What Twitter Knows

Characterizing Ad Targeting Practices, User Perceptions, and Ad Explanations Through Users' Own Twitter Data

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UNIVERSITY *of* WASHINGTON

UNIVERSITY OF MARYLAND

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targeted advertising:

using detailed information about users' demographics, preferences, opinions, and activity to target ads

expectation:

Miranda Wei
gender: F
location: Seattle, WA
interests: cats, ramen, Battlestar Galactica

reality: organic ketchup buyer + 15 other criteria

targetingType: Tailored audiences (lists)

targetingValue:
NCS_PD_04358_Kraft_Organic and
natural ketchup buyers_1_26362226

…

targetingType: Keywords

targetingValue: #parenting

…

1. What ad targeting mechanisms exist and how are they used to target Twitter users?

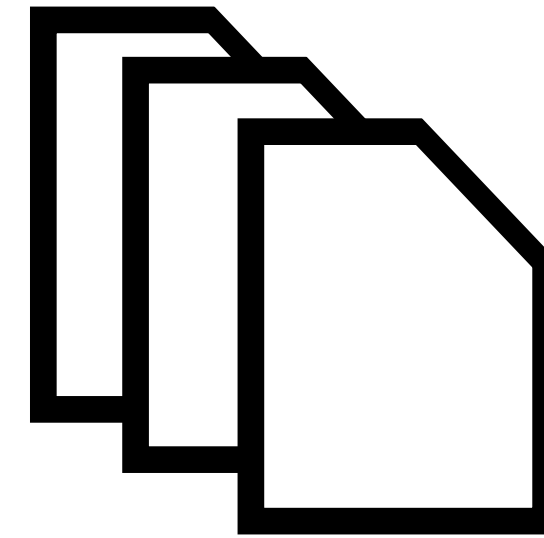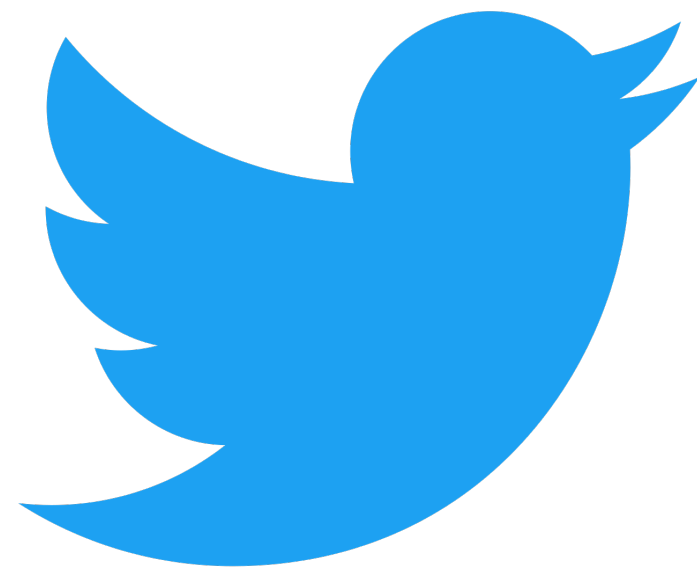**2.** What do Twitter users think about the mechanisms for...
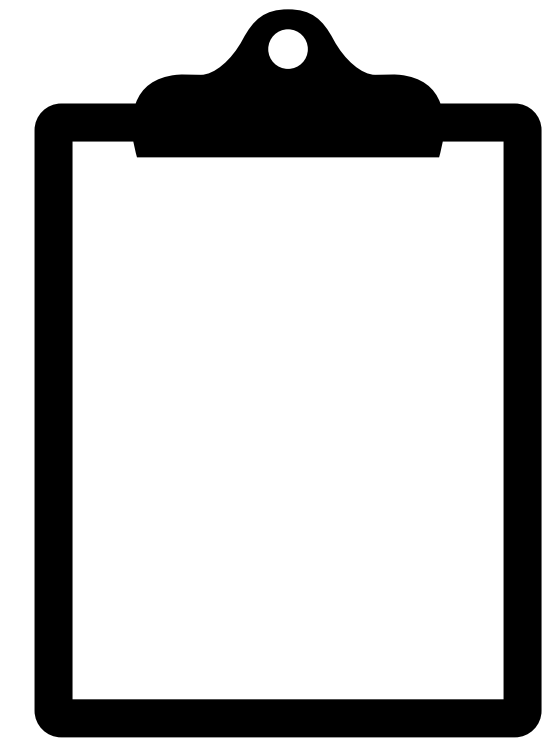
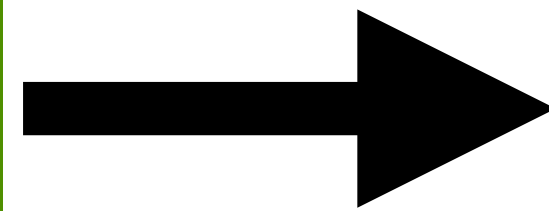**a)** ad targeting? **b)** transparency?
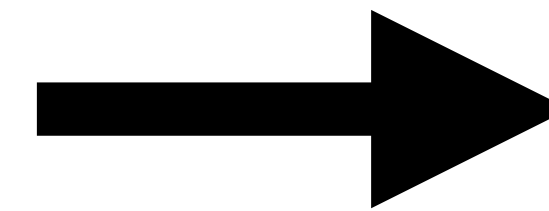
study protocol

ad-impressions.js
personalization.js
twitter_advertiser_list.pdf

request Twitter data → upload ad-related data → take customized survey

5

1. What ad targeting mechanisms exist and how are they used to target Twitter users?

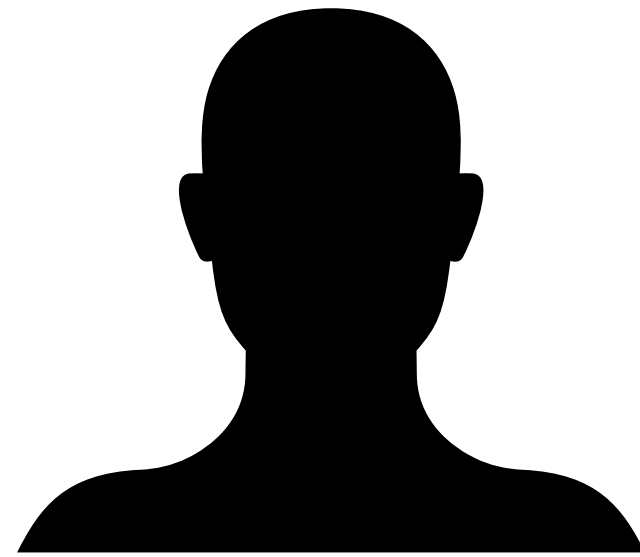**2.** What do Twitter users think about the mechanisms for...

a) ad targeting?   **b)** transparency?

231 participants and their ads

per participant

- mean 6.6 years on Twitter

- mean 1,046.6 ads in last 3 months
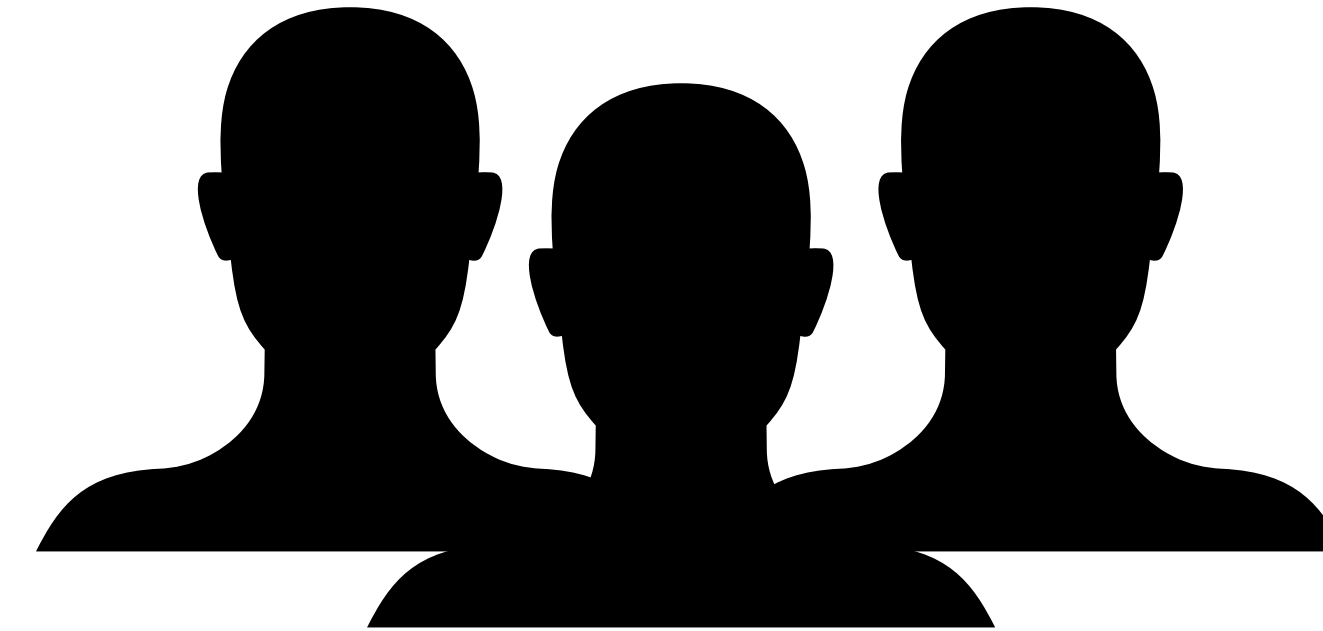
across all participants

- observed 240,651 ads with at least one targeting type
  - e.g., location targeting

- 45,209 unique instances
  - e.g., Boston

targeting types

demographic:
*characteristics about
user and their device(s)*

- provided by user or
inferred by Twitter

targeting type	uses
language	350,121
platform	32,351
location	31,984
new device	236

targeting types

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psychographic:
user lifestyles, behaviors or attitudes

- provided by user or inferred by Twitter

targeting type	uses
behavior	35,008
interest	25,284

targeting types

demographic:
characteristics about user and their device(s)

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targeting type	uses
language	350,121
platform	32,351
location	31,984
new device	236

psychographic:
user lifestyles, behaviors or attitudes

- provided by user or inferred by Twitter

targeting type	uses
follower lookalikes	590,502
conversation	128,005
behavior	35,008
interest	25,284

advertiser:
user information collected offline

- provided by advertiser

targeting type	uses
tailored (list)	113,952
mobile	21,631
tailored (web)	18,016

potential violations of Twitter's own policies?

prohibited to target by race, religion, sex life, health, politics, and financial status

yet…

- **keyword:** "unemployment," "Gay," "#AfricanAmerican," "latinas"

- **conversation:** "Liberal Democrats (UK)"

- **tailored list:** "YYYY account status: balance due," "Christian Audience to Exclude," "LGBT Suppression List"

1. What ad targeting mechanisms exist and how are they used to target Twitter users?

2. What do Twitter users think about the mechanisms for...

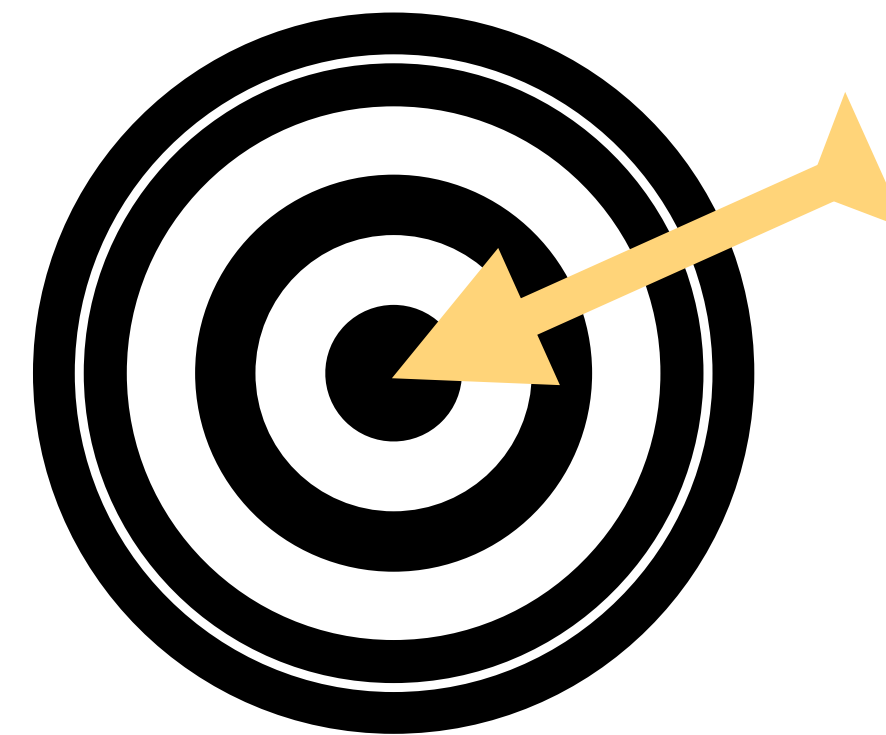**a)** ad targeting?   **b)** transparency?

opinions of targeting types
vary by specificity and accuracy

tend to approve abstractly, but object to specific instances

e.g., event targeting

accuracy significantly correlated with fairness and comfort

… to a certain point

1. What ad targeting mechanisms exist and how are they used to target Twitter users?

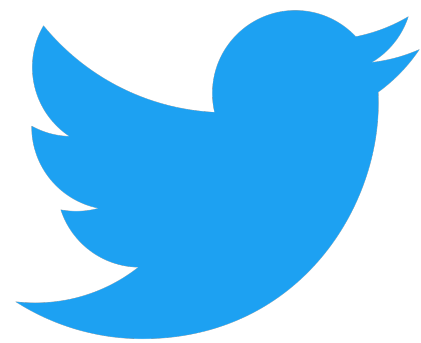**2.** What do Twitter users think about the mechanisms for…

a) ad targeting?   **b)** transparency?

current ad explanations

Why am I seeing this ad?

One reason you may be seeing this ad is that **Postmates** wants to reach people interested in **Health news and general info**. There may be other reasons you're seeing this ad, including that **Postmates** wants to reach **people above the age of 18 and located here: Phoenix AZ, US**.

You can view and manage information connected to your account that Twitter may use for ads purposes. See your Twitter data.

Twitter also personalizes ads using information received from partners as well as app and website visits. You can control these interest-based ads using the "Personalize ads" setting.

Why am I seeing this ad?

You're seeing this ad because you're on a list **Postmates** wants to reach on Twitter. When the list was uploaded, Twitter did not learn any new identifying information about you.

Your Data

Postmates
Learn more about **Postmates**

- March 17, 2019
  Postmates uploaded a **hashed** list. Twitter matched your information with information on that list.

- April 17, 2019
  You saw this ad from **Postmates**

There may be other reasons you're seeing this ad, including that **Postmates** wants to reach **people who are ages 18 and up, are located in Phoenix AZ, US, and are Female**. This information is based on your Twitter profile and where you've connected to the internet.

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speculative ad explanations

detailed text

Why am I seeing this ad?

You may be seeing this ad because **Postmates** wants to reach people similar to people who follow **@chrishemsworth; and @BarackObama**.

You may also be seeing this ad because **Postmates** has added your Twitter username or email to a list of people who they want to reach. You may have been added if you **visited their webpage, used their mobile app, or signed up for their mailing list**.

You may also be seeing this ad because **Postmates** wants to reach people on the following audience lists: **Suppression (Installs All Time) (email); Suppression (Installs All Time) (Device Id); and Email Suppression List (May 2018)**

You may also be seeing this ad because **Postmates** wants to reach people interested in **Health news and general info**. Your interest profile is based on your **tweets and retweets, pages and people you follow, websites you visit, and more**.

You may also be seeing this ad because **Postmates** wants to reach people in the following demographics: **ages 18 and up; Phoenix AZ, US; and Female**.

You can view or manage account information used for ad purposes. Go to the "Personalize ads" setting to control internet-based ads.

detailed visual

Why am I seeing this ad?

Some of the targeting types used to target this ad to you were:

Tailored audiences: **Postmates** can add your name, your Twitter username, or your email to a list of people they want to reach.

[Suppression (Installs All Time) (email)] [Suppression (Installs All Time) (Device Id)] [Email Suppression List (May 2018)]

Follower Look-alikes: **Postmates** can target people who are similar to people who follow a person or page on Twitter.

[@chrishemsworth] [@BarackObama]

Interests: **Postmates** can target people based on inferred interests.
Postmates did not target you using inferred interests.

Demographics: **Postmates** can target based on demographics or inferred demographics.

[Ages 18 and up] [Phoenix AZ, US] [Female]

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speculative ad explanations

creepy

Why am I seeing this ad?

You saw this ad on **April 17, 2019 at 11:05 AM** on **the Twitter app from a(n) Android device, IP address   ###.###.#.#   (Phoenix AZ, US).**

You are seeing this ad because **Postmates** used your information, such as your **email address or phone number**, to find you on Twitter.

You are also seeing this ad because **Postmates** has made the following determinations about you:

- Your information on Twitter was matched with external lists called **Suppression (Installs All Time) (email)**, **Suppression (Installs All Time) (Device Id)**, and **Email Suppression List (May 2018)**
- You have a lot in common with people who follow **@chrishemsworth**, and **@BarackObama**
- You are interested in **Health news and general info**.
- You are participating in the conversation about **Fitness** on Twitter.
- You **are ages 18 and up, and are Female**.
- You are located in or around **Phoenix AZ, US**.

These inferences are based on your Twitter profile and online activities, such as your **tweets and retweets, people and pages you follow, and websites you visit, as well as data that third parties have provided about you.**

You can view or manage account information used for ad purposes. Go to the "Personalize ads" setting to control internet-based ads.
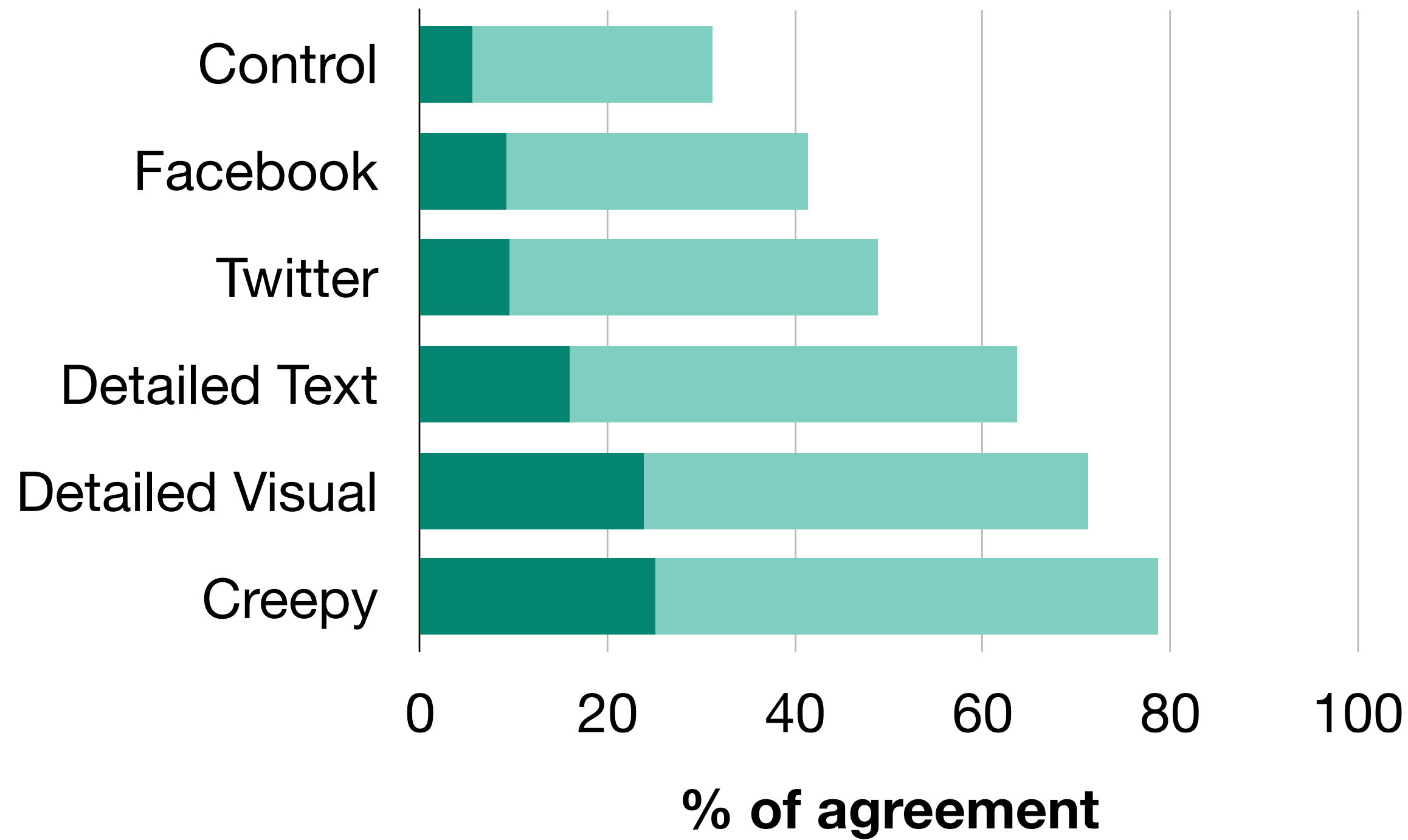
control

Why am I seeing this ad?

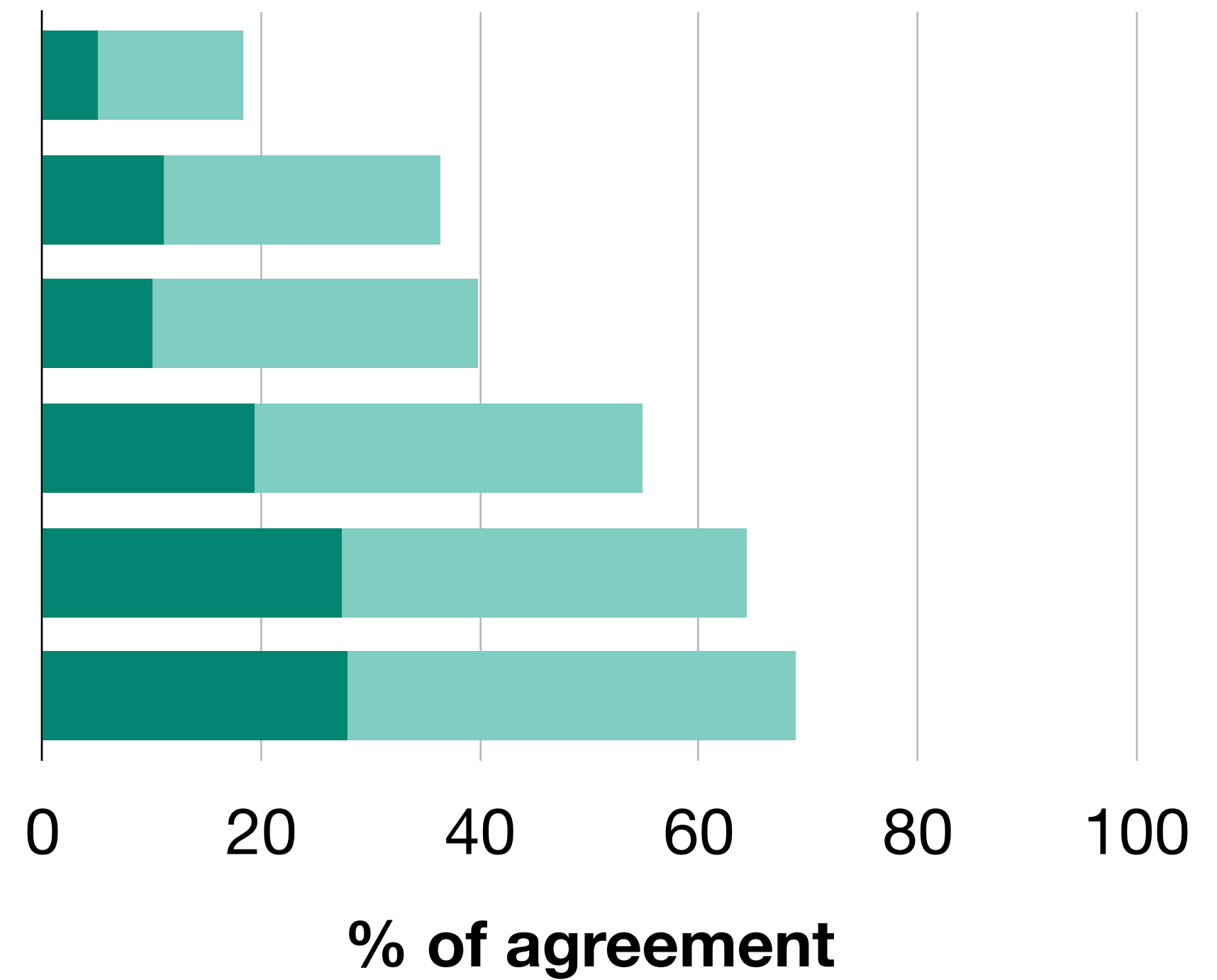One reason you may be seeing this ad is that **Postmates** paid for an ad on this site.

You can view or manage account information used for ad purposes. Go to the "Personalize ads" setting to control internet-based ads.
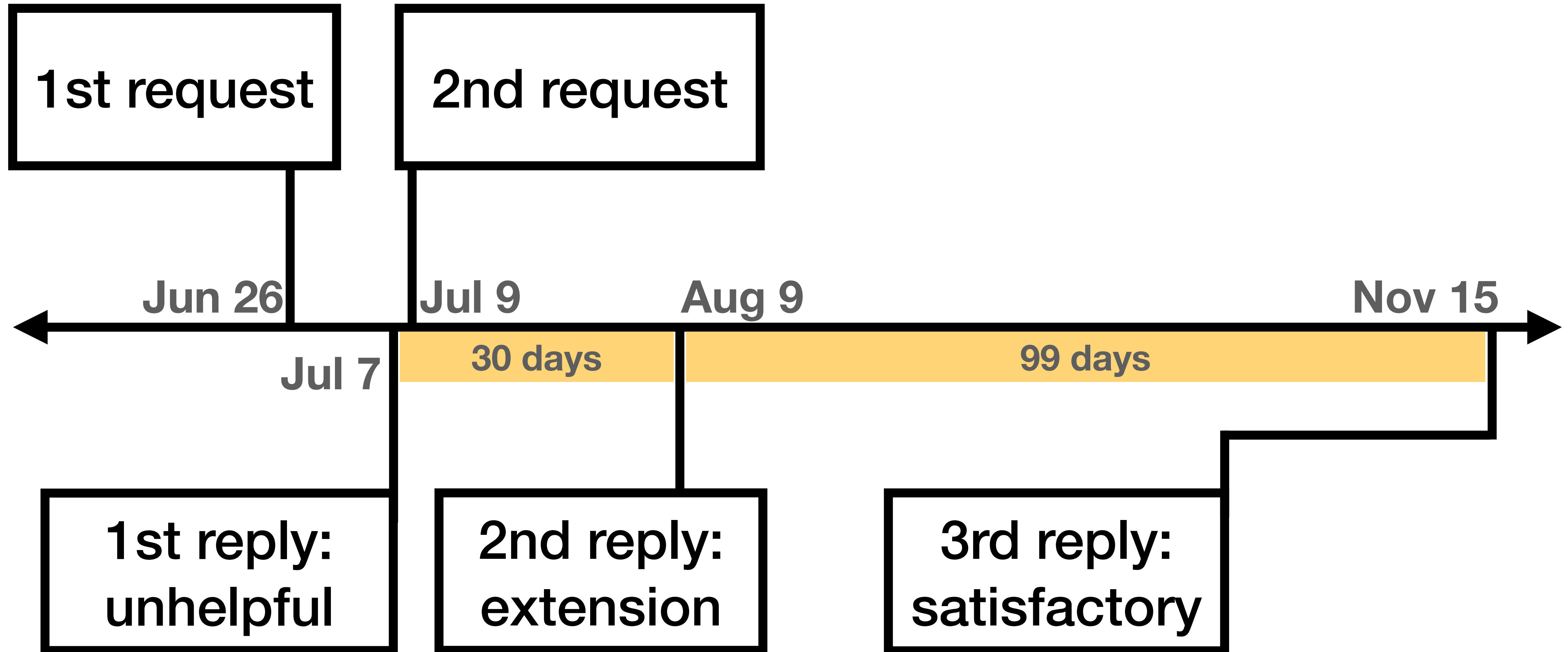
ad explanation results

useful

want similar

Control
Facebook
Twitter
Detailed Text
Detailed Visual
Creepy

0   20   40   60   80   100
% of agreement

■ strongly agree   ■ agree

key takeaways

- transparency is key, especially data access

obtaining clarifications from Twitter (4+ months)

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key takeaways

- transparency is key, especially data access

- some of the most concerning targeting types are understudied

  - e.g., tailored audiences, follower lookalikes

- how to enforce targeting policies if skirting scrutiny is trivial?

- ad explanations should be more detailed

the "creepy" ad explanation?

What Twitter Knows

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Blase Ur

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