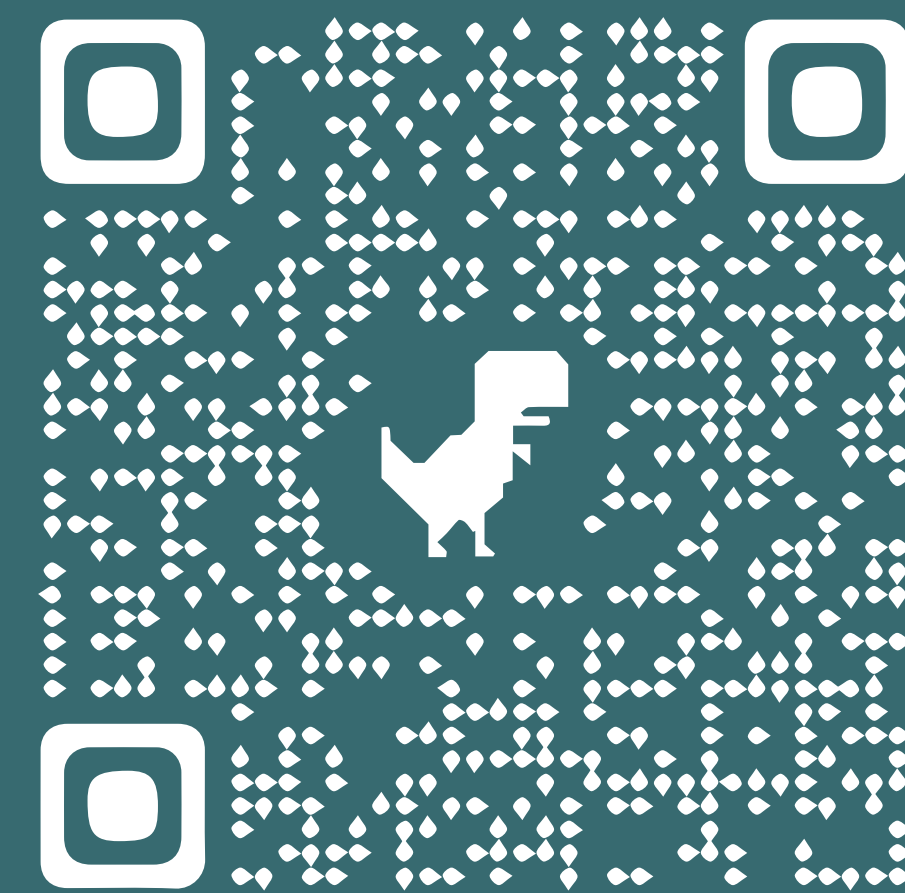
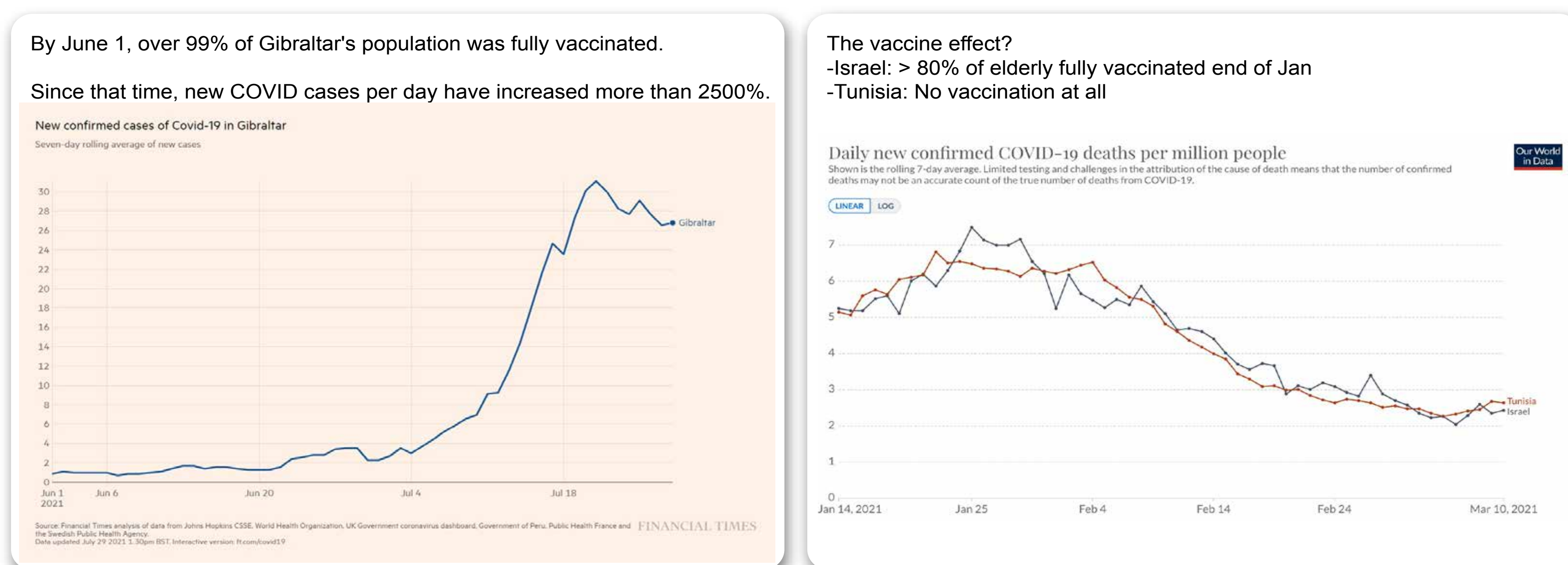


# Visualization Guardrails: Designing Interventions Against Cherry-Picking in Interactive Data Explorers



Maxim Lisnic, Zach Cutler, Marina Kogan, Alexander Lex

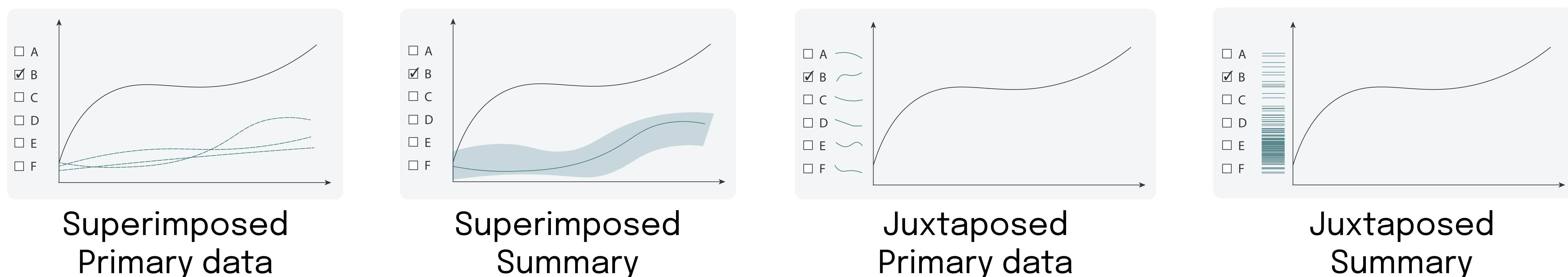
## 1 Data exploration platforms democratize access to data for the public. But unconstrained and unguided selections can lead to cherry-picking<sup>1</sup>



Tweets showing cherry-picked data using the Financial Times (left) and OurWorldInData (right) data explorers

<sup>1</sup>We define cherry-picking as the act of selecting a specific subset of data that supports an argument, while ignoring a more representative sample that might contradict it. Our previous work shows that cherry-picking is one of the most common ways to spread COVID misinformation. [1]

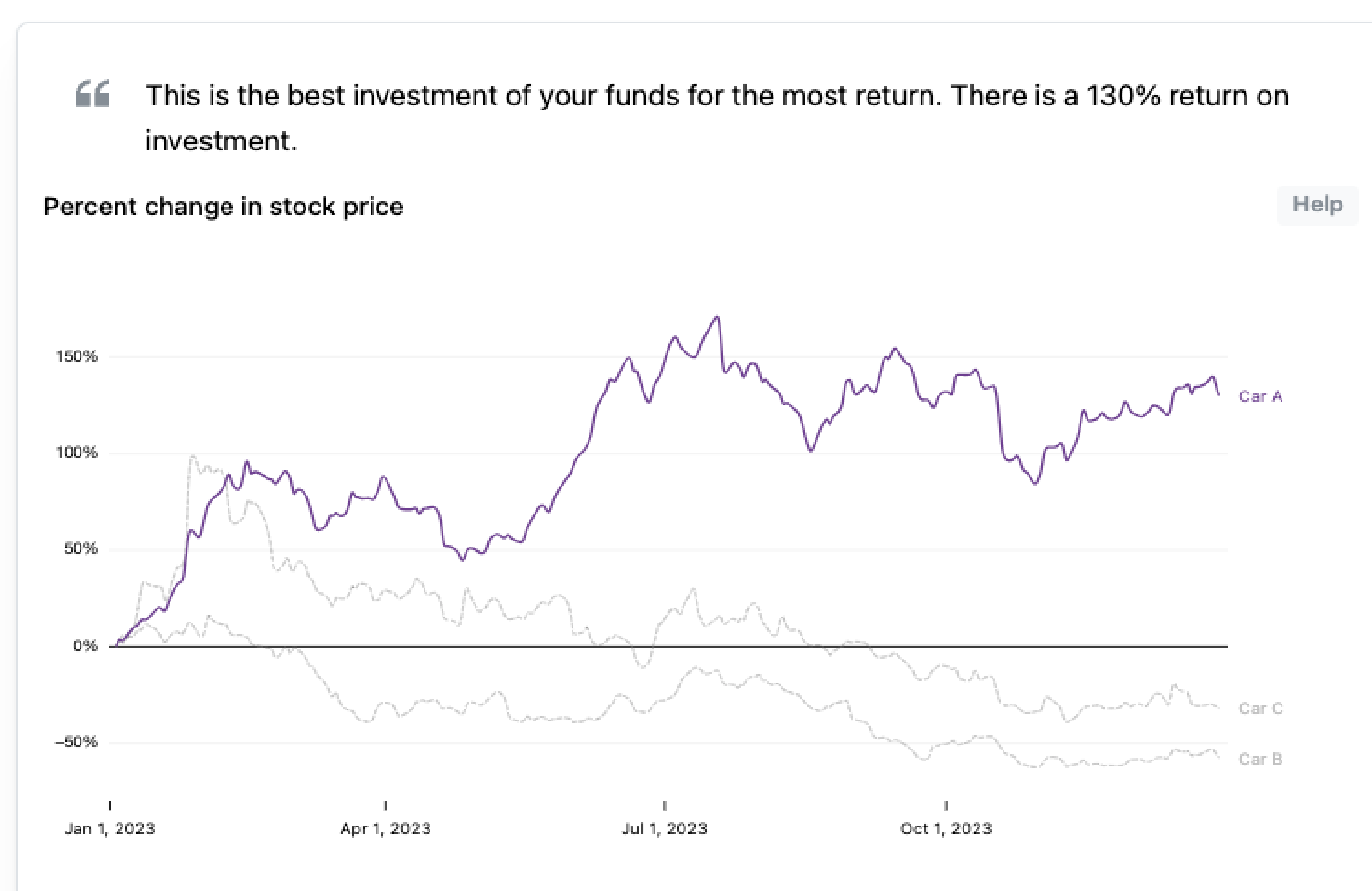
## 2 We propose a design space of guardrails—interventions against cherry-picking



## 3 To evaluate, we asked a group of participants to create charts using our prototype, and another group to react to those charts

### 4 Creators found it more difficult to construct cherry-picked views with Superimposed Primary data

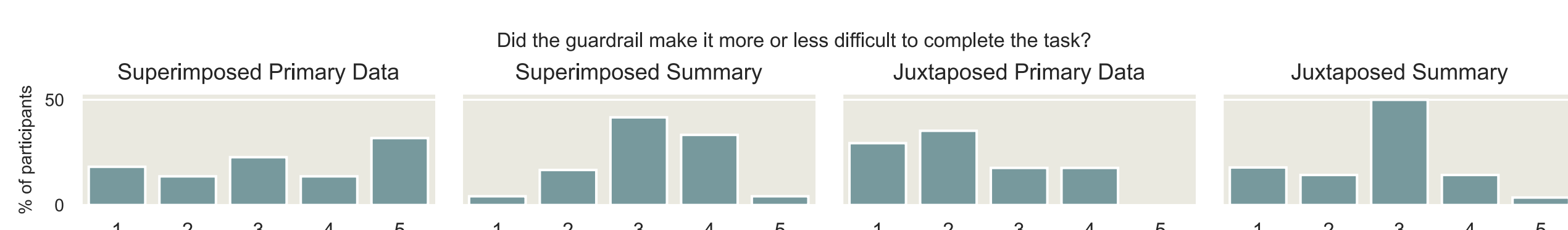
### 5 Some viewers were more skeptical because of the guardrails, but 38% did not notice and another 23% did not understand them



“[The chart] shows [option A] to be the worst one out of the lines shown.”

“The comparatives at the side to visualise how it compares to other infected places.”

“[The infections are] still considerably higher than the average and I do not think it is worth taking any risks.”



[1] Misleading Beyond Visual Tricks: How People Actually Lie With Charts  
Maxim Lisnic, Cole Polychronis, Alexander Lex, Marina Kogan  
Proceedings of the 2023 CHI Conference on Human Factors in Computing  
Systems (CHI '23), doi: 10.1145/3544548.3580910