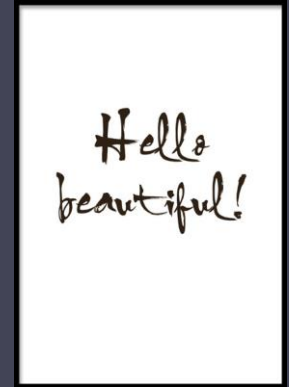


Hello Beautiful?



The Effect of Interviewer Physical Attractiveness
on Cooperation Rates and Survey Responses

Mads Meier Jæger
University of Copenhagen

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Mads Meier Jæger¹

Abstract

This article analyzes the effect of interviewers' physical attractiveness on cooperation rates in face-to-face interviews and survey responses (self-reports on physical appearance, weight, and health). This article includes four aspects of physical attractiveness (facial attractiveness, voice attractiveness, body mass index [BMI], and height) and reports that (1) interviewers with more attractive faces and lower BMI have higher cooperation rates, (2) differences in interviewers' personality (Big Five, Rosenberg self-esteem) account for about one third of the total effect of facial attractiveness on cooperation rates, and (3) being interviewed by a more attractive interviewer leads to more positive self-reports on physical appearance, weight, and health (but does not affect self-reports unrelated to physical appearance).

Keywords

interviewer effect, physical attractiveness, response rate, survey response, personality, social desirability

¹ Department of Sociology, University of Copenhagen, Copenhagen K, Denmark

Corresponding Author:

Department of Sociology, University of Copenhagen, Øster Farimagsgade 5, Building 16, DK-1014 Copenhagen K, Denmark.

Email: mmj@soc.ku.dk

Background #1

- Response (and retention) rates in surveys are declining in in most countries
- We want to know which factors predict response rates and how we can improve survey quality
- Many aspects of survey design affect response rates. A particularly important aspect is **interviewers**:
 - Interviewer sex, race, and age affect response rates (**who gets interviewed?**)
 - Interviewer characteristics also affect survey responses, for example on gender and race relations (**what do respondents say?**)

Background #2

- Recent research suggest that **interviewers' physical appearance** affects survey responses:
 - Interviewer BMI affects survey responses to questions on health behaviors (Eisinga et al. 2011, 2012)
 - → Respondents interviewed by heavier interviewers report eating less
- Interesting result, but we don't know a lot yet about the effect of interviewers' physical appearance on response rates and survey responses!
- Physical attractiveness has been associated with many economic, social, and psychological outcomes

Background #3

- This paper analyzes the effect of interviewers' **physical attractiveness** on two aspects of survey quality in face-to-face surveys:
 1. Cooperation (response) rates in face-to-face surveys
 2. Survey responses relating to physical appearance, weight, and health (in which we might expect interviewers' physical attractiveness to matter)

Contribution #1

The paper makes five contributions to existing research

1. **Four measures of interviewer physical attractiveness** (facial attractiveness, voice attractiveness, BMI, and height)
2. **Analyzes what makes more attractive interviewers more successful** → Personality traits (self-esteem and Big Five)
3. **Survey design forced interviewers to make physical first impression** (first contact via phone, (e)mail etc. not allowed; interviewers had to visit respondents' homes and knock on the door)

Contribution #2

The paper makes five contributions to existing research

4. **Total population to be interviewed known beforehand (via registers)**, as were also reasons for non-eligibility and non-response (death, emigration, illness etc.) → We know exactly which doors got knocked on
5. **Analyzes effect of interviewer attractiveness on survey responses** → Self-rated physical appearance, weight level, and health (and a range of “placebo” self-assessments unrelated to respondents’ physical attractiveness)

Theory #1

Why would physically attractive interviewers have an advantage at the doorstep?

- **Social psychology:**
 - “What is beautiful is good” stereotype → We ascribe positive qualities onto physically attractive individuals (friendliness, etc.) [“Demand side”]
 - Physically attractive individuals internalize others’ perceptions and develop personality traits to match (self-confidence, extraversion)
 - [“Supply side”]
- **Evolutionary psychology:** Physical attractiveness is a manifestation of innate health, strength, and fecundity → Human brain hardwired to instantly regard physical attractiveness as desirable (takes less than 1/30th of a second, as measured in MRI scanners!)

Theory #2

Once through the door, how might physically attractive interviewers affect survey responses?

- **Social desirability bias:** Respondents (un)consciously modify responses to conform to social norms that they attribute to the interviewer. For example, research shows that ...
 - Men express more gender-egalitarian attitudes if interviewed by a woman than if interviewed by a man
 - Respondents report eating less and healthier if interviewed by a heavier interviewer than if interviewed by a lighter one
 - And so on ...

Hypotheses

1. More physically attractive interviewers have higher response rates than less attractive ones

(Mechanism: Respondents form positive opinions about interviewers at the doorstep and interviewers act in ways that reinforce that impression)

2. Physical attractiveness in interviewers leads to more positive survey responses of physical appearance (but is unrelated to self-reports on other factors)

(Mechanism: Social desirability bias)

Data #1

Danish Longitudinal Survey of Youth - Children (DLSY-C):

- Samples all children born to 3,151 participants who participate in an ongoing cohort study, the Danish Longitudinal Survey of Youth (DLSY). Participants in DLSY born in/around 1954 and followed since 1968 (similar to NCDS)
- Total population in DLSY-C is 5,468 children (1.74 children per DLSY respondent). Parents and children linked via Central Person Register (CPR) register
- Status of DLSY-C population at time of interview:

Interviewer knocked on door

Data #2

	Interview	Percent	N
1	Completed interview	64.4	3,515
2	Partial interview	0.1	3
	No interview. Reason:		
3	R refused	9.3	508
4	R ill	0.3	17
5	R out of town	0.7	37
6	R not met	3.3	181
7	R moved to unknown location	0.8	42
8	R disabled	0.4	20
9	R other reason	0.3	15
10	R moved abroad	0.4	22
11	R research protection	13.7	747
12	R too young	2.3	128
13	R lives in Greenland	0.3	16
14	R missing	0	1
15	R emigrated	2.4	133
16	R deceased	1.5	83
	Total	100.0	5,468

Data #3

Interviewer data ($N = 93$)

1. **Questionnaire** administered during interviewer training sessions (well in advance of data collection)
 2. **Physical attractiveness ratings** based on (a) a photograph of each interviewer's face and (b) a recordings of his/her voice. Rated by panel of ten people
- Interviewers received list of respondents assigned to them → They had no control over which respondent they would face (so, quasi-random assignment of interviewers to respondents)

Variables #1

Dependent variables (DLSY-C respondents):

1. Dummy variable for successful interview, if approached (87% of those approached)
2. For those interviewed: (1) self-rated appearance (1-5 scale), (2) self-rated weight category (1-5 scale), and (3) self-rated health (1-5 scale) [“appearance”]
 - + Four “placebo” self-assessments: (1) happiness (0-10 scale), (2) self-esteem (Rosenberg), (3) locus of control (Rotter) and (4) self-perceived risk taker (1-10 scale)

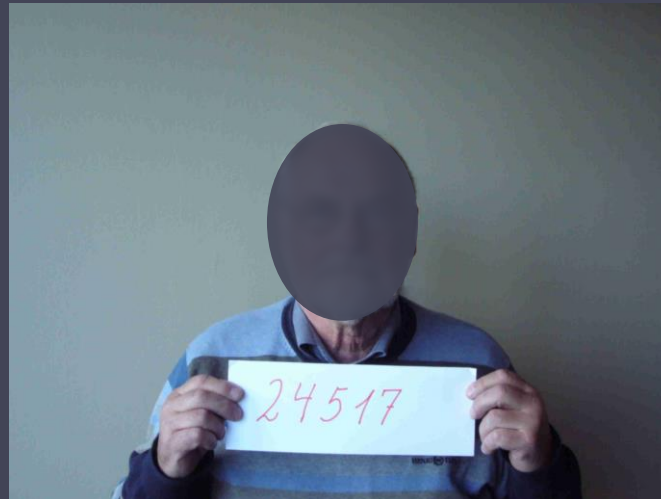
Variables #2

Explanatory variables: Physical attractiveness:

1. Facial attractiveness

- Panel of ten raters (aged 25-65, both men and women) rate photos
- Raters use 1-10 scale with 1 = “Not attractive” and 10 = “Super hot”
- Calculate mean rating across ten raters (inter-rater reliability: 0.88)

Sample photo:



Variables #3

Explanatory variables: Physical attractiveness:

2. Voice attractiveness

- Rating based on 30-second recording of interviewer reading out passage from H.C. Andersen's fairytale *the Tinderbox*
- Voice rated along six dimensions using 1-7 scale: (1) pleasant, (2) competent, (3) physically attractive, (4) trustworthy, (5) extroverted, and (6) confident.
- Calculate mean rating across ten raters for each dimension (inter-rater reliability: 0.72-0.82)
- Estimate factor score based on six dimensions (explains 90% of variance)

Sound sample: 

- Photos and voice recordings presented to panel in random order (correlation between facial and voice attractiveness = 0.43!)

Variables #4

Explanatory variables: Physical attractiveness:

3. **BMI** (calculated from self-reported weight and height)
4. **Height** (centimeters, calculated as deviation from mean height by gender)

Variables #5

Explanatory variables: Personality:

1. **Self-Esteem** (Rosenberg scale)
2. **Big Five Inventory** (10 item short form):
 - **Extraversion** (talkative, assertive, energetic)
 - **Agreeableness** (good-natured, cooperative, trustful)
 - **Conscientiousness** (orderly, responsible, dependable)
 - **Neuroticism** (anxious, hostile, easily upset)
 - **Openness** (imaginative, excitable, curious)

Controls: Interviewer's sex, age, experience in years, and education

Controls: Respondent's sex and age

Analytical setup

1. **Binary probit regression** of the likelihood of being interviewed on interviewer physical attractiveness + controls
2. For those interviewed, **OLS regression** of self-rated (1) physical appearance, (2) weight level, and (3) health on interviewer physical attractiveness + controls
(Also regression of “placebo” self-assessments)

Does physical attractiveness
affect response rates?

Results #1

Binary Probit on Probability of interview					
Facial attractiveness	0.082 (0.032)* [0.017]				0.069 (0.036)# [0.014]
Voice attractiveness		0.028 (0.033) [0.006]			0.002 (0.036) [0.0005]
BMI			-0.062 (0.033)# [-0.013]		-0.051 (0.032) [-0.010]
Height				0.029 (0.035) [0.001]	0.013 (0.031) [0.003]
Log-Likelihood	-1,347	-1,350	-1,306	-1,361	-1,291
N (respondents)	3,563	3,563	3,510	3,605	3,468
N (interviewers)	87	87	87	89	85
<i>Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $p < \# 0.10$. Standard errors adjusted for clustering of respondents within interviewers</i>					

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Results #2

- How much of the attractiveness advantage is due to personality? Decomposition analysis:
- **Facial attractiveness**: One-third of total effect is due to personality, especially self-esteem and openness
- **BMI**: Personality explains only one percent; not much here ...

Does interviewer attractiveness
affect survey responses?

Results #2

OLS Regressions of Self-Rated Appearance, Weight Category, and Health					
Model	1	2	3	4	5
Self-Reported Appearance (higher value = more attractive)					
Facial attractiveness	0.042 (0.011)***				0.034 (0.014)*
Voice attractiveness		0.017 (0.014)			0.002 (0.015)
BMI			-0.026 (0.013)*		-0.019 (0.012)
Height				0.026 (0.001)*	0.018 (0.010)#
Self-Reported Weight Category (higher value = lighter)					
Facial attractiveness	0.036 (0.016)*				0.038 (0.019)#
Voice attractiveness		0.002 (0.020)			-0.016 (0.022)
BMI			-0.063 (0.013)***		-0.059 (0.013)***
Height				-0.007 (0.021)	-0.018 (0.020)
Self-Reported Health (higher value = healthier)					
Facial attractiveness	0.013 (0.019)				0.005 (0.019)
Voice attractiveness		0.004 (0.023)			-0.002 (0.025)
BMI			-0.029 (0.020)		-0.027 (0.019)
Height				0.032 (0.016)*	0.029 (0.014)*
Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $p < \# 0.10$. Standard errors adjusted for clustering of respondents within interviewers					

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Height				-0.007 (0.021)	-0.018 (0.020)
Self-Reported Health (higher value = healthier)					
Facial attractiveness	0.013 (0.019)				0.005 (0.019)
Voice attractiveness		0.004 (0.023)			-0.002 (0.025)
BMI			-0.029 (0.020)		-0.027 (0.019)
Height				0.032 (0.016)*	0.029 (0.014)*

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, # $p < 0.10$. Standard errors adjusted for clustering of respondents within interviewers

... and what about self-ratings
unrelated to appearance?

Results #3

Model	1	2	3	4	5
Happiness					
Facial attractiveness	-0.037 (0.029)				-0.028 (0.033)
Voice attractiveness		-0.029 (0.032)			-0.022 (0.033)
BMI			0.025 (0.038)		0.021 (0.036)
Height				0.028 (0.027)	0.035 (0.026)
Self-Esteem					
Facial attractiveness	0.075 (0.084)				0.098 (0.093)
Voice attractiveness		-0.099 (0.106)			-0.144 (0.124)
BMI			-0.028 (0.098)		-0.121 (0.094)
Height				-0.071 (0.080)	0.047 (0.080)
Locus of Control					
Facial attractiveness	-0.037 (0.023)				-0.026 (0.029)
Voice attractiveness		-0.020 (0.023)			-0.010 (0.024)
BMI			0.029 (0.023)		0.025 (0.023)
Height				-0.011 (0.017)	-0.004 (0.021)
Risk Attitudes					
Facial attractiveness	-0.116 (0.071)				-0.074 (0.074)
Voice attractiveness		-0.102 (0.061)			-0.080 (0.055)
BMI			-0.024 (0.079)		-0.045 (0.075)
Height				-0.072 (0.059)	-0.057 (0.055)

Nada!

Conclusions #1

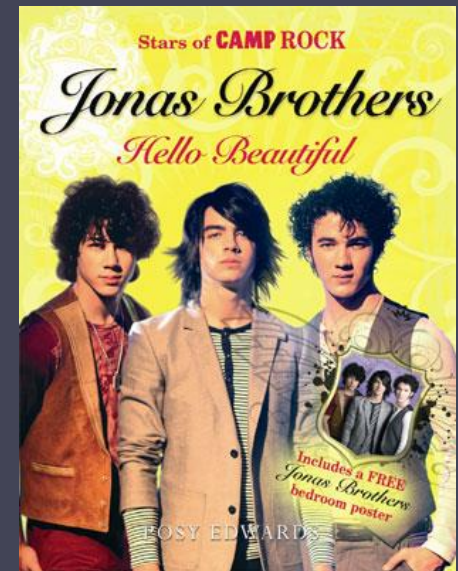
- Interviewers' physical attractiveness (facial attractiveness and BMI) has a **positive effect on cooperation rates**
- **Differences in personality traits** explain one-third of the positive effect of facial attractiveness on response rates
- Two reasons why more attractive interviewers are more successful are that they have **higher self-esteem** and are **more open**

Conclusions #2

- Interviewers' physical attractiveness affects **survey responses related to physical appearance**
- **Results consistent with social desirability bias** → Respondents (un)consciously modify answers to reflect the interviewer's appearance
- **No effect of interviewer attractiveness on self-reports not related to physical appearance**; suggests (to me that) social desirability is mechanism

Conclusions #3

- Estimates of effect of physical attractiveness are **lower bound** because:
 1. There is only little variation between interviewers wrt. age (mean age 62.7)
 2. There is an age mismatch between interviewers (mean age 62.7) and respondents (mean age 27.8) → Respondents would probably have been affected more strongly by *hot* young interviewers ... ?



Limitations + Future

- **Small sample of interviewers** ($N = 93$); low statistical power
- **External validity**: DLSY-C respondents come from families that have participated in long-running study (can be addressed by taking into account how long parents [and grandparents] participated in DLSY)
- **Future**: (1) Re-do ratings of interviewers' attractiveness with new panel to assess validity; (2) Re-do rating w. combined photos + voices to test for real-life impression effects (you meet a person and a voice IRL; maybe bigger effects)

Thank you for your attention!