ARE SCALE DIRECTION EFFECTS THE SAME IN DIFFERENT SURVEY MODES? COMPARISON OF A FACE-TO-FACE, A TELEPHONE, AND AN ONLINE SURVEY EXPERIMENT

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BACKGROUND AND THEORY

- The direction of the scales have been proved to influence responses
- Research question: Is the effect the same on different modes?
- Why expect differences?
- Different cognitive process, interview situation
- The role of the interviewer
- Unordered vs. ordered questions – primacy and recency effects
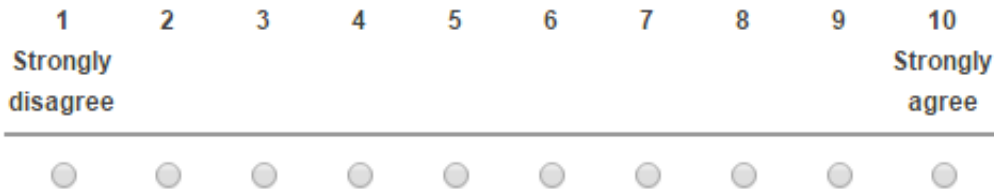
BACKGROUND AND THEORY

- What might be the underlying reason of biased answering of scalar questions?

Satisficing
- Krosnick 1991
- Not putting enough effort in answering
- Choosing a convinent response option
- Acquiescence, ERS
- Previous research questioned the importance of SF in scalar questions

Anchoring-and-adjustment heuristic
- Yan and Keusch (2015)
- Respondents first anchor the initial value of the scale then they mentally or visually travel further along the scale until they find an acceptable scale point.
- Left-right
- Top-bottom
- If insufficient, the final estimate is likely to be biased close to the original anchor

1	2	3	4	5	6	7	8	9	10
Strongly disagree									Strongly agree

BACKGROUND AND THEORY

- What clues do the two theories provide on mode differences?

Satisficing
- Quite unclear
- Primacy effects on all modes
- If satisficing is stronger on one mode, stronger scale direction effects are expected.

Anchoring-and-adjustment heuristic
- Primacy effects on all modes, but stronger on self-administered modes, as the scale is visually presented to the respondents.

1	2	3	4	5	6	7	8	9	10
Strongly disagree									Strongly agree
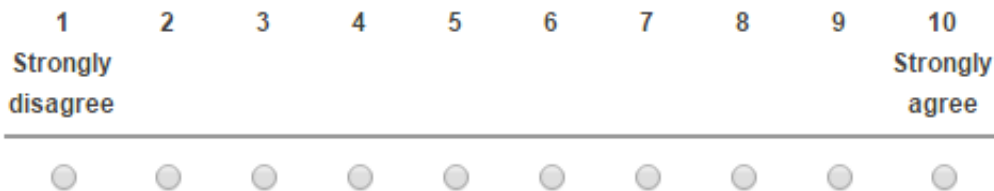
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How scale length relates to these mechanisms?

	Dichotomous scales	Likert-type scales	Rating scales
Satisficing	Unclear/Recency on interviewer adm., Primacy on self-adm.	Primacy on all modes, especially for descending format	Primacy on all modes
Anchoring and adjustment heuristic	Unclear/Primacy on all modes	Primacy on all modes, but stronger on self-adm.	Primacy on all modes, but stronger on self-adm.

DATA AND DESIGN OF THE EXPERIMENTS

- Three separate surveys (Face-to-face (N=2000), telephone (N=1000), online survey (N=5000))
- August–September 2019, Hungary
- Questions on local issues
- Respondents were randomly assigned to one of the two groups per question

Dichotomous scale	
Positive first group	**Negative first group**
Please complete the sentence. My view about the future of my town/district is rather… 1. positive 2. negative	Please complete the sentence. My view about the future of my town/district is rather… 1. negative 2. positive
1–4 Likert-type scale	
Ascending group	**Descending group**
Please say to what extent you agree or disagree with the following statement. The leaders of my town/district do everything they can to make our town/district develop. 1. Strongly disagree 2. Rather disagree 3. Rather Agree 4. Strongly Agree	Please say to what extent you agree or disagree with the following statement. The leaders of my town/district do everything they can to make our town/district develop. 1. Strongly Agree 2. Rather agree 3. Rather disagree 4. Strongly disagree
0–10 rating scale	
0–10 group	**10–0 group**
Please tell me on a scale 0-10 how satisfied you are with your local municipality. 0 means not satisfied at all, and 10 means completely satisfied.	Please tell me on a scale 10-0 how satisfied you are with your local municipality. 10 means completely satisfied, and 0 means not satisfied at all.

Dichotomous scale

	F2F (n=2000)				Phone (n=1000)				Web (n=5001)			
	Positive first	Negative first	p-value	C	Positive first	Negative first	p-value	C	Positive first	Negative first	p-value	C
% of positive	72.14	76.23	0.060	0.047	71.75	73.85	0.512	0.022	56.22	57.76	0.449	0.016

Chi-squared tests were used to test proportion differences. C refers to coefficient of contingency of the chi-squared tests (Walker and Young, 2003).

RESULTS

1-4 Likert-type scale

	F2F (n=2000)				Phone (n=1000)				Web (n=5001)			
	Ascending	Descending	p-value	R^2	Ascending	Descending	p-value	R^2	Ascending	Descending	p-value	R^2
% of Completely Disagree (1)	7.69	7.31	0.775	0.007	12.15	11.02	0.590	0.019	**12.18**	**17.49**	**0.000**	**0.077**
Proportion of Completely Agree (4)	14.47	16.40	0.263	0.028	32.93	36.27	0.295	0.036	17.51	15.32	0.135	0.030
Mean (SD)	**2.75 (0.81)**	**2.83 (0.80)**	**0.034**	**0.003**	2.90 (1.01)	2.99 (0.96)	0.209	0.002	**2.66 (0.92)**	**2.52 (0.97)**	**0.000**	**0.005**
Median	3	3	-	-	3	3	-	-	3	3	-	-

Higher scores on the Likert-type scales means higher agreement. R2 refers to the proportion of the variance for the dependent variables that's explained by scale direction.

RESULTS

0–10 Rating scale

	F2F (n=2000)				Phone (n=1000)				Web (n=5001)			
	0-10	10-0	*p-value*	R^2	0-10	10-0	*p-value*	R^2	0-10	10-0	*p-value*	R^2
Proportion of *10* or *9*	8.30	6.23	0.109	0.039	8.03	9.68	0.406	0.029	16.84	19.26	0.129	0.032
Proportion of *0* or *1*	17.31	18.58	0.511	0.016	26.70	26.57	0.953	0.002	**14.50**	**10.86**	**0.005**	**0.055**
Mean (SD)	6.17 (2.68)	6.37 (2.57)	0.108	0.002	6.54 (2.89)	6.43 (3.02)	0.576	0.000	**5.29 (3.06)**	**5.69 (2.94)**	**0.001**	**0.005**
Median	7	7	-	-	7	7	-	-	5	6	-	-

R2 refers to the proportion of the variance for the dependent variables that's explained by scale direction.

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0–10 Rating scale – regression results

	F2F	Phone	Web
(Intercept)	6.34 (0.92)	5.52 (1.50)	3.46*** (0.60)
Gender (Ref. Male)	−0.12 (0.38)	−0.05 (0.61)	0.56 (0.28)
Age	0.00 (0.01)	0.03 (0.02)	0.00 (0.00)
Education	−0.02 (0.18)	−0.11 (0.28)	0.24 (0.11)
Treatment (Ref. Positive first group)	−0.09 (0.38)	−0.40 (0.61)	**0.83** (0.28)**
Gender x treatment	0.19 (0.24)	0.20 (0.38)	-0.26 (0.17)
Age x treatment	0.00 (0.01)	0.01 (0.01)	0.00 (0.00)
Education x treatment	−0.07 (0.11)	−0.15 (0.18)	**0.15* (0.07)**
Observations	2000	1000	5001
R^2	0.004	0.015	0.006
Adjusted R^2	0.001	0.008	0.005

*$p < .05$; **$p < .01$; ***$p < .001$.

CONCLUSIONS

- No strong evidence was found for scale direction effects.
- The face-to-face and the telephone survey were more robust against the ordering of the scales.
- Strong primacy effect was found in the online survey on the 0–10 rating scale.
- The findings suggest that the heuristic of anchoring and adjustment provide a better theoretical ground for understanding scale direction effects.
- On the 0-10 scales, respondents have more opportunity to settle earlier.
- As online and mixed-mode surveys are increasingly used worldwide, decisions on scale directions should be well considered.

THANK YOU FOR YOUR ATTENTION!

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