

# Respondents' behavior in web surveys: Comparing positioning effects of a scale on impulsive behavior

## BACKGROUND – POSITION EFFECTS

- The quality of data in surveys is affected by questionnaire length
- Accurate responses can only be expected when respondents carefully and thoroughly answer the questionnaire
- Respondents' stress and fatigue increase with length of the interview/questionnaire (Groves et al. 1999; Singer et al., 1999; Hoogendoorn, 2004; Krosnick & Presser, 2010)
- Respondents' motivation and effort expended on cognitive processing decreases
- Increased risk of showing satisficing response behavior
- Data quality is lower for questions positioned later in a questionnaire
  - leading to higher rates of don't know (Krosnick et al., 2002)
  - uniform answers / less differentiation (Herzog and Bachmann, 1981)
  - shorter response times



## RESEARCH QUESTIONS AND HYPOTHESES

1. What effects do variations in question positioning within the questionnaire have on data quality?
2. Does positioning influence the depth of processing?

### Hypotheses:

- Data quality will be lower when the question is asked later rather than earlier in the questionnaire
- Later positioning may negatively affect respondents' motivation to invest a lot of effort in answering

### Indicators:

- Item nonresponse
- Response times
- Response differentiation
- Measures of attention and cognitive effort (fixation times & fixation counts)

## METHODS & DATA

### STUDY 1

- Lab experiment (n=131)
- Field phase: April 10<sup>th</sup> to May 22<sup>nd</sup> 2017
- Experimental question: grid question with 8 items on impulsive behavior (using a 5-point unipolar agreement scale, Kovaleva et al., 2014; Whiteside & Lynam, 2001)
- Between-subjects design with random assignment
- Respondents: 50% female; Age 18-34: 65%, 35-54: 22%, 55+: 13%; Years of schooling: 10 years or less: 29%, 12 years or more: 71%

### STUDY 2

- Web survey (n=869)
- Field phase: November 15<sup>th</sup> to November 20<sup>th</sup> 2018
- Experimental question: grid question with 8 items on impulsive behavior (using a 5-point unipolar agreement scale, Kovaleva et al., 2014; Whiteside & Lynam, 2001)
- Between-subjects design with random assignment
- Respondents: 50% female; Age 18-34: 34%, 35-54: 33%, 55+: 33%; Years of schooling: 10 years or less: 51%, 12 years or more: 49%

### Experimental design:

“Start” – Grid after 2 warm-up questions – mean duration questionnaire 44 seconds  
 “End” – Grid before socio-demographics – mean duration questionnaire 29 minutes



### Experimental design:

“Start” – Grid after socio-demographics and 2 warm-up questions (4 pages, 5 Items)  
 “End” – Grid before Evaluation (27 pages, 42 Items)

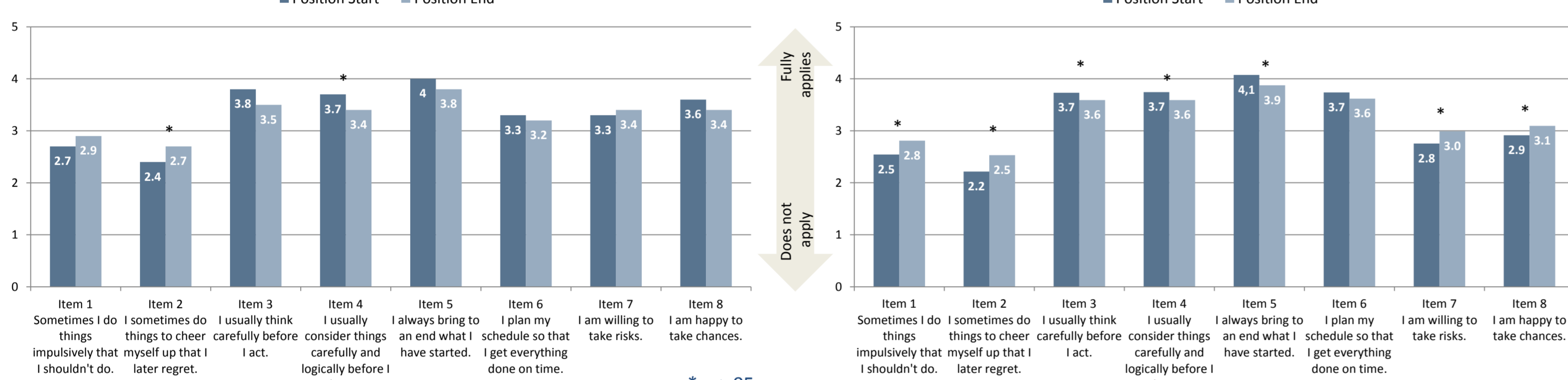


## RESULTS

### Response Distribution and Nonresponse

#### Eye Tracking – Study 1

#### Web Survey – Study 2



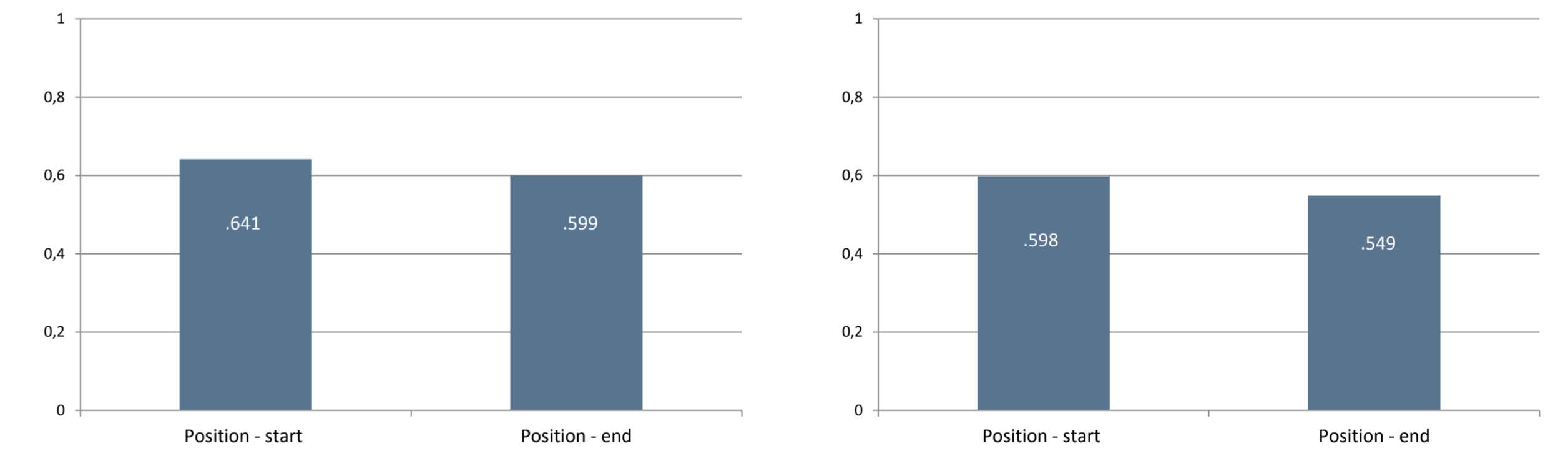
➔ No item nonresponse!

Nonresponse %	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8
Start	-	.91	.91	.68	.46	-	-	-
End	-	.70	.47	.23	.23	-	.70	-

### Response Differentiation

#### Eye Tracking – Study 1

#### Web Survey – Study 2



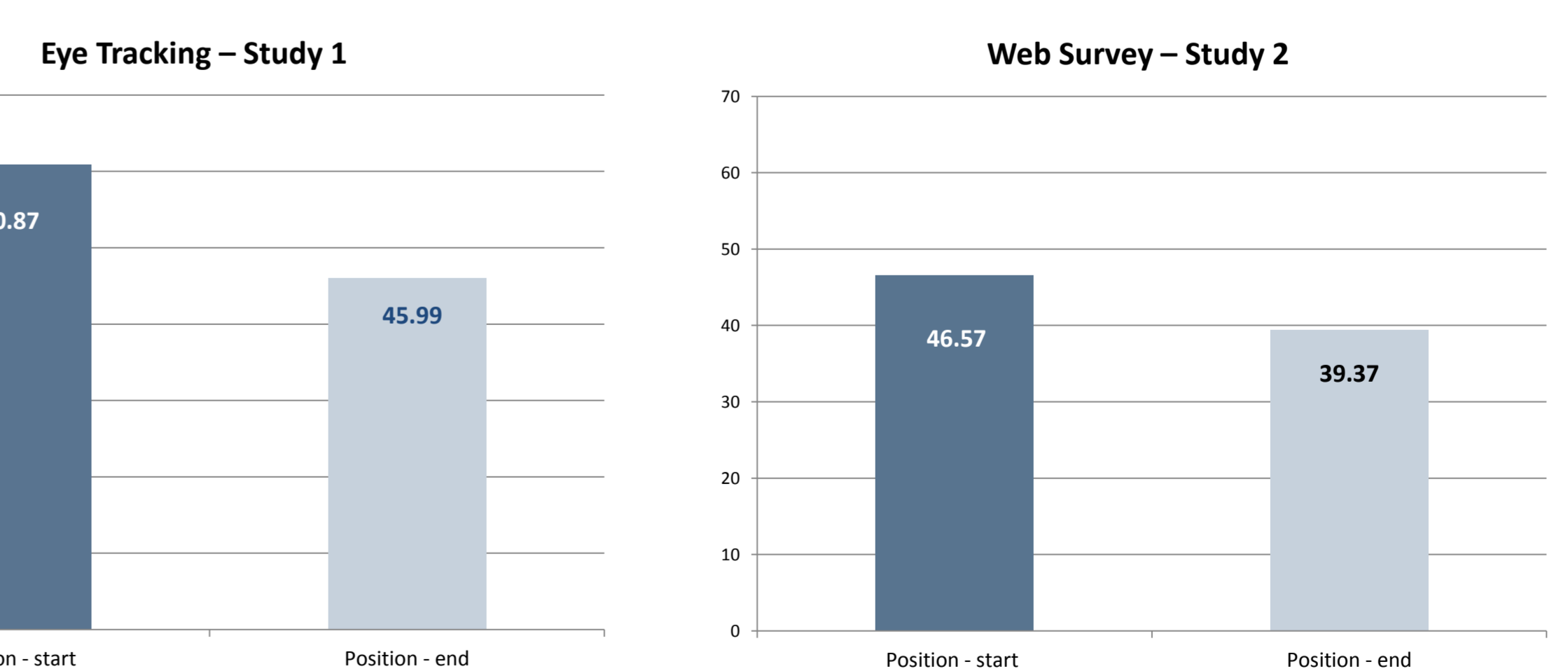
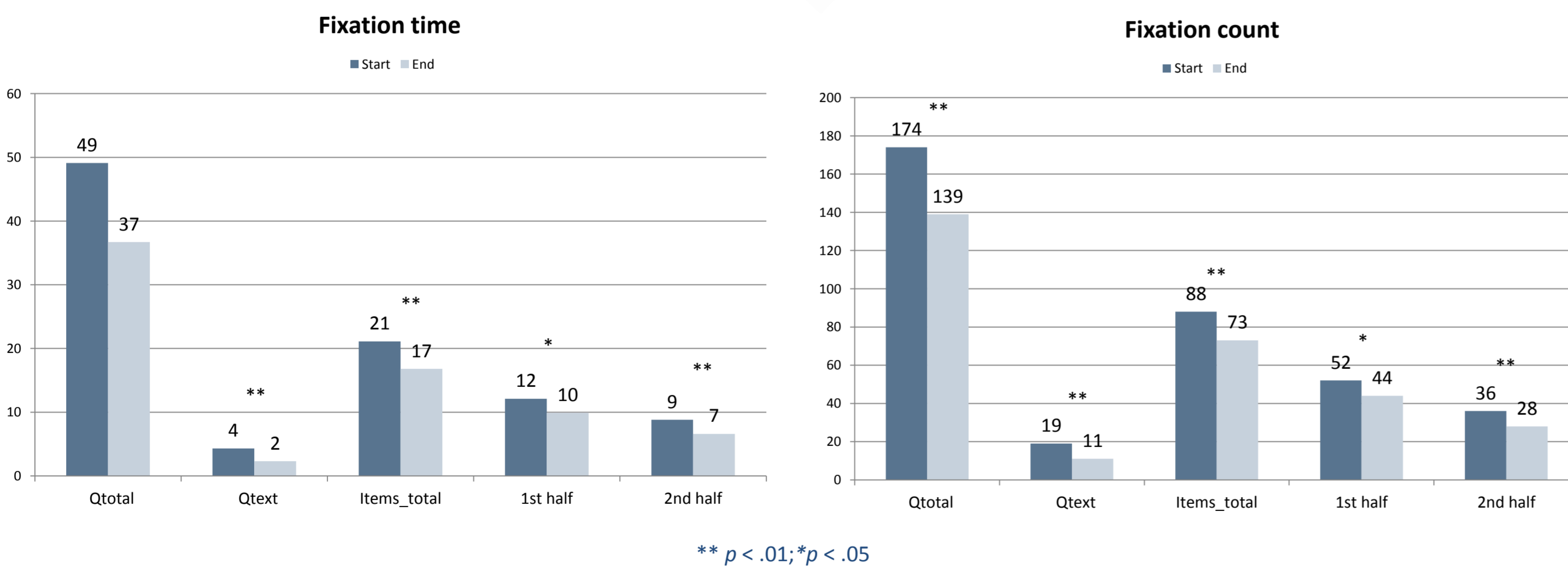
▪ Degree of differentiation  $P_d$  (McCarty & Shrum, 2000)

### Cognitive Effort and Attention – Eye Tracking Study 1

### Response Times

#### Eye movements Cognitive processing

#### In seconds



## CONCLUSION

- Data quality is lower for questions positioned later in a questionnaire (even in short surveys)
  - Less item differentiation
  - Shorter response times
  - Less fixation time, fewer fixation counts = less effort
- Caution should be employed when deciding on the position of a question within a survey, bearing in mind the potential losses in data quality as respondents progress through the survey

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