

# Using web probing to understand the cognitive processes underlying respondents' behavior when confronted with check-all and forced-choice questions?

## Background

- In **check-all-that-apply** questions respondents are typically presented with a list of multiple items and are asked to mark all that apply to them
- In **forced-choice** questions the response options are presented as a series of "yes/no" questions and the respondent explicitly indicates for each item whether it applies or not
- The two formats do not produce comparable results:
  - In forced-choice questions the **mean number** of response options marked with "yes" is **higher** than the mean number of response options marked affirmatively in check-all questions (Rasinsky et al., 1994; Smyth et al., 2006; 2008; Thomas/Klein, 2006)
  - Higher endorsement has been replicated across different **types of questions, countries and languages**, and **survey modes** (Nicolaas et al., 2011; Thomas & Klein, 2006; Tsuchiya & Hirai, 2010; Smyth et al., 2006, 2008)
  - The **response task** and subsequently the **strategies of respondents for answering** are fundamentally different when responding to questions either in a check-all or in a forced-choice format

## Research Questions:

- Can web probing tell us something about how format effects happen?
- Can web probing be used to understand the differences between check-all and forced-choice question formats?

## Web Probing

- Open and closed probing questions are developed and then implemented into an online questionnaire
- Focus here on response strategies : How respondents answer questions, not on respondents problems
- Benefits:**
  - Time and resources saving recruitment of respondents
  - Realization of larger sample sizes
  - Quantification of results
  - No interviewer effects / more standardization
- Limitations:**
  - Open probes require more effort by respondents

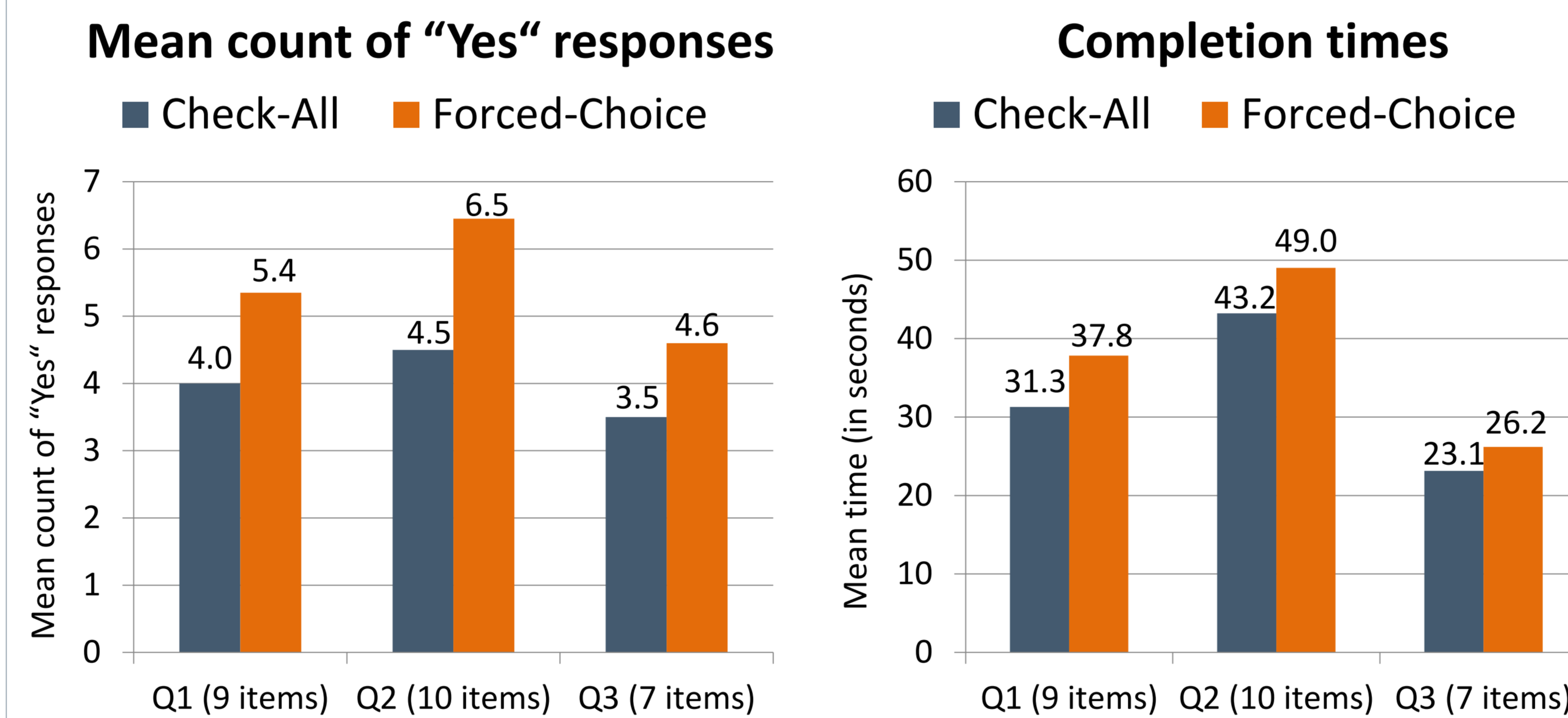
## Experimental Design (I)

- Respondents: N = 475 (236/239),  $M_{age} = 47$ , from 20 to 82
  - randomly assigned to the two response formats
  - not representative of the German population
- Data collection in November 2014

## Experimental Design (II)

Questions	Probes
<b>Q1:</b> Characteristics of a successful relationship (9 items)	<b>General probe :</b> "What did you consider when answering?"
<b>Q2:</b> Considered possibilities of political influence (10 items)	<b>General probe :</b> "What did you consider when answering?" <b>Specific closed probe :</b> "You did not select the item(s) X. Was it because a) you did not noticed it, b) it does not apply to you, c) you were not sure whether it applies, d) for some other reason?"
<b>Q3:</b> Issues respondents worry about (7 items)	
<b>Aimed at =&gt; Understanding the response process</b> <b>=&gt; Understanding the reasons why items are left blank</b>	

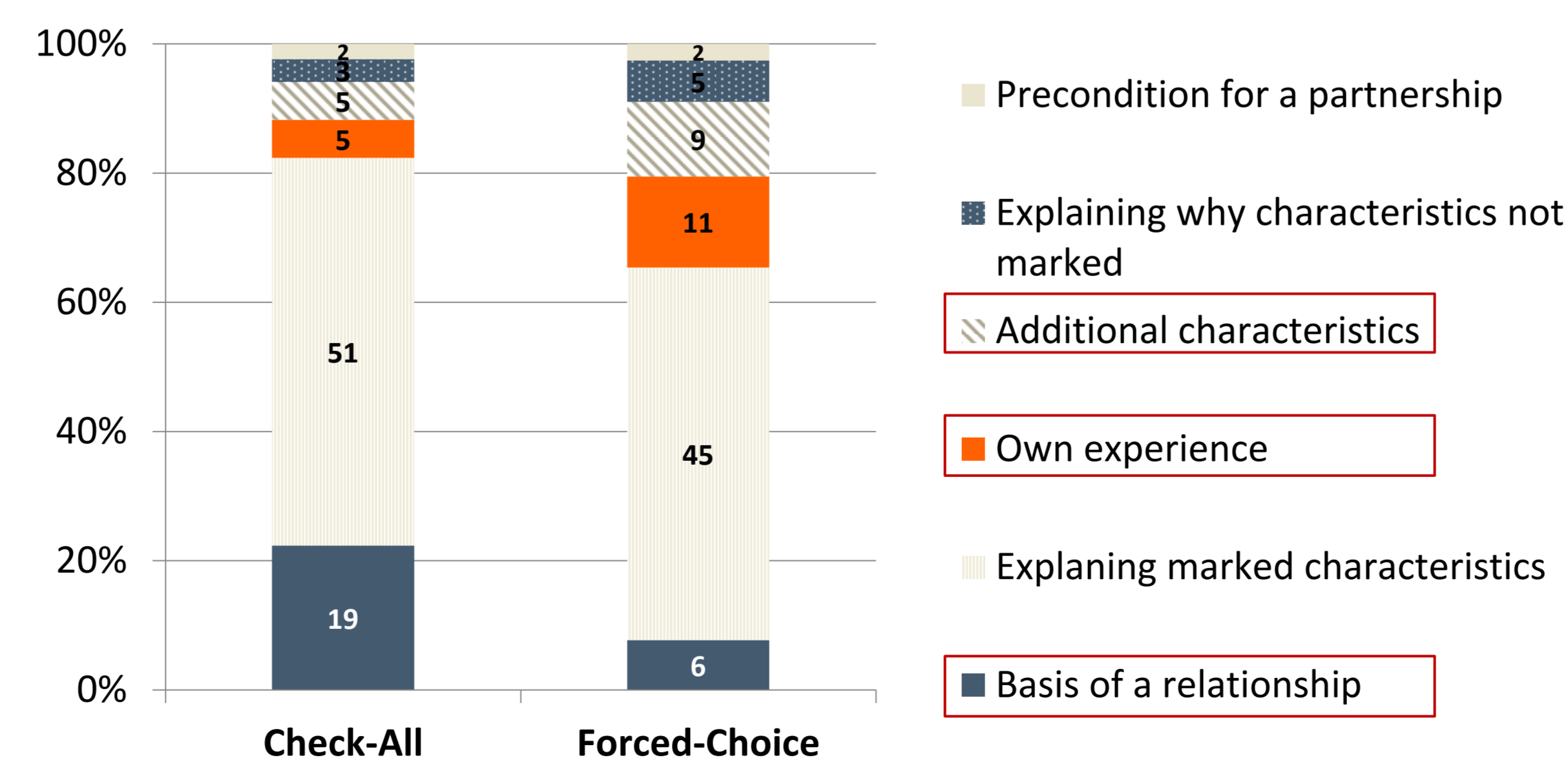
## Results (I)



## Productivity of general probe – across all three questions in %

	Interpretable	Not interpretable	Nonresponse
<b>Check-All</b>	80.5	18.1	1.4
<b>Forced-Choice</b>	74.2	23.0	2.8

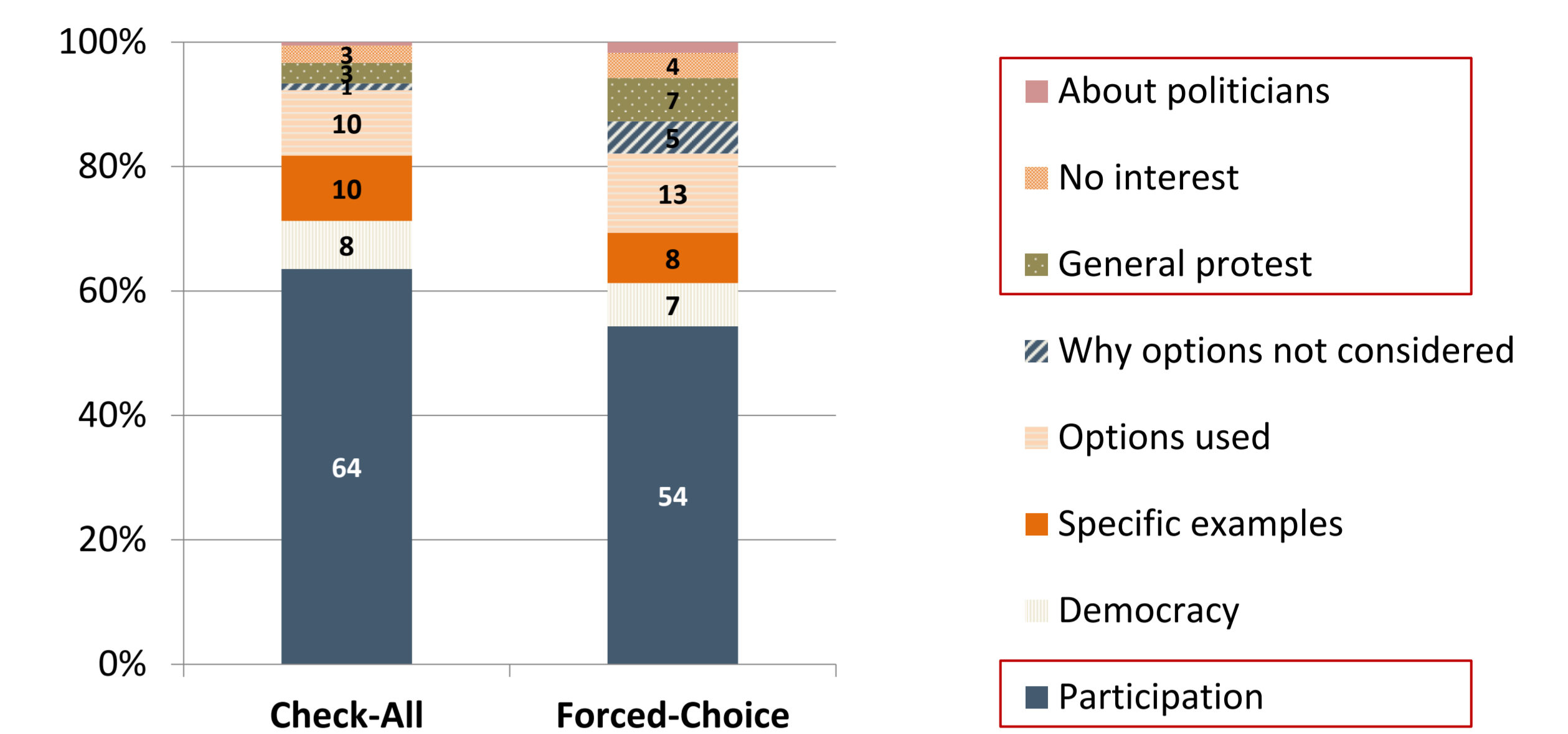
## Patterns of interpretation Q1 – Characteristics relationship



➤ Higher number of characteristics mentioned in forced-choice format: 2.9 vs 5.2

## Results (II)

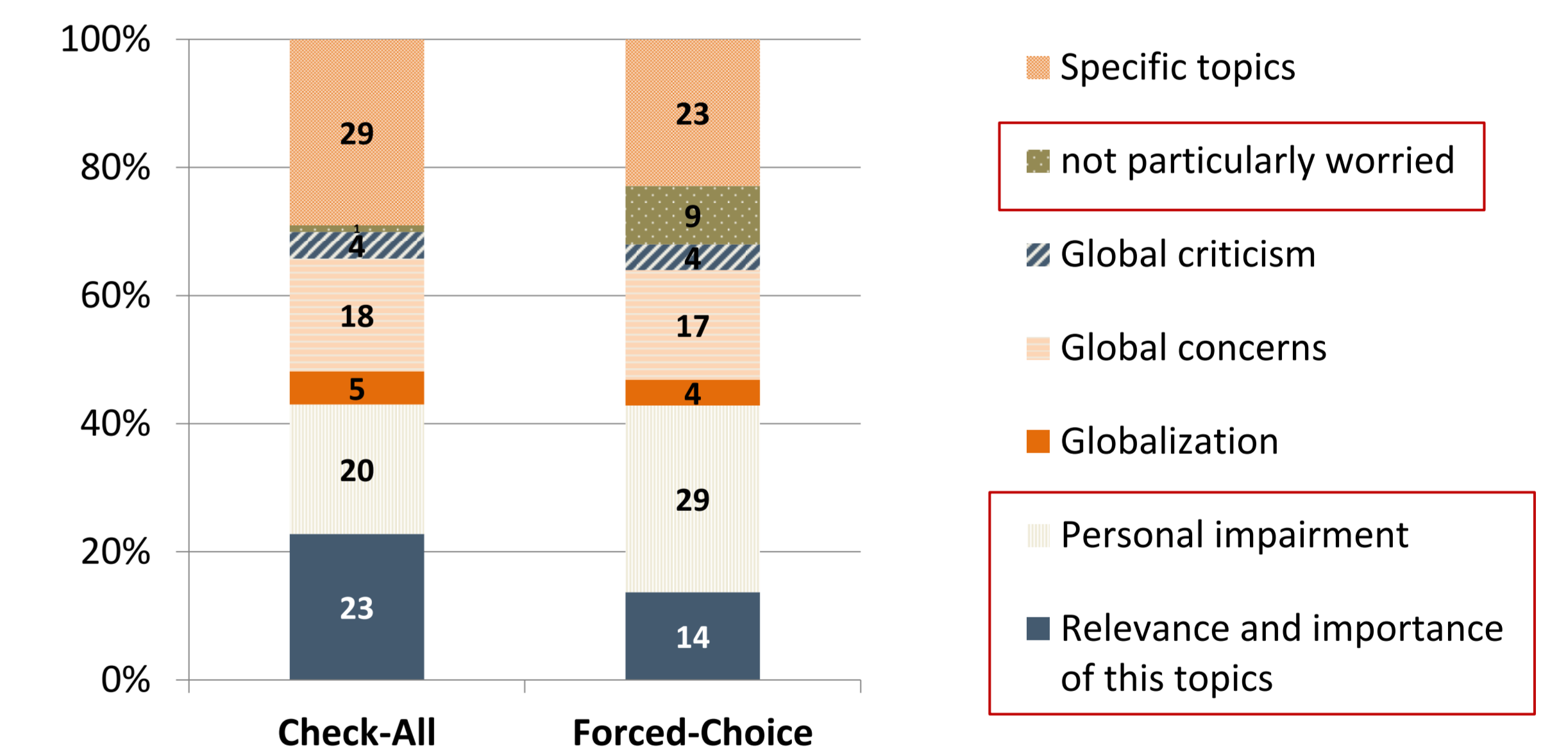
### Patterns of interpretation Q2 – Possibilities of political influence



### Specific probe Q2 – Reasons why items are left blank in %

	Not noticed	Does not apply	Not sure whether it applies	Other reason	No answer
<b>Check-All</b>	2	73	8	14	2
<b>Forced-Choice</b>	13	40	20	28	-

### Patterns of interpretation Q3 – Issues to worry about



## Conclusion

- Insights:**
  - Patterns of interpretation are the same but frequencies differ across formats
  - Reasons for leaving options blank differ across formats
  - Response task is perceived in different ways
- Limitations of web probing:**
  - No one can follow up on incomplete answers, provide clarification
  - Probing is restricted to scripted questions previously programmed
  - 20 % of responses are not interpretable
  - Willingness to answer probes thoughtfully decreases over time

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