

Note: Item text has been redacted by the author for publicly available versions of this content.

# Feelings of Love Worthiness: Scale Development Using Item Response Theory

Amelia D. Coffman, Camilla S. Øverup,  
Julie A. Brunson, & Linda K. Acitelli

UNIVERSITY of  
**HOUSTON**



# Why Feelings of Love Worthiness?

“Lovability” was considered as early as Horney (1937; *The Neurotic Personality of Our Time*).

“...deeply ingrained feelings of being unlovable. I am not referring here to his feeling of being loved by this or that particular person but to his belief...that nobody does or could ever love him. Oh, he may believe that others love him for his looks, his voice, or for the sexual satisfaction he gives them. But they do not love him for himself, because he simply is unlovable.” (*Neurosis and Human Growth*; 1950)

# Why Feelings of Love Worthiness?

- Attachment researchers identify one key feature of attachment as the perception (or lack thereof) that the self is worthy of love from others (e.g., Bowlby, 1977)
- Rogers's concept of unconditional positive regard as a therapeutic necessity
- Deficits in perceptions of lovability seen in psychological disorders (for example, borderline personality disorder)

# Why Feelings of Love Worthiness?

- The clinical importance of feeling worthy of love is recognized
- No single inventory measures feelings of love worthiness
  - “Lovability” is one of the 11 scales of the proprietary Multidimensional Self-Esteem Inventory (MSEI; O'Brien & Epstein, 1988)
- Such an inventory would be useful to clinicians and researchers, especially if it could identify deficits (rather than presence) in feelings of love worthiness

# The Feelings of Love Worthiness Inventory (FLWI)

## Development:

- Three qualitative studies inquired about many aspects of feeling worthy of love
- Based on these responses, an initial item pool of 154 items was written by the researchers
- We narrowed these to 63 items through informal evaluation of item content and item wording, and piloted these items from summer 2013 through spring 2014
- The pilot measure was evaluated through exploratory factor analysis (EFA) and with a series of IRT analyses

# Pilot Instrument

People have different feelings about themselves and their relationships. As you read the following statements, think about how you generally feel about yourself and your interactions with others. Please indicate the extent to which each statement describes you.

[Redacted statement]

Not at all like me



Not like me



Neutral



Like me



Very much like me



[Redacted statement]

Not at all like me



Not like me



Neutral



Like me



Very much like me



# Sample

- 842 undergraduates successfully completed the pilot FLWI
- Mean age 22.49,  $SD = 5.15$
- 84.9% Female
- Ethnically diverse (34.3% Hispanic/Latino, 23.8% Caucasian, 18.1% Asian/Pacific Islander, 16.3% African American, 2.7% Middle Eastern, 0.2% Native American, 4.0% Multi-racial, 0.6% Other)

# Data Analytic Strategy

## 1. Factor Analysis

- EFA
- Oblique PROMAX rotation
  - Scree plot clearly recommended a single factor
  - A small second factor emerged but was composed of reverse-scored items
  - Consequently, we used unidimensional IRT

## 2. Item Response Theory Analyses

- Four successive IRT analyses (conducted using IRTPRO software)



# A Review of Item Response Theory

Basic ideas and assumptions:

- There is some continuous unobserved “ability” variable, or “latent trait”
  - Feelings of Love Worthiness
- All observed relationships among items can be completely accounted for by the latent variable
  - Termed *local independence*
- Graded response model (GRM; Samejima, 1996) for Likert-scaled responses
  - Slope ( $a$ ) & thresholds ( $b_i$ )

# Criteria for Item Selection

- Decisions about individual item functioning were based on:
  1. Evidence of *local dependence* (LD)
    - Caused by covariation greater than the unidimensional model can account for
    - Often caused by some degree of redundancy in item content
    - Identified using Chen and Thissen's (1997) standardized LD  $\chi^2$  index (extension to multiple category items)

# Criteria for Item Selection

## 2. Slope ( $a$ ) parameters

- Increases as the item is more strongly related to the underlying construct
- A slope parameter is expected to be  $\geq 1.0$

## 3. Threshold ( $b_j$ ) parameters (difficulty)

- Shift the item along the x-axis (along the underlying construct); some variation is favorable

## 4. Clear and direct item content

## 5. Fit of the final models

1.  $M_2$  goodness-of-fit statistic
2. Root mean square error of approximation (RMSEA)

# Results

- 63-item analysis:
  - SEs ranged from 0.07 – 0.21
  - One item with low slope ( $\alpha = 0.05$ )
    - [blurred text]
  - Multiple item pairs with substantial LD values emerged and were addressed
- 23-item analysis:
  - Several additional item pairs emerged with LD
- 17-item analysis:
  - Two additional item pairs emerged with LD
- 15 items retained

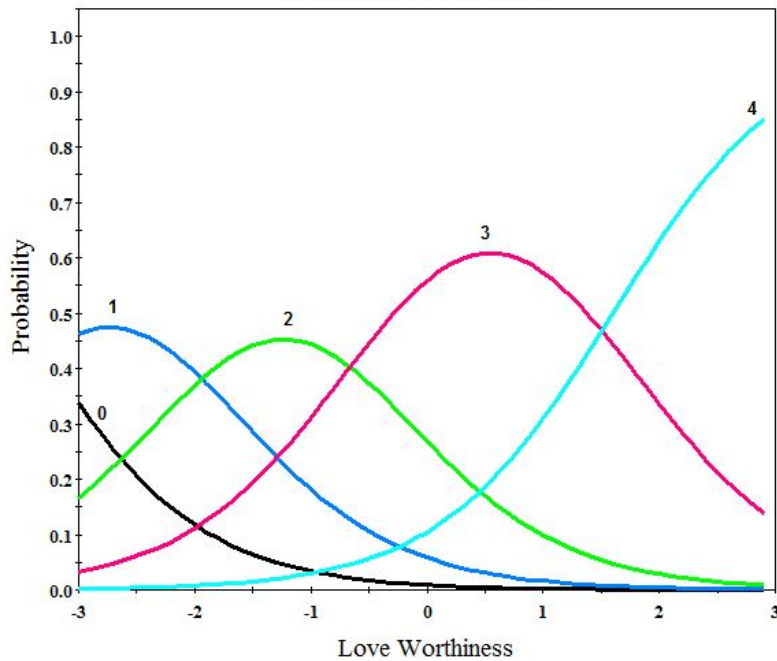
# Results

Final 15 item set (48 items removed)

- Good fit; No LD
- SEs of the final item set ranged from 0.09 – 0.18
- Slopes ( $\alpha$  parameters) ranged from 1.25 – 2.82
- $M_2(1665) = 3919.43, p < .001$
- RMSEA = .04
- Cronbach's  $\alpha = .92$

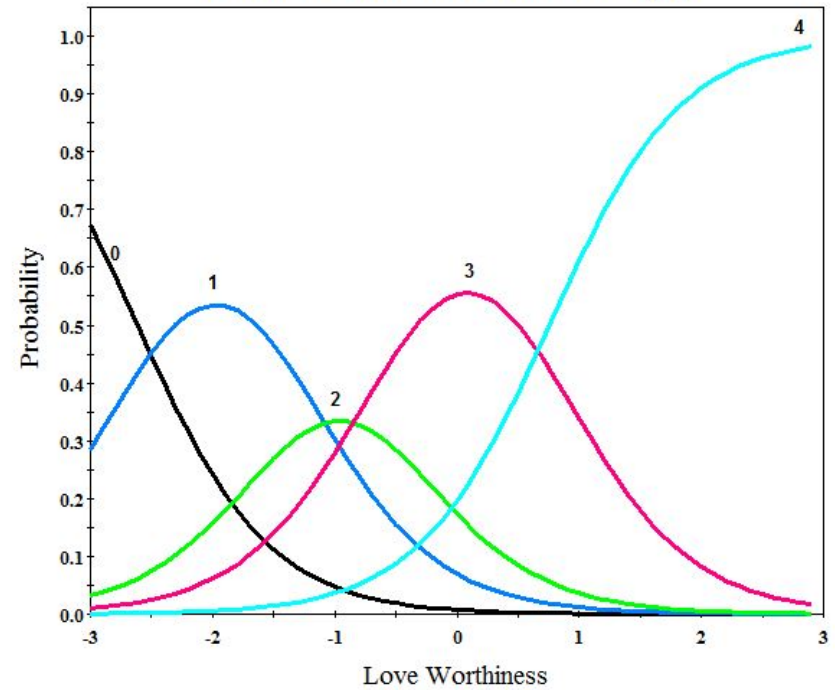
# Example Trace Lines

Item 19



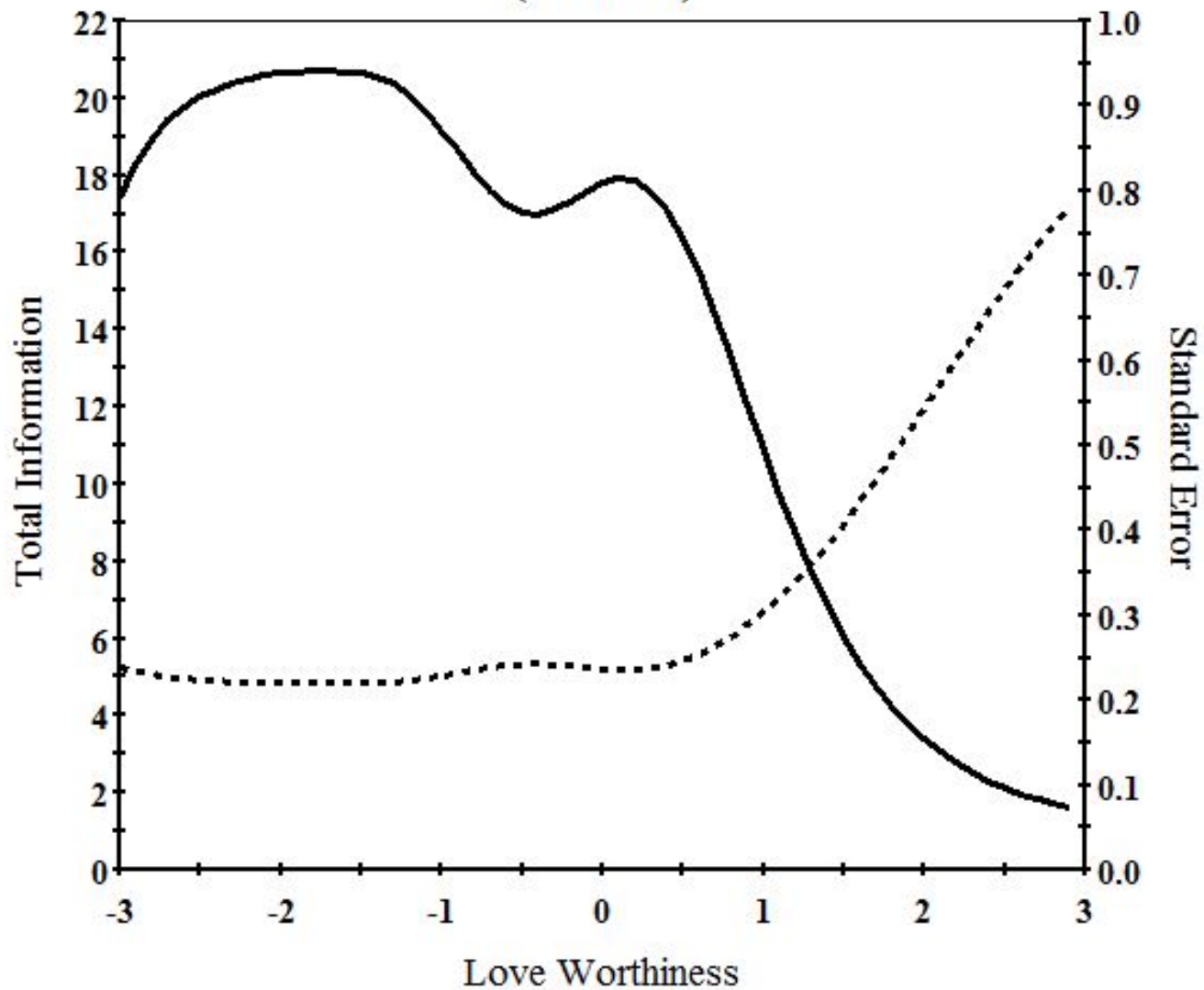
$$a = 1.34; b_1 = -3.50; b_2 = -1.96; \\ b_3 = -0.51; b_4 = 1.60$$

Item 63



$$a = 1.86; b_1 = -2.61; b_2 = -1.33; \\ b_3 = -0.59; b_4 = 0.76$$

Total Information Curve  
(15 items)



# Discussion

- Items in the final 15-item set of the FLWI form a cohesive and non-redundant unidimensional item set
- The FLWI measures feelings of love worthiness best in the lower ranges of the construct, as is most clinically helpful
- The FLWI shows promise as a measure of feelings of love worthiness for clinicians and researchers



# Future Directions

- Evidence of the construct validity of this 15-item FLWI (underway very soon!)

Convergent and discriminate validity in:

- Self-esteem/Contingent self-esteem
- Secure attachment
- Shame & guilt
- State depression
- Self-worth/Self-compassion
- Ways of coping
- Borderline personality features

# Questions?

UNIVERSITY of  
**HOUSTON**

