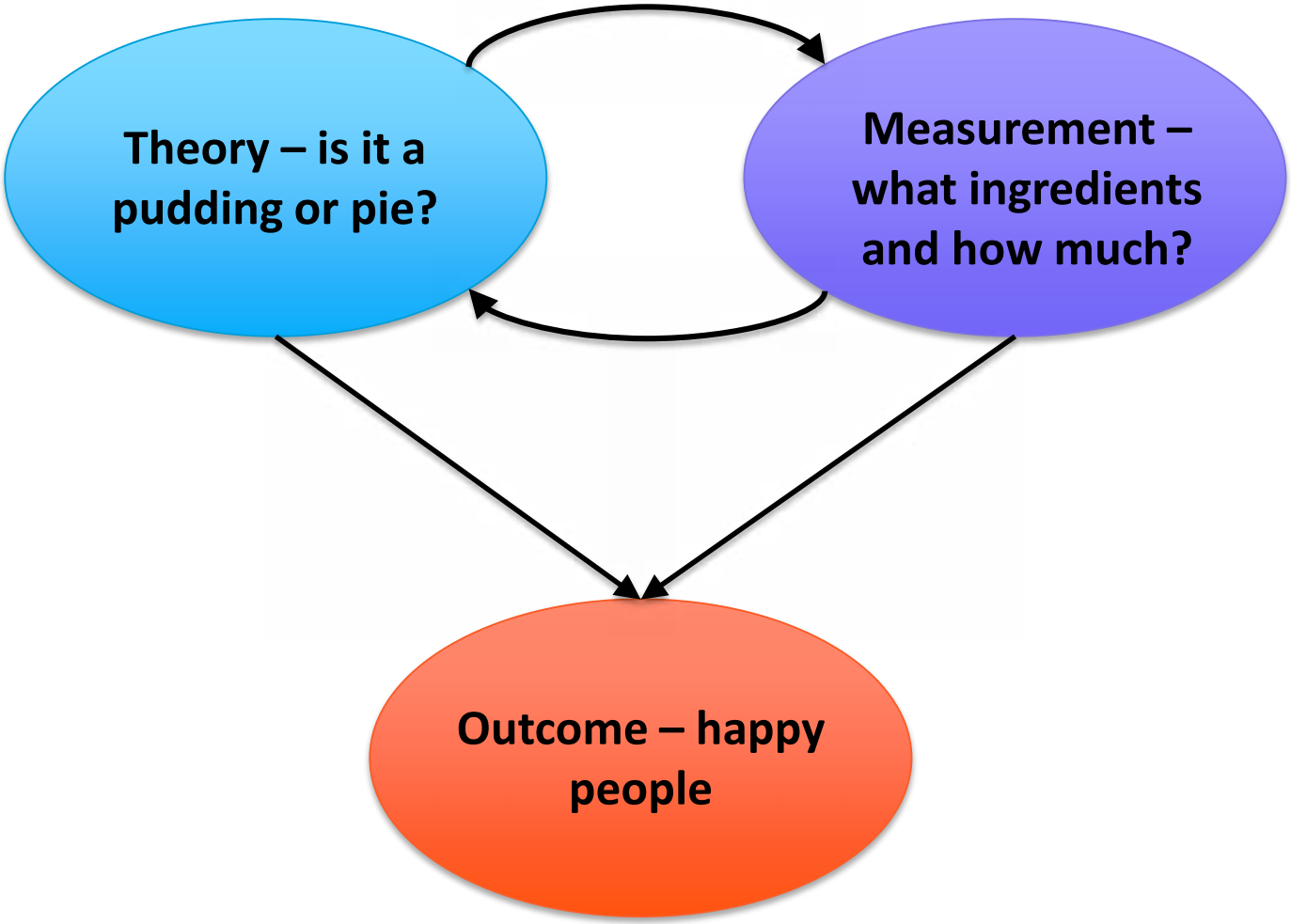
Pudding……..or pie?

Outcome problems

versus

**Not actually eating pudding either*

Putting it all together



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Measuring adaptive behaviour in children

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Adaptive Behaviour Scale: Outline

Adaptive Behaviour: Why the Focus?

"The effectiveness and degrees to which the individual meets the standards of personal independence and social responsibilities"

Required for diagnosis, funding and treatment planning

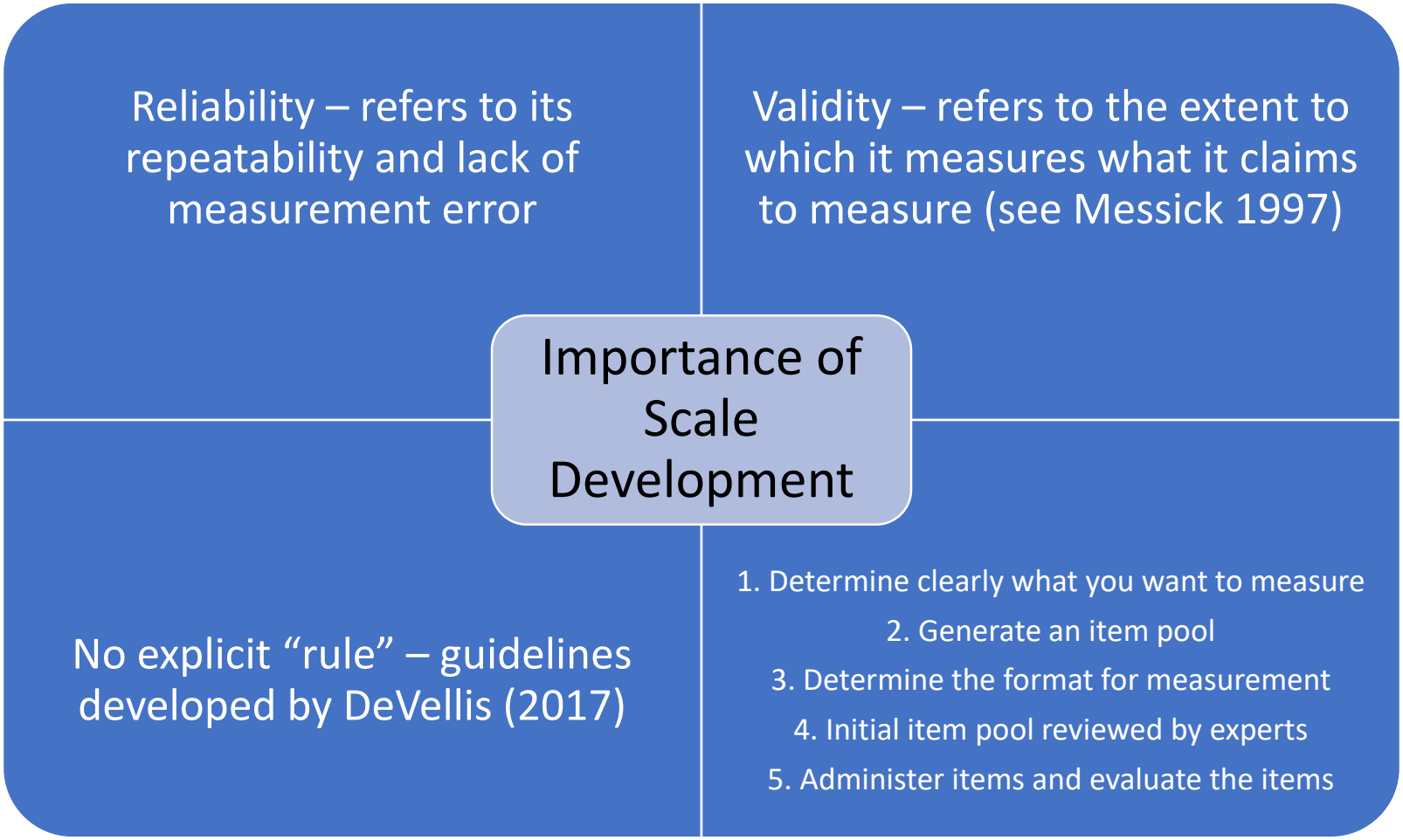
the only definition of adaptive behaviour that authors agree upon is "that adaptive behaviour is what adaptive behaviour scales measure"

"[adaptive behaviour] initially lacked a theoretical framework, and that problem has never been fully resolved"

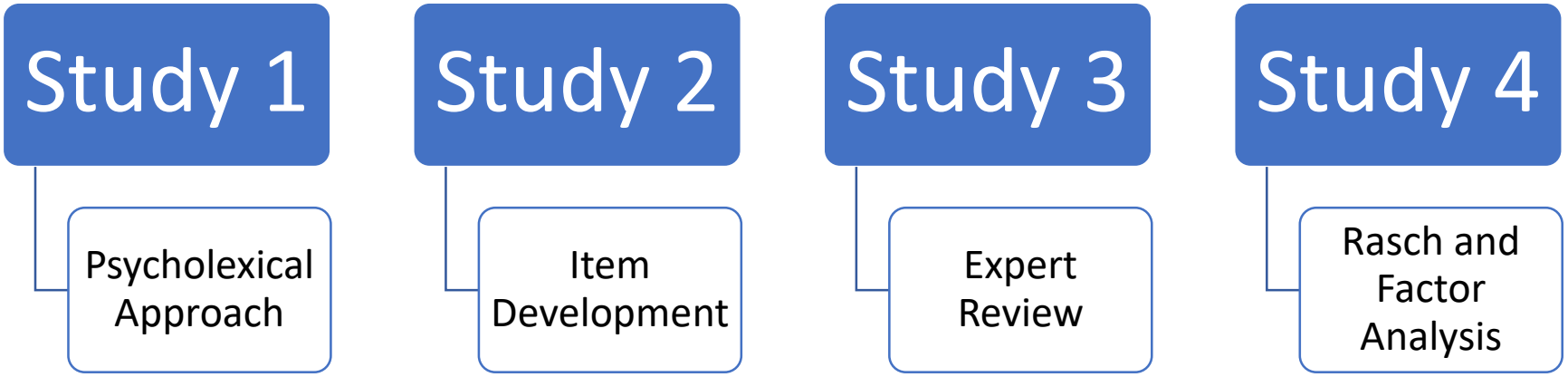
No universal definition of adaptive behaviour – systematic review revealed assessments a re predominantly clinical US populations

The Application of Adaptive Behaviour Models

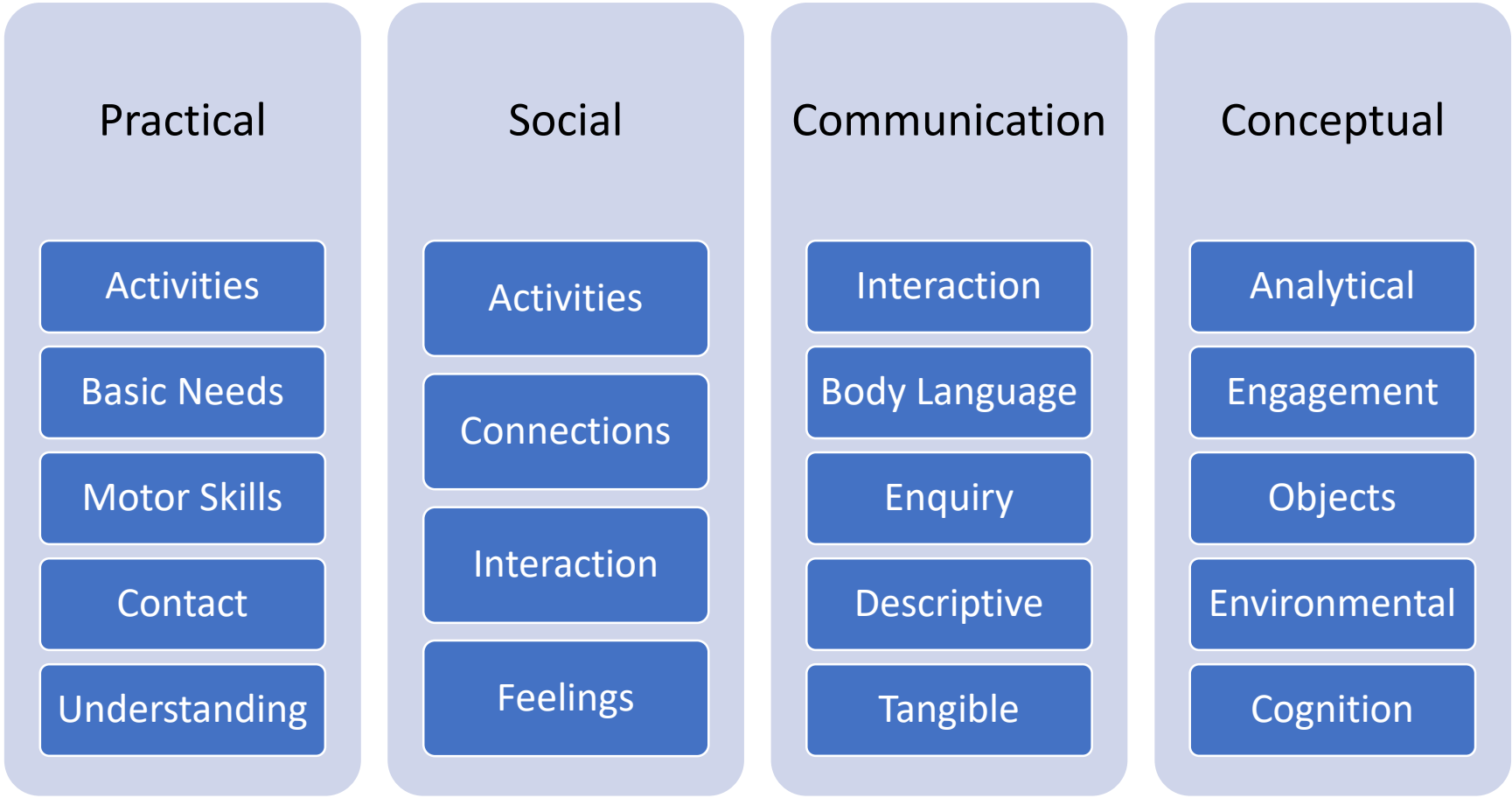
Importance of Scale Development



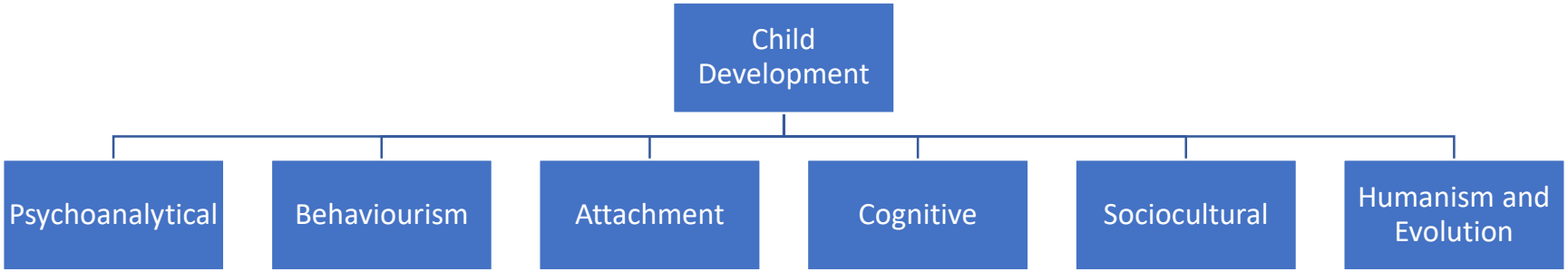
Adaptive Behaviour Scale: The Current Project



Adaptive Behaviour Scale: Psycholexical Approach



Adaptive Behaviour Scale: Item Development



psych scene

Child Development Infographic

Sources:

Berger (2013). The Developing Person Through Childhood and Adolescence – Tenth Edition. New York, NY: Worth Publishers.

Roy (2016). A Therapist's Guide to Child Development: The Extraordinarily Normal Years. New York, NY: Routledge.

2 years

Physical

Walk and run
Climb
Reached full mobility
Lift above head
Roll over
Stand on their own
Jump and kick
Feed self with spoon
Draw spirals
Pincer grip

Cognitive

Object permanence
Multiword sentences
Focus on their own needs and desires

Emotional

Range of outbursts of emotionality
Experience and express more advanced feelings (i.e., pride, embarrassment)
Begin to understand acceptable and unacceptable social behaviours

Social

Begin to develop a sense of self
Parallel play

3 years

Physical

Motor skills have improved with coordination and control
Balance has improved
Walk up and down stairs
Walk on tiptoes
Stand and hop on one foot
Catch a large ball
Kick a ball forward
Ride a tricycle
Hold crayons and pencils with fingers
Complete a large puzzle
Can pour own drinks, but with spills

Cognitive

Follow simple directions with no more than 3 steps
Understand daily routine
Clearer sense of time
Understand the concept of 'same' and 'different'
Name common colours
Recall parts of a story
Begin to understand numbers and counting
Use three and six word sentences
Understand basic grammar rules

Emotional

Identify many of their own emotions
Able to interpret facial expressions
Begin to show empathy
Difficulty with emotional regulation and self-control
Switch between fantasy and reality

Social

Begin to identify self as unique and separate
Understand the concepts of 'mine' and 'his' or 'hers'
Begin to identify friends
Enjoy playing with, rather than alongside them
Sharing is difficult
Begin to understand 'taking turns'
Begin to imitate other behaviours
Begin to separate more easily from parent(s)

4 years

Physical

Become more coordinated with athletic abilities
Extremely active, often clumsy
Able to dress self
Able to feed self
Engage in more creative tasks (e.g. beading/building)
Difference in gender (girls' more advanced fine motor; boys' more advanced gross motor)
Brush teeth

Cognitive

Put thoughts into words
Able to solve problems
Short attention span
Learn best by doing
Count between 5-7 items
Accurately name 4 or more colours
Draw people with basic body parts
Fantasies more elaborate
Not uncommon to lie

Emotional

Not uncommon to be overwhelmed with feelings
Struggle with self-regulation
Develop an increased understanding and concern for 'right' and 'wrong'

Social

Possessions very important
Generally view sharing toys as stealing a part of themselves
Friends are important
Generally prefer to play with others rather than themselves
Enjoy make believe and become absorbed by fantasy play
Seek more independence
May begin to assert power by shielding to control their play

5 years

Physical

Learning to do many new things both academically and physically
5 ½ year olds may find motor skills that were once easy now difficult
Can fold paper in half
Trace their hands
Cut shapes from paper
Able to write letters, draw and colour within the lines
Ride a bicycle
Skip and gallop in rhythm
Use a knife to cut
Wash face and comb hair

Cognitive

Store and access knowledge more easily
Apply causality to situations and events
Difficulty differentiating between reality and fantasy
Difficulty attaching words to their thoughts/feelings

Emotional

Change from calm and peaceful to overly demanding, explosive and disobedient by 5 ½
Ability to relate to others improves
Tend to develop great emotional flexibility
Less dependence on only one caregiver

Social

Begin to develop prosocial behaviours (i.e. help, cooperate, share)
Not uncommon to lie
Consistency with rules assists development of fairness and appropriate behaviour
Develop a greater sense of empathy
Able to accept another's perspective
Negotiate through play
Develop social skills and competence within peer interface

6 years

Physical

Bed time routine is essential
Become more independent
Able to tie their own shoelaces
Able to draw and paint recognisable images
Write simple words
Catch a small ball
Skip and jump rope
Ride a bicycle without training wheels
Participate in more fine motor activities

Cognitive

Move from concrete to abstract thought
Begin to acquire the ability to manipulate symbols mentally and visually
Develop the ability to learn and operate according to rules (i.e. saying 'thankyou' when someone helps)
Learn the rules of reading, spelling and arithmetic
Learn best through discovery
Write using both capital and lower-case letters
Can decode unfamiliar words
Able to count by twos, fives, and tens
Able to identify seasons and days of the week

Emotional

May be sensitive to criticism and correction
Becomes aware of the needs and feelings of others
When hungry, tired or under stress s/he may be emotionally volatile
Feels proud of accomplishments
At 6 ½ s/he may become calmer and more easy-going

Social

Become competitive – want to be the best and the first
Typically unable to regulate their emotions when they lose
Can be bossy and controlling
Express themselves dramatically
Find it difficult to admit to being wrong and apologise to others
Value friendships with people similar to them
Make friends easily and enjoy playing in a group
Begin to become more humorous and talkative

7 years

Physical

Gross and fine motor skills more advanced, however, still mastering skills
Engage in more complex activities
Able to plan movements
Hand-eye coordination is well-established
Jump and leap
Swim
Ride bicycles and scooters
Display increased visual concentration
Able to focus on small visual detail

Cognitive

Able to understand logical and linear processes, generalizability, reciprocity, inclusion, reversibility and conservation
Able to hold more information
Able to give explanations of objects and their purposes
Able to start using Logic. Don't repeat information at their value
Begin to fantasize about things that are real (i.e., becoming a doctor)
Improve use of language and pattern of speech
Begin to engage in private narrating/self-talk

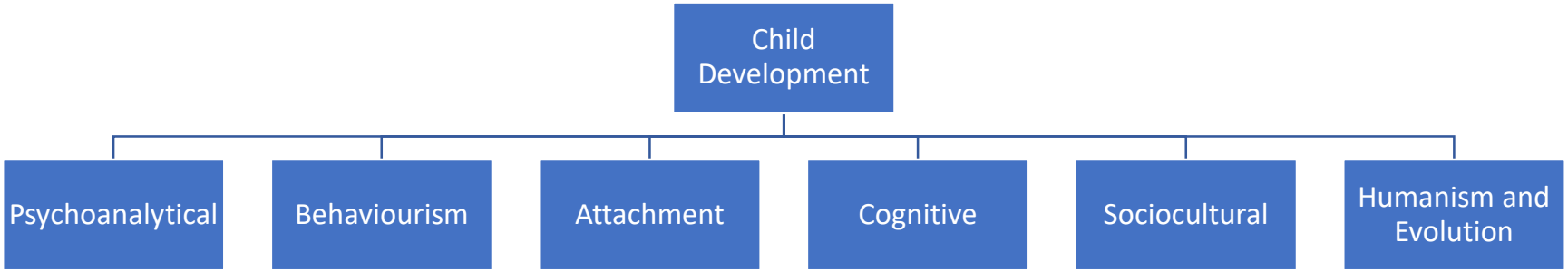
Emotional

Become more serious
Become more sensitive
Become more reflective about their world
Tend to believe things are not 'fair' and most people are against them
Easily disappointed
Can develop fears that were not previously problematic
Tend to cry easily, but hide their tears from peers
Developing strategies for emotional regulation

Social

Begin to assert themselves
Are able to manage if they do not get what they want
Comfortable with losing
Constantly compare themselves to others to form identity
Worry about perception of other children and want to be liked
Have a preference for playing with one friend at a time
Begin to understand a social hierarchy

Adaptive Behaviour Scale: Item Development



Words from Psycholexical Approach – items created from child development

Rating	Description
Level 0	no assistance/completely independent
Level 1	requires support
Level 2	requires substantial support (limited ability/proficiency to demonstrate behaviour unless support is provided by another person)
Level 3	requires very substantial support
Level 4	full assistance required

Adaptive Behaviour Scale: Expert Review

5 panellists = 158 years of combined experience in psychology and education

Clarity, Formatting and Design

Construct Definition

Dimensions of Inclusion

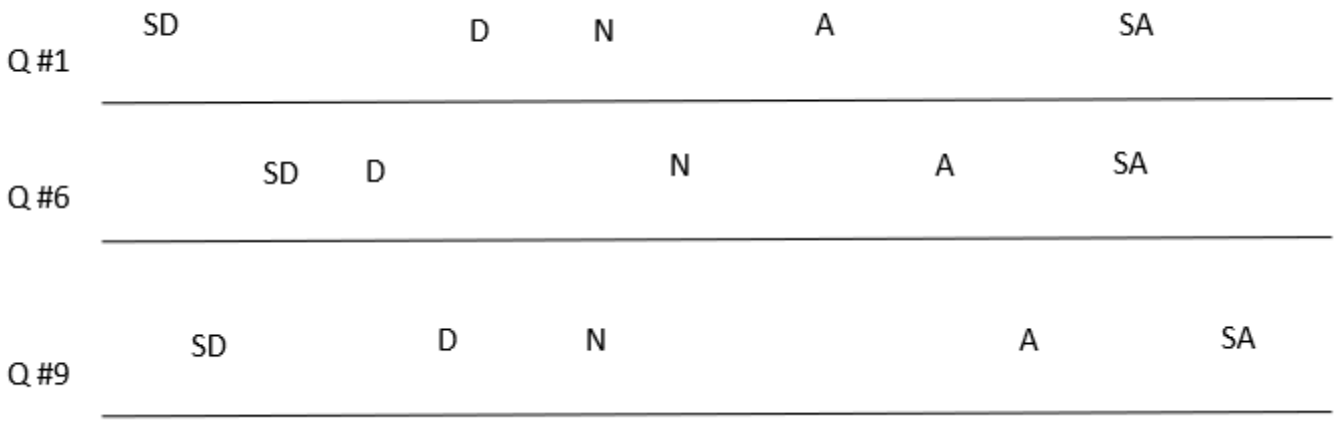
(1) valued recognition; (2) human development; (3) involvement and engagement; (4) proximity; and (5) material wellbeing

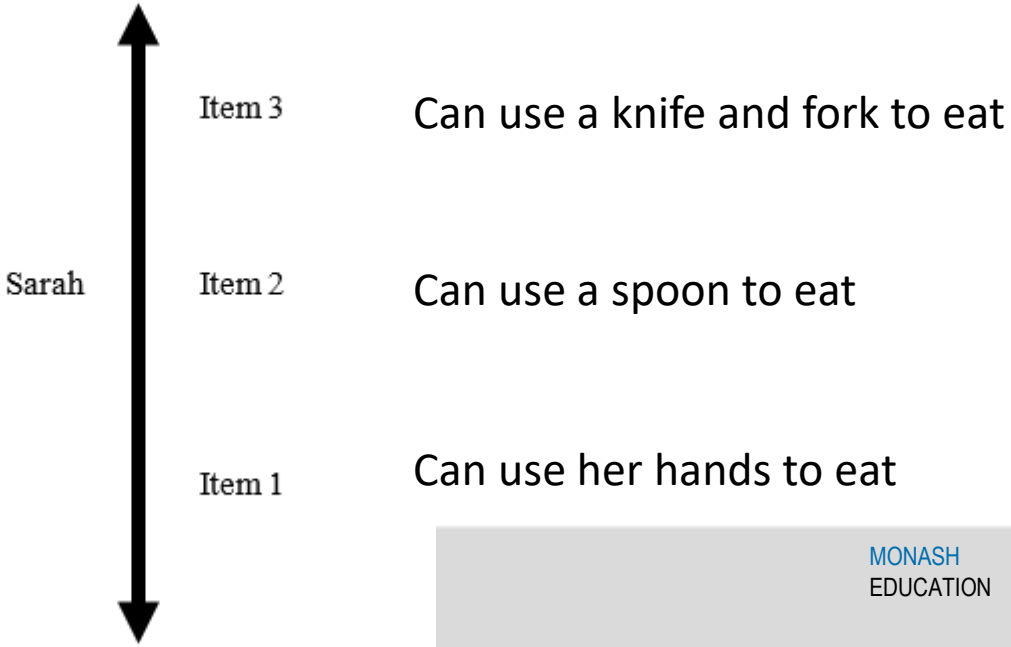
Adaptive Behaviour Scale: Rasch Analysis, Factor Analysis and Correlations

Rasch Analysis

- Suitability of items
- Strengths and Weaknesses of items

Adaptive Behaviour Scale: Rasch Analysis, Factor Analysis and Correlations





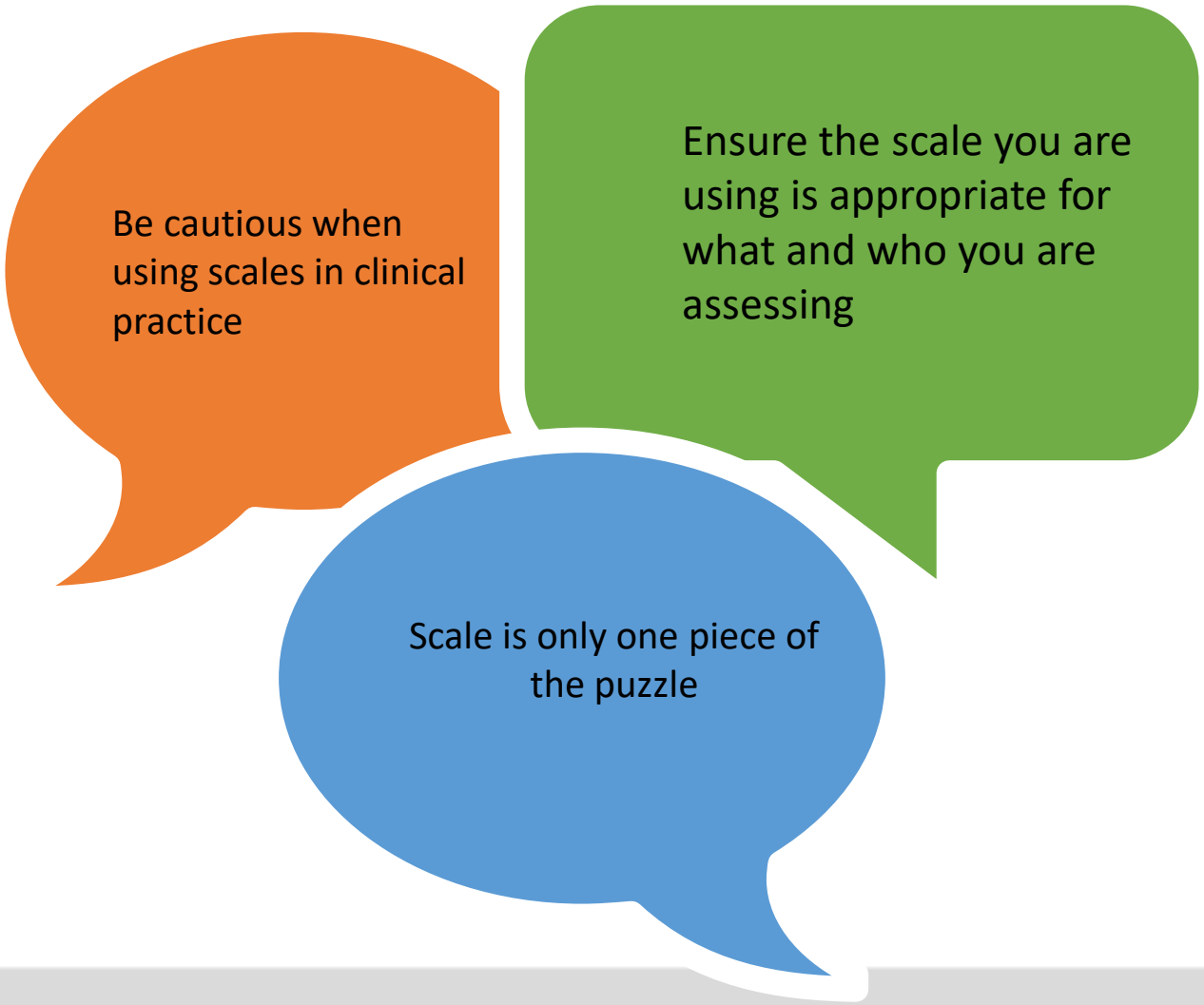
Adaptive Behaviour Scale: Rasch Analysis, Factor Analysis and Correlations

Rasch Analysis	Factor Analysis	Correlations
• Suitability of items • Strengths and Weaknesses of items	• Reduce many items into a fewer number of dimensions	• Construct validity based on relationship between existing measure (ABAS-3)

Adaptive Behaviour Scale: Conclusions

1. Adaptive Behaviour
2. Importance of Scale Development
3. Process for Scale Development
4. Practical Implications…

Adaptive Behaviour Scale: Take Home Messages



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Ways of Thinking in children

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Dr Christine Grove
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Presentation Outline

Capturing and understanding Ways of Thinking in children.

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Ways of Thinking

Ways of Thinking- unpacked

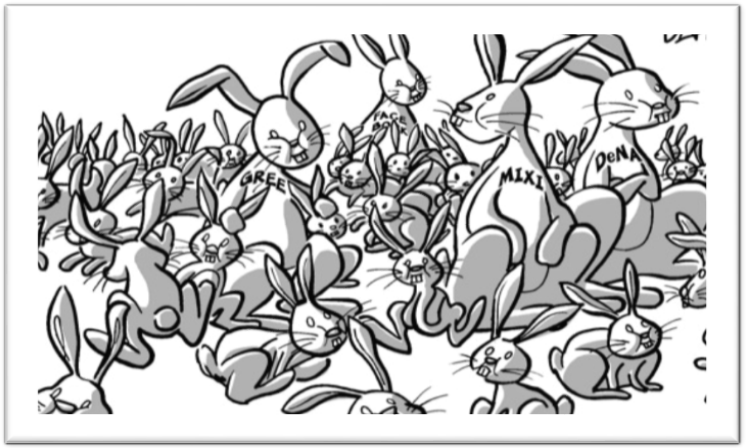
Thinking: active mental processes underlying human choices and behaviour

+

Individual Differences: individual personal patterns of behaving, feeling and thinking

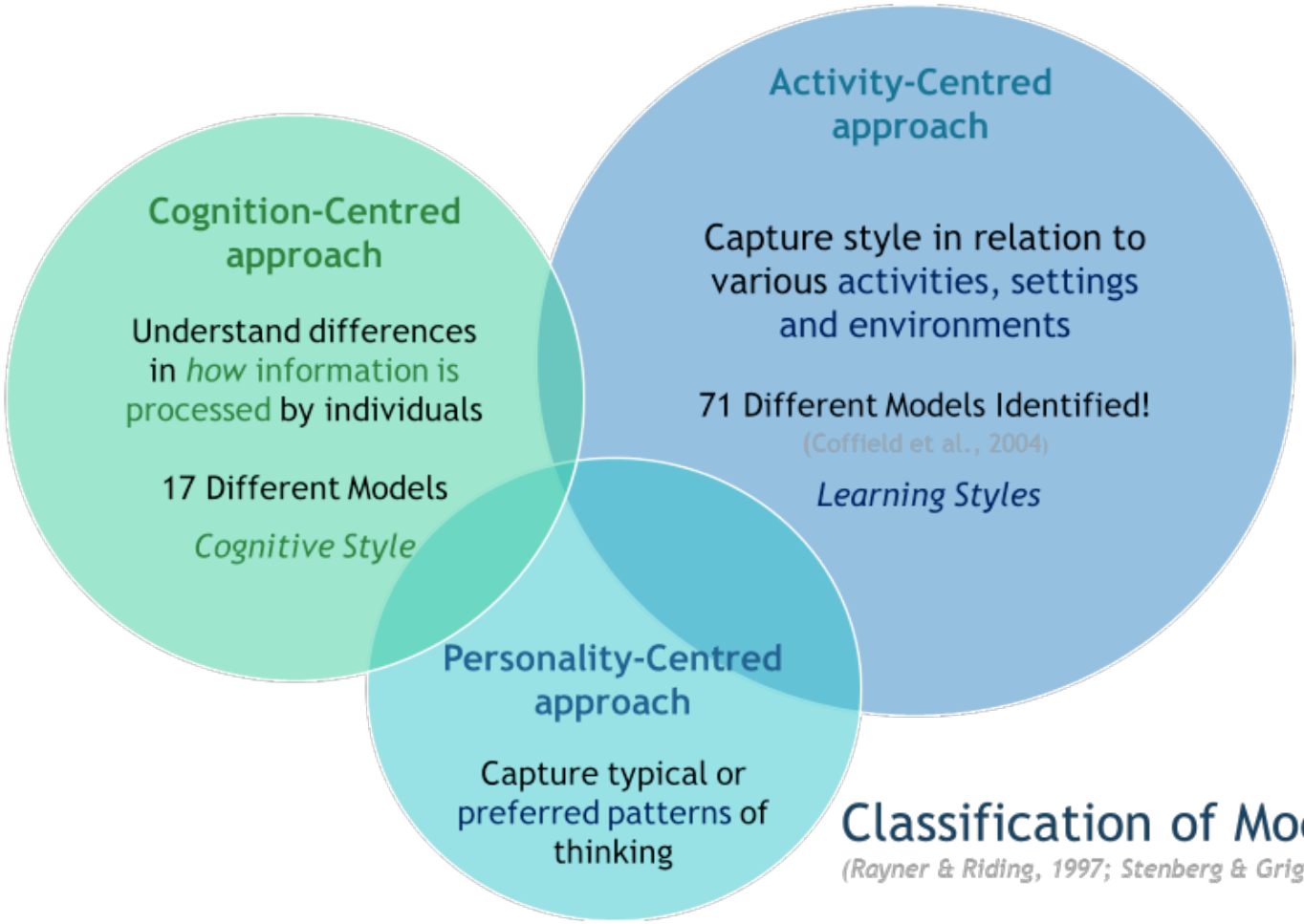
=

Cognitive style: describes a person's typical or habitual mode of problem solving, thinking, perceiving and remembering



A multitude of Cognitive Style models

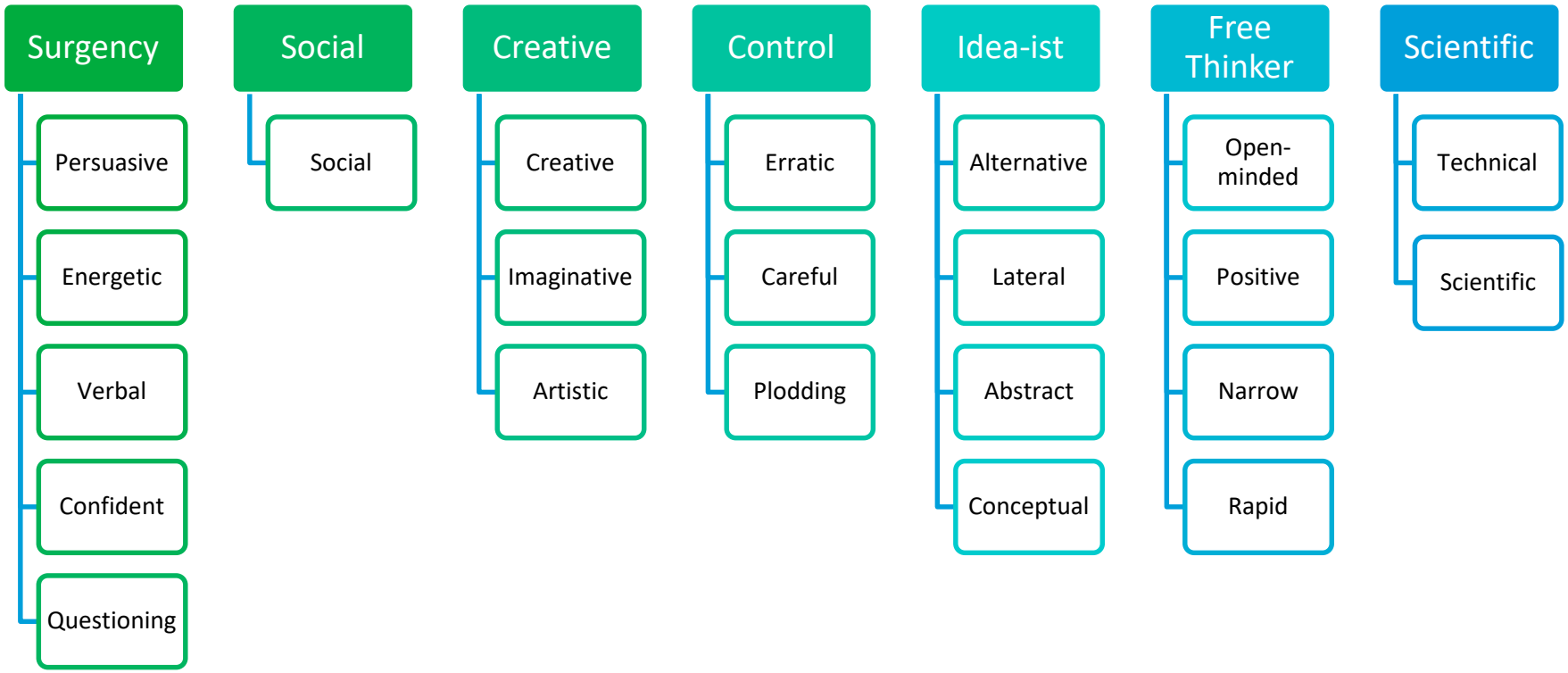
Ways of Thinking



Classification of Models

(Rayner & Riding, 1997; Stenberg & Grigorenko, 1999)

Ways of Thinking model



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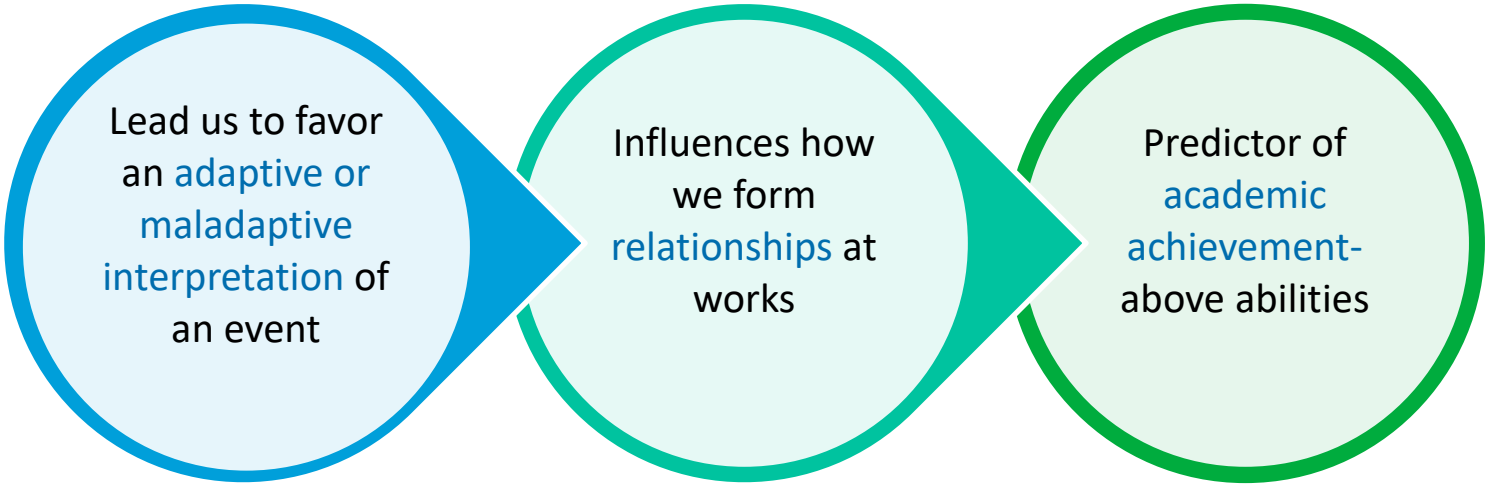
Capturing ways of thinking in children?

Ways of thinking in children, why?

The way we think has been linked to:



Self-Report

- Thinking is an internal process
- We rarely ever capture the child's voice and language- especially when it comes to ways of thinking

Self-report in children

Response Format

Never *Sometimes* *Most of the Time* *Always*

1 ***2*** ***3*** ***4***

Yes/No

Item Phrasing

- Children respond differently to the same item when worded negatively vs. positively
- Need to be mindful of suggestibility in item/social desirability

***Consider:** length of questionnaire and language level

Overcoming Challenges

The Perceived Competence Scale for Children- Susan Harten 1982
Self-report scale for 9-12 years olds

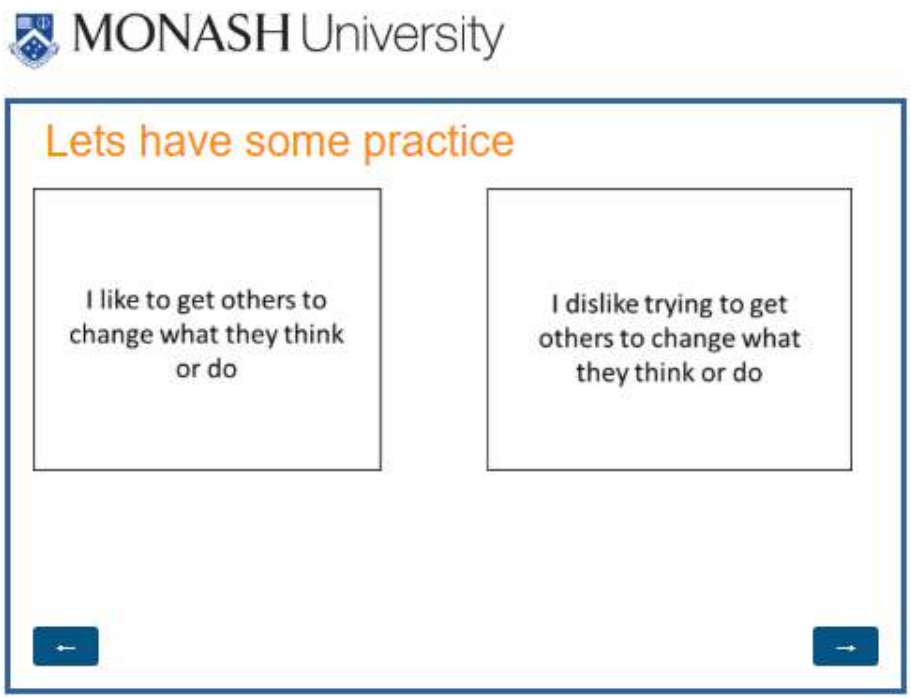
Really true for me	Sort of true for me			Sort of true for me	Really true for me
☐	☐	Some kids often forget what they learn	but	☐	☐

- Minimised the influence of social desirable response formats
- Collects a response against a four point scale, but the choice an individual makes is always dichotomous

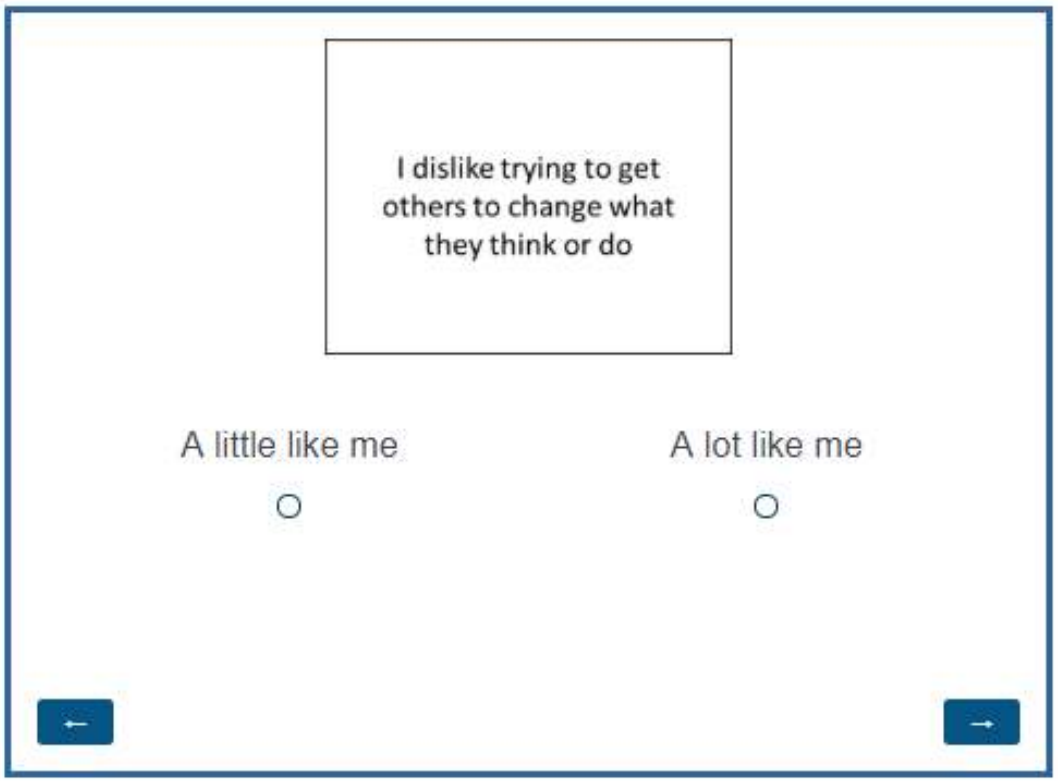
Overcoming challenges

How often do you get others to change their minds

Never *Sometimes* *Most of the Time* *Always*



Overcoming Challenges



Overcoming Challenges

A lot like me

1

A little like me

2

A little like me

3

A lot like me

4

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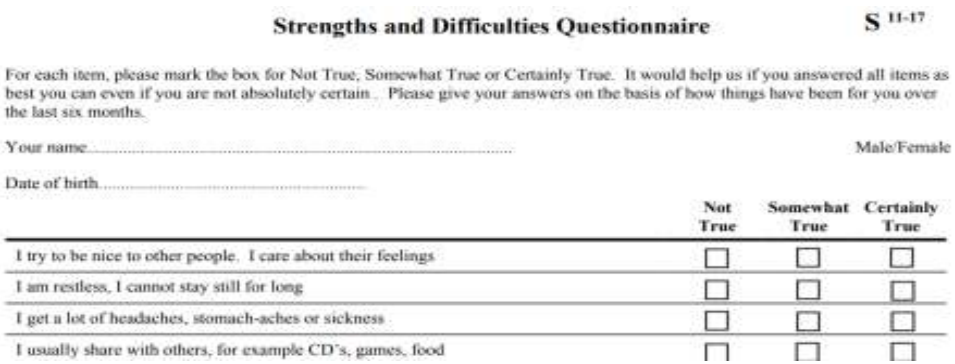
Practical implications- Thinking about practice

Clinical applications

Strength and Difficulties Questionnaire (11-17 years- 29 items)



Strengths and Difficulties Questionnaire S 11-17

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of how things have been for you over the last six months.

Your name..... Male/Female

Date of birth.....

	Not True	Somewhat True	Certainly True
I try to be nice to other people. I care about their feelings	☐	☐	☐
I am restless, I cannot stay still for long	☐	☐	☐
I get a lot of headaches, stomach-aches or sickness	☐	☐	☐
I usually share with others, for example CD's, games, food	☐	☐	☐

CONNERS 3rd Edition™

Self-report: 8-18 years
99 items 20 minutes to complete

BASC™3

1539 × 433

Behavioural Assessment System for Children, Third Edition
Self-Report 6 -11 years (child) – 30 minutes to complete
137 items
*Four point scale and True and False responses

Practical Applications

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The Development of a Verbally Administered Mental Health Literacy Scale for Children

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Background

What is mental health?

More than the absence of mental illness

A **state of wellbeing** in which every individual realises their potential to cope with normal stressors of life and is able to **contribute** to their community (WHO, 2013)

What is Mental Health Literacy (MHL)?

Knowledge and not internal states

MHL refers to **knowledge** of mental illness to aid in the **recognition, management, and prevention** of mental illness for oneself and others (Jorm et al., 1997; Jorm 2000)

Delivered via MHL preventative education programs

Children's MHL

Little is known about children's MHL.

MHL content needs to be **developmentally appropriate** across the lifespan (Kutcher et al., 2016; Bale et al., 2018).

Serious mental health problems can develop **by age 12** (Lawrence et al., 2015)

Background

MHL improves help-seeking behaviour

- Educating children about mental health can encourage young people to seek help for a mental health problem (Rickwood, Deane &Wilson, 2005; Rickwood, Deane; Wilson & Ciarrochi, 2007)
- Improves ability to **recognise** and **build tools for resilience** when a mental health problem occurs as they grow, learn, and transition through life (Bale, Grove & Costello, 2018)

MHL programs are not well-evaluated

- Research lacks methods to appropriately determine the evidence of the effectiveness of MHL programs (Wei, Hayden, Kutcher, Zygmunt & McGrath, 2013)

Scales are needed to measure MHL in children

- Studies are increasingly recognising scale-development, quantitatively measuring MHL, as a means of evaluating MHL in children to improve MHL intervention outcome measures (Riebschleger et al., 2017; Kutcher, et al. 2016; Bakker et al, 2016)

Research aims and questions

To develop a verbally administered MHL scale suitable for children aged 10-12.

Research questions:

1) What does the literature indicate are the important MHL needs for children?
2) What are the current measurement practices for children's MHL and are they inclusive of all children's needs?
3) What do experts regard as key concepts/attributes of MHL that should be included in child-focused scales?
4) Does the proposed verbally administered measure of MHL demonstrate appropriate psychometric properties using Rasch modelling?

Studies

Study One: Concept Clarification

Step 1. Identification of domains: Frameworks to inform theoretical underpinnings of the scale

↓

Study Two: Item Generation

Step 2. Content validity: Conduct qualitative research to generate and validate dimensions and items

↓

Study Three: Scale Development (Two Components)

Step 3. Pre-testing: Ensuring the items and responses are meaningful

Survey administration and sample size: gathering enough data from the right people

Step 4. Item Reduction: Rasch analysis: ensuring the scale is parsimonious

Study one: concept clarification

Literature Review (published paper: Bale, Grove & Costello, 2018).

Research questions answered:

1. What does the literature indicate are the important MHL needs for children?
2. What are the current measurement practices for children's MHL and are they inclusive of all children's needs?

Method:

- A narrative literature review search of MHL attributes and scales for children (under 18 years of age).
- Qualitative data from published articles were analysed to gather themes informed by the research aims and questions (Ferrari, 2015; Percy, Kostere & Kostere, 2015).
- The theoretical framework conceptualised by Jorm et al. (1997) was used to guide the structure of this review, using the six attributes of MHL as key search terms in the literature searches.

Study one: concept clarification

Results

MHL Attribute	Content
Recognition	• Recognising early symptoms of mental illness. • Identifying duration and intensity of symptoms of mental illness • Identifying anxiety disorders, depression, and symptoms of grief and loss
Accessing mental health information	• Using online platforms to find mental health information as first step to initiate help-seeking behaviours • Understanding the role of parents, peers, General Practitioners (GPs), schools, and children themselves
Causes and risk factors	• Preventative actions, including, communication with socials supports; maintaining physical activity; increase time spent doing a relaxing activity; avoiding drugs and alcohol; having religious or spiritual beliefs; non-avoidance of stressful situations • Understanding the biological basis of mental illness • Understanding the effect of genetic vulnerability • Understanding the influences of psychological and social factors
Professional help and treatments available	• Knowledge of difference between psychologists, counsellors, and general practitioners. • Knowledge of evidence-based treatments. • Knowledge of utilising GPs as a first point of contact

Study one: concept clarification

Self-help strategies	• **Knowledge of physical health habits** • **Knowledge of relaxation exercises** • **Building resilience through actively problem solving** • **Acceptance** • **Knowledge of unhelpful thinking patterns.** • **Knowledge of ineffective coping strategies; avoidance; emotional numbing; ruminating; impulsivity**
Attitudes that reduce stigma and promote help-seeking behaviour	• Mental illness if normal • Mental illness is common • Mental illness can be efficiently treated • Knowledge that no one is to blame, or is responsible, for having a mental illness or mental health problem • Knowledge of other inaccurate misconceptions about mental illness (e.g., irresponsible, dangerous, and unlikely to recover)

Study one: concept clarification

- 26 scales were identified
  - 12 scales were program evaluation-specific
  - 14 were general survey tools
- Limited scales captured all of the constructs of MHL
- Scales were either non-verbal or unclear in their method of administration
- Limited scales targeting children under the age of 12
- Limited scales that were psychometrically validated

Study one: concept clarification

Key conclusions

- More research is needed to explore important MHL content for younger children (i.e. children under 12 years of age)
- Robust children MHL scales are needed to inform and evaluate MHL programs to identify better mental health outcomes for children
- Current measures of MHL are mostly unvalidated or lacking in reported psychometric properties and are not accessible for any child who may have challenges with literacy

Study two: item generation

Delphi Study (Bale, Grove & Costello, paper under review)

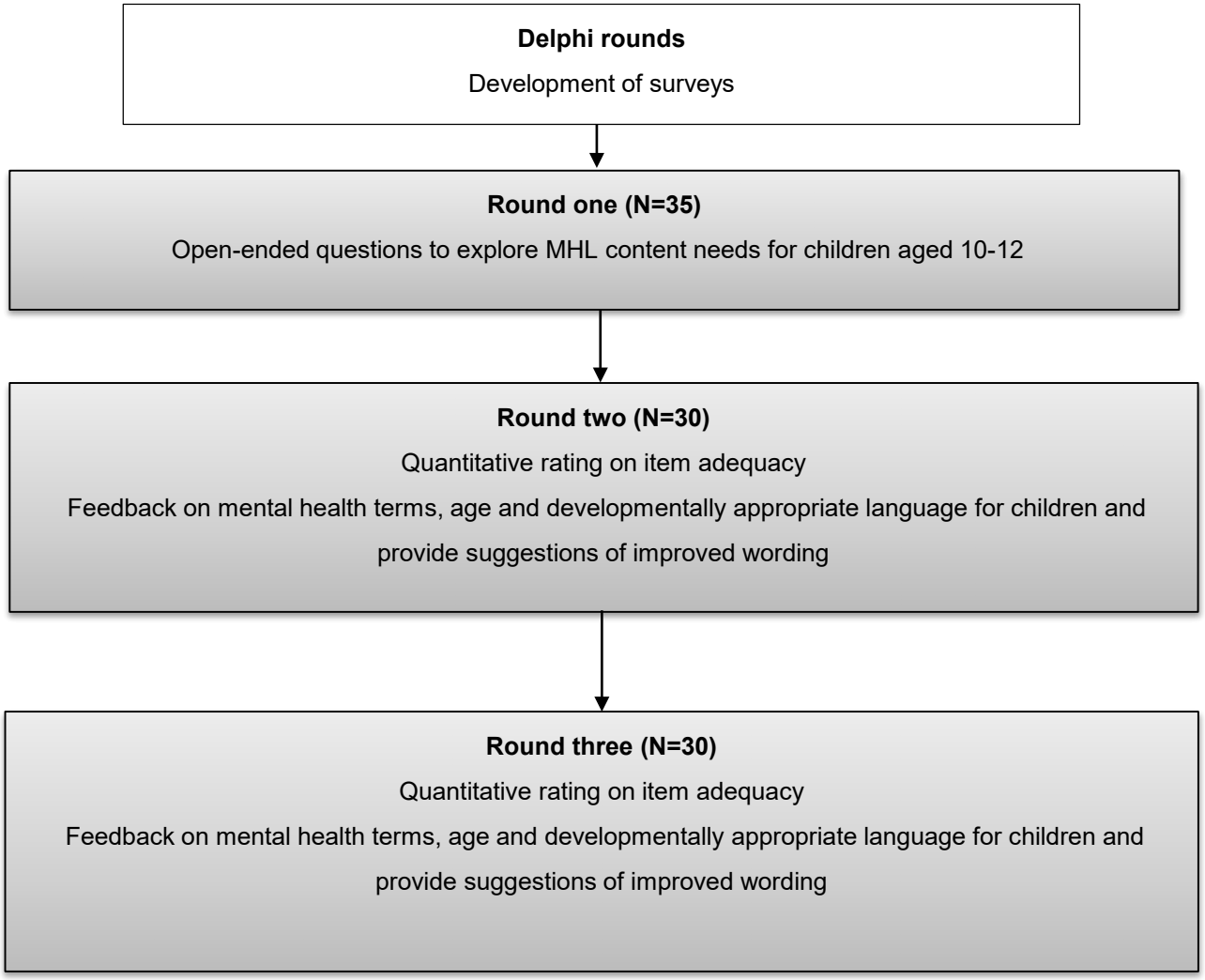
Research questions answered:

3. What do experts regard as key concepts/attributes of MHL that should be included in child-focused scales?

Method

Participants: 35 experts working in a professional or research capacity with children aged 10-12 participated in three rounds of surveys. Experts who responded to an email invitation consisted of 14 qualified teachers, 17 qualified psychologists, and four research experts. In the first round, all 35 experts responded. In the second and third Delphi round, 30 of 35 experts returned their answers (retention rate: 85.7%).

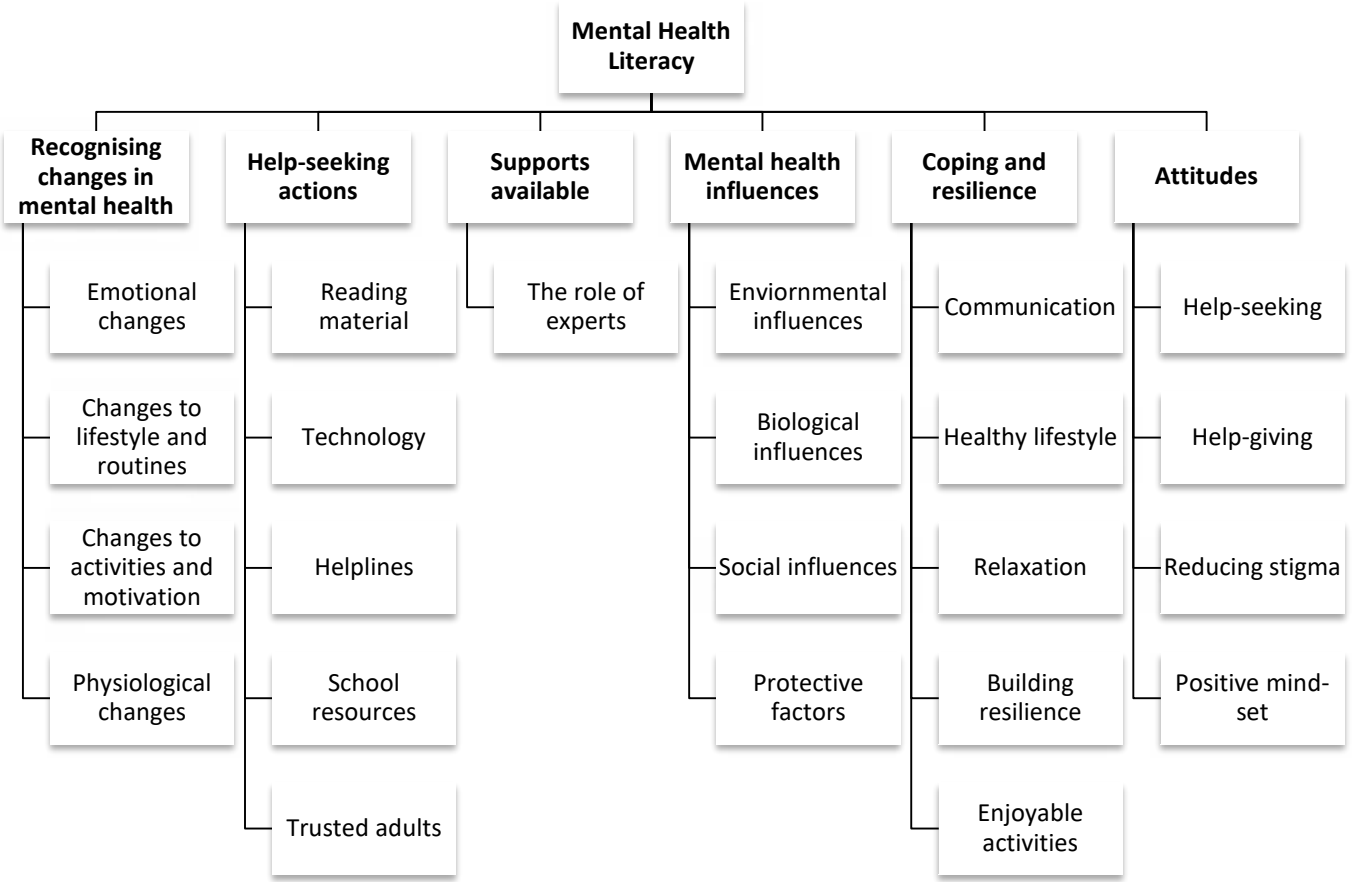
Study two: item generation



Study two: item generation

Results: round one

Data analysis: thematic analysis (Braun & Clarke, 2006)



Study two: item generation

Results: round two & three

Round	Mean level of expert agreement across items*			No. of items with <80% agreement	Items removed
	Adequate	Needs minor improvement	Needs major improvement		
2	84.4 (12.2)	12.7 (9.7)	5.6 (3.6)	30	0
3	86.7 (11.4)	12.8 (10.1)	4.6 (3.0)	7	22 †

Note. *Mean level of agreement based on valid percentages, standard deviation shown in brackets, † = 22 attitude items were not included in the final analysis

Study two: item generation

Example items

- *What clues can you use to tell how someone is feeling?*
- *What does it mean to have good mental health?*
- *Where can a person learn about mental health?*
- *Who can a person talk to about their mental health?*
- *Jake needs medicine for his depression. Which expert should he go to?*
- *What sorts of things might make a person more likely to have mental health problems?*

Study three: scale development

Research question:

4. Does the proposed verbally administered measure of MHL demonstrate appropriate psychometric properties using Rasch modelling?

Step 1: Pre-testing (completed)

- Field Test
- Item changes were made based on children's responses
- Inter-rater agreement was employed to help finalise the final items to be included in the pilot phase

Step 2: Item-reduction:

- Pilot study (N = 50)
- Item reduction and construct validity: Rasch analysis and Factor Analysis (FA)

Implications

Inclusion

- **More inclusive** than traditional pen and paper measures; they can accommodate for children that have limited reading and writing skills

Interpersonal approach

- verbal scales can provide important **qualitative insight** required to fully appreciate children's experiences and to help **plan and provide appropriately responsive child and youth health services** (Darbyshire MacDougall & Schiller 2005)
- Allows children to respond to **open-ended questions** freely through the flexibility in self-expression that speech offers (Huxham et al., 2012)

Research and practice

- Policy makers, academics, and clinicians can use the scale to **validate interventions** with a MHL foci
- Valid scales for children can support **intervention development and funding**

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EDUCATION

Measuring epistemic cognition in adults: A mixed methods approach

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GROUP OF EIGHT AUSTRALIA

Background: Needing to know about knowing

- How do you know what you know? How do you come to know it?
- Various models and measures over time
- Ongoing questions around how to name, define, conceptualise and measure

Need:

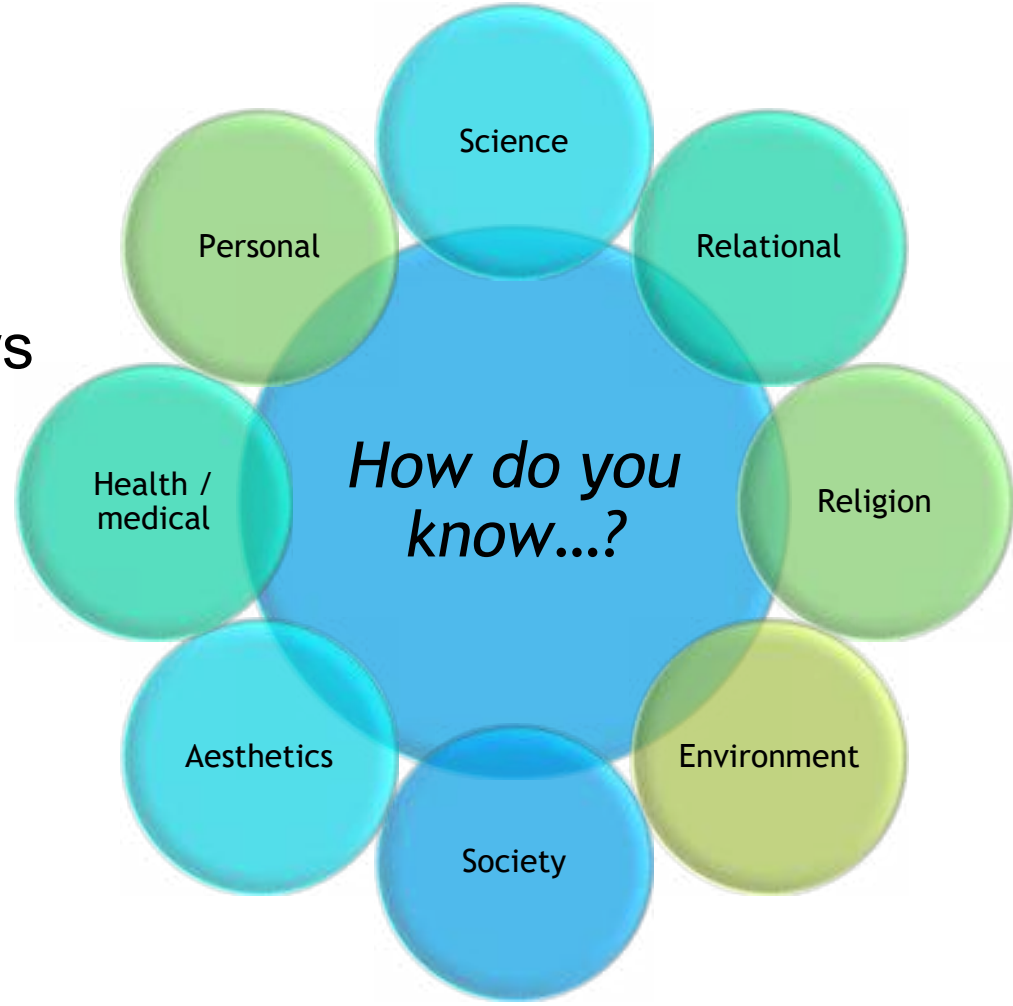
- Finer-grained detail in measures with robust psychometric qualities
- Conceptual unification
- Focus on *how* adults *know* or *experience* knowing, not just their beliefs

Aims and research question

- **Overall purpose**: to understand the meaning ascribed to knowing and knowledge by adults, in order to develop a more comprehensive understanding and model of 'ways of knowing'
- **Design**: Sequential mixed methods study
- **This study**: Exploratory, qualitative study – Interpretative Phenomenological Analysis (IPA; Smith, Flowers & Larkin, 2009)
- **Research question**: What is the lived experience of knowing?

Data Collection

- Six adult participants in Australia, all over the age 50.
- Semi-structured interviews (phone)
- Length: 1-1.5 hours
- Interview guide used
- Focus on meaning of knowing in diverse areas



Sample questions

- How do you know…
  - that you like a song, or not?
  - that climate change is real, or not?
  - that we should vaccinate for diseases, or not?
  - that there is a God(s), or not?
  - that evolution is real, or not?
  - that you like someone or not?
  - how to care for your children?

Iterative process (based on Smith, Flowers & Larkin, 2009):

1. Immersion in the data set
2. Initial noting (descriptive, linguistic and conceptual comments)
3. Identification and labelling of emergent themes
4. Searching for connections between emergent themes and clustering them
5. Moving to the next case
6. Looking for patterns across cases

- **Rigour**: Researcher diary; audit trail; peer debriefing

Participants

PARTICIPANT PSEUDONYM	AGE	GENDER	OCCUPATION
Angela	60s	Female	Business owner
Wendy	50s	Female	Business owner/student
Tom	60s	Male	Semi-retired/ Social worker
Andrew	60s	Male	Semi-retired
James	50s	Male	Worker/ Student
Beverly	60s	Female	Retired

Results Overview

Superordinate theme	Meaning
Justification for knowing	The reasons given for knowing that something is known.
Sources of knowledge	The people or places where knowledge comes from.
Influences on knowing	The factors that facilitate or hinder the production, sourcing or implementation of knowledge.
Knowing of others	The approaches other people take to knowing; the barriers, biases and other influences on the knowing of others.
Meaning of knowing	Personal meanings, formal understandings and representations of knowing.

Justification for Knowing

- Seeing as knowing
- Evidence
- Foundational knowledge: science and religion
- Instinct/feeling: “you know because it makes you feel good”
- “You just know…”
- “I don’t know” – not knowing, but theorizing

- Multiple forms of justification used, within/across topics
- Justification related to the topic

Justification

“it all makes sense, it’s just logical, logic and evidence. That’s how I know to accept, 97%, what 97% of climate scientists are saying.”

“The evidence is overwhelming that it's anthropogenic”

“It’s just backed up by millions of pieces of evidence I’ve seen, over, in the world”

Wendy

“So yes I'm on the side of vaccination, I've seen it actually physically work, I know that it works, so I'm happy. Whether I'm right, is a different matter, I could be as equally wrong as the anti-vaxxers, but you know sort of, from an evidence-based point of view, you know.”

“I've physically seen it work, so it's not a, it's not a subject that I've read about or you know seen studies about.”

James

Sources

- People as sources
  - Family and friends
  - Skilled people, experts and mentors
- Written sources
  - Books, magazines, textbooks and newspapers
  - Articles and reports from universities/large organisations
- The internet/online sources
- Source evaluation
  - Credibility and trust
  - Seniority and expertise
  - Made knowledge accessible and understandable
  - Need to be careful – many answers and biases

“a lot of it is spending time with people who are skilled in these areas and picking their brains, that’s, that's you know, a really big part of it…”

“if I don’t know something I've got partners within the communities”

Angela

"for something like physics if I'm stuck I'll go to my lecturer, now I'm pretty confident my lecturer knows what he or she's doing, otherwise they wouldn't be a university lecturer"

Wendy

“and then if I don't know something I'll look it up on the internet, and find out what it's all about”

“so you just type in something and there is the answer, so it's all covered.”

“it's endless what you can just find out instantly”

“Well I'd probably go to the source and think, well, that's a bit American, or whatever country, and I'd, more rely on the Australians”

Beverly

Influences

- People
  - Family and friends influenced approach and motivation
  - Question what knowledge is and the importance of evidence
- Pivotal moments
  - Changes in approach to knowing
  - Impact of changing world/paradigms
- Time
  - Needed to reflect on what is known vs. not known/hidden
  - As barrier to knowing/seeing
- Frameworks: religion and science
  - Bigger picture – relevance of ultimate knowledge
  - Influence on importance of evidence

"I don't believe that we're on a spaceship that's gonna be there forever so my ultimate concern for the climate change isn't a huge issue so I'm not gonna spend much time analysing or worrying about it because I kind of have a belief that overrides that."

Tom

Knowing of others

- How others respond to knowledge, and why
  - Ignore, accept or reject, dismiss, not act on it, don't question
  - Resistance as they'll have to change
  - "*how people can see this and not know that it's wrong?*"
- Barriers and biases
  - Vested interests in presenting knowledge
  - Back up preconceived ideas with biased sources/anecdotal evidence
  - Fear, anger, complexity of knowledge
- Conversations with others (about their knowing)
- Inferior knowledge of others: "*it's just insane*"
  - Conspiracies, the extremes, superficial approach

- Outcomes of knowing: Personal meanings, impacts and feelings
  - Personal conflict
  - Power, helping others, proving self, being at the forefront
  - Identity: Survival; *maybe I'm smarter than I thought I was*?
- Personal definitions, stances & representations of knowing
  - Decision making; coming to a conclusion; truth; the reality; the answer; weighing it up on a scale
  - Pegboard, subconscious process, radar
  - Shades of grey
- Formal definitions: Knowing about knowing

Meaning of knowing

“getting a collection of knowledge is good, it makes you feel good, it gives you a bit of confidence and just, it's a comfort thing that you know that you should be able to cope with almost anything and some things are out of your hands, but things that you can sort of, help your life, good to have knowledge and keep up with things.”

Beverly

Discussion: Next steps and theoretical implications

- Current results
  - add detail and context to current understandings of justifications, sources, and grounds for trusting sources
  - extend on previous work through consideration of personal meaning of knowing and influences on knowing
- Next steps & further challenges
  - QUANT study to test and refine model – justification for knowing
  - Understanding *what* we are measuring:
    - Beliefs, traits, thinking, preferences?
    - Enacted epistemology?
    - Role of context
  - Change and development over time
  - Are there different "types" of knowers? Implications for interventions?

Diverse implications

- Learning and teaching
- Lifelong learning, professional developmental and keeping up with evidence-based practice
- Presentation and evaluation of information online/in media
- Societal issues e.g., climate change, vaccination
- Health choices (Dr Google?)
- Climate change, asylum seeker policy and vaccination
- Making political decisions
- Parenting
- Juror reasoning
- Psychology: CBT and psychoeducation?

Practical implications

- Presentation of knowledge claims
  - Consider purpose, context, influences and background.
    - Why is knowledge needed?
  - Link to who/what (source/s) and how
    - Understand and utilise valued/preferred sources
    - Aim to build credibility and trust for other reliable sources
    - Understand meaning, use and acceptance of evidence
- Build capacity and awareness
  - Teach skills for critical evaluation of knowledge and sources
  - Raise awareness of biases (own and those of sources)

Practical implications

- Understand stress and tension
  - if valued sources contradict
  - new knowledge conflicts with existing knowledge
- Understand relationship between identity and knowing
  - Self-knowing and self-esteem
  - Need to empower?
- Critique and evaluate measures used
  - What are we measuring?
  - How is it defined/conceptualised?
  - How was it developed?

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Thank you

Questions?

GROUP OF EIGHT AUSTRALIA

The 12th Conference of the International Test Commission

Diversity and equity in a globalized digital world: Opportunities and challenges for assessment

14-17 July 2020

University of Luxembourg
Belval Campus
Luxembourg

CALL FOR PAPERS

WELCOME TO LUXEMBOURG

The Grand Duchy of Luxembourg is delighted to invite you to the 2020 ITC Conference, taking place at the University of Luxembourg's Belval Campus. The conference promises to be an exceptional, professional and scientific experience in a unique cultural environment renowned for its vibrancy and cosmopolitan flair. With its flourishing economy, extremely diverse population and active commitment to research, Luxembourg is the perfect venue to host the 2020 conference. The 2020 conference will be exploring the theme Diversity and equity in a globalized, digital world: Opportunities and challenges for assessment. This theme not only highlights cultural diversity following from globalisation, it also tackles today's rapid advancements in the field of technology-based assessment.

Belval Campus is situated in the south of Luxembourg and is easily accessible from Luxembourg City and Esch-sur-Alzette. Luxembourg is strategically located in the heart of Europe and is within easy reach of numerous major European- and international business centres.

THEME

Diversity and equity in a globalized digital world: Opportunities and challenges for assessment

Sub-themes

- Test development and validation in international and multicultural environments
- Innovations and advances in psychometric theory, modelling and technologies
- Current issues of policy, diversity and equity
- Best practices in testing and assessment
- Test security and privacy in a globalized digital world

IMPORTANT DATES

31 Oct. 2019	Deadline for workshop submissions
15 Dec. 2019	Deadline for paper and poster submissions
15 Dec. 2019	Deadline for symposia submissions
28 Feb. 2020	Notification to authors
1 Feb. - 30 Apr. 2020	Early bird registration
1 May - 13 Jul. 2020	Late registration

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Faculty of Language and Literature, Humanities, Arts and Education

KEYNOTE SPEAKERS

The following distinguished speakers are confirmed to present at the 2020 conference:

Prof Anita Hubley, University of British Columbia, Canada
Contributions of Response Processes to Test Validation and Development

Prof Sacha Epskamp, University of Amsterdam, The Netherlands
Network Psychometrics: Current State and Future Directions

Prof Jonathan Templin, University of Iowa, United States of America
Building a Diagnostic Model-Based Formative Assessment System for Personalizing Educational Progress

Prof John Fremer, Caveon Consulting Services, United States of America
Challenges Confronted and Lessons Learned: Protecting Test Content and Personal Information from Test Security Threats in International Testing Programs

Dr Sara Ruto, PAL Network, Kenya
Measuring Learning for All Children: The Citizen Led Assessment Approach

Prof John O'Gorman, Griffith University, Australia
The Future for Organisational Neuroscience in Selection and Assessment, or is There One?

Prof Lianzhen He, Zhejian University, China
China's Standards of English Language Ability: Impetus for Change in Language
Learning, Teaching and Assessment

Prof Aletta Odendaal, University of Stellenbosch, South Africa
Psychological Testing and Assessment in Developing Context: Shifting the Boundaries of Theory and Practice

WORKSHOPS

Several pre-conference workshops are planned covering state-of-the-art testing methods, techniques, and practices.

Visit www.itc-conference.com for updates and news on workshops.

THE PROGRAM

14 Jul. 2020	Pre-conference workshops
14 Jul. 2020	Opening ceremony
15-17 Jul. 2020	Lectures, symposia, oral presentations and poster presentations
16 Jul. 2020	Gala dinner
17 Jul. 2020	Closing ceremony

USEFUL INFORMATION

ITC website	https://www.intestcom.org
ITC 2020 conference website	https://www.itc-conference.com
University of Luxembourg website	https://wwwen.uni.lu
Luxembourg Tourism website	https://www.visitluxembourg.com

NEWS

News about the conference will be updated regularly on the conference website
www.itc-conference.com.

CONTACT US

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Luxembourg
Email: itc@uni.lu