Computational Propaganda: Challenges and Solutions

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Roadmap

• What is Computational Propaganda?

• Examples of ComProp in US and UK 2016

• Effective Solutions
What is Computational Propaganda?

- Malicious use of software to megaphone or dampen political messages online, with the goal of manipulation of public opinion.
- Problem is both computational and social in nature. **International** and **cross-platform** presence.
- **Social media bots**: code that controls profile accounts on social media, deployed to effect a political goal.
- Misinformation v. Disinformation
What Can Bots Do?

• **Megaphonining**: amplify a message to manufacture consensus. Dampen a message to thwart opposition/organization (hashtag hijacking, poisoning).

• **Promote transparency/protest**

• **Harassment**: persecution of perceived opposition

• **Crawlers**: gather intelligence, report analytics, etc.

• **Malware bots**: more cybersecurity-oriented, “botnets” overload websites with DDoS attacks (Mirai Botnet 2016).
Brexit Campaign (June 2016)

• Bots played “a small but strategic role” in Brexit conversations online
• Bots were deployed on both sides, but the pro-Brexit bots dominated
• “less than 1 percent of sampled accounts generate almost a third of all the messages.” (Howard and Kollanyi, 2016)

Table 1: Hashtag Use on Twitter, by Perspective on the UK Referendum

<table>
<thead>
<tr>
<th>Perspective</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remain</td>
<td>363,217</td>
<td>20</td>
</tr>
<tr>
<td>Leave</td>
<td>993,176</td>
<td>54</td>
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<tr>
<td>Neutral</td>
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<td>26</td>
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<tr>
<td>Occurrence</td>
<td>1,831,626</td>
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</table>

Source: Author’s calculations based on Twitter sample of these hashtags June 5-12, 2016.
Note: This table reports the number of times these hashtags were used, not the number of tweets.
US Presidential Election (2016)

- **Nevada Primary** – “Latino” bots supporting Trump
- **Debates** – pro-Trump vs. pro-Clinton bot activity ratio 4:1
- **Election day** – ratio widens to 5:1

Several accounts “went dark” on Nov. 9, became active in May for French Elections (Ferrara 2017)

Figure 1: Hourly Twitter Traffic, by Candidate Camp

Source: Authors’ calculations from data sampled 1-9/11/16.
Note: This figure is based on the hashtags used in the tweets
Potential Solutions

• Blue-ribbon commissions of academic experts, private-sector executives and legislators

• Data sharing – amongst and between researchers and private companies

• More transparency around advertising/automation

• Solutions must be also both human and computational
“When I realized that people believe what the Internet says more than reality, I discovered that I had the power to make people believe almost anything”

– Andrés Sepúlveda

How to Hack an Election