

# Can we identify and prevent cheating in online surveys? Evidence from a web tracking experiment.

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# Knowledge measures, online surveys, and cheating

**Political knowledge** is a **central construct** in political science, communications, and related fields

This article is more than 10 years old

## Women know less about politics than men worldwide

Regardless of gender equality, women are less likely to know about current affairs than men. The survey findings were consistent from Colombia to the UK

Get the [data](#)



ANNUAL REVIEWS

Publications A-Z Journal Information

Home / Annual Review of Political Science / Volume 4, 2001 / Galston, pp 217-234

## Political Knowledge, Political Engagement, and Civic Education

Annual Review of Political Science  
Vol. 4:217-234 (Volume publication date June 2001)  
<https://doi.org/10.1146/annurev.polisci.4.1.217>

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## News, Political Knowledge and Participation: The Differential Effects of News Media Exposure on Political Knowledge and Participation

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# Knowledge measures, online surveys, and cheating

**Political knowledge** is a **central construct** in political science, communications, and related fields

Online surveys can harm the quality of this measures if participants search the answers online

PRE	PREKNOW_CATCH
<b>CASI PRE: KNOWLEDGE CATCH QUESTION</b>	
Survey Question	<b>In what year did the Supreme Court of the United States decide Geer v. Connecticut?</b> <b>Type the year.</b>
Logic	If type =video or phone, skip.
Response Order	No response options
Misc Spec	- Response Type: Numeric Entry



Google

In what year did the Supreme Court of the United States decide Geer v. Connecticut? X

Images News Videos Books Finance

About 295,000 results (0,39 seconds)

**1896**

Connecticut, 161 U.S. 519 (1896)

**J** Justia US Supreme Court Center  
<https://supreme.justia.com/cases/federal>

**Geer v. Connecticut :: 161 U.S. 519 (1896)**

# How prevalent is cheating in online surveys?

- The **prevalence fluctuates substantially** across studies, countries, types of questions, and approaches to measure cheating
- In general, nonetheless, these are **nonignorable numbers**

25%

ANES Survey 2019 pilot study

30%

Respondi Sample, Germany

14%

YouGov Sample, USA

13%

CCES Sample, USA

Höhne, J. K., Cornesse, C., Schlosser, S., Couper, M. P., & Blom, A. G. (2020). Looking up answers to political knowledge questions in web surveys. *Public Opinion Quarterly*, 84(4), 986-999.

Style, H., & Jerit, J. (2020). Does it matter if respondents look up answers to political knowledge questions?. *Public Opinion Quarterly*, 84(3), 760-775.

Clifford, S., & Jerit, J. (2016). Cheating on political knowledge questions in online surveys: An assessment of the problem and solutions. *Public Opinion Quarterly*, 80(4), 858-887.



# Does this even matter?

While there is **evidence that cheating negatively affects the validity** of knowledge measures, others have found that the impact is not relevant

*Political Science Research and Methods* (2022), page 1 of 9  
doi:10.1017/psrm.2022.42



RESEARCH NOTE

## Who's cheating on your survey? A detection approach with digital trace data

Tables C1 to C4 in the online Appendix report the results. In most cases the differences are substantively minor, and there is no instance of a statistically significant difference. Both analyses suggest that the distortions in measures of political knowledge induced by cheating have no severe downstream consequences for either the estimated relationships between political knowledge and some of its key predictors or estimates of political knowledge as a predictor of related outcomes.

## TRENDS: How Internet Search Undermines the Validity of Political Knowledge Measures

Political Research Quarterly  
2020, Vol. 73(1) 141–155  
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DOI: 10.1177/1065912919882101  
journals.sagepub.com/home/prq  
SAGE

Across experimental and observational studies, we find a consistent pattern of results—namely, that search engine use reduces the validity of political knowledge measures and undermines the ability to replicate canonical findings in the public opinion literature.

# How can we identify cheating?

**Three main strategies** have been used in the past, all imperfect. But there is a **new alternative: web trackers**



Catch  
questions



Paradata



Self-reports



Web  
tracking  
data

# What is web tracking data?

Direct observations of online behaviours using tracking solutions, or *meters*.



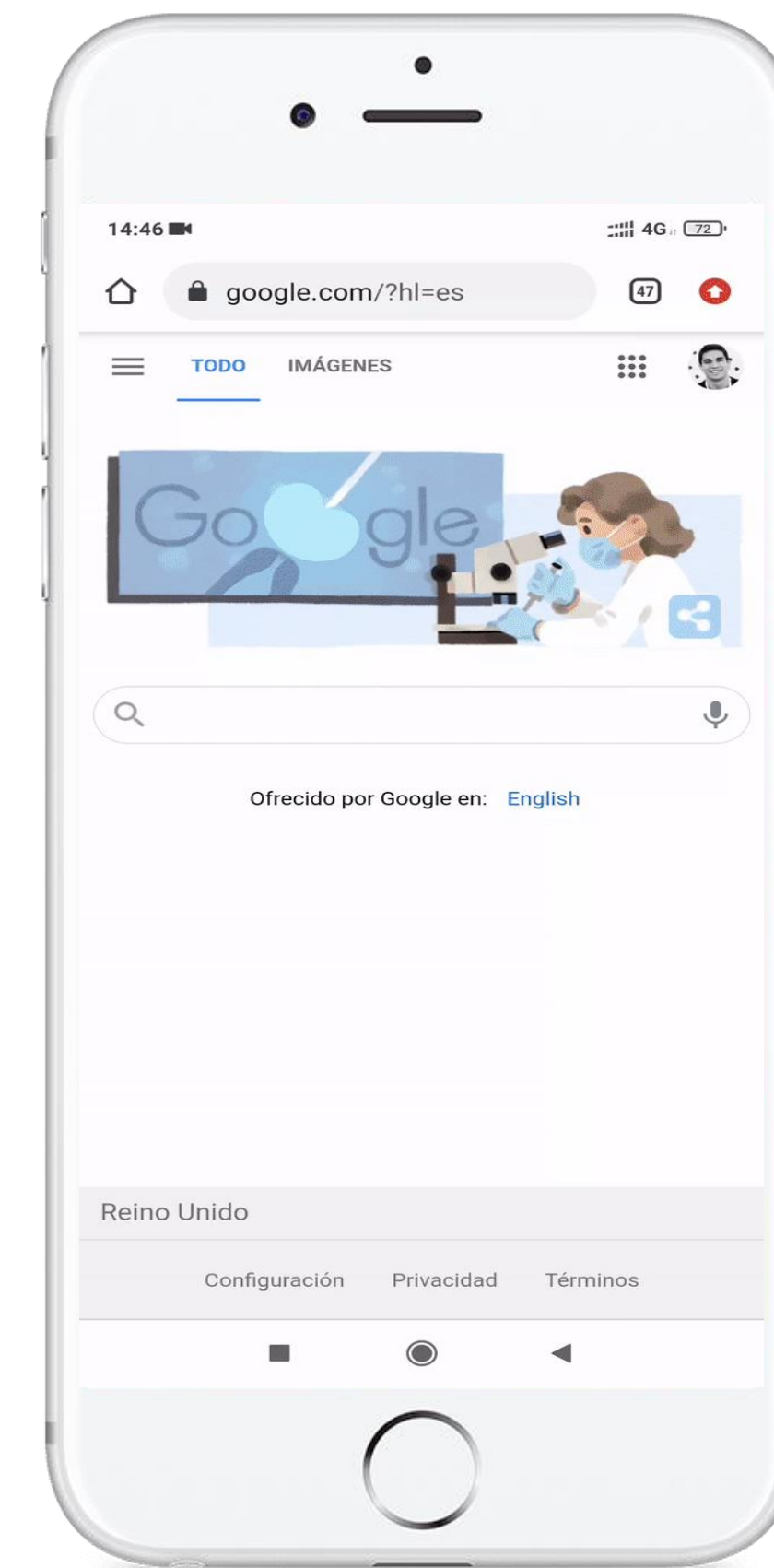
**Group of tracking technologies (plug-ins, apps, proxies, etc)**



**Installed on participants devices**

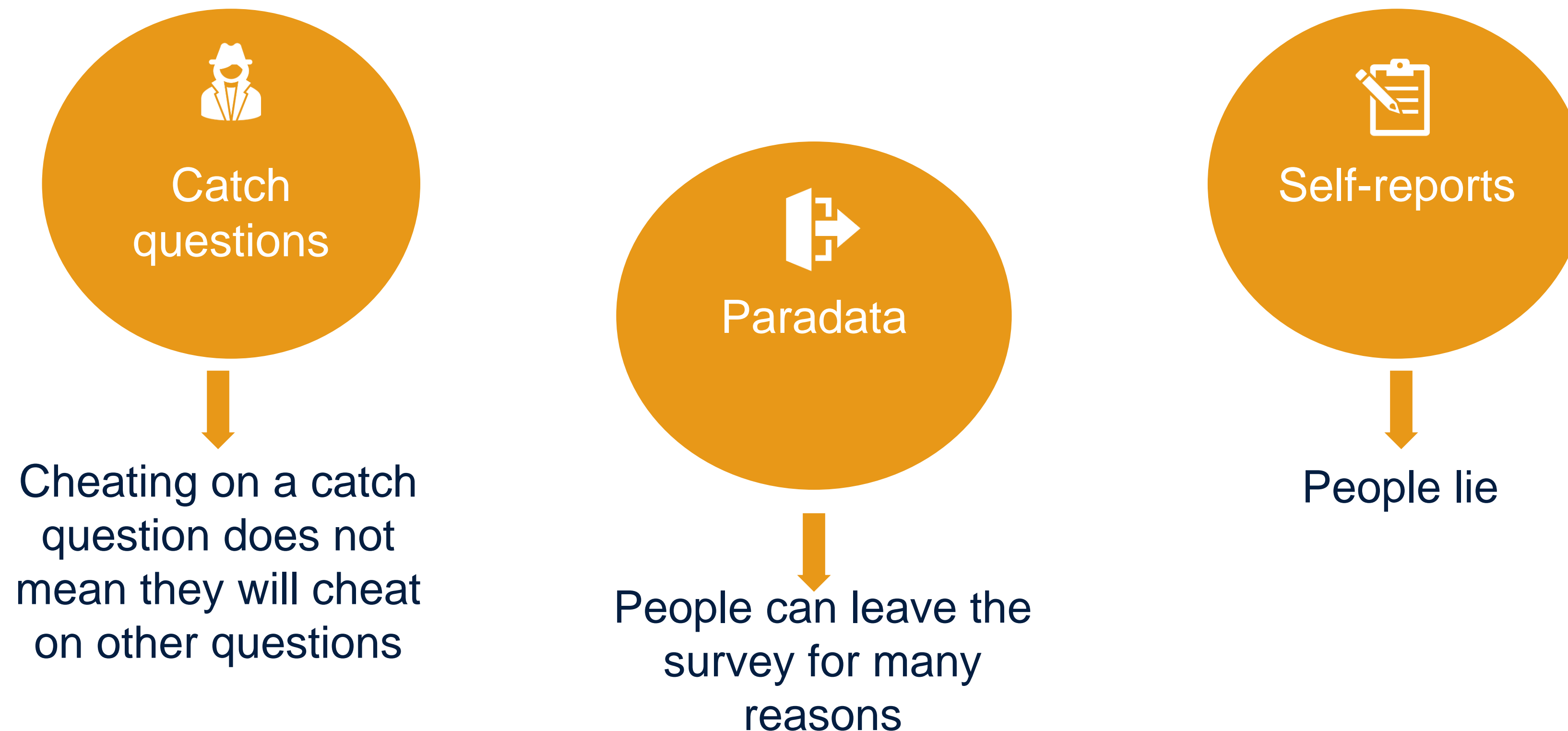


**Collect traces left by participants when interacting with their devices online: URLs, apps visited, cookies...**



# The benefits of using web tracking data

- The other approaches rely on indirect evidence, one can never be 100% certain





# The benefits of using web tracking data

- The other approaches rely on indirect evidence, one can never be 100% certain
- Web tracking data allows to catch participants *in flagrante*

URL <https://www.google.com/search?client=firefox-b-d&q=In+what+year+did+the+Supreme+Court+of+the+United+States+decide+Geer+v.+Connecticut%3F>

URL <https://supreme.justia.com/cases/federal/us/161/519/>



- What question they cheated for
- What they searched
- Whether they got it right

# Web tracking is not perfect!

- Web tracking data, as any other data source, is affected by errors

JOURNAL ARTICLE

## When Survey Science Met Web Tracking: Presenting an Error Framework for Metered Data

Oriol J. Bosch , Melanie Revilla [Author Notes](#)

*Journal of the Royal Statistical Society Series A: Statistics in Society*, Volume 185, Issue Supplement\_2, December 2022, Pages S408–S436, <https://doi.org/10.1111/rssa.12956>

**Published:** 06 November 2022 [Article history](#) ▼

## VALIDITY AND RELIABILITY OF DIGITAL TRACE DATA IN MEDIA EXPOSURE MEASURES: A MULTIVERSE OF MEASUREMENTS ANALYSIS

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## UNCOVERING DIGITAL TRACE DATA BIASES: TRACKING UNDERCOVERAGE IN WEB TRACKING DATA

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<sup>3</sup> Research and Expertise Centre for Survey Methodology, Universitat Pompeu Fabra

<sup>4</sup> Institut Barcelona Estudis Internacionals (IBEI)

**This study**



# A critical look at web tracking data as an approach to identify cheating

- Can we trust web tracking data when identifying cheating?
- How does it compare with other indirect approaches?
- What is the prevalence of cheating, if we triangulate different approaches?
- Do interventions to reduce cheating work?

# Data

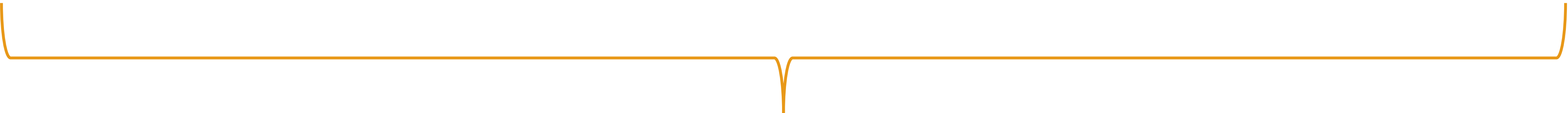
- **Survey** combined with **web tracking data** at the individual level
- Netquest metered panel in Spain
  - **Cross-quotas:** gender, age, and education
  - **Sample size:** 1,200
  - **Fieldwork:** Late May – Early June 2023
- Tracking technologies installed in both **mobile and desktop devices**
- Part of the ERC project **WEB DATA OPP**



# Political knowledge questions

5 legitimate political questions, plus one catch questions

- The Defense Minister in Spain is Margarita Robles? (Yes/No)
- What political offices does Emmanuel Macron hold? (Open-ended, w/ picture)
- What percentage of the Spanish congress are women? (choose correct option)
- What was the date chosen for the upcoming general election? (choose correct option)
- What political party has decided not to run in this general election? (open-ended)
- Who was the first president of the Second Spanish Republic? (catch, open-ended)



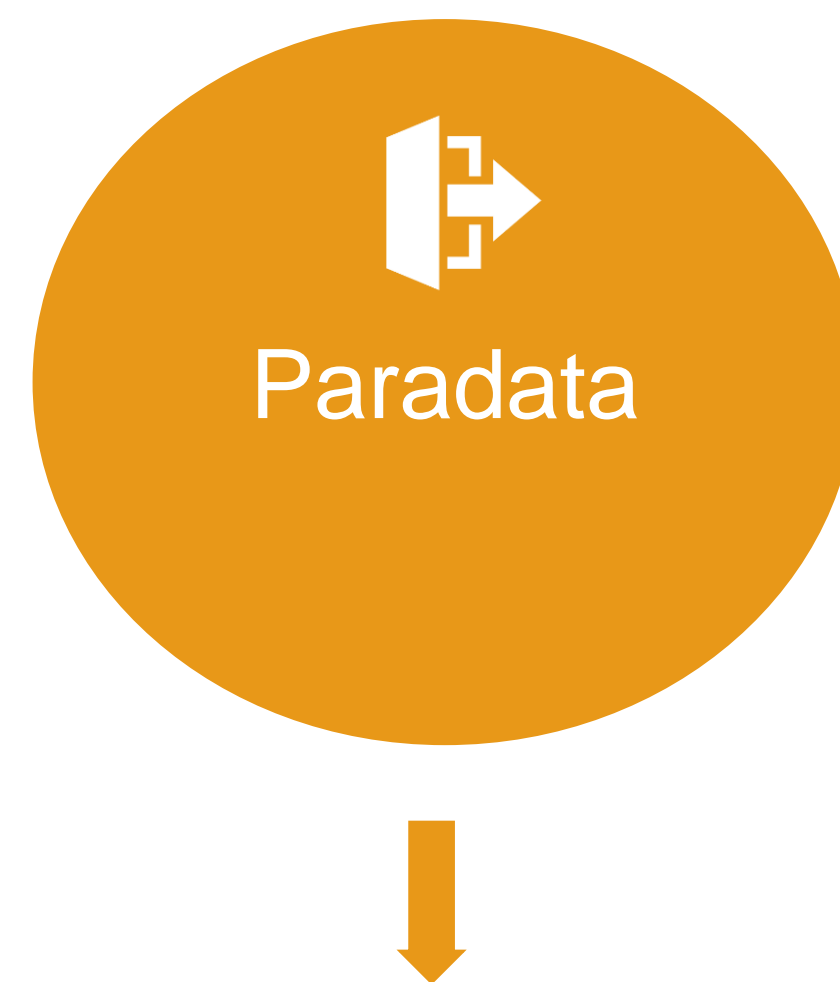
Combination of basic knowledge + current affairs  
Combination of response formats  
Randomized order



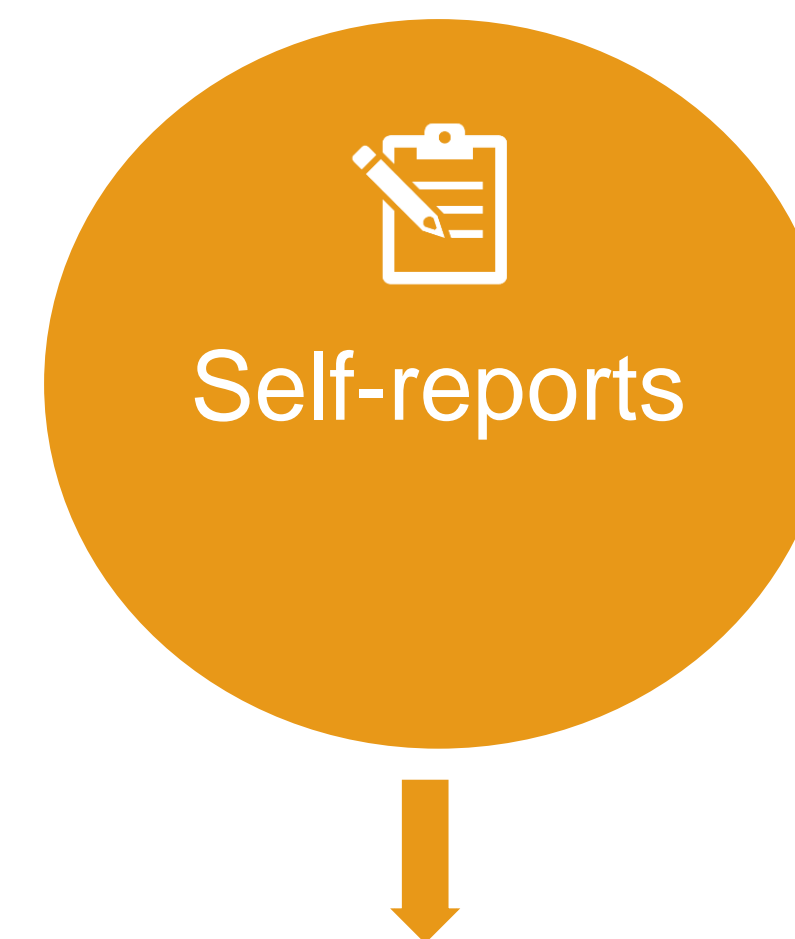
# Identification strategy



Previously shown question



Whether they left the survey screen during the questions



We ask them to report for how many of the questions they searched information online



Manually checked all the URLs of participants between the time they entered the first knowledge page, and they left the last one

# Experiment

## Asking nicely 😊

- 33% of the sample
- “It is important for the validity of our results that you do not use external sources such as the Internet to search for the correct answer”

## Timer

- 33% of the sample
- Limit of 30 / 40 seconds
- Were told beforehand

## Control

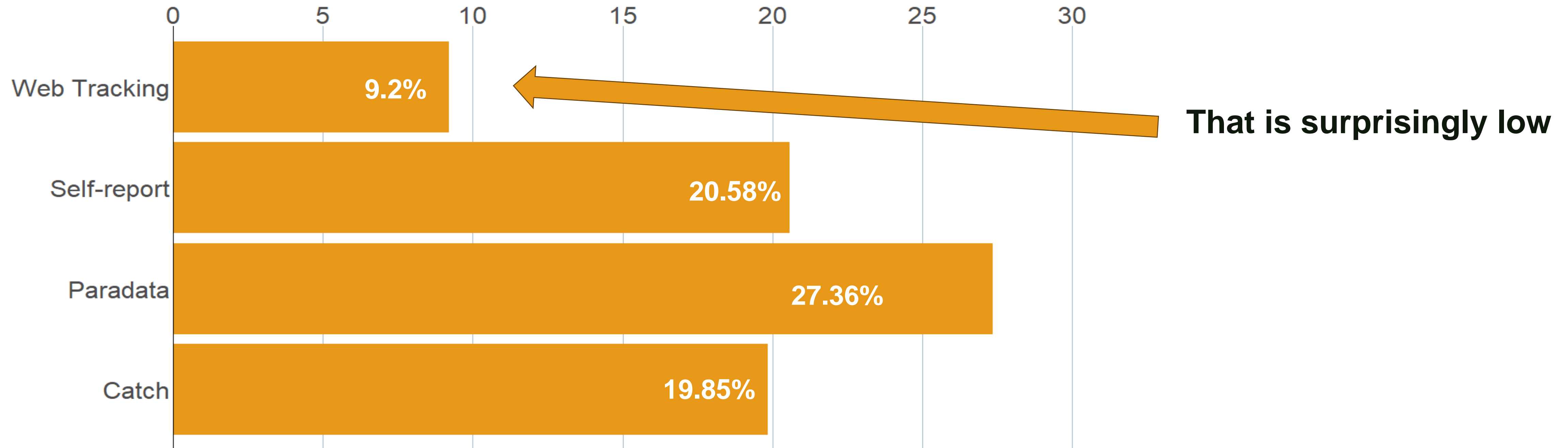
- 33% of the sample
- Baseline introduction
- “Please think carefully about the answers and give us the one that you think may be correct. However, if you really don't know how to answer, select "I don't know" and move on to the next one.”

# Results

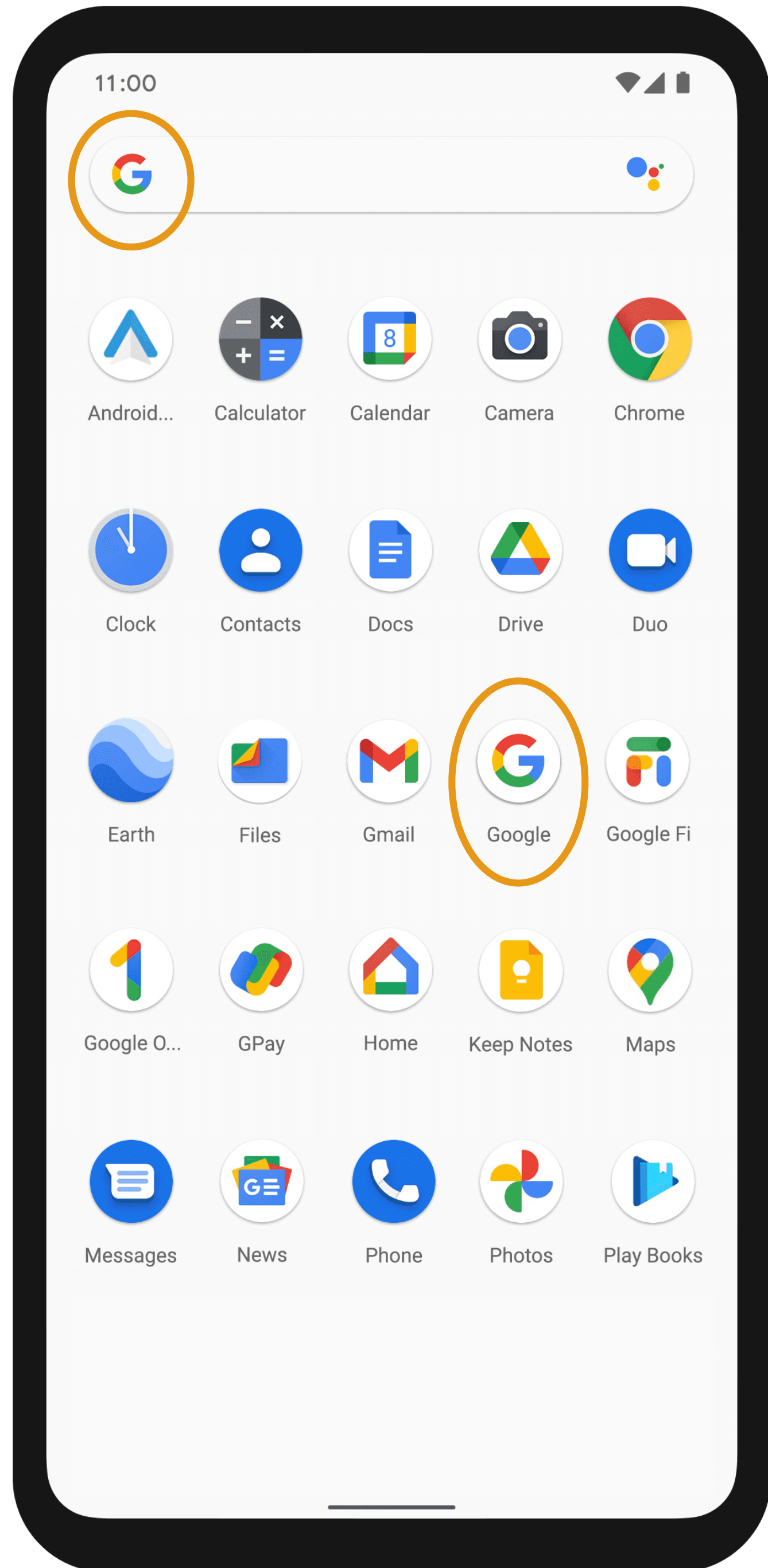


# Cheating in the wild

**Less cheaters than expected, hope or bias?**  
% of cheaters in the wild

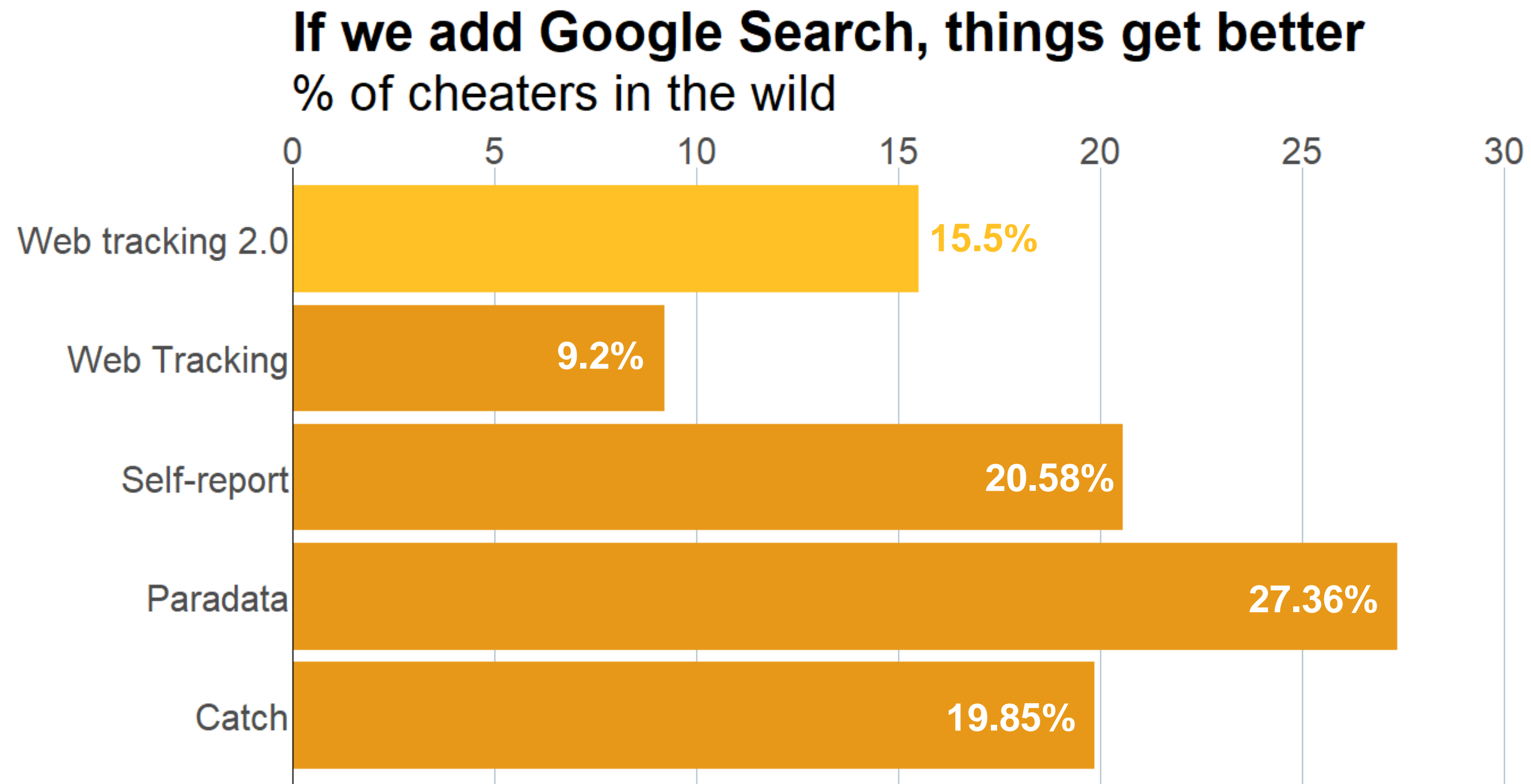






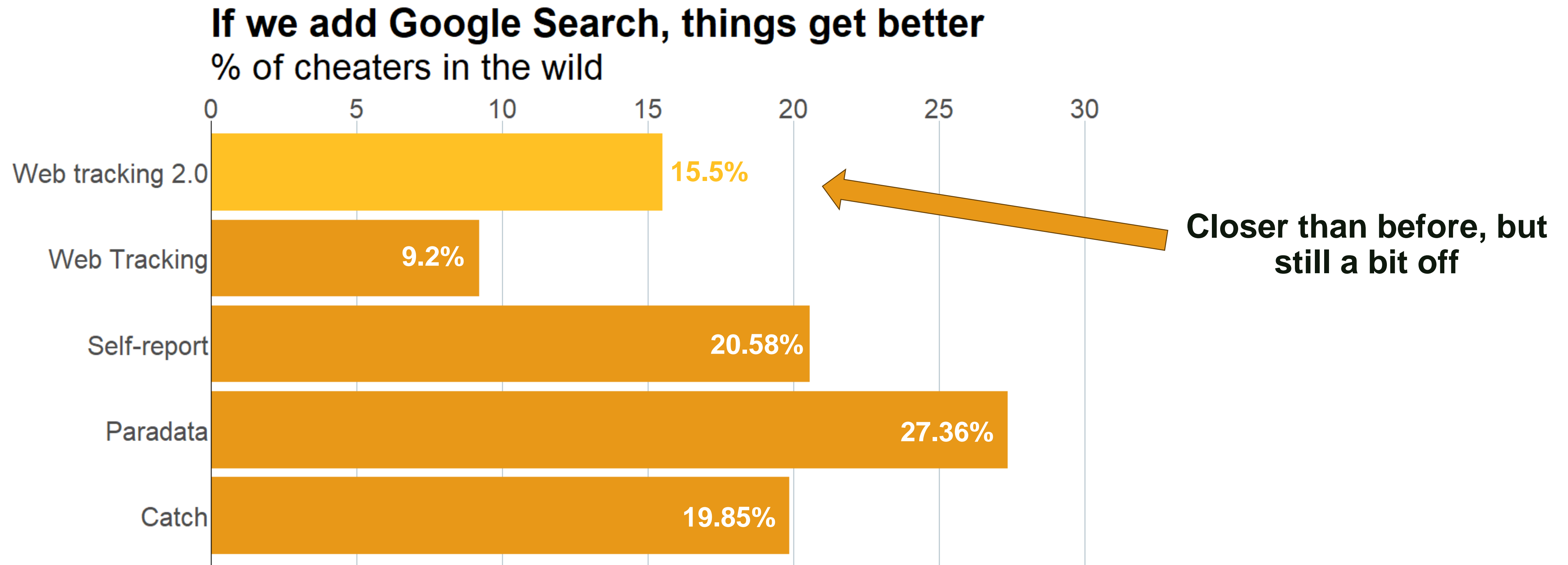
When we conducted the study, our technologies could not see inside apps, such as google search

# Cheating in the wild, accounting for app search

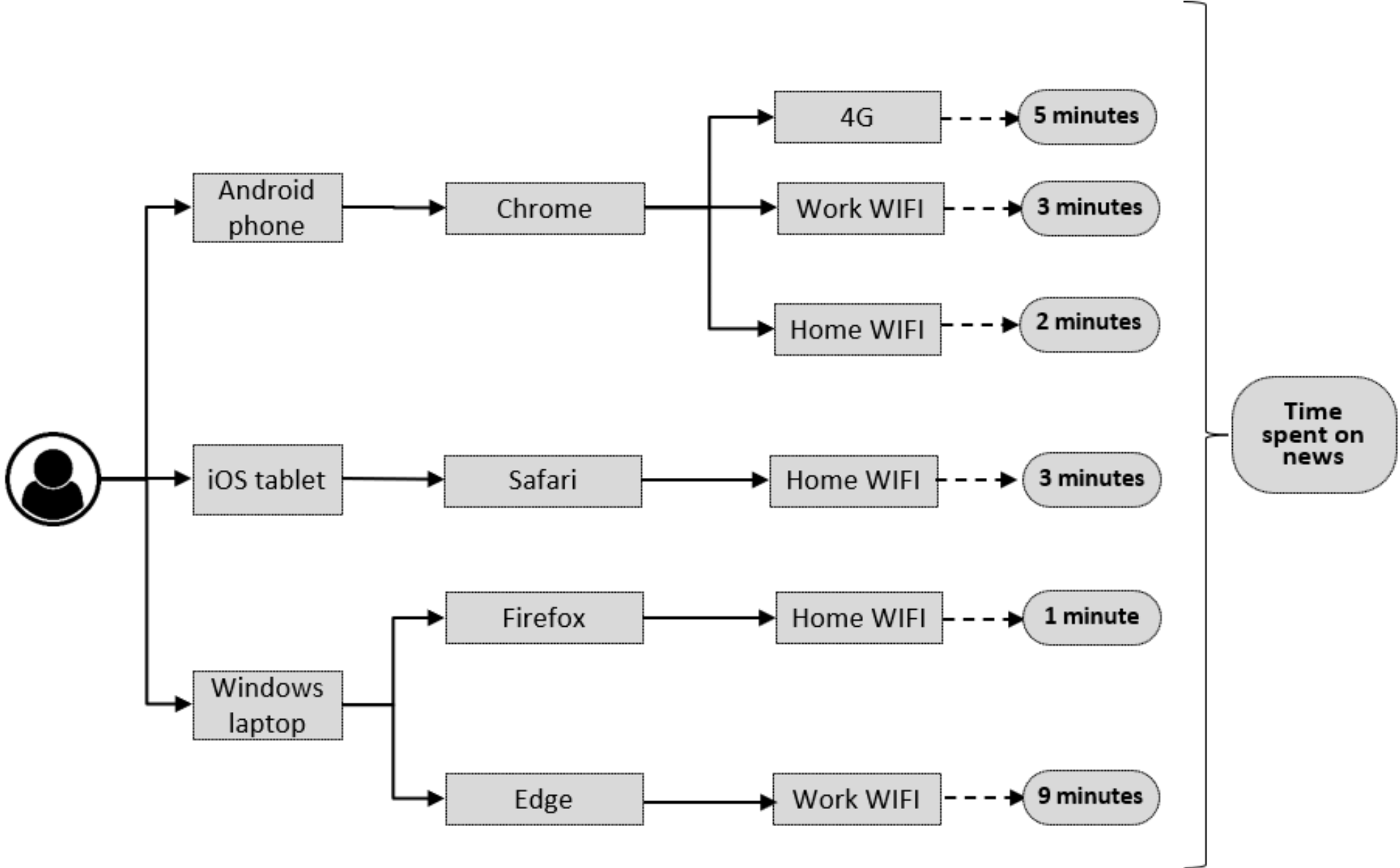




# Cheating in the wild, accounting for app search

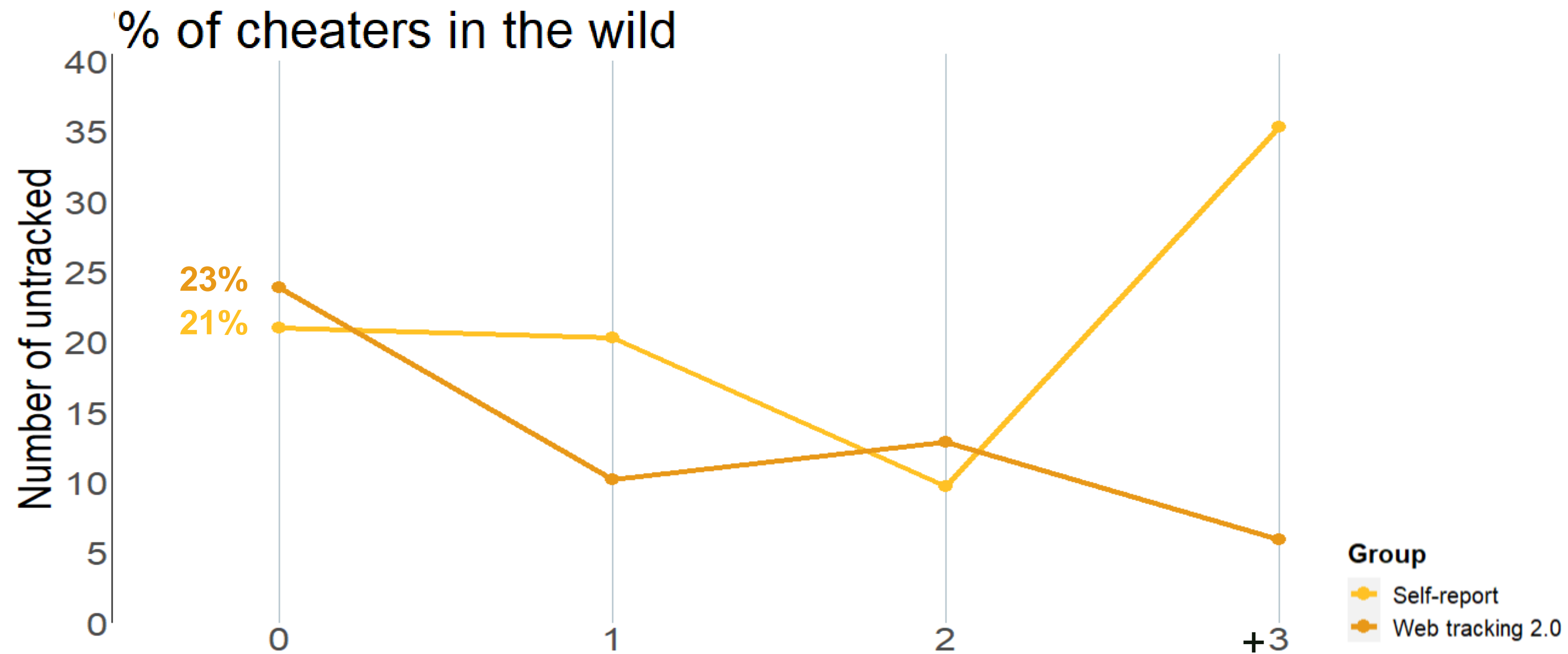


Participants might have cheated on non-tracked devices



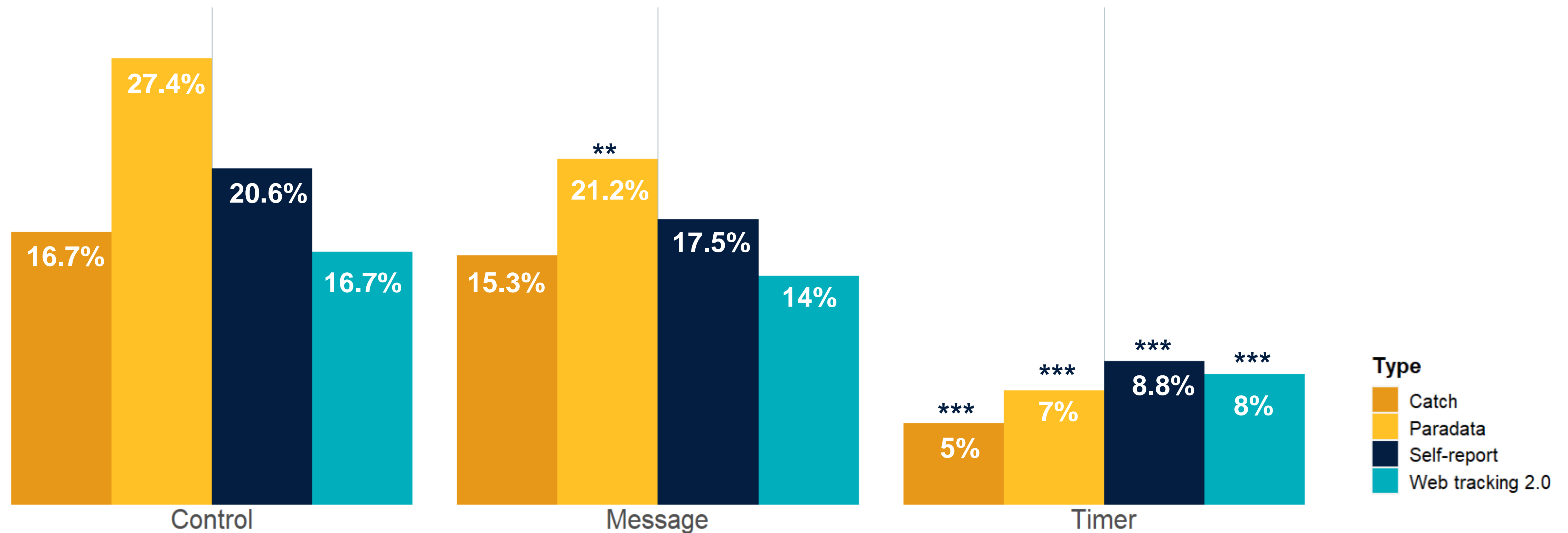
# The role of tracking undercoverage

## Undercoverage might explain everything else!



# Did our experiment work?

**Asking nicely works to some extent, but a timer is the most effective**  
% of cheaters

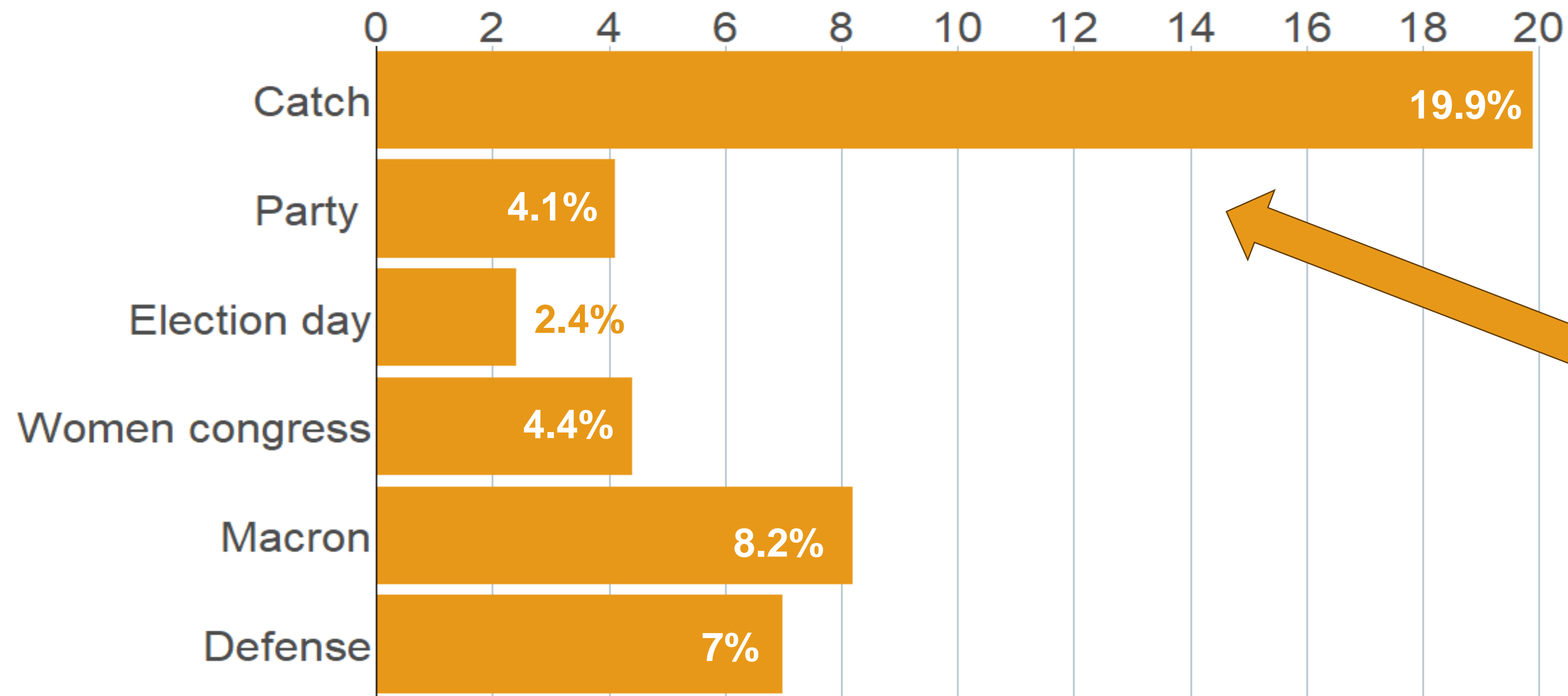




# Attention! Maybe the cure is the disease

## Are catch questions...the problem?

% of cheaters in the wild

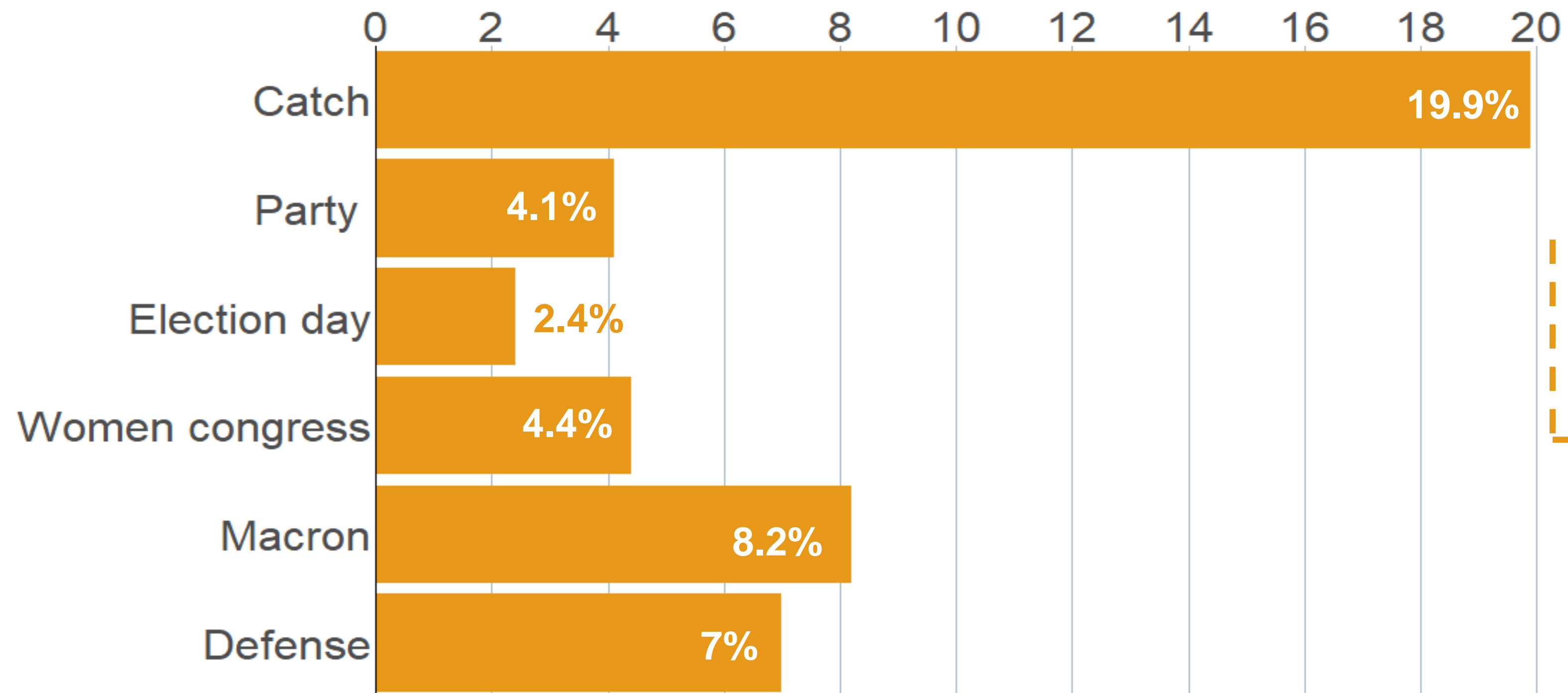


**People seem to cheat for the catch questions, way less for the other ones**

# Attention! Maybe the cure is the disease

## Are catch questions...the problem?

% of cheaters in the wild



### Self-reported cheating

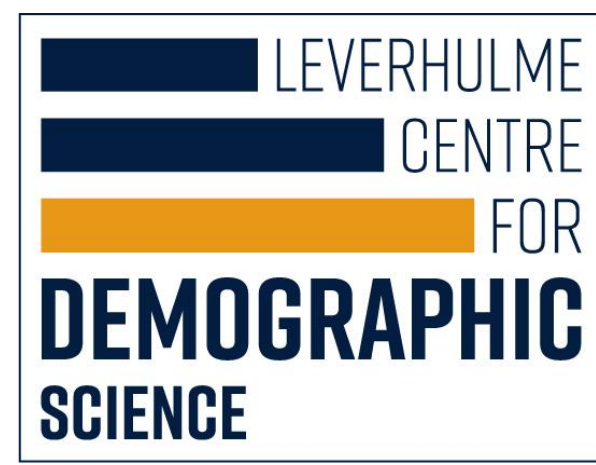
- 1 question cheated: 14.8%
- +2 questions cheated: 5.8%

# Conclusions

# Take-home messages

- Web tracking **can be an option** to catch people cheating, **but it is still imperfect**: it is important to justify why we need the granularity it brings (for some participants).
- If there is **no in-app data**, **web tracking is in part a proxy**, just like other methods!
- **Catch questions are a problematic approach**: they artificially inflate cheating
- Maybe the best approach in a panel of committed people: **just ask them!**
- Asking nicely does not work, putting a time limit does...but does it affect the quality of non-cheaters?





Thanks! Questions?

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