

Randomised Response as a Method to study Research Misbehavior - a pilot study

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The Dutch National Survey on Research Integrity

www.nsri2020.nl

Unique Features

- ▶ **First quantitative, web-based, nation-wide study** in The Netherlands
 - ▶ Use of randomized response methodology
 - ▶ **Missingness by design** = random selection of explanatory variables per respondent
- >> keep response time short >> better response rate

Main Goal:

solid evidence based estimates that are disciplinary field (DF) specific on RM & their associated explanatory variables

What & Why RR

- ▶ Around since 1950s
- ▶ Used extensively in sensitive areas: social security fraud, doping in sport
- ▶ Creates probabilistic than direct association
- ▶ Respondents feel more trusting hence elicits more honest answers



Pilot Study on the RR Method

- ▶ AIM:

feasibility study

test understanding & trustworthiness in an academic setting

METHOD



10,000 Belgian researchers
from WoS



Web based; 15 mins total

Part 1:

- 6 yes/no questions on RM

Part 2:

- 6 Evaluation questions
- Open ended fields

e.g. Have you, in the last three years, fabricated data in your research?

Clarity of instructions

Trustworthiness

How it works

Probabilities are fixed i.e. :



>> Always a probability YES & NO stop with the SAME symbol



Would this lead to confusion /lack of clarity?

2 conditions tested

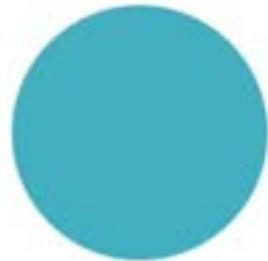
Condition A: Symbols independent

Have you ignored a red traffic light in the previous 12 months?

1. Click on the 'start' button
2. The circle and triangle will start alternate
3. Click on the 'stop' button when you are ready to answer
4. Choose the symbol that represents your answer



YES



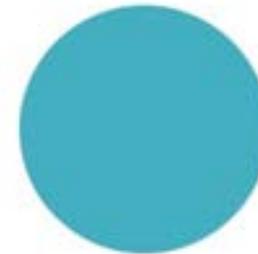
NO

Stop

Condition B: Symbols dependent

Have you had a cup of coffee today?

1. Click on the 'start' button
2. The circle and triangle will start alternate
3. Click on the 'stop' button when you are ready to answer
4. Choose the symbol that represents your answer



YES



NO

Stop

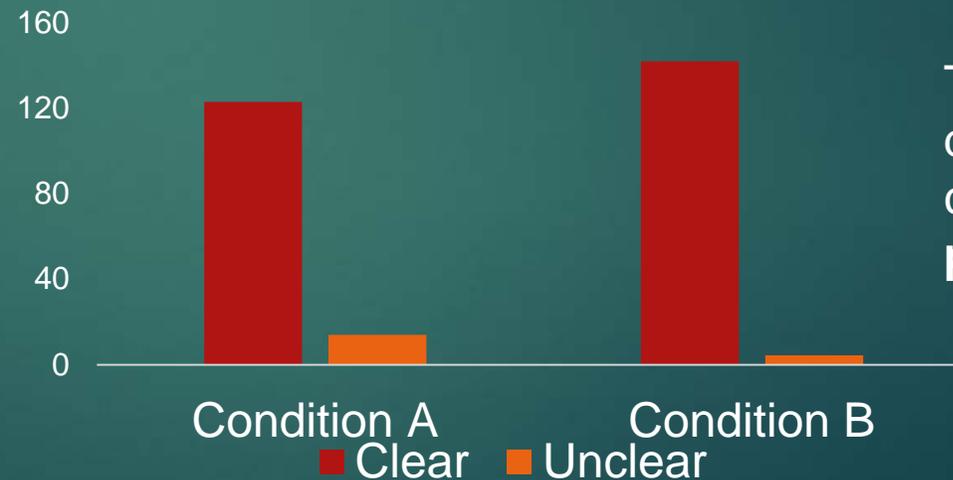
Prelim Results: main findings

>> whether symbols always different or the same did not improve feeling of trustworthiness or understanding

Trustworthiness:

Mean: Group A: 3.13 vs Group B: 2.95;
95% CI: -0.02 - 0.39; $p = 0.08$

Clarity:



T- test: no significant
difference btw
conditions
p value = 1

However...

- ▶ Condition A **significantly more dropout** (30.1%) than Condition B (7.5%); p-value = 0.005

>> implies that maybe symbols being the same led to more drop outs

Qualitative results confirmed this

Same symbols more confusing

“Why I was presented with 2 similar images... as if the answer did not matter”

“...not very clear to me if the same symbol appears ...how useful information can be extracted..”

“I still don't understand how the "same figure" answers work”

Trustworthiness: respondents need/desire/want to understand the “how” & “why”

“Not clear why randomised method was chosen”

“I wonder how you can then obtain useful data?”

“I didn't understand ..the RR method. Neither why ...two circles for the Yes and No”

“I did understand how to follow the procedure, but have not got a clue how it actually works”

Take home message:

- ▶ Symbols always being different may improve clarity and potentially help with drop out rate
- ▶ Include rational and simplified explanation of the RR would be helpful
- ▶ Consider cognitive interviewing within Dutch sample for final survey

The National Survey on Research Integrity (NSRI)

www.nsri2020.nl

Lex Bouter, Jelte Wicherts, Gerben ter Riet, Maarten Cruyff

ZonMw subsidiary of the Dutch Government

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Back up

Preliminary results: main findings

As of 13 May 2019	Number
Invitational e-mails sent	10,484
Valid emails addresses	9,369
Links to survey opened	435
Participants that completed survey	297
No. that dropped out half way	138

Response Rate of 3.2%

Respondents	Number
M/F	190/101
Disciplinary fields:	
Biomedical	81
Humanities	55
Engineering	79
Social Sci.	81
Academic rank:	
PhD	47
Postdoc	75
Assoc. Prof	52
Full Prof	80
Others	33



*“We have to remember that what we observe
is not nature itself but nature exposed to our
method of questioning”*

*Werner Heisenberg
Nobel prize winner for Quantum Mechanics*

How it works



What & Why

- ▶ Valid **evidence based estimates** that are **disciplinary field (DF) specific** in Netherlands and elsewhere missing

- ▶ Objectives
 - a. Valid **DF specific estimates of DRP** & associated **explanatory variables**
 - b. Generate a good understanding of the role of different stakeholders

- >> co-create actionable stakeholder oriented plans
- >> three year time frame to achieve this

Terminology

- ▶ DRP = Major & minor misbehaviors

FFP to subtle trespasses of ethical and methodological standards (=QRP)