How Do People Change Their Technology Use in Protest?: Understanding “Protest Users”

Hanlin Li*, Nick Vincent*, Janice Tsai**, Jofish Kaye**, Brent Hecht*

(The first two authors contributed equally)

* PSA Research Group
People, Space, and Algorithms
NORTHWESTERN UNIVERSITY

** mozilla
Emergence of protests against tech companies

Americans are changing their relationship with Facebook. Pew Research Center
Academic research on protests against tech companies
Academic research on protests against tech companies

Data Union

Posner and Weyl 2018
Academic research on protests against tech companies

Data Union

“Data Strikes”: Evaluating the Effectiveness of a New Form of Collective Action Against Technology Companies

Posner and Weyl 2018

Vincent et al. 2019
1) What is the rate of participation in these protests among internet users? What are the motivations and tactics involved?

2) What challenges people face in protest? What roadblocks prevent people from protesting?
People **stop** or **change** their technology use to protest a tech company's values or actions.
Protest Users:

People **stop** or **change** their technology use to protest a tech company's values or actions.

**Protest Non-Use**    **Protest Use**
Protests against tech companies – overlap with technology non-use
Protests against tech companies – overlap with technology non-use

Wyatt. 2003. Non-users also matter: The construction of users and non-users of the Internet
Protests against tech companies – overlap with technology non-use

Wyatt. 2003. Non-users also matter: The construction of users and non-users of the Internet

Satchell & Dourish. 2009. Beyond the user: use and non-use in HCI

Baumer et al. 2015. On the Importance and Implications of Studying Technology Non-use

Baumer et al. 2018. Socioeconomic Inequalities in the Non Use of Facebook

Baumer et al. 2019. All Users are (Not) Created Equal: Predictors Vary for Different Forms of Facebook Non/use
Protests against tech companies – overlap with technology non-use
Methods

Amazon, Apple, Facebook, Google, Microsoft: the five most valuable tech companies on the U.S. stock market.
Methods

2017 exploratory survey  2019 targeted survey
Methods

2017 exploratory survey
Do you protest <Company Name>?
And what is the primary motivation?
SurveyMonkey, n = 463

2019 targeted survey
Motivations?
Tactics?
Challenges?
Methods

2017 exploratory survey

Do you protest <Company Name>? And what is the primary motivation?

SurveyMonkey, n = 463

2019 targeted survey

Do you protest <Company Name>? Motivations? Tactics? Challenges?

Qualtrics, n = 398
Methods

2017 exploratory survey
Do you protest <Company Name>? And what is the primary motivation?
SurveyMonkey, n = 463

2019 targeted survey
Do you protest <Company Name>? Motivations? Tactics? Challenges?
Qualtrics, n = 398

Our focus
Methods

• **Large enough sample** to achieve a margin of error of 5% at a **95% confidence level** for the percentage of protest users.

• Questionnaires can be seen at [http://www.psagroup.org](http://www.psagroup.org)
Respondent Demographics

Our samples for both surveys appeared to be reasonably balanced across a number of demographic factors.
Prevalence

Motivations

Tactics

Challenges and Roadblocks
Prevalence

Motivations

Tactics

Challenges and Roadblocks
30% Active protest users
19% Potential protest users
51% Others

21% protesting one company
5% protesting two companies
Prevalence of Protest Users

Protest Non-Use  Protest Use  Interested  Others

Facebook
Apple
Microsoft
Amazon
Google
Rising Rates of Protest Users across All Five Companies *

* These comparisons need to be interpreted with caution.
Who are protest users?
Who are protest users?

• Male respondents were 2.4 times more likely than female respondents to protest when holding other factors constant.
Who are protest users?

- Male respondents were 2.4 times more likely than female respondents to protest when holding other factors constant.
- Older respondents were less likely to protest than younger respondents.
- Prevalence
- Motivations
- Tactics
- Challenges and Roadblocks
### Protest Users’ Motivations

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Amazon</th>
<th>Apple</th>
<th>Facebook</th>
<th>Google</th>
<th>Microsoft</th>
<th>Total instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company profits off my data</td>
<td>3</td>
<td>11</td>
<td>34</td>
<td>5</td>
<td>6</td>
<td>59</td>
</tr>
<tr>
<td>Privacy violations</td>
<td>2</td>
<td>9</td>
<td>37</td>
<td>6</td>
<td>3</td>
<td>57</td>
</tr>
<tr>
<td>Too expensive</td>
<td>3</td>
<td>27</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>43</td>
</tr>
<tr>
<td>Company is too large</td>
<td>5</td>
<td>10</td>
<td>11</td>
<td>7</td>
<td>8</td>
<td>41</td>
</tr>
<tr>
<td>Personal values</td>
<td>4</td>
<td>10</td>
<td>18</td>
<td>4</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>Terrible service</td>
<td>6</td>
<td>11</td>
<td>12</td>
<td>4</td>
<td>4</td>
<td>37</td>
</tr>
<tr>
<td>Self-care or well-being</td>
<td>3</td>
<td>4</td>
<td>23</td>
<td>4</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td>Company political stance</td>
<td>4</td>
<td>7</td>
<td>15</td>
<td>4</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>Demographic bias</td>
<td>1</td>
<td>6</td>
<td>15</td>
<td>3</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td>Company exploits workers</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>28</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>4</td>
<td>9</td>
<td>2</td>
<td>2</td>
<td>18</td>
</tr>
</tbody>
</table>

**# of protest user**

<table>
<thead>
<tr>
<th></th>
<th>Amazon</th>
<th>Apple</th>
<th>Facebook</th>
<th>Google</th>
<th>Microsoft</th>
<th>Total instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>47</td>
<td>73</td>
<td>21</td>
<td>22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Concerns around companies profiting off of user data as a motivation from our exploratory 2017 survey
Motivations - Concerns around Companies Profiting off of User Data

• “I resent the invasive tentacles of tech companies. They are trying to control and profit from everything we do in life. They don't respect privacy they just want $$”

• “They sell my personal information exploiting ME MAKING PROFIT OFF OF ME, without giving me any financial share of their profit pirating.”
# Protest Users’ Motivations

<table>
<thead>
<tr>
<th></th>
<th>Amazon</th>
<th>Apple</th>
<th>Facebook</th>
<th>Google</th>
<th>Microsoft</th>
<th>Total instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company profits off my data</td>
<td>3</td>
<td>11</td>
<td>34</td>
<td>5</td>
<td>6</td>
<td>59</td>
</tr>
<tr>
<td>Privacy violations</td>
<td>2</td>
<td>9</td>
<td>37</td>
<td>6</td>
<td>3</td>
<td>57</td>
</tr>
<tr>
<td>Too expensive</td>
<td>3</td>
<td>27</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>43</td>
</tr>
<tr>
<td>Company is too large</td>
<td>5</td>
<td>10</td>
<td>11</td>
<td>7</td>
<td>8</td>
<td>41</td>
</tr>
<tr>
<td>Personal values</td>
<td>4</td>
<td>10</td>
<td>18</td>
<td>4</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>Terrible service</td>
<td>6</td>
<td>11</td>
<td>12</td>
<td>4</td>
<td>4</td>
<td>37</td>
</tr>
<tr>
<td>Self-care or well-being</td>
<td>3</td>
<td>4</td>
<td>23</td>
<td>4</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td>Company political stance</td>
<td>4</td>
<td>7</td>
<td>15</td>
<td>4</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>Demographic bias</td>
<td>1</td>
<td>6</td>
<td>15</td>
<td>3</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td>Company exploits workers</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>28</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>4</td>
<td>9</td>
<td>2</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td><strong># of protest user</strong></td>
<td><strong>23</strong></td>
<td><strong>47</strong></td>
<td><strong>73</strong></td>
<td><strong>21</strong></td>
<td><strong>22</strong></td>
<td></td>
</tr>
</tbody>
</table>
## Potential Protest Users’ Motivations

<table>
<thead>
<tr>
<th>Reason</th>
<th>Amazon</th>
<th>Apple</th>
<th>Facebook</th>
<th>Google</th>
<th>Microsoft</th>
<th>Total instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company profits off my data</td>
<td>7</td>
<td>8</td>
<td>24</td>
<td>8</td>
<td>7</td>
<td>54</td>
</tr>
<tr>
<td>Privacy violations</td>
<td>7</td>
<td>4</td>
<td>32</td>
<td>8</td>
<td>7</td>
<td>58</td>
</tr>
<tr>
<td>Too expensive</td>
<td>4</td>
<td>16</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Company is too large</td>
<td>11</td>
<td>9</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>41</td>
</tr>
<tr>
<td>Personal values</td>
<td>5</td>
<td>1</td>
<td>16</td>
<td>5</td>
<td>6</td>
<td>33</td>
</tr>
<tr>
<td>Terrible service</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Self-care or well-being</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Company political stance</td>
<td>5</td>
<td>3</td>
<td>13</td>
<td>6</td>
<td>6</td>
<td>33</td>
</tr>
<tr>
<td>Demographic bias</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Company exploits workers</td>
<td>14</td>
<td>8</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>14</td>
</tr>
</tbody>
</table>

# of potential protest user

<table>
<thead>
<tr>
<th></th>
<th>Amazon</th>
<th>Apple</th>
<th>Facebook</th>
<th>Google</th>
<th>Microsoft</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>33</td>
<td>53</td>
<td>25</td>
<td>38</td>
<td></td>
</tr>
</tbody>
</table>
Prevalence

Motivations

Tactics

Challenges and Roadblocks
Tactics - Overall

- Stopped use: 93 instances
- Ad blocking: 41 instances
- Fake data or accounts: 27 instances
- Private browsing: 24 instances
Tactics - Facebook

- **Stopped use**: (36 instances)
- **Ad blocking**: (16 instances)
- **Anti-tracking extensions**: (11 instances)
- **Private browsing**: (9 instances)
Prevalence

Motivations

Tactics

Challenges and Roadblocks
# Challenges for Protest Users

<table>
<thead>
<tr>
<th></th>
<th>Amazon</th>
<th>Apple</th>
<th>Facebook</th>
<th>Google</th>
<th>Microsoft</th>
<th>Total instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Losing connections</td>
<td>4</td>
<td>11</td>
<td>40</td>
<td>8</td>
<td>6</td>
<td>69</td>
</tr>
<tr>
<td>Spending more time with alternatives</td>
<td>3</td>
<td>13</td>
<td>16</td>
<td>4</td>
<td>5</td>
<td>41</td>
</tr>
<tr>
<td>No good alternative</td>
<td>7</td>
<td>9</td>
<td>14</td>
<td>5</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Missing out on information</td>
<td>4</td>
<td>5</td>
<td>19</td>
<td>6</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td>Higher price for alternatives</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>32</td>
</tr>
<tr>
<td><strong># of protest user</strong></td>
<td>23</td>
<td>47</td>
<td>73</td>
<td>21</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>
## Roadblocks for Potential Protest Users

<table>
<thead>
<tr>
<th>Issue</th>
<th>Amazon</th>
<th>Apple</th>
<th>Facebook</th>
<th>Google</th>
<th>Microsoft</th>
<th>Total instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Losing connections</td>
<td>2</td>
<td>2</td>
<td>25</td>
<td>5</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td>Spending more time with alternatives</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>No good alternative</td>
<td>13</td>
<td>11</td>
<td>18</td>
<td>10</td>
<td>10</td>
<td>62</td>
</tr>
<tr>
<td>Missing out on information</td>
<td>8</td>
<td>8</td>
<td>20</td>
<td>9</td>
<td>8</td>
<td>53</td>
</tr>
<tr>
<td>Higher price for alternatives</td>
<td>9</td>
<td>10</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>35</td>
</tr>
<tr>
<td><strong># of potential protest user</strong></td>
<td><strong>34</strong></td>
<td><strong>33</strong></td>
<td><strong>53</strong></td>
<td><strong>25</strong></td>
<td><strong>38</strong></td>
<td></td>
</tr>
</tbody>
</table>
Discussion

What do all these numbers mean for practice and research?
Protest users as a substantial force in the sociotechnical landscape

- Active protest users: 30%
- Potential protest users: 19%
- Others: 51%
Protest users as a substantial force in the sociotechnical landscape

% of respondents who hold a negative attitude toward the tech industry

30% protest users

Americans have become much less positive about tech companies’ impact on the U.S. Pew Research Center 2019
The prevalence of protest users should be of significant concern for companies that monetize user data.
The prevalence of protest users should be of significant concern for companies that monetize user data.

Users who do not provide data can meaningfully reduce the performance of a technology for the other users (Vincent et al., 2019).

Our results suggest that protest users are likely already reducing the performance of intelligent technologies.
For social computing researchers, our study highlights the need to design and study sociotechnical systems with protest users in mind.
For social computing researchers, our study highlights the need to design and study sociotechnical systems with protest users in mind.

- How and why might people contest a new feature or system?
For social computing researchers, our study highlights the need to design and study sociotechnical systems with protest users in mind.

- How and why might people contest a new feature or system?
- How studies of technology (non-)use might be affected by protest users?
As researchers, how can we support protest users?
Technologies to Support Protest Users

Redirecting to alternatives:

For the 12% Google active and potential protest users, a tool for web search that routes search queries to minority players such as DuckDuckGo.
Technologies to Support Protest Users

Supporting Collective Action

For **active and potential protest users**, a tool to highlight their collective impact.

“Over the last week, $n$ other people have also been using this anti-Facebook tracking extension and $m$ ads have been blocked, costing the company $p$ dollars.”
The perception of the **economic fairness** between users and technology companies.
The perception of the **economic fairness** between users and technology companies.
30% of our nationally representative sample of the U.S. adult population are protest users of at least one prominent tech company, by stopping or changing their technology use.

Concerns about business models that profit off of user data and privacy are the primary motivations for protest users. We identify nuanced behaviors of protest users, calling for future investigation of how intelligent technologies' performance may be influenced by protest users.

Questions?

lihanlin@u.northwestern.edu

@hanlinliii

How Do People Change Their Technology Use in Protest?: Understanding “Protest Users”
Hanlin Li *, Nicholas Vincent *, Janice Tsai, Jofish Kaye, and Brent Hecht
(* Equal contribution)

See related materials at http://www.psagroup.org/
30% of our nationally representative sample of the U.S. adult population are protest users of at least one prominent tech company, by stopping or changing their technology use.

Concerns about business models that profit off of user data and privacy are the primary motivations for protest users.
30% of our nationally representative sample of the U.S. adult population are protest users of at least one prominent tech company, by stopping or changing their technology use.

Concerns about business models that profit off of user data and privacy are the primary motivations for protest users.

We identify nuanced behaviors of protest users, calling for future investigation of how intelligent technologies’ performance may be influenced by protest users.