

DRAFT

*Designing Assessments for Multidisciplinary
Constructs and Applications: A User-
centered Methodology*

Chapter 7- Supplements

Tables, Boxes and Figures

(Guilford, in press)

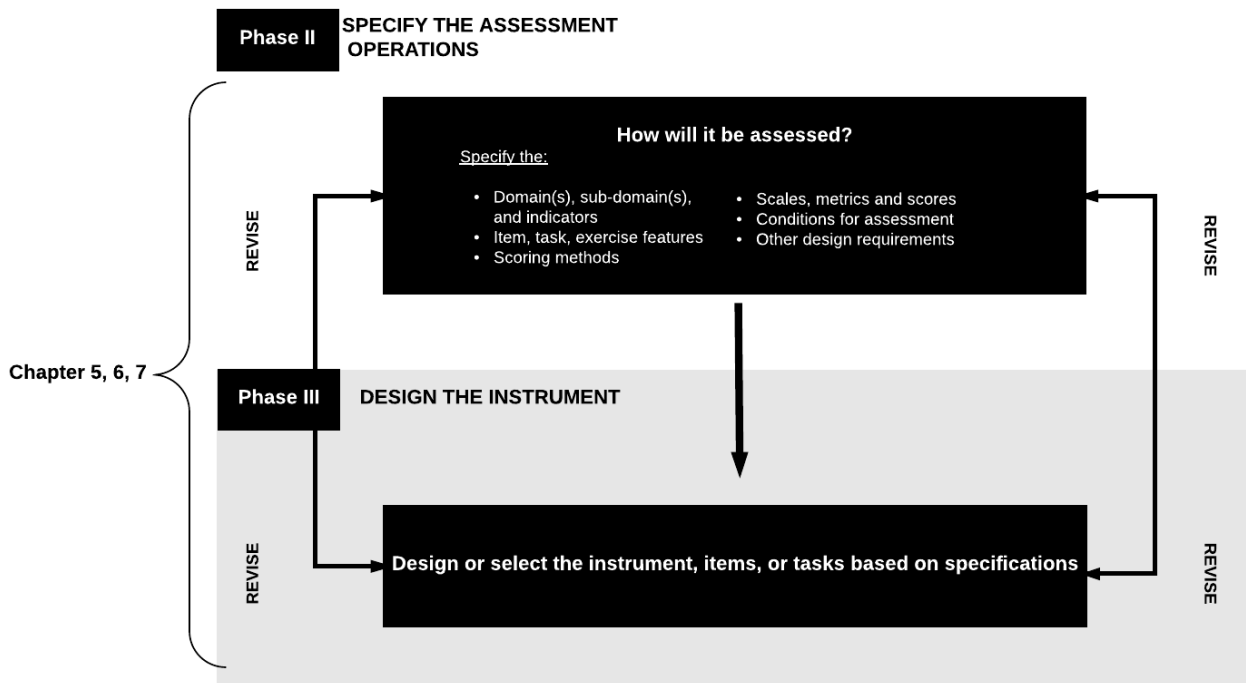


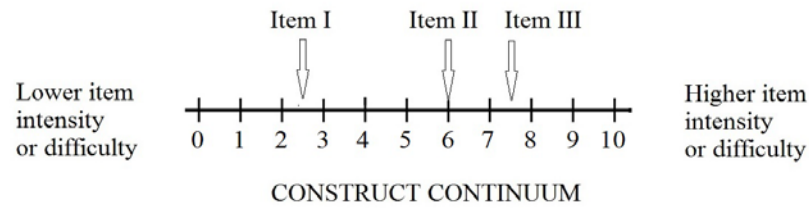
Figure 7.1.

Connecting Chapter 2 to the Process Model and the Rest of the Book

Note: See Figure 1.6 for the complete Process Model

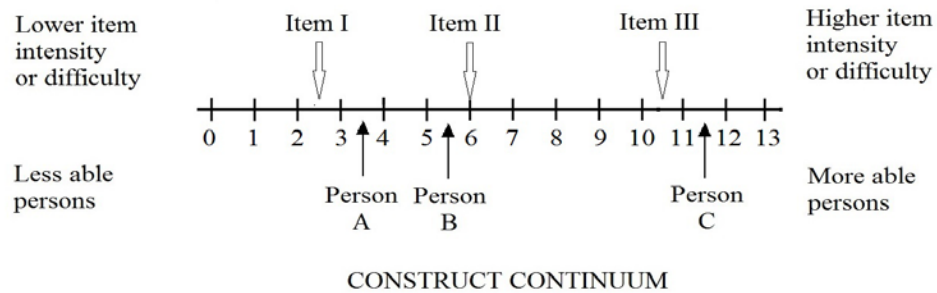
Figure 7.2.*Three Scaling Techniques*

A.



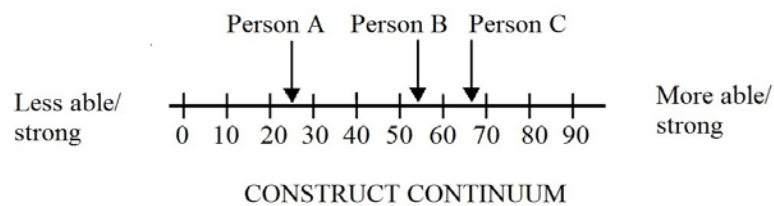
Thurstone Scaling Method: Ordering Items on a Number Line

B.



Guttman Scaling Method: Ordering Items and Persons on a Number Line

C.



Likert Scaling Method: Ordering Persons by Scale Scores

<i>SURVEY QUESTIONS/ STATEMENTS</i>	<i>ITEM</i>	<i>5-POINT RESPONSE RATING SCALE</i>				
		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
1. My counselor considers my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. My wellbeing is a priority for my counselor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. My counselor listens to my concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 7.2

Closed-Ended Survey Items with a Likert Response Scale: Measuring Client Attitudes towards Counselors

	Interview Questions	Response Scale	
<i>Closed- ended items in question format</i>	1. How often do you ask open-ended questions during client interviews?	a. Very Often b. Often c. Seldom d. Very Seldom e. Never	<i>Fixed Response Options</i>
	2. How often do you ask open-ended questions that go from general to specific?	a. Very Often b. Often c. Seldom d. Very Seldom e. Never	
<i>Open- ended items</i>	<u>Follow-up Probes to Item 2</u>		
	2A. Provide an example of a general question you recently asked a client.	[Space to record interviewee responses]	
	2B. Provide an example of a specific question you recently asked a client.	[Space to record interviewee responses]	

Figure 7.3

A Combination of Open- and Closed-ended Items from an Interview-Based Assessment: Measuring Counselor Proficiencies in Motivational Interviewing

Box 7.1 Descriptive Fact-based Items

Survey Questions:

1. How many people were living in your home during the previous calendar year (2018)? Select the best response. Include any foster children, new born children, roommates, or temporary guests in your count. If you/your family resided elsewhere (such as, overseas), select 0.

- a. 0
 - b. 1-3
 - c. 4-6
 - d. 7-10
 - e. 11 or more
2. What is your current level of education? Choose the best response.
- a. primary school level or less (up to grade 3)
 - b. middle school level (up to grade 8)
 - c. high school level (up to grade 12)
 - d. two years of college or vocational/technical training
 - e. college, graduate, or advanced level (hold a 4-year degree or beyond)
-

Box 7.2.Measuring *Attitude Towards the Movies on a Thurstone Scale***A. Thurstone's Scaling Technique**

Thurstone's (1959) items on the Attitude Towards the Movies questionnaire are listed below. Each attitude statement is assigned a weight that reflects its intensity level.

DIRECTIONS:

Below you will find six items expressing different attitudes toward the movies. There are no right or wrong answers. Enter your response in the space in the column to the extreme right.

Put a check mark (✓) if you **agree** with the statement.

Put a cross (X) if you **disagree** with the statement.

If you **cannot decide**, place a question mark (?).

Item No.	Intensity Weight	Item	
1	0.0	It is a sin to go to the movies.	✓
2	1.3	Going to the movies is a foolish way to spend your money.	✓
3	2.0	I don't find much that is educational in current films.	✓
4	3.4	A movie once in a while is a good thing for everybody.	X
5	4.3	The movies are the most vital form of art today.	X
6	4.7	The movies are the most powerful influence for good in American life.	X

1. How to score the survey:

To score, each response selected is first assigned a point value, as follows:

- An Agree response receives 1 point.
- A Disagree receives 0 points.
- Undecided responses are dropped.

On each item, the point value is multiplied by the corresponding weight for "intensity". On items answered with an Agree or Disagree, apply the Item weight, and calculate the total score as an average (Arithmetic Mean) .

Example:

If every item above was checked, the total score is 15.7 ($0 + 2 + 1.3 + 3.4 + 4.3 + 4.7 = 15.7$). **Mean** = $15.7/6 = 2.61$

The score for the person above = ? Interpret the score:

Source:

Excerpted from *Thurstone, L.L. (1959). The measurement of values (pp 285-86). Chicago, IL: University of Chicago Press, as cited in Hopkins (1998).*

Box 7.3.**Likert Scaled Items and Response Options****1. Likert's Attitude Measurement Technique**

A classic Likert-type item has a statement of attitude towards an object, presented as a statement or question. It has five-responses, as shown below (SA-SD). Each response option is assigned a weight on an increasing gradient. For a positively-worded item, the increasing order of weights is applied when scoring. In a negatively- oriented item, the order of weights is reversed in the score.

Positively-oriented item example: *I find much that is educational in current films.*

Negatively-oriented item example: *Going to the movies is a foolish way to spend your money.*

Response Option	Abbreviation	Numeric Weight	Reversed Weights
a) Strongly disagree	SD	0	4
b) Disagree	D	1	3
c) Uncertain (Neither agree nor disagree)	U	2	2
d) Agree	A	3	1
e) Strongly agree	SA	4	0

2. How to score Likert-scaled items

Here is a person's total score based on the responses below. Items 1 and 3 are reverse coded.

Item No.	Item	Responses
1	It is a sin to go to the movies.	2
2	I find much that is educational in current films.	4
3	Going to the movies is a foolish way to spend your money.	1
4	A movie once in a while is a good thing for everybody.	4
5	The movies are the most vital form of art today.	3
6	The movies are the most powerful influence for good in American life.	2
Total score for the person		16
Maximum possible score on 6 items		30

Your score?

Source for items:

Adapted from Thurstone, L.L. (1959). The measurement of values (pp 285-86). Chicago, IL: University of Chicago Press, as cited in Hopkins (1998).

Table 7.1.

Items Types that Measure Typical versus Maximum Performance

Targeted Construct	What the assessment designer seeks	Item Examples	
Value/Belief	Typical and honest response	1. Should the United States devote a portion of its national budget towards studying global climate changes?	<i>Response choices</i> <ul style="list-style-type: none"> ▪ Yes ▪ Not sure ▪ No
Value/Belief	Typical and honest response	2. How would you rate the quality of your education on the topic of “global warming and climate change”?	<i>Response choices</i> <ol style="list-style-type: none"> 1. Satisfactory 2. Not Sure 3. Unsatisfactory
Recall of knowledge	Best or maximum performance	List <u>three main findings</u> from the scientific report published by (give source or author) on global warming in (year).	<i>Space for response</i>

Box 7.4**Measuring *Locus of Control* with an interview-based assessment**

Item 1. Think of a recent project at work where you were successful in reaching your goals. *When you achieve a goal on a project like this one, to whom do you attribute the success? Of the five possible answers I will read, please choose just one that applies best to you.*

1. *Entirely or mostly to myself*
2. *Partly to others, but mostly to myself*
3. *Neither to myself nor to others*
4. *Partly to myself, but mostly to others*
5. *Entirely or mostly to others*

Item 1 probes:

1. *Why did you choose that response? Tell me more about the project that you have in mind.
What was your role in the project?
What factors helped you reach your goal?
Who helped you perform well?*
2. *Do you feel this way about most of your projects at work?*

Note: Adapted from Chatterji (2003) Chapter 4, 9

Box 7.5

Design Specifications for Self-report Assessments: Measuring *Subjective Perceptions of Unhealthy Intimate Relationships*

Assessment Purpose(s): Screening adults for levels of abuse, assault or other signs of neglect in intimate relationships in mental health counseling contexts.

Score-based Inferences: Perceived levels of abuse in intimate relationships

Units of analysis: Individuals

Uses: Screening tools in survey or interview format may be used individually or together, as a part of an **intake assessment** to determine whether there is a need for further diagnostic testing of clients.

Population: Female and male college students or adults involved in intimate relationships.

Construct: *Subjective Perceptions of Unhealthy Intimate Relationships* (Domain Specifications in Box 7. 6)

Assessment Methods Specifications:

1. “Parallel forms” may be constructed linked to the domain indicators either in survey-based and/or interview-based assessment modalities. See instruments in Table 7.2 and 7.3 as examples.
2. Items must be closed-ended, forced-choice Likert-type items tapping into (a) *Beliefs (experience-based perceptions)* and (b) *Feeling* dimensions of the construct, as defined by indicators in domain.
3. Length of tool should fall within 10-20 items. A small number (2-3) of items with reverse-oriented wording should be randomly included in item sets of 10-20.
4. The following *interview probes* should be applied to any three (3) structured items that generate ratings of 3 during the client interview, presented one at a time. Re-read each item again with the rated response aloud. Then, ask the questions. Notes should be taken by the interviewer as interviewee responds and read back aloud to the interviewee immediately after to verify accuracy.
Probes: a) *Could you describe a recent episode of this behavior?* b) *When did it happen?* c) *Where did it happen?* d) *Who else was present?* e) *What triggered the episode?* f) *How did you react?* G) *How did you cope with the episode?*

Conditions and Materials Specifications: Individually-administered assessments for one-on-one counseling settings. Materials should include: the assessment forms and scoring specifications; note taking materials; a table and chairs; a comfortable, private room or seating area for conducting the assessments. Guided by a counselor/interviewer, the instruments may be self-scored by subject.

Scoring specifications:

Interview. Questions 1, 3, 4, 6, 7, 8, 9, 10 and 12 are scored as below. *Items 2, 5 and 11 are reverse-coded, as shown in parenthesis.* A total score is obtained.

1. Very Often = 3 (0)
2. Often = 2 (1)
3. Sometimes = 1 (2)
4. Very rarely or Never = 0 (3)

Survey. Questions 1, 2, 4, 6, 7, 8, and 10 are scored as below. *Items 3, 5 and 9 are reverse-scored (see*

parenthesis).

1. Strongly Agree = 3(0)
2. Agree = 2 (1)
3. Disagree = 1 (2)
4. Strongly Disagree = 0 (3)

Criteria for decision-making with total scores assuming a 10-12 item screening tool.

1. 20 or greater = High (indicates a need for follow up testing and action).
2. 10-20 = Low (indicates no diagnostic assessments are necessary immediately, but follow up visits are recommended to ensure client status does not escalate).
3. <10 = Nil to Very Low (indicates no follow up or diagnostic assessments are necessary)

Adapted from Bogart (2003) as illustrative example. See original under Process Model Applications at:
<http://www.columbia.edu/~mb1434/EdAssess.htm>

Box 7.6

Domain Specifications for Measuring *Subjective Perceptions of Unhealthy Intimate Relationships*

Excerpted Domain

General Indicator:

Adults in an intimate relationship report experiences of, or feelings about, partner's behaviors that indicate *various forms of abuse* that occurred in the past six month period. (Taxonomic levels: *Beliefs/Experience-based perceptions OR Feelings*).

Specific Indicators:

- Reports experiences of/feelings about, *emotional abuse*.
 - Reports experiences of/feelings about, *physical abuse*, including sexual assault or abuse.
 - Reports experiences of /feelings about, *verbal abuse*.
 - Reports experiences of /feelings about, affirming and supportive behaviors of spouse/partner (*Affirmative indicator, reverse-oriented wording*)
-

Sub-indicators of Emotional Abuse

- 1.1. Uses guilt or other forms of coercion to get desired reaction from subject
 - 1.2 Displays extreme mood swings (highs and lows)
 - 1.3 Sulks or pouts
 - 1.4 Give subject the "silent treatment" or ignores partner for periods of time
 - 1.5 Makes unrealistic promises to subject
 - 1.6 Isolates partner from family and/or friends
 - 1.7 Restricts subject's use of phone or other forms of communication with others
 - 1.8 Tracks subject's whereabouts
 - 1.9 Shows irrational reactions to subject's behavior
 - 1.10 Expects subject to anticipate his/her needs and wants
 - 1.11 Blames subject for things that go wrong, even when it is clear that the subject is not responsible.
 - 1.12 Supports, trusts, and affirms subject in various aspects of life. [Alternative indicator for items with reverse-oriented wording]
-

Adapted from Bogart (2003). See original at:

Table 7.2

Survey-Based Screening Assessment, Directions to Respondents and Items

Subjective Perceptions of Unhealthy Relationships

Purpose: This is a “Relationship Screening Tool”. It is designed to assist college-going students and adults in self-assessing their intimate relationships with partners/spouses. This tool will be used for screening purposes only. That is, we will use the results to decide whether there is any need for further assessments before we consider a treatment, or no need at all, as applicable to your case. This is not a diagnostic tool.

Directions: The following statements reflect *how you feel* about your partner's behavior in your intimate relationship. **All your answers will be kept completely confidential. So, please be as honest as you can in your responses. There are no right nor wrong answers. Thank you for your participation.**

Please place a check to indicate if you **strongly agree (SA)**, **agree (A)**, **disagree (D)** or **strongly disagree (SD)** with each statement below. Choose **only one** response to each item.

In the past six (6) months:	SA	A	D	SD
1. I was afraid I would do things that would make my partner angry.	_____	_____	_____	_____
2. I was anxious about how my partner would react to things I may do.	_____	_____	_____	_____
3. I felt safe in my relationship with my partner.*	_____	_____	_____	_____
4. I felt the need to make excuses to others about my partner's behavior.	_____	_____	_____	_____
5. I trusted that my partner would not go through my personal items.*	_____	_____	_____	_____
6. I felt that no matter what I do, my partner would be unhappy with me.	_____	_____	_____	_____
7. I wished that my partner would let me take time to do what I want to do.	_____	_____	_____	_____
8. When my partner got angry I felt it was because I did something wrong.	_____	_____	_____	_____
9. I felt like an equal partner in my relationship.*	_____	_____	_____	_____
10. I was afraid of what my partner would do if I ended the relationship.	_____	_____	_____	_____

*Reverse-oriented items. Significantly modified and adapted from Bogart (2003). See original under Process Model Applications at: <http://www.columbia.edu/~mb1434/EdAssess.htm>

Table 7.3 An Interview-based Screening Tool--Script for Interviewer, Directions and Items

Subjective Perceptions of Unhealthy Relationships

Purpose (Please read aloud to interviewee): Obtain voluntary consent and permission. Make subject comfortable following greeting. *“Ready to begin? This is a “Relationship Screening Tool”. It is designed to assist college-going students and adults self-assess the health of their intimate relationships with partners/spouses. This tool will be used for screening purposes only; that is, we will use the results to evaluate if there are needs for further assessments before treatment, or no need for treatment at all, as applicable to your case. This is not a diagnostic tool. Is this purpose clear?”*

Directions: *Please be honest in your responses. All your answers will be kept completely confidential. The interview can be stopped whenever you want. Shall we start? (Begin only when interviewee indicates s/he is ready): I will now read aloud some (12) questions to you. For each question, your response can either be: All the time, Sometimes, Rarely, or Very Rarely or Never. I will put an 'x' in the column that matches your response. Please choose ONE of the four responses that best describes your partner on that behavior.*

When we finish, we will calculate and interpret your score together. At that time, I may ask a few follow up questions to three (3) items. You may answer those in your own words. I will take notes as you do so, and read those back so that you can verify my notes are accurate. Comfortable? Ready? (Begin after interviewee says he/she is ready.)




<i>Items</i>	<i>Response choices</i>			
In the past six (6) months, how often did your partner:	Very Often	Often	Sometimes	Very Rarely or Never
1. Embarrass you in front of others?	_____	_____	_____	_____
2. Compliment you on something you did well?*	_____	_____	_____	_____
3. Blame you for making him/her upset or angry?	_____	_____	_____	_____
4. Treat you roughly - grab, pinch, shove or hit you?	_____	_____	_____	_____
5. Encourage you to spend time with friends and family?*	_____	_____	_____	_____
6. Check up on you to make sure you are exactly where you said you would be?	_____	_____	_____	_____
7. Say things that make you feel incapable of making a decision on your own?	_____	_____	_____	_____
8. Pressure you to do things sexually that you do not want to do?	_____	_____	_____	_____
9. Borrow or take money and not pay you back?	_____	_____	_____	_____
10. Blame something you did for doing hurtful things to you?	_____	_____	_____	_____
11. Support you in your academic and/or professional life?*	_____	_____	_____	_____

12. Express displeasure with the way you look? _____

*Reverse-oriented items. Suggested item probes included in Assessment Specifications.
Significantly modified and adapted from Bogart (2003)- Process Model Applications at:
<http://www.columbia.edu/~mb1434/EdAssess.htm>

Table 7.4

Self-Report Instruments: Examples of Stems and Response Choice Options

1. Stimulus:	<i>To what <u>extent</u> did you . . . ?</i>	
Responses:	1. To a great extent 2. To a moderate extent 3. To some extent 4. Very little 5. Not at all	
2. Stimulus:	<i>Describe <u>how much</u> you like . . . ?</i>	
Responses:	1. Like it a lot 2. Like it somewhat 3. Not sure 4. Dislike it somewhat 5. Dislike it a lot	
3. Stimulus:	<i>How <u>often</u> (frequently) do you . . . ?</i>	
Responses:	1. All the time 2. Most of the time 3. Some of the time 4. Rarely 5. Not at all	
4. Stimulus:	<i>How <u>highly</u> would you rate the quality of . . . ?</i>	
Responses:	1. Very high 2. High 3. Average 4. Low 5. Very low	
5. Stimulus:	<i>Rate the <u>quality</u> of . . .</i>	
Responses:	1. Very good 2. Good 3. Satisfactory 4. Poor 5. Very poor	
6. Stimulus	<i>How <u>happy</u> do you feel about . . . ?</i>	
Responses:	1. I feel: <div> 1. Happy 2. Not sure/Don't know 3. Unhappy </div> <div> Happy Not Sure Sad    </div>	2. I feel: <div> 1. Happy 2. Neither happy nor sad 3. Sad </div>

Note: Pictorial excerpted from Hopkins (1998), with permission.

Table 7.5

A Validation Checklist for Designing Self-report Tools

Overall Assessment - Checklist
<ol style="list-style-type: none"> 1. Does the overall assessment, including items, show a match with: <ul style="list-style-type: none"> ▪ the content and behaviors targeted in indicators of the domain? ▪ age and other demographic specifications of the intended population? ▪ assessment purposes—the inferences and uses planned with scores? 2. Are directions for respondents and assessors clear? Are the directions sufficient? 3. Are the assessment conditions and materials necessary clearly outlined in the instructions and/or specifications? 4. Are the scoring procedures clearly described? 5. Are there enough items by domain and sub-domain to generate reliable scores? 6. Is the overall layout and presentation of the assessment user-friendly? 7. Does the assessment <i>appear to be</i> free of the following biases? <ul style="list-style-type: none"> ▪ Readability bias ▪ Inflammatory bias ▪ Stereotypical bias ▪ Materials-/Conditions-related biases
Checklist for Closed-ended Items
<ul style="list-style-type: none"> ▪ Are item statements or questions clearly written? ▪ Is the language in items concrete? ▪ Are overly wordy items absent? ▪ Do the answer options fit the stem of the item? ▪ Are double- or triple-barreled items absent? ▪ Are there sufficient response categories to capture the variability of expected responses? ▪ Are there any “leading” questions? ▪ Are there any “loaded” questions? ▪ Is the number of points on the response scale reasonable? Does each response point have a clear descriptor? ▪ Are negative words, if used, in italics or underscored (e.g., <i>not</i>) ?Are double negatives avoided? ▪ Are negatively-oriented items used sparingly and with judgment? ▪ Are items free of: <ul style="list-style-type: none"> ▪ jargon (e.g., use of technical terms) ▪ abbreviations (e.g., ADD for Attention-Deficit Disorder) ▪ biased language or content (e.g., boys are more violent than girls)
Added Checklist for Interview-based Items
<ul style="list-style-type: none"> ▪ Is there a script to accompany interview questions? Is the script sufficiently clear? ▪ Is the script interviewee-friendly? ▪ Are there directions for each step of the interview? ▪ Do instructions for interviewers/recorders clarify: <ul style="list-style-type: none"> ▪ The time allowed for each prompt? ▪ The probes allowed for each prompt? ▪ When to skip items? ▪ Pause periods (e.g., between item prompt and probes)? ▪ How to deal with unexpected responses (e.g., rambling) ▪ The methods for recording, scoring, and coding responses?