

*Authors: Philipp Sischka, Alexandra Mergener, Kristina Neufang & Jean Philippe Décieux*

## **Forced answering in online surveys: Is it really a reactance effect that reduces data quality?**

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**Session 6: Interviewer effects and measurement errors – further discussions**

# The forced answering (FA)-option

The FA (or forced response) option forces the respondent to answer or enter a response to each single item.

- Items cannot be skipped without answering
- Rationale: No missing data

This question is very important. Please respond to the question.

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How many sexual partners did you have in your life?

Continue

The screenshot shows a survey interface. At the top, a light red banner contains the text "This question is very important. Please respond to the question." Below this is a horizontal line. The question "How many sexual partners did you have in your life?" is displayed in a light red banner. Underneath the question is a text input field. At the bottom right of the form area is a "Continue" button.

# State of the art

## Effects of FA on different quality parameters

- Less item-nonresponse (Albaum et al., 2010, 2011; Roster et al., 2014)
- Inconclusive results for FA on dropouts
  - No effects on dropouts (Albaum et al., 2010, 2011; Roster et al., 2014)
  - Higher dropouts (Décieux et al., 2015a, O'Neil, Penrod & Bornstein 2003; Stieger et al. 2007)
  - Earlier dropouts (Décieux et al., 2015b; Mergener et al., 2015)
- Decrease of validity of answers (Décieux et al., 2015a)

# Psychological explanation?

## **Reactance effect**

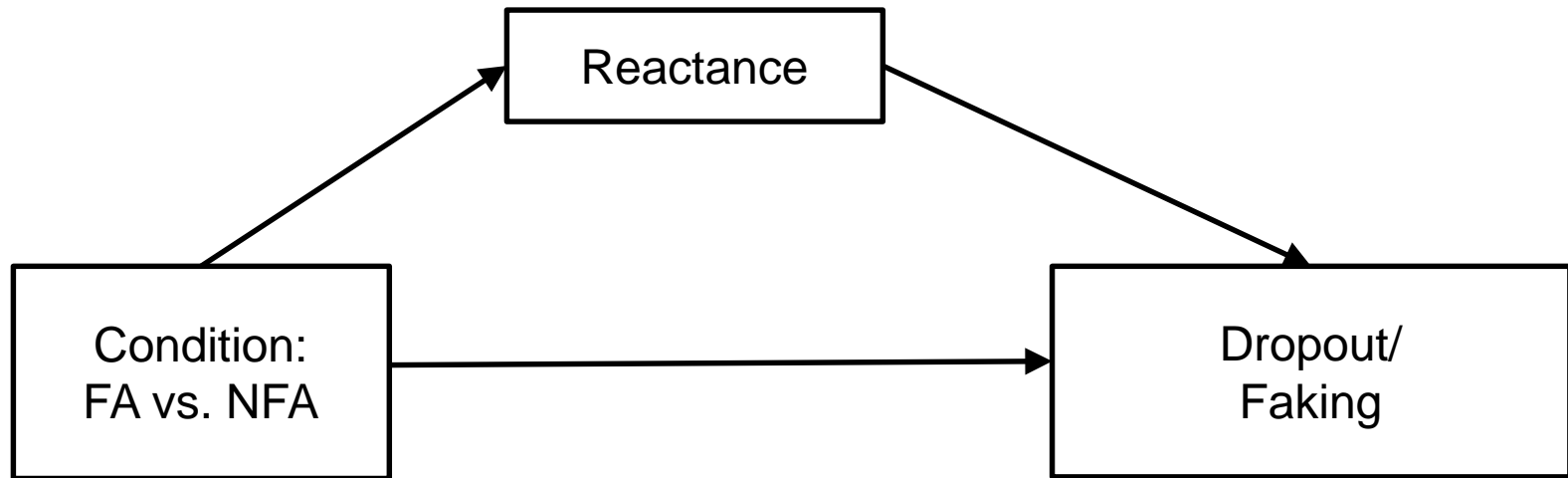
- Reactance appears when an individual's freedom is threatened and cannot be directly restored (Brehm, 1966).
- Individual freedom refers to all subjectively perceived alternatives, actions, opinions, and beliefs.
- In case this personal freedom is restricted, individuals feel pressured.
- Reactance defines the motivation to restore this loss of freedom.

# Psychological explanation?

## FA & reactance

- FA conditions can be conceived of as an induction of reactance because the respondent is denied the choice to leave a question unanswered.
- The FA scenario should result in an internal pressure to disclose information that respondents might not want to reveal.
- The effect may be exacerbated when sensitive or personal topics are concerned.
- Therefore, the FA option should be experienced by the respondent as a loss of freedom.

# Theoretical model



# Study design

## Sample overview

- Students at two German universities (contacted via e-mail)
- Effective sample:  $N = 914$
- Age:  $M = 26.1$  years,  $SD = 6.6$
- Sex: 54.7% females ( $n = 498$ )

## Survey design

- Randomization across two experimental conditions (NFA vs. FA)
- Cover story / survey topic: partnership and sexuality
- 68 items with different types of response formats (Likert-items, open-end questions, etc.)
- Median response time = 9.4 minutes
- no incentives

# Survey design (I)

## FA condition

- „You have to answer each question to reach the next page.“

Nun folgen detailliertere Fragen zu Partnerschaft und Sexualität.

Sie **müssen jede Frage beantworten**, um zur nächsten Seite zu gelangen.

Bitte beantworten Sie möglichst alle Fragen wahrheitsgemäß.

Wenn Sie die Befragung abbrechen möchten, nutzen Sie bitten den Button **„Umfrage abbrechen“**

## NFA condition

- „If you do not want to answer a question, you can skip it, without giving an answer.“

Nun folgen detailliertere Fragen zu Partnerschaft und Sexualität.

Wenn Sie eine Frage nicht beantworten wollen, können Sie diese auch **überspringen** ohne sie zu beantworten und **zur nächsten Frage wechseln**.

Bitte beantworten Sie möglichst alle Fragen wahrheitsgemäß.

Wenn Sie die Befragung abbrechen möchten, nutzen Sie bitten den Button **„Umfrage abbrechen“**



# Survey design (II)

## Dropout-Button

Umfrage abbrechen

Wie lange leben Sie schon in dieser Partnerschaft?

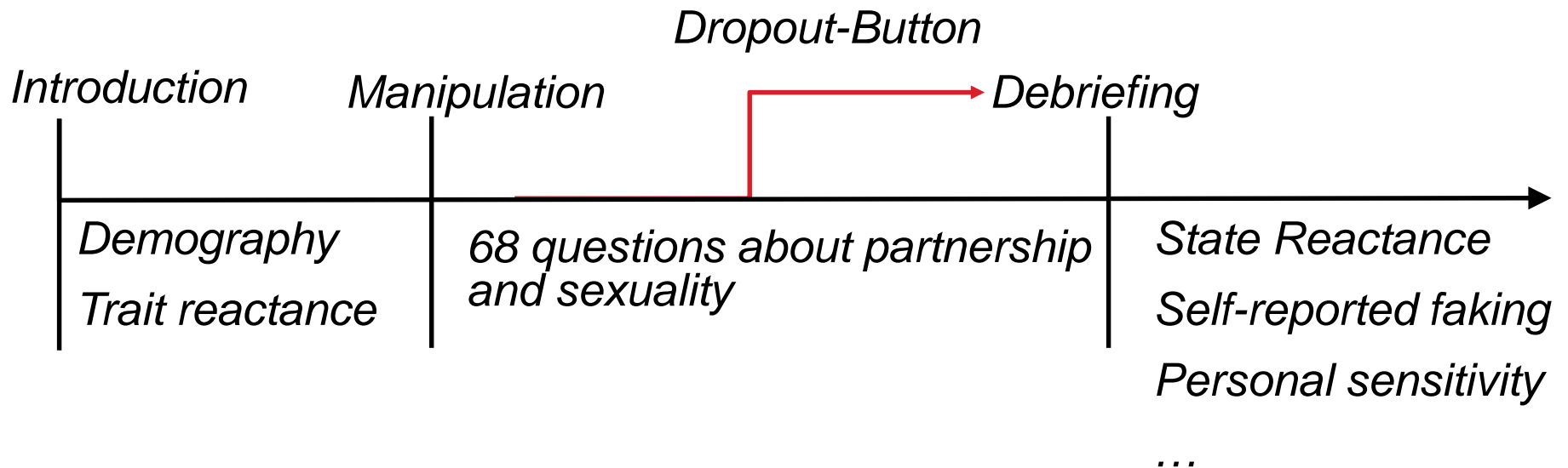
- Weniger als 1 Jahr
- 1 bis unter 2 Jahre
- 2 bis unter 5 Jahre
- 5 bis unter 10 Jahre
- 10 und mehr Jahre

Weiter

# Measures

- **Trait reactance** (assessed prior to the experimental manipulation):
  - 18 item scale (Merz, 1983) ( $\alpha = .84$ )
  - Sample item: „ I become frustrated when I am unable to make free and independent decisions“. Answer categories from 1 to 5
- **State reactance**:
  - 4 item scale ( $\alpha = .70$ )
  - Sample item: „The questionnaire made me angry“. Answer categories from 1 to 5
- **Faking**:
  - „How many questions did you not answer honestly?“
- **Personal sensitivity**
  - “How personally sensitive did you find the questions in this survey?”

# Questionnaire structure



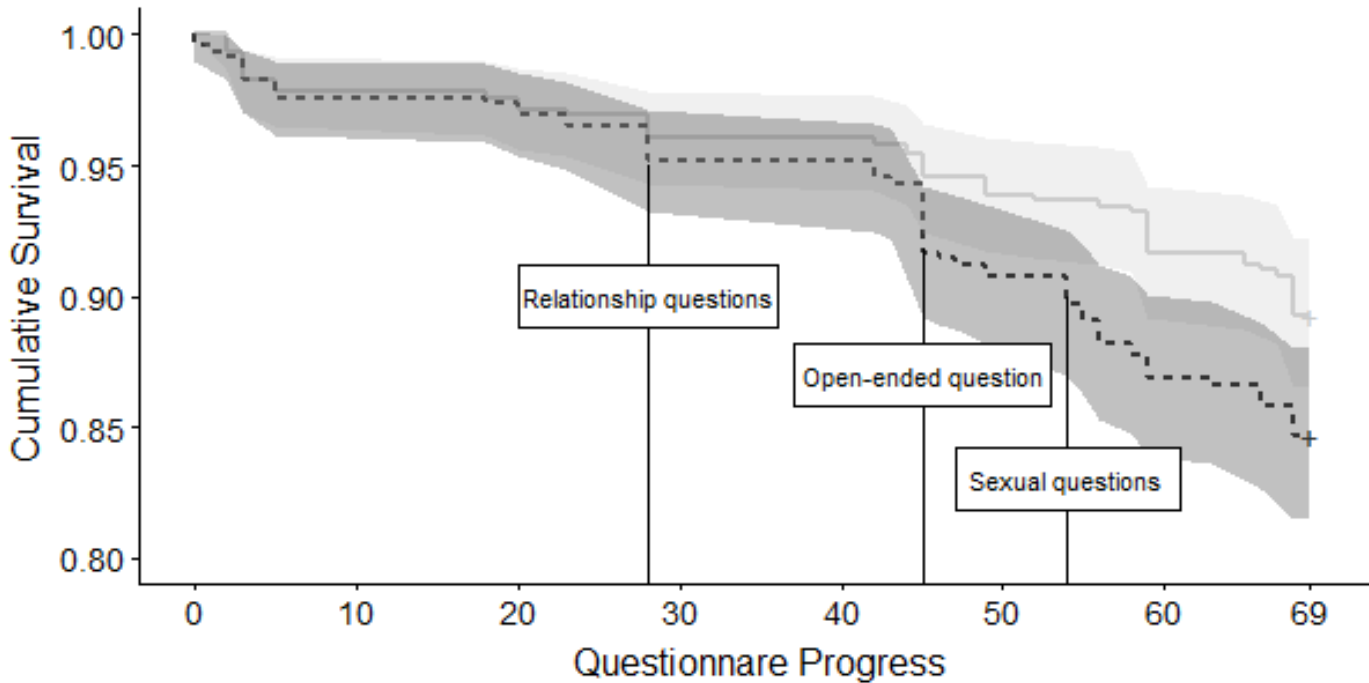
# Results (I): Descriptives & intercorrelations

	<i>M</i>	<i>SD</i>	2.	3.	4.	5.	6.	7.	8.	9.
1. Sex <sup>a</sup>	45.3%	-	.17***	.02	.04	.05	.10**	.11***	.03	-.01
males			[.11; .24]	[-.04; .09]	[-.03; .10]	[-.02; .12]	[.04; .17]	[.05; .18]	[-.04; .10]	[-.08; .06]
2. Age	26.06	6.63		.01	.10**	.09*	-.05	-.05	-.05	-.15***
				[-.05; .08]	[.04; .17]	[.02; .16]	[-.11; .02]	[-.11; .02]	[-.12; .02]	[-.22; -.08]
3. Condition <sup>a</sup>	-	-			-.01	.08*	.07*	-.03	.00	.03
					[-.07; .06]	[.01; .15]	[.00; .13]	[-.09; .04]	[-.06; .07]	[-.04; .10]
4. Trait	3.10	0.55				.13***	-.03	-.07*	-.03	-.05
Reactance						[.07; .20]	[-.09; .04]	[-.13; .00]	[-.10; .03]	[-.12; .01]
5. State	1.77	0.65					.22***	.06	.10**	.03
Reactance							[.15; .28]	[-.01; .12]	[.03; .17]	[-.04; .10]
6. Dropout <sup>a</sup>	13.0%	-						.73***	.01	-.01
dropouts								[.69; .76]	[-.06; .08]	[-.08; .06]
7. Items-	4.50	13.22							-.03	-.13***
Missing									[-.10; .04]	[-.20; -.06]
8. Faking <sup>a</sup>	25.7%	-								.07*
faking										[.00; .14]
9. Personal	4.09	1.04								
Sensitivity										

# Results (II): Survival analysis

Survival Curves

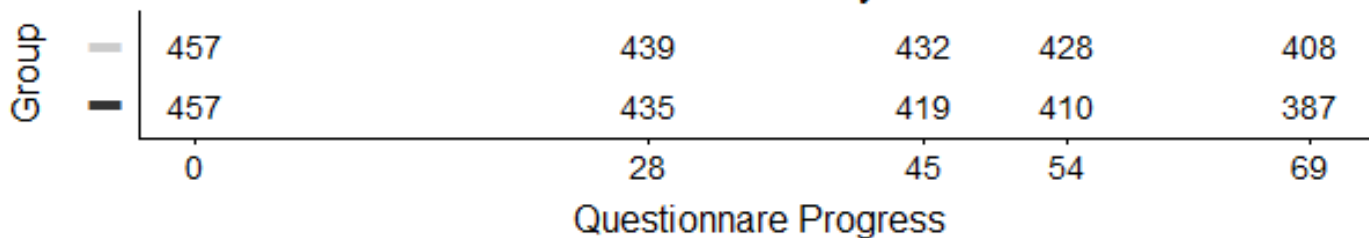
Group — NFA — FA



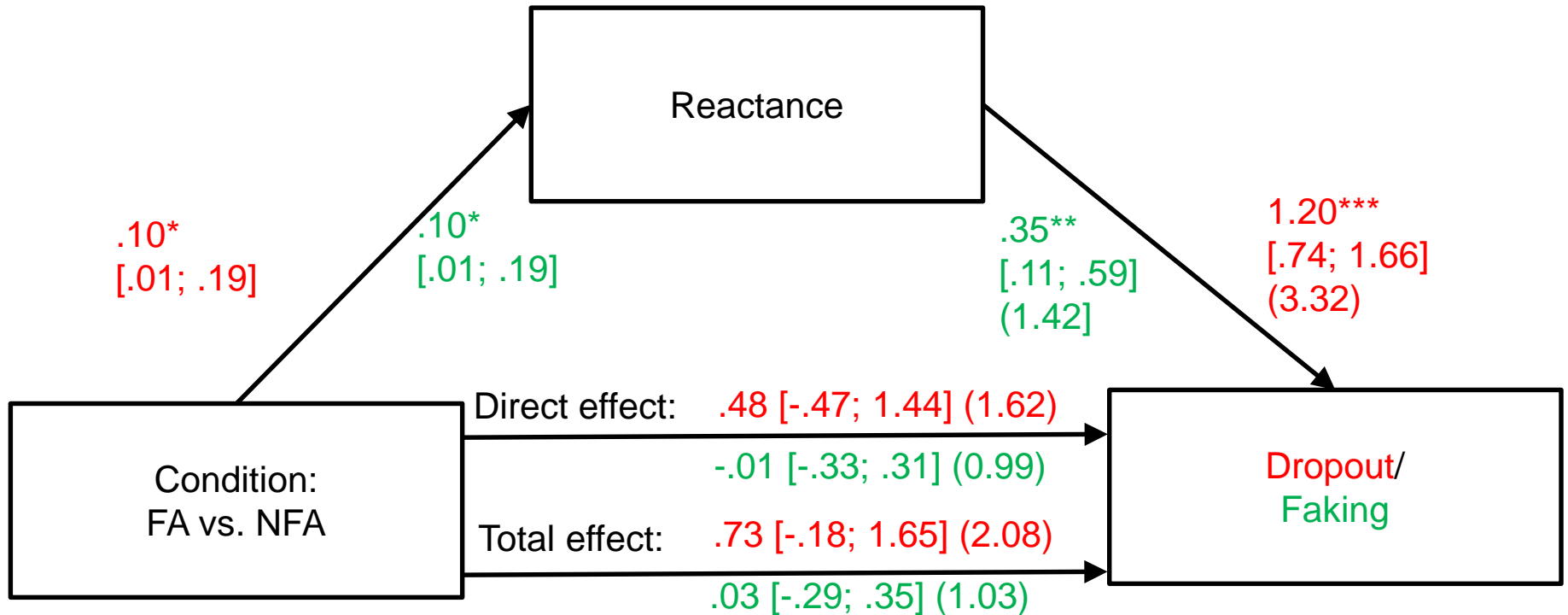
Log-Rank-Test:  
 $\chi^2=4.3, df=1, p < .05$

Cox regression:  
 HR = 1.47;  
 95% CI [1.02; 2.11]

Number at risk by time



# Results (III): Mediation analysis



Bootstrap results (10.000 samples) for indirect effects (95 % CI):

$.12^*$  (.02; .28)

$.04^*$  (.00; .09)

# Results (IV): Open-ended question

- Open-ended answers were coded in two categories
  - semantically meaningful vs. semantically non-meaningful answers
  - two coders, Krippendorff's  $\alpha = .97$  (Hayes, & Krippendorff, 2007)
- More non-meaningful answers in FA condition
  - NFA: 0.8%,
  - FA: 3.6%,
  - $r = .09$ ,  $p = .027$ , OR =4.62, 95% CI [1.29; 29.49]
- Respondents in the FA condition gave shorter answers
  - number of signs that had been filled in;
  - NFA:  $M = 74.3$ ,  $SD = 67.5$ ;
  - FA:  $M = 54.2$ ,  $SD = 56.6$ ;
  - $t(456.82) = 3.91$ ;  $d = 0.31$ , 95% CI [0.16; 0.47]

# Discussion

## Limitations

- Reactance was measured after dropout
- Correlational test of mediation
- Convenience sample (student population)

## Summary & conclusion

- point-biserial correlations are low, but odds ratios are high
- First support for postulated mediation model: reactance as underlying psychological mechanism
- FA leads to satisfying behaviour





# **Thank you for your attention!**

Email: [philipp.sischka@uni.lu](mailto:philipp.sischka@uni.lu)

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# Appendix (I): Cumulative Complete Data

