

Item Attributes as Drivers of Acquiescent Response Style*

CSDI 2017

Rachel Davis¹, Sunghee Lee²,
Tim Johnson³, Fred Conrad², Ken Resnicow²,
Jim Thrasher¹, Karen Peterson²

¹. University of South Carolina; ². University of Michigan;

³. University of Illinois-Chicago

* Supported by NIH RO1-CA1722830 (PI: Davis)

Outline

- Background
 - Acquiescent Response Style (ARS)
 - Drivers of ARS
- Data and Methods
- Results
- Implications

Acquiescent Response Style (ARS)

- Yay saying, regardless of question content

	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
The U.S. spends too much money on scientific research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The U.S. should dedicate more money to finding new scientific discoveries.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Acquiescent Response Style (ARS)

- Yay saying, regardless of question content

	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
The U.S. spends too much money on scientific research.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The U.S. should dedicate more money to finding new scientific discoveries.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Source of measurement error
 - Inflated or deflated scale scores
 - Inflated or deflated relationships

Drivers of ARS

- Respondent level
 - Age
 - Education
 - Race, ethnicity: Concern for cross-cultural research
- Item level
 - No established research
 - Item attributes (e.g., social desirability)
 - Response scale direction; Primacy/Recency effect?

Data and Methods – 1

- 2 telephone surveys designed to study ARS with Latinos
- Study 1
 - n=120; Only Latinos roughly equally divided into
 - Mexican Americans
 - Cuban Americans
 - Puerto Ricans
 - 20 items measuring simpatía
 - Random assignment of Likert scale direction:
Strongly agree – Strongly disagree v.
Strongly disagree – Strongly agree

Data and Methods – 2

- Study 2
 - n=401; roughly equally divided into
 - Non-Latino Whites
 - Latino: Mexican Am., Cuban Am., Puerto Ricans
 - 100 attitudinal items with Likert scale
 - Social desirability direction; SD pressure
 - Conditional wording; Mental comparison; Reverse thinking
 - Number of unfamiliar terms; ambiguous terms
 - Knowledge
 - Number of words; Polysyllable words

Data and Methods – 3

- “Divorce should be avoided unless it is an extreme situation.”
 - Social desirability direction (Yes/No): Yes
 - Social desirability pressure (Range:1-3): 3
 - Conditional wording (Yes/No): Yes
 - Mental comparison (Yes/No): No
 - Reverse thinking (Yes/No): Yes
 - Number of unfamiliar terms: 0
 - Number of ambiguous terms: 0
 - Knowledge (1. Def no accurate knowledge... 3.Unclear ... 5. Def accurate knowledge): 5
 - Number of words: 10
 - Number of polysyllable words: 2

Data and Methods – 4

- Summary of Item Attributes

Item Attributes	Study 1 20 items	Study 2 100 items
Mean proportion of acquiescent responses (A+SA)	0.44	0.47
Mean social desirability direction (range: 0-1)		0.6
Mean social desirability pressure (range: 1-3)		1.7
Mean inclusion of conditional wording (range: 0-1)		0.4
Mean involvement of mental comparisons (range: 0-1)		0.2
Mean involvement of reverse thinking (range: 0-1)		0.3
Mean # of unfamiliar terms (range: 0-4)		0.5
Mean # of ambiguous terms (range: 0-3)		0.6
Knowledge (range: 1-5)		3.9
Mean # of words, English (range: 3-22)		10.7
Mean # of words, Spanish (range: 5-22)		11.7
Mean # of polysyllable words, English (range: 0-4)		1.1
Mean # of polysyllable words, Spanish (range: 0-9)		3.5

Data and Methods – 5

- Model % AR (Strongly agree+Agree) in multivariate regression
 - Study 1
 - Respondent-level analysis using 20 simpattia scale items
 - Covariates include response scale direction assignment:
 - Strongly agree – Strongly disagree v.
Strongly disagree – Strongly agree
 - Study 2
 - Item-level analysis using all 100 items
 - Model on item attributes

Results – 1. R Scale Direction

Respondent Attributes (Dep var: % AR)	Coeff
R scale: “strongly disagree” → “strongly agree”	0.22
Age	0.00
Gender: Female v. Male	0.02
Education (Ref: 1-6 years)	
7-12 years or GED	-0.10
Some college or associate’s degree	-0.02
College graduate	-0.08
Graduate degree	-0.05
Language of interview: Spanish v. English	-0.12
Ethnicity (Ref: Puerto Rican)	0.04
Mexican American	-0.02
Cuban American	
	R^2 0.28

$p < 0.1$

$p < 0.05$

$p < 0.01$

$p < 0.001$

Results – 2. Item Attributes

Item Attributes (Dep var: % AR on 95 items)	NHW	Mex Am	Cuban Am	Puerto Rican
Social desirability toward agreement	0.40	0.37	0.41	0.38
Increasing social desirability pressure	-0.01	-0.03	-0.04	-0.01
Contains conditional wording	-0.04	-0.05	-0.05	-0.04
Involves mental comparisons	-0.05	0.01	-0.03	0.01
Involves reverse thinking	-0.01	-0.05	-0.07	-0.05
# of unfamiliar terms	0.02	0.03	0.01	0.01
# of ambiguous terms	-0.02	-0.01	0.01	-0.01
Knowledge (Ref: unclear)				
Definitely had knowledge	0.12	0.12	0.11	0.12
Likely had knowledge	0.04	0.00	0.05	-0.01
Unlikely had knowledge	-0.10	-0.12	-0.04	-0.02
Definitely no knowledge	-0.19	-0.08	-0.06	-0.11
<i>R</i> ²	0.64	0.68	0.73	0.68

p<0.1

p<0.05

p<0.01

p<0.001

Results – 3. Item Attributes by Educ

Item Attributes (Dep var: % AR on 95 items)	≤High school (n=139)	≥Some college (n=198)
Social desirability toward agreement	0.35	0.43
Increasing social desirability pressure	-0.04	-0.00
Contains conditional wording	-0.04	-0.04
Involves mental comparisons	0.01	-0.04
Involves reverse thinking	-0.05	-0.08
# of unfamiliar terms	0.02	0.02
# of ambiguous terms	0.00	-0.02
Knowledge (Ref: unclear)		
Definitely had knowledge	0.11	0.12
Likely had knowledge	0.03	0.01
Unlikely had knowledge	-0.01	-0.08
Definitely no knowledge	-0.07	-0.14
R^2	0.69	0.70

$p < 0.1$

$p < 0.05$

$p < 0.01$

$p < 0.001$

Results – 4. Item Attributes by Educ: English Interviews

Item Attributes (Dep var: % AR on 95 items)	≤High school (n=66)	≥Some college (n=121)
Social desirability toward agreement	0.33	0.41
Increasing social desirability pressure	-0.03	-0.00
Contains conditional wording	-0.05	-0.06
Involves mental comparisons	-0.00	-0.04
Involves reverse thinking	-0.09	-0.11
# of unfamiliar terms	0.01	0.01
# of ambiguous terms	-0.01	-0.03
Knowledge (Ref: unclear)		
Definitely had knowledge	0.13	0.11
Likely had knowledge	0.05	-0.01
Unlikely had knowledge	-0.04	-0.11
Definitely no knowledge	-0.10	-0.20
# of words in English	-0.00	0.01
# of polysyllable words in English	-0.00	-0.01
	R^2	
	0.60	0.66

$p < 0.1$

$p < 0.05$

$p < 0.01$

$p < 0.001$

Results – 5. Item Attributes by Educ: Spanish Interviews

Item Attributes (Dep var: % AR on 95 items)	≤High school (n=126)	≥Some college (n=77)
Social desirability toward agreement	0.36	0.46
Increasing social desirability pressure	-0.05	0.00
Contains conditional wording	-0.04	-0.03
Involves mental comparisons	-0.00	-0.02
Involves reverse thinking	-0.03	-0.04
# of unfamiliar terms	0.03	0.03
# of ambiguous terms	0.01	-0.01
Knowledge (Ref: unclear)		
Definitely had knowledge	0.10	0.14
Likely had knowledge	0.01	0.01
Unlikely had knowledge	0.01	-0.03
Definitely no knowledge	-0.06	-0.06
# of words in Spanish	-0.00	-0.00
	R^2	
	0.60	0.66

p<0.1
p<0.05
p<0.01
p<0.001

Implications

- ARS interacts with item attributes
- Increased ARS
 - Response scale direction: Recency effect
 - Social desirability direction towards agreement
 - R expected to have knowledge
- Decreased ARS
 - Reverse thinking

Thanks!

sungheel@umich.edu