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Do Attention Checks Work in Removing Thoughtless Responding?

The Case of Treatment Effects

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Attention checks

Psychology: Physical labs moved online

Identify respondents who pay insufficient attention

Mancosu et al. 2019
Oppenheimer et al. 2009

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Popularity

Journal of Personality and Social Psychology

2019: 139 articles published:

42%

used attention checks to exclude respondents

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Instructed Attention Check (blunt)

To help us be sure that your computer is working properly with ours, please select “Slightly disagree” below.

- ○ Strongly agree
- ○ Agree
- ○ Slightly agree
- ○ Neither agree nor disagree
- ○ Slightly disagree
- ○ Disagree
- ○ Strongly disagree

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Instructed Attention Check (subtle/trap)

Now, each person has different activities that they like to engage in on a regular basis. Please look at the list below and consider which of the activities you engage in most frequently. In this study, we need you to be able to think through social situations, envisioning how different people act and interact. It is also important for you to read instructions. That's why, if you are reading these instructions, you should only select the last option below (leaving all the others blank) and indicate in the text box that you read the instructions. Thanks.

- ☐ Watching television
- ☐ Cooking food
- ☐ Taking a nap
- ☐ Reading for pleasure
- ☐ Talking to friends on the phone
- ☐ Exercising
- ☐ Commuting long distances
- ☐ Other _____

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Manipulation Check

In this study, you read about referral bonuses for a new email client. Some people read about a scenario in which the reader (i.e., you) was the sender of referral invitations, while other people read about a scenario in which their friend was the sender of referral invitations.

Which scenario did you read about?

- ○ Was the sender of referral invitations
- ○ Friend was the sender of referral invitations

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Seriousness Check

Researchers typically like to limit the data they analyze to only those participants who paid attention to the tasks and answered questions honestly. Researchers would prefer to exclude participants who did not pay close attention throughout or only tried to finish the study as quickly as they could.

Below, we will ask you whether you think your data should be included in the data analysis, meaning that you believe you paid close enough attention to the study. *Your payment does not depend on how you respond. Regardless of your choice, you will receive full payment.*

Please answer honestly. Do you believe that your data should be included in analysis?

- ○ Yes, my data should be included in analysis.
- ○ No, my data should not be included in analysis.

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Data

- 4 laboratories (Stanford, UCSB, UCB, and UVA)
- 20 newly discovered experimental treatment effects
- 100 studies administered (5 replications per finding)
- Administered in non-probability panels between 2015 and 2019
- Each study included an attention check after the experimental procedure had been completed
- 1,500 completed interviews with successful attention checks

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Data

256,607 respondents across 100 data collections

One lab deleted data on all respondents who failed the attention check

So 66 data collections were included

194,433 respondents

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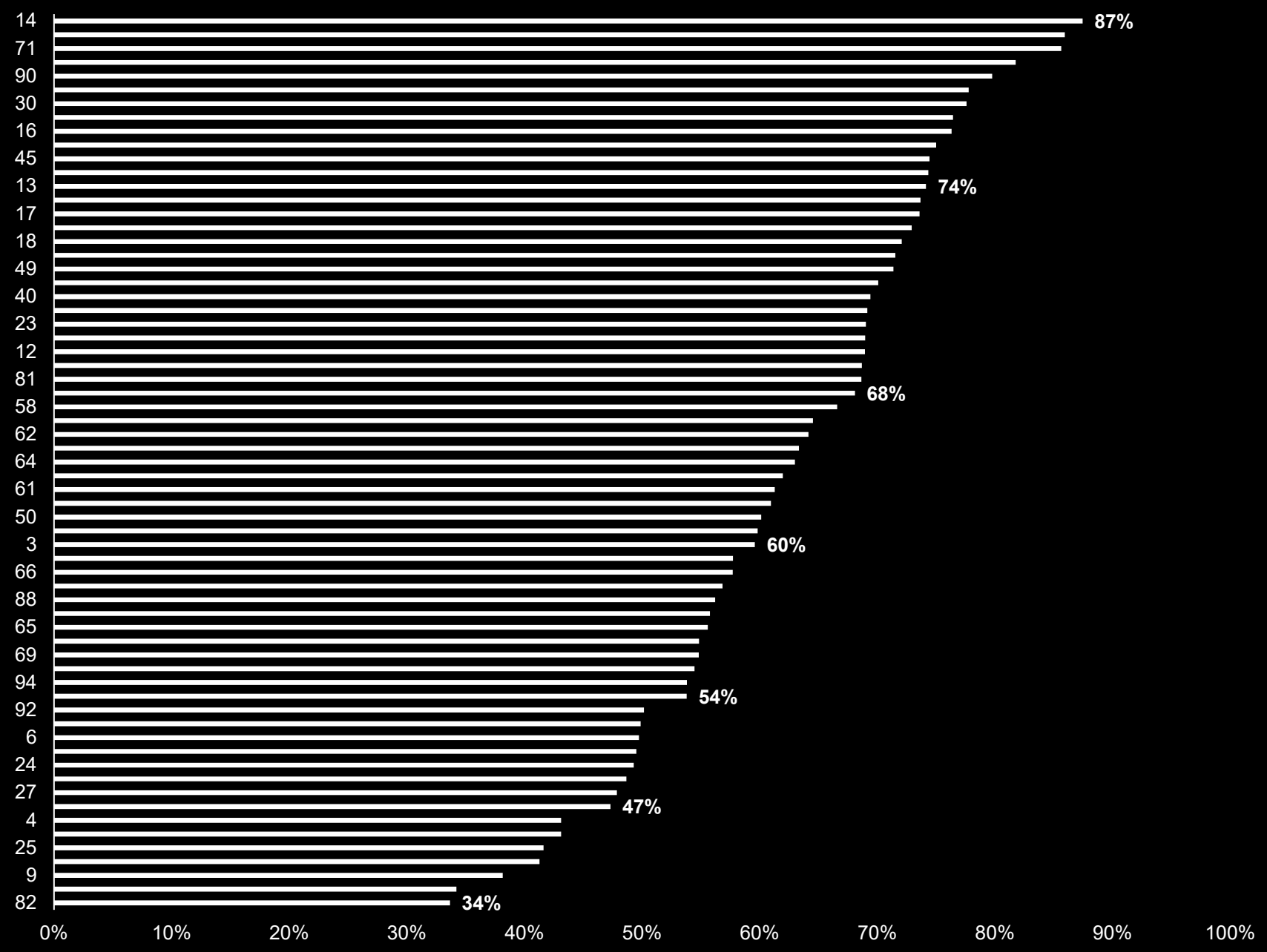
Frequency of Failing Attention Checks

60% of respondents passed (117,314 people)

40% failed (77,089 people)


Percent who passed the attention check(s)
14
71
90
30
16
45
13
17
18
49
40
23
12
81
58
62
64
61
50
3
66
88
65
69
94
92
6
24
27
4
25
9
82
87%
74%
68%
60%
54%
47%
34%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

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Impact on Treatment Effects

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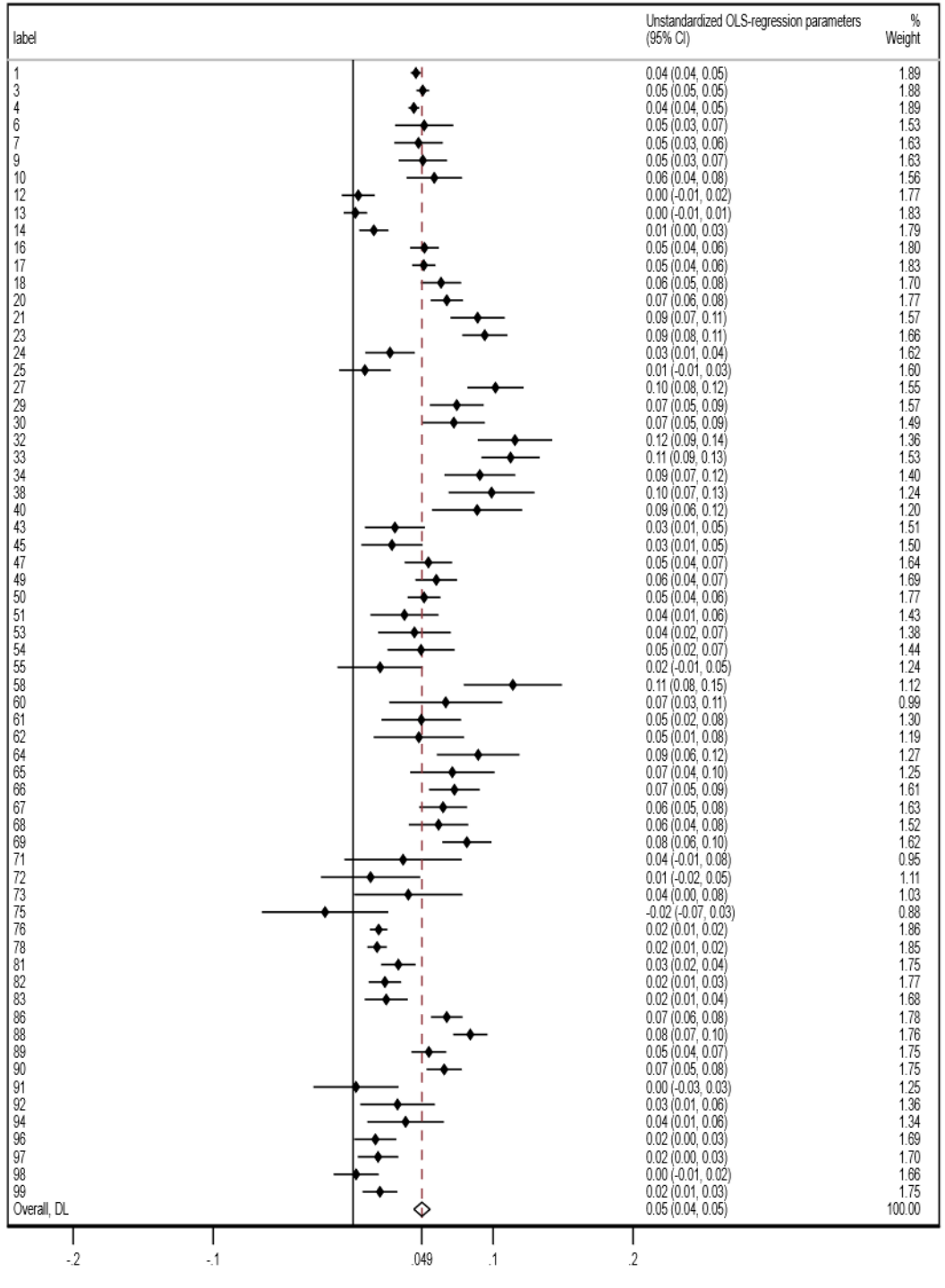
Average Treatment Effect

Passing and failing respondents

b = .05, *p* < *.001*

57 effects significant

9 effects not significant



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Average Treatment Effect

Passing respondents

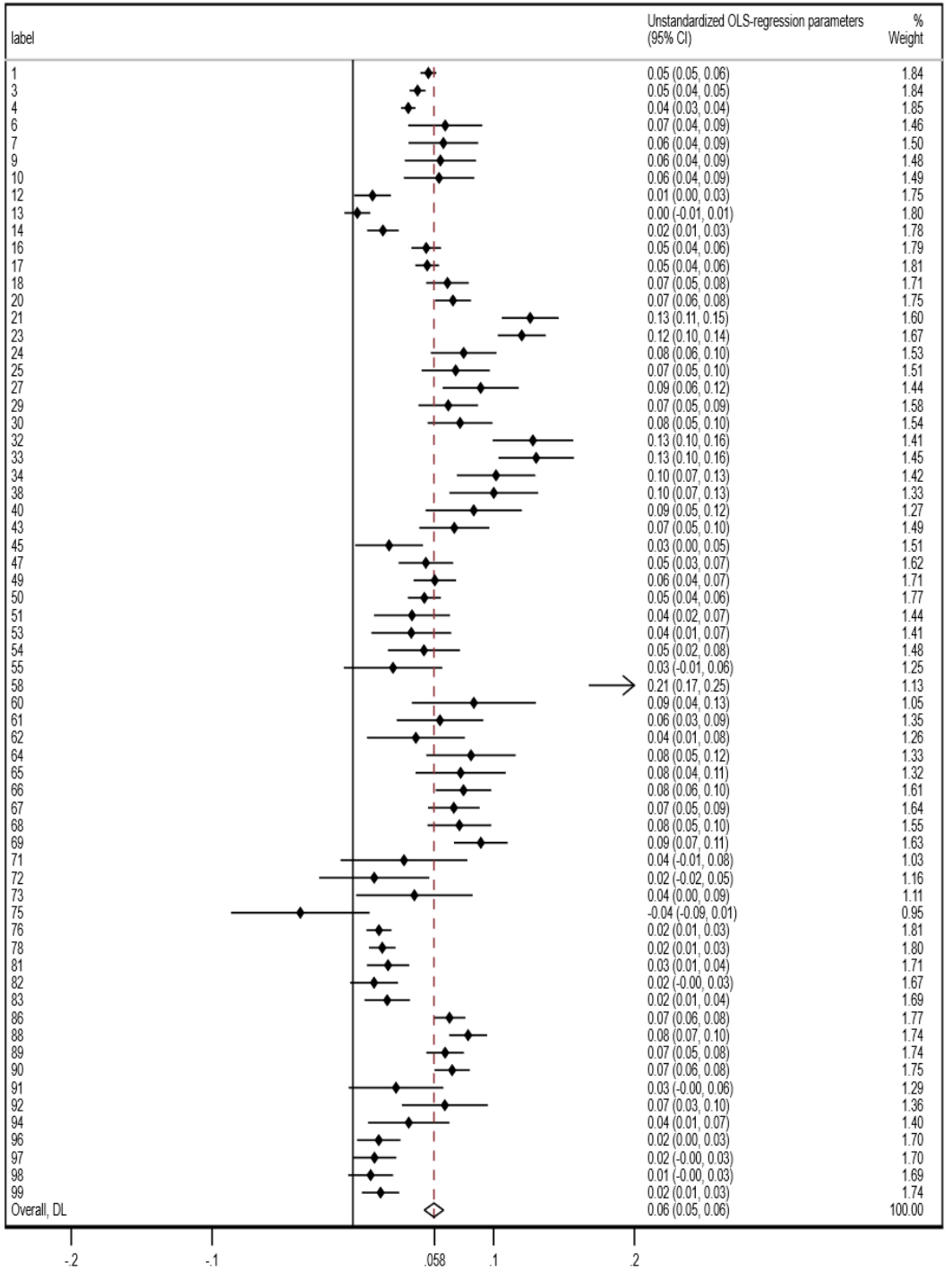
b = .06, *p* < *.001*

Δ b = .01, *p* < *.001*

57 effects significant

9 effects not significant

2 became sig; 2 became non-sig



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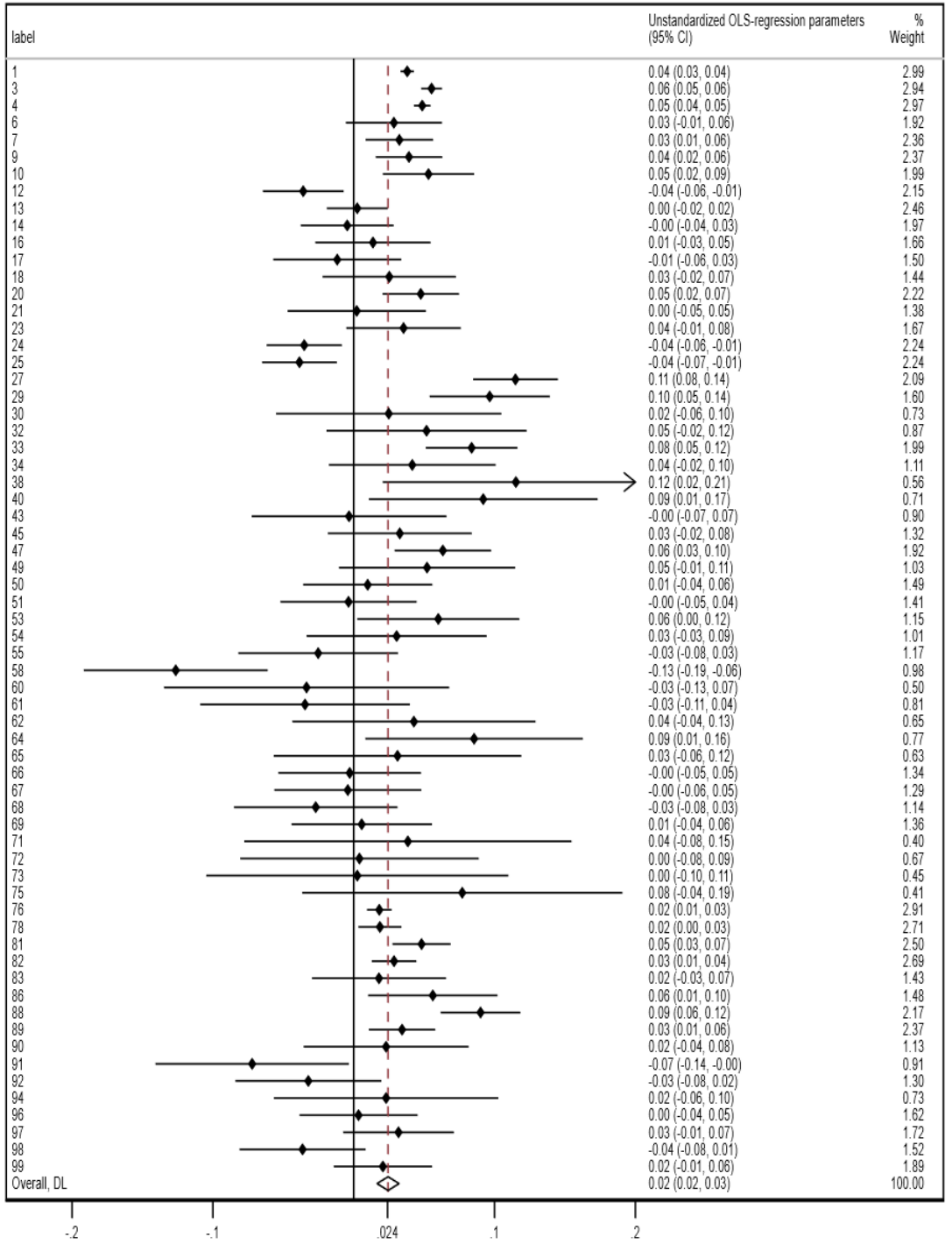
Average Treatment Effect

Failing respondents

b = .02, *p* < .001

22 effects still significant as expected!

5 effects significant and backwards!



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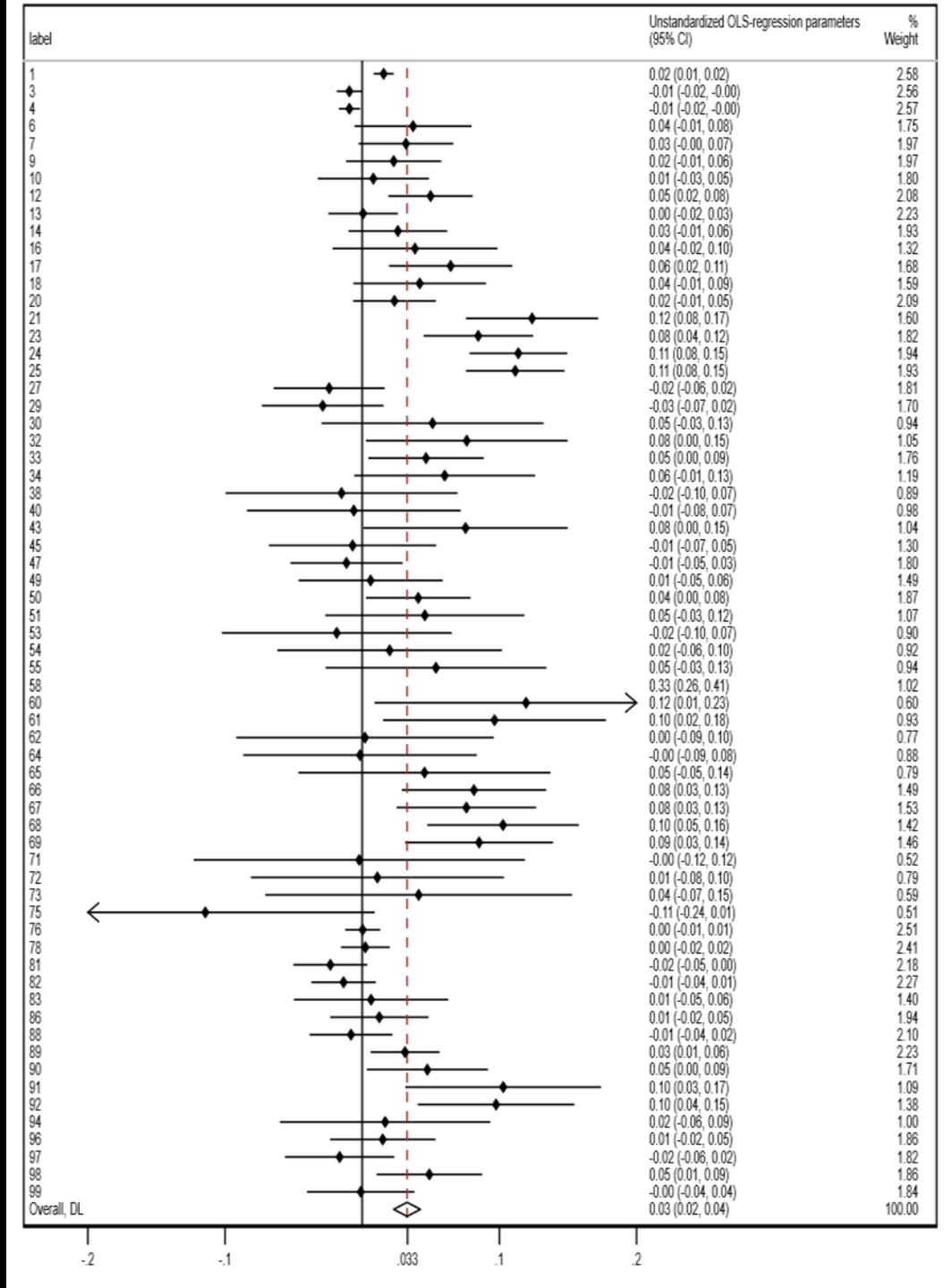
Moderation of Individual Studies

$b_{\text{treatment*passing}} = .03$, $p < .001$

23 significant positive interactions

2 significant negative interactions

41 non-significant interactions!



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Moderation of Treatment Effects

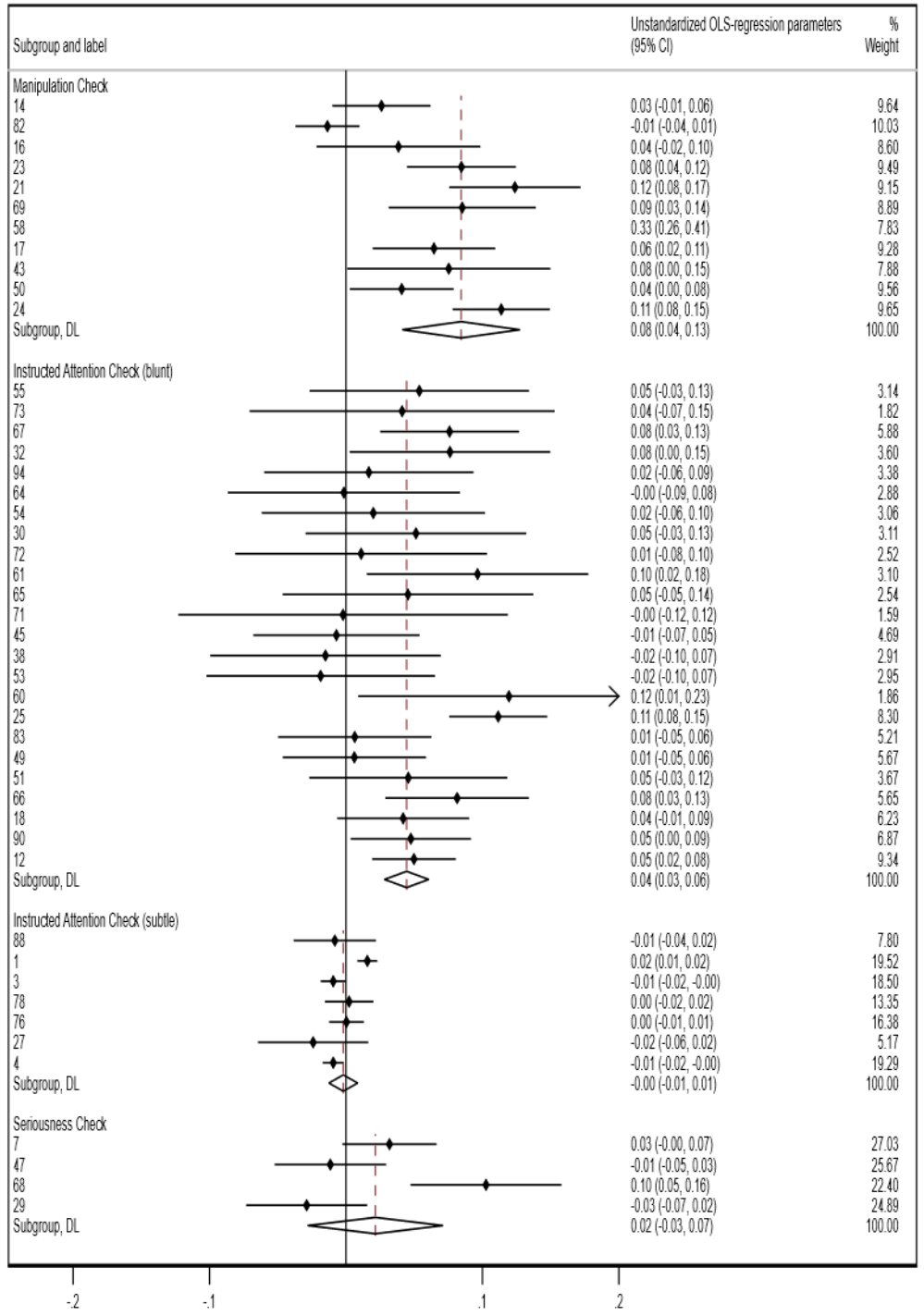
Separately by type of attention check

$b_{\textit{Manipulation check}} = .08,\ p < .001$

$b_{\textit{Instructed attention check (blunt)}} = .04,\ p < .001$

$b_{\textit{Instructed attention check (subtle/trap)}} = -.00,\ p = .71$

$b_{\textit{Seriousness check}} = .02,\ p = .39$



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Conclusions

Attention checks did strengthen treatment effects

Manipulation checks worked best at strengthening treatment effects

But …

Substantive conclusions of experiments were unchanged by dropping failers

And … attention check failers were clearly not paying no attention

Drawbacks:

Lost statistical power: 40% of collected data (77,119 respondents) excluded

Money wasted (if you pay for attention check failers)

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General Online Research
March 31 – April 2, 2025
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