

ID#240202

PUBLISHED ON
MAY 9, 2024

The Cambridge Analytica Scandal: Psychographics, Facebook, and the 2016 US Elections

BY C. DANIEL GUETTA*

Introduction

Appearing at the Concordia Annual Summit in September 2016 on a slate that also included luminaries like Madeleine Albright and Warren Buffett, Cambridge Analytica CEO Alexander Nix spun the presidential campaign of Texas Senator Ted Cruz as a success. His firm had contracted with the Cruz campaign for data and strategy services until the candidate dropped out of the race four months earlier, ceding the Republican presidential nomination to Donald Trump.^{1 2}

Prior to dropping out, Cruz had gone from being a candidate with low name recognition and low likability³ in a crowded field to being the “only credible threat” to Donald Trump.⁴ Underlying this transformation, Nix explained, was Cambridge Analytica’s novel approach to data collection and analysis. In addition to focusing on factors like race and gender to fine-tune advertising imagery and target political messaging, Cambridge Analytica was pioneering a more holistic way of understanding voters. “Clearly, demographics and geographics and economics will influence your worldview. But equally important, or probably more important, are psychographics—that is, an understanding of your personality,” he said.⁵

He then described his firm’s “long-form quantitative instrument” designed to evaluate character traits including openness, conscientiousness, extraversion, agreeableness, and neuroticism (colloquially known as OCEAN, a common rubric for mapping personality types).⁶ Nix told the audience his firm had used insights from surveys filled out by hundreds of thousands of Americans to build a model that could predict the personality of every single voter in the United States.⁷

Author affiliation

* Columbia Business School

Copyright information

© 2024 by The Trustees of Columbia University in the City of New York.

This case is for teaching purposes only and does not represent an endorsement or judgment of the material included.

Acknowledgements

Hannah Brown '24 provided research and writing support for this case.

This case cannot be used or reproduced without explicit permission from Columbia CaseWorks. To obtain permission, please visit caseworks.business.columbia.edu, or e-mail ColumbiaCaseWorks@gsb.columbia.edu

For a highly neurotic and conscientious audience, he said, gun rights messaging should play on fears of burglary or home invasion. For a closed, agreeable audience, an effective message might invoke fathers and sons.⁸

“Of the two candidates left in this election, one of them is using these technologies. It’s going to be very interesting to see how they impact the next seven weeks,” he concluded.⁹

Seven weeks later, Donald Trump was elected.¹⁰ Cambridge Analytica and its data-collection methods would soon be caught in a massive political scandal that ensnared the firm, Facebook, and the White House.

Psychometrics Meets Big Data

In September 2006, the social media network Facebook opened its platform to anyone over the age of 13 with an e-mail address.¹¹ The site, which had previously been restricted to high school and college students along with employees at a handful of companies, grew to 12 million users by the end of the year.¹²

The following summer, David Stillwell, a graduate student at the University of Nottingham, was among the first to capitalize on the young network’s data-collection capabilities. Stillwell built a Facebook application called myPersonality, an online quiz where participants rated 100 statements like “I have a vivid imagination” and “I do not like poetry” on a five-step scale from “very inaccurate” to “very accurate.”¹³ The app would then compute the user’s scores for the “big five” OCEAN personality traits and return a personalized psychological profile (Exhibit 1).

Stillwell has said his plan was to share myPersonality with 50 of his Facebook friends. But people enjoyed reading and sharing their OCEAN profiles, and his friends shared the quiz with their friends, who in turn shared the quiz with their own friends. The quiz eventually reached six million people.¹⁴

Stillwell’s myPersonality included a voluntary opt-in feature that allowed participants to “donate” their Facebook data—which included their names, locations, and a list of the pages they “liked”—to the research project. About 40 percent of users consented to sharing their data.¹⁵

The graduate student freely shared the resulting dataset with other researchers, and the project ultimately resulted in more than 50 peer-reviewed publications.¹⁶ One of these studies found that the app-generated personality assessments were more accurate than those made by a user’s real-world friends. Another determined that psychological targeting was “an effective approach to digital mass persuasion.”¹⁷

In the years following the release of myPersonality, Stillwell moved to the University of Cambridge’s Psychometrics Centre. There, in 2013, he cowrote a paper that found it was possible to predict a user’s ethnicity and sexuality based on the pages they had “liked” on

Facebook.¹⁸ In a decision he later called “an afterthought,”¹⁹ that paper included a few lines about the commercial implications of the findings:

On the other hand, the predictability of individual attributes from digital records of behavior may have considerable negative implications, because it can easily be applied to large numbers of people without obtaining their individual consent and without them noticing. Commercial companies, governmental institutions, or even one’s Facebook friends could use software to infer attributes such as intelligence, sexual orientation, or political views that an individual may not have intended to share. One can imagine situations in which such predictions, even if incorrect, could pose a threat to an individual’s well-being, freedom, or even life.²⁰

The paper seemed to frame the use of digital records by private companies as a potential negative outcome. Years later, a private company did indeed take inspiration from the paper, but it came to a very different conclusion.

A Yacht on the Hudson and the Birth of Cambridge Analytica

In a 1992 interview, Nigel Oakes, a British advertising executive who had previously dated a cousin of Queen Elizabeth and worked as a roving DJ,^{21 22} made a bold claim about his approach to persuasion: “We use the same techniques as Aristotle and Hitler, we appeal to people on an emotional level to get them to agree on a functional level.”²³ The following year, he founded the company Strategic Communication Laboratories (SCL) in furtherance of these concepts.²⁴

Oakes thought he could use insights from the social sciences to “plant” motivations in people’s heads without their knowledge.²⁵ His ideas were met with skepticism from former business partners and psychologists,²⁶ but the company attracted prominent investors and clients, possibly due in part to Oakes’s aristocratic background.²⁷ The company worked largely as an international defense contractor for many years, and Oakes has said he provided consulting services to South African President Nelson Mandela.²⁸ SCL also provided training for Britain’s 15th Psyops Group.²⁹

Sometime in the aughts, Oakes hired Alexander Nix, a fellow Eton-educated Englishman, to expand the business outside of the defense sector. “If he’s the Steve Jobs, I’m the Steve Wozniak,” Oakes said of their working relationship in a 2017 interview.³⁰

Nix began to home in on political campaigns as a potential revenue stream and turned an eye toward the United States, where the Supreme Court removed many restrictions on political donations in its 2010 *Citizens United* decision.^{31 32} Campaign spending in US elections was poised to grow dramatically. He just needed to break into the industry³³ (Exhibit 2).

In 2013, he got his chance. Nix connected with Republican political donor Rebekah Mercer through acquaintances. The two met for lunch in New York City, and Mercer was evidently impressed: She arranged for Nix to meet her father, billionaire Robert Mercer, later the same

day.³⁴ Nix was given instructions to meet at an address on the Hudson River, but when he arrived, he was perplexed. The location was a dive bar. Then Mercer's 203-foot yacht pulled up to an adjacent dock.³⁵ On board were the Mercers and Steve Bannon, cofounder of the conservative news outlet Breitbart.³⁶

On the yacht, Nix pitched a data-driven approach to campaigning. He claimed he could generate "psychographic" profiles of voters and target different personality traits with different kinds of political messages.³⁷ The idea wasn't dissimilar to the pseudoscientific persuasion tactics Oakes had been peddling for decades. But Nix's plan contained one key legitimizing factor: The firm's targeting and messaging strategies would be bolstered by a vast database of sophisticated voter profiles.³⁸

Nix's timing was perfect. A few months earlier, Republican presidential candidate Mitt Romney had suffered an embarrassment when his much-touted voter-turnout app crashed on Election Day.³⁹ The winning candidate, incumbent Democratic President Barack Obama, had implemented a highly sophisticated digital strategy.⁴⁰ The Mercers viewed a data-driven approach as essential to Republican success in the 2016 presidential campaign, but they hadn't decided who should lead the operation.⁴¹

"The magic that happened for S.C.L. in America was that the Republicans at that stage essentially were a third-rate country," an anonymous former SCL employee told *The New Yorker*. "Whoever had money and whoever wanted to do stuff was going to do it."⁴²

The yacht meeting was a success. The Mercers helped finance \$1.5 million for an SCL pilot project in that year's gubernatorial race in Virginia.⁴³ Their candidate lost, but their interest in Nix's work was unshaken: On December 31, 2013, SCL incorporated a new US-based firm, Cambridge Analytica, to further its stateside elections work.⁴⁴ Robert Mercer put \$15 million toward the effort and retained majority ownership.⁴⁵ Steve Bannon was listed as vice president of the board, and Nix acted as CEO. By the 2016 election, Cambridge Analytica would grow to 200 employees.⁴⁶

The Panopticon and the Cruz Campaign

In 2014, Cambridge Analytica wanted to work for Ted Cruz, a Republican senator from Texas who was mounting a primary bid for the party's nomination for the 2016 presidential election.⁴⁷ The firm pitched to the Cruz team about its psychographics targeting, claiming that it would provide the candidate with a one-stop software platform for campaign managers to handle voter databases, microtargeting, door-to-door canvassing, and more.⁴⁸

There was just one problem: This software didn't exist yet. Cambridge Analytica had hired Chris Wylie, a Canadian in his 20s who had volunteered for the Obama campaign and learned about microtargeting from a campaign adviser there, to lead its psychographic profiling efforts.⁴⁹ "It was like, 'A-ha!' [...] This kid can actually turn what we are pretending to do into

more than us just gathering data and sitting in a room for a couple of weeks,” the former employee told *The New Yorker*.⁵⁰

But Wylie didn’t have the granular data he needed to build the detailed voter models that would bring the whole strategy to life. That’s when he found Stillwell’s research and requested a meeting with the Cambridge Psychometrics Centre.⁵¹ Scheduling e-mails between SCL and the Cambridge academics bore the title “Panopticon meeting,” a reference to a prison in which a single watchman can surveil everyone inside while remaining invisible to the inmates.⁵²

Stillwell’s team did not wind up working with Cambridge Analytica, but the firm found a willing partner in Aleksandr Kogan, the University of Cambridge faculty member who had put the two parties in touch.⁵³ In the summer of 2014 (sources differ on the exact date), Kogan began to collect user data by way of a Facebook app called *thisisyourdigitallife*.⁵⁴ Its data-collection structure was similar to that of *myPersonality*: Kogan planned to gather users’ Facebook data alongside their quiz responses. In the fine print, Kogan told Facebook and app users that the data he harvested would be used for academic purposes.⁵⁵

There was one huge difference between *myPersonality* and *thisisyourdigitallife*. Whereas *myPersonality* just collected data from the users who opted in, *thisisyourdigitallife* collected information from all participants—and, crucially, all of their friends.⁵⁶ This policy made the data-collection process exponentially faster: At the time, each Facebook user had an average of 340 friends.⁵⁷

Cambridge Analytica covered \$800,000 in expenses for *thisisyourdigitallife* in exchange for the data Kogan harvested, and Kogan was told he’d be allowed to keep a copy of the data for himself.⁵⁸ Kogan used the Amazon crowdsourcing platform Mechanical Turk to pay users about \$1 each to engage with *thisisyourdigitallife*.⁵⁹ Around 270,000 people participated.⁶⁰

Though this data-collection effort was later portrayed in some press accounts as a hack, Facebook’s policies at the time allowed users to give app developers permission to collect data from their friends’ profiles, often without the knowledge or consent of the friends. In 2010, Facebook had launched Open Graph, a platform that gave developers access, with a user’s permission, to their name, gender, location, birthday, education, relationship status, and more.⁶¹ Some permissions even allowed Open Graph developers to access private messages.⁶² (Facebook’s terms and conditions did say that the data could not be sold.)⁶³

Kogan and Facebook have offered conflicting accounts of how much the company knew about the data *thisisyourdigitallife* was collecting.⁶⁴ Kogan was working with Facebook on unrelated research at the time, and the company reportedly gave him a dataset that included 57 billion friend requests.⁶⁵ Facebook tightened restrictions on developers’ access to users’ friends’ data in 2015.⁶⁶ In a 2023 interview, Stillwell noted that the company held a patent on predicting people’s personalities from their status updates.⁶⁷

Soon, *thisisyourdigitallife* and Cambridge Analytica had amassed a database of more than 50 million⁶⁸ users, about 30 million of whom could be matched with other databases.⁶⁹ (Sources

differ on how many accounts were harvested exactly, but most are consistent with these orders of magnitude.) Though it would be quite a while before news of these efforts broke into the mainstream media, at the time some Mechanical Turk users did flag the app's activities for possible violation of Facebook's terms of service.⁷⁰ It's unclear if the company took these complaints seriously.⁷¹

With funding from Cambridge Analytica, Kogan had managed to scrape a huge amount of personal information from Facebook users' profiles. The effort had required consent from just a small fraction of the people affected. "Everyone knew we were wading into a gray area," Wylie said later. "It was an instance of if you don't ask questions, you won't get an answer you don't like."⁷²

Cambridge Analytica proceeded to use the data to identify four personality types that might be persuaded to vote for Senator Cruz: "timid traditionalists," "stoic traditionalists," "temperamental," and "relaxed leaders." Accompanying examples of suggested imagery included "a family having a nice moment together" (timid traditionalist) and "a young man tossing away a tax return and taking the key of his motorbike" (temperamental).⁷³

As the primary elections inched along, relationships between the Cruz campaign and Cambridge Analytica were frosty at times. Cruz's campaign website, built by Cambridge Analytica, failed to launch on time after the senator teased it on Twitter.⁷⁴ Not long before the South Carolina primary, data analysts for the Cruz campaign discovered that Cambridge Analytica had not been updating the voter database, an oversight that left 70,000 people out of the firm's targeting models. "It was like an internal Ponzi scheme," one campaign official told the magazine *Mother Jones*.⁷⁵ Despite the setbacks, Cambridge Analytica managed to maintain the Mercers' support. In one tense conference call, Rebekah Mercer and Steve Bannon reportedly insisted that the firm's services were the only thing keeping the Cruz campaign afloat.⁷⁶

In December 2015, *The Guardian* broke the news of the Cruz campaign's use of Facebook data for psychographic targeting.⁷⁷ After the story was published, Facebook asked Cambridge Analytica to delete the dataset Kogan had gathered. Wylie confirmed to the company that he had deleted the data, but the data remained on Cambridge Analytica's servers.⁷⁸ By that time, he had left the firm.⁷⁹

Cruz's campaign would last five more months before he lost the Republican nomination to Donald Trump.⁸⁰ After Cruz exited the race, Cambridge Analytica began eyeing the Trump campaign.⁸¹ Paul Manafort, Trump's campaign chairman, who was later sentenced to seven and a half years in prison for tax fraud, bank fraud, and conspiracy,⁸² reportedly protested plans to work with Cambridge Analytica. "They're full of [expletive], right?" he said on a phone call with a senior staffer on a rival campaign that had recently worked with Cambridge Analytica. "I don't want 'em anywhere near the campaign."⁸³

Manafort lost that battle. With the Mercers' ongoing support, Cambridge Analytica began working for Trump. Manafort was replaced as campaign chairman by Steve Bannon, the vice president of the firm.⁸⁴

The Trump Election, WikiLeaks, and the Cambridge Analytica Scandal

Weeks after Nix touted his approach at the Concordia Annual Summit, Donald Trump shocked many when he beat Democratic nominee Hillary Clinton in the general election, becoming president of the United States.⁸⁵

In the first year of the Trump presidency, media outlets cast about for explanations of why so many predictions of the outcome of the 2016 elections had been so wrong. In January 2017, BuzzFeed News published an unverified dossier compiled by former British intelligence officer Christopher Steele, alleging that Trump was an asset of the Russian government.⁸⁶ This led to intense interest in any connection between the Trump campaign and Russia.⁸⁷ Many clung to the idea that Russian interference had put Trump in office,⁸⁸ and the Justice Department hired a special counsel to investigate the claims in the dossier.⁸⁹

In March 2018, more than a year after Trump took office, Wylie turned whistleblower and leaked a cache of documents to *The New York Times* and *The Observer* of London.⁹⁰ Unlike *The Guardian's* 2015 work, which had tread much of the same ground, these stories sparked huge public outcry.⁹¹ For the first time, Facebook was forced to publicly acknowledge the role of its platform in the data-collection process.⁹² (Nix questioned Wylie's motivations, pointing to the fact that he had gone on to do similar work for different firms, and suggesting he simply wanted to damage the competition.)^{93,94}

"We exploited Facebook to harvest millions of people's profiles. And built models to exploit what we knew about them and target their inner demons," Wylie told *The Observer*.⁹⁵ "That was the basis the entire company was built on."

Press accounts drew connections between SCL, Cambridge Analytica, and Russia, fueling speculation that the firm was somehow involved in Russian efforts to swing the US election in favor of Donald Trump. Some of these connections were concrete: Nix had reached out to WikiLeaks founder Julian Assange during the campaign, in hopes of obtaining opponent Hillary Clinton's private e-mails,⁹⁶ and SCL claimed to have worked in Russia and Ukraine.⁹⁷ Others were more tenuous. Multiple press reports emphasized that Kogan, the Cambridge researcher who collected the data, was Russian American, and that Justice Department special counsel Robert Mueller demanded the e-mails of Cambridge Analytica employees who'd worked on the Trump campaign as part of his investigation.⁹⁸ Nix was caught on camera by undercover reporters from Britain's Channel 4 News talking about entrapping rival candidates in fake bribery stings and hiring sex workers to seduce them.⁹⁹ In the video, Cambridge

Analytica executives claimed they could sneak propaganda “into the bloodstream of the internet.”¹⁰⁰

Around this time, it was also widely reported that SCL had been involved in a campaign promoting Britain’s exit from the European Union.¹⁰¹ Both parties disputed the scope and scale of Cambridge Analytica’s work on the Leave campaign,¹⁰² but the idea that a shadowy firm had a hand in two of the most shocking election outcomes of the period added fuel to the narrative that Cambridge Analytica had used unethically obtained data to employ powerful manipulation tactics that swayed momentous elections.¹⁰³

The news also came at a time when the Trump campaign’s use of Facebook was under the microscope. The site had been a vehicle for the spread of misinformation and “fake news” throughout the campaign, and researchers and pundits were still assessing the fallout.¹⁰⁴

The scandal shut down Cambridge Analytica in May 2018.¹⁰⁵ Nix was subsequently banned from running companies in Britain for seven years.¹⁰⁶ The US Federal Trade Commission fined Facebook \$5 billion in 2019 for violating an earlier agreement in which it promised to gain “express consent” from users when sharing their data.¹⁰⁷

Some SCL employees were relieved that Wylie, their former colleague, had thrust the company into the spotlight. “What I found surreal was before [...] when I was aware that very dodgy things were being done by very dodgy people and no one seemed to care,” said the employee who spoke to *The New Yorker*.¹⁰⁸

In the same article, writer Sam Knight reflected on his interview with the anonymous former employee.

After hearing about life inside S.C.L., I said that I found it hard to reconcile the two versions of the company: one a minor player in foreign elections, founded by an Old Etonian who liked to be called James Bond; and one that had brought “information warfare” to two of the world’s oldest democracies. “They aren’t two different things,” the employee said. “You can be a slightly hokey Nigel Oakes operation and still weaponize Facebook.” The startling thing, in retrospect, is how easy it was.¹⁰⁹

Lost in the coverage, however, was a more nuanced understanding of what Cambridge Analytica had actually done. How did it go from an enormous dataset listing millions of users’ Facebook data to hyper-targeted advertising? And, perhaps most importantly, did it work?

A Deep Dive into Big-Data-Driven Psychographics

To better understand the kinds of techniques Cambridge Analytica would have used to mine the data it obtained, we will use a sample dataset made available by Michal Kosinsky, as part as his data-mining tutorial.¹¹⁰ The exposition here loosely follows parts of that excellent tutorial, which we strongly recommend to more advanced students.

The file Kosinsky makes available comprises data on a sample of 110,728 Facebook users and provides two key sets of data about these users:

- Demographic data—whether they are men, women, Republicans, Democrats, etc. The files also contain information about how prominent each of the OCEAN personality traits is in each of these users (obtained from surveys the users completed).
- Data about the items these users “liked” on Facebook. At the time these data were collected, users could like a broad range of items on Facebook, from pages belonging to specific sports personalities to pages loosely representing a specific theme (e.g., “I love candy”). It is probable that “like” data such as these were part of the information Cambridge Analytica obtained and claimed to use for its targeting. The data list information about 1,580,284 different items users might have liked.

At first glance, these data are quite daunting. And yet, hidden inside these users’ digital fingerprints are signals that could reveal valuable insights about them.

In class, we will look at the dataset itself, and attempt to tease out these signals.

Before class, consider the following questions:

- What aspects of this dataset make it so difficult to handle? Can you think of ways to simplify it that might simplify its analysis?
- Consider Cambridge Analytica’s aims, as described in this case. How might the firm have used a dataset such as this one to achieve these aims?
- Cast a critical glance at the story of Cambridge Analytica described in this case. Are you convinced that it achieved what it promised? Does any part of its story give you pause for thought?
- What broader lessons about data are there to learn from this story, both for the world at large and for companies like Facebook?

Exhibits

Exhibit 1: myPersonality User Interface

facebook

Search

myPersonality

My Personality Profile Compare to Friends More Tests Options

Latest news: **New Schwartz's Values Survey.** [View All News]

Below, there are phrases describing people's behaviours. Please use the rating scale to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Rate yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. If you are unsure of which response to choose (e.g. you act one way in a certain situation, and another way in a different situation), choose the response which feels most "natural" to you.

So that you can describe yourself in an honest manner, your answers to individual questions cannot be seen by others, only the overall calculation of your personality traits.

Answer Questions (if you don't want to do 100 now, you can always answer more later)

Phrase:	Very Inaccurate	Moderately Inaccurate	Neither Inaccurate nor Accurate	Moderately Accurate	Very Accurate
I...					
Have a vivid imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hold a grudge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do not mind being the centre of attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do not like poetry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complete tasks successfully.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Believe that others have good intentions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid philosophical discussions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

— Researchers used this app on Facebook to see whether a computer could figure out people's personalities. Wu Youyou /Cambridge University / Facebook

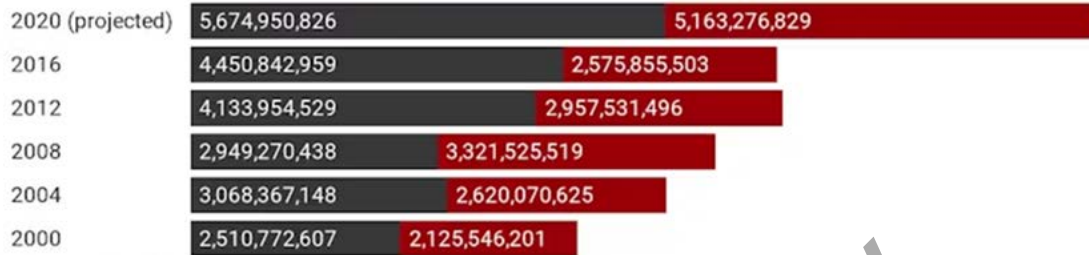
Source: "'Like' This: Can Facebook Assess Your Personality?" NBC News, <https://www.nbcnews.com/health/health-news/can-facebook-assess-your-personality-n284736>, accessed May 8, 2024.

Exhibit 2: Spending on US Elections Before and After *Citizens United*

Total cost of US elections

\$US, adjusted for inflation

■ Congressional Races ■ Presidential Race



Source: Center for Responsive Politics, via Open Secrets

Source: "The scale of US election spending explained in five graphs," The Conversation, October 15, 2020, <https://theconversation.com/the-scale-of-us-election-spending-explained-in-five-graphs-130651>.

Do Not Copy

Endnotes

- ¹ Svitek, Patrick, "Cruz Ending Campaign After Devastating Indiana Loss to Trump," *The Texas Tribune*, May 3, 2016, <https://www.texastribune.org/2016/05/03/cruz-suffers-devastating-loss-indiana-primary/>.
- ² Nix, Alexander, "The Power of Big Data and Psychographics," 2016 Concordia Annual Summit, YouTube video, 11:00, September 27, 2016, https://www.youtube.com/watch?v=n8Dd5aVXLcC&ab_channel=Concordia.
- ³ "Ted Cruz Favorability Trend," The Texas Politics Project, University of Texas at Austin, 2024, <https://texaspolitics.utexas.edu/set/ted-cruz-favorability-trend>.
- ⁴ Nix, "The Power of Big Data."
- ⁵ Nix, "The Power of Big Data."
- ⁶ Goldberg, Emma, "The \$2 Billion Question of Who You Are at Work," *The New York Times*, March 5, 2023, <https://www.nytimes.com/2023/03/05/business/remote-work-personality-tests.html>.
- ⁷ Nix, "The Power of Big Data."
- ⁸ Nix, "The Power of Big Data."
- ⁹ Nix, "The Power of Big Data."
- ¹⁰ Pace, Julie, and Robert Furlow, "Trump claims astounding victory as America's 45th president," Associated Press, November 9, 2016, <https://apnews.com/article/fb2e92a47f054019a2589ace78d20836>.
- ¹¹ Abram, Carolyn, "Welcome to Facebook, everyone," Facebook, company website, September 26, 2006, <https://www.facebook.com/notes/facebook/welcome-to-facebook-everyone/2210227130/>.
- ¹² "Number of active users at Facebook over the years," Associated Press, October 23, 2012, <https://finance.yahoo.com/news/number-active-users-facebook-over-years-214600186--finance.html#:~:text=5.5%20million%20%E2%80%94%20End%20of%202005,20%20million%20%E2%80%94%20April%202007>.
- ¹³ "'Like' This: Can Facebook Assess Your Personality?," NBC News, January 12, 2015, <https://www.nbcnews.com/health/health-news/can-facebook-assess-your-personality-n284736>.
- ¹⁴ Stillwell, David J., and Michal Kosinski, "myPersonality Project," May 2018, <https://sites.google.com/michalkosinski.com/mypersonality>.
- ¹⁵ Stillwell, "myPersonality Project."
- ¹⁶ "Publications," MichalKosinski.com, <https://sites.google.com/michalkosinski.com/mypersonality/publications?authuser=0>.
- ¹⁷ "Publications," MichalKosinski.com.
- ¹⁸ Kroll, Andy, "Cloak and Data: The Real Story Behind Cambridge Analytica's Rise and Fall," *Mother Jones*, May/June 2018, <https://www.motherjones.com/politics/2018/03/cloak-and-data-cambridge-analytica-robert-mercier/>.

¹⁹ Kroll, "Cloak and Data."

²⁰ Kosinski, Michal, David Stillwell, and Thore Graepel, "Private traits and attributes are predictable from digital records of human behavior," *Proceedings of the National Academy of Sciences of the United States*, March 11, 2013, <https://www.pnas.org/doi/full/10.1073/pnas.1218772110>.

²¹ Doward, Jamie, and Alice Gibbs, "Did Cambridge Analytica influence the Brexit vote and the US election?," *The Guardian*, March 4, 2017, <https://www.theguardian.com/politics/2017/mar/04/nigel-oakes-cambridge-analytica-what-role-brexit-trump>.

²² Barry, Ellen, "Long Before Cambridge Analytica, a Belief in the 'Power of the Subliminal,'" *The New York Times*, April 20, 2018, <https://www.nytimes.com/2018/04/20/world/europe/oakes-scl-cambridge-analytica-trump.html>.

²³ Kroll, "Cloak and Data."

²⁴ Barry, "Long Before Cambridge Analytica."

²⁵ Barry, "Long Before Cambridge Analytica."

²⁶ Barry, "Long Before Cambridge Analytica."

²⁷ Barry, "Long Before Cambridge Analytica."

²⁸ Barry, "Long Before Cambridge Analytica."

²⁹ Barry, "Long Before Cambridge Analytica."

³⁰ Barry, "Long Before Cambridge Analytica."

³¹ Barry, "Long Before Cambridge Analytica."

³² Lau, Tim, "Citizens United Explained," Brennan Center for Justice, December 12, 2019, <https://www.brennancenter.org/our-work/research-reports/citizens-united-explained?ref=foreverwars.ghost.io>.

³³ Kroll, "Cloak and Data."

³⁴ Kroll, "Cloak and Data."

³⁵ Kroll, "Cloak and Data."

³⁶ Kroll, "Cloak and Data."

³⁷ Kroll, "Cloak and Data."

³⁸ Kroll, "Cloak and Data."

³⁹ Wyler, Grace, "Insiders Explain How Mitt Romney's Campaign Completely Fell Apart On Election Day," *Business Insider*, November 12, 2012, <https://www.businessinsider.com/romney-project-orca-election-day-collapse-2012-11>.

⁴⁰ Pilkington, Ed, and Amanda Michel, "Obama, Facebook and the power of friendship: the 2012 data election," *The Guardian*, February 17, 2012, <https://www.theguardian.com/world/2012/feb/17/obama-digital-data-machine-facebook-election>.

⁴¹ Kroll, "Cloak and Data."

⁴² Knight, Sam, "Life Inside S.C.L., Cambridge Analytica's Parent Company," *The New Yorker*, March 26, 2018, <https://www.newyorker.com/news/letter-from-the-uk/life-inside-scl-cambridge-analyticas-parent-company>.

⁴³ Rosenberg, Matthew, Nicholas Confessore, and Carole Cadwalladr, "How Trump Consultants Exploited the Facebook Data of Millions," *The New York Times*, March 17, 2018, <https://www.nytimes.com/2018/03/17/us/politics/cambridge-analytica-trump-campaign.html>.

⁴⁴ Confessore, Nicholas, and Danny Hakim, "Data Firm Says 'Secret Sauce' Aided Trump; Many Scoff," *The New York Times*, March 6, 2017, <https://www.nytimes.com/2017/03/06/us/politics/cambridge-analytica.html>.

⁴⁵ Rosenberg, "How Trump Consultants Exploited."

⁴⁶ Confessore, "Data Firm Says."

⁴⁷ Rosenberg, "How Trump Consultants Exploited."

⁴⁸ Kroll, "Cloak and Data."

⁴⁹ Rosenberg, "How Trump Consultants Exploited."

⁵⁰ Knight, "Life Inside S.C.L."

⁵¹ Rosenberg, "How Trump Consultants Exploited."

⁵² Kroll, "Cloak and Data."

⁵³ Rosenberg, "How Trump Consultants Exploited."

⁵⁴ Federal Trade Commission, In the Matter of Aleksandr Kogan and Alexander Nix, 2019, https://www.ftc.gov/system/files/documents/cases/182_3106_kogan-nix_complaint.pdf.

⁵⁵ Rosenberg, "How Trump Consultants Exploited."

⁵⁶ FTC, In the Matter of Aleksandr Kogan and Alexander Nix.

⁵⁷ Davies, Harry, "Ted Cruz using firm that harvested data on millions of unwitting Facebook users," *The Guardian*, December 11, 2015, <https://www.theguardian.com/us-news/2015/dec/11/senator-ted-cruz-president-campaign-facebook-user-data>.

⁵⁸ Rosenberg, "How Trump Consultants Exploited."

⁵⁹ Schwartz, Mattathias, "Facebook Failed to Protect 30 Million Users from Having Their Data Harvested by Trump Campaign Affiliate," *The Intercept*, March 30, 2017, <https://theintercept.com/2017/03/30/facebook-failed-to-protect-30-million-users-from-having-their-data-harvested-by-trump-campaign-affiliate/>.

⁶⁰ FTC, In the Matter of Aleksandr Kogan and Alexander Nix.

⁶¹ Zuckerberg, Mark, "From Facebook, answering privacy concerns with new settings," *The Washington Post*, May 24, 2010, <https://www.washingtonpost.com/wp-dyn/content/article/2010/05/23/AR2010052303828.html>.

⁶² Rosenberg, "How Trump Consultants Exploited."

⁶³ Kroll, "Cloak and Data."

⁶⁴ Facebook publicly acknowledged no wrongdoing but privately asked Kogan to delete the data; Facebook hired Kogan's main collaborator: Schwartz, "Facebook Failed to Protect."

Kogan said he was a "scapegoat": Kroll, "Cloak and Data."

After the news broke, Mark Zuckerberg said in 2018 congressional testimony that "something bad" might be going on at the Psychometrics Centre: Lapowsky, Issie, "The Man Who Saw the Dangers of Cambridge Analytica Years Ago," *Wired*, June 19, 2018, <https://www.wired.com/story/the-man-who-saw-the-dangers-of-cambridge-analytica/>.

Kogan briefly collaborated with Facebook: Lapowsky, "The Man Who Saw the Dangers." Facebook paid Stillwell's way to a workshop on using Facebook data for research: Lapowsky, "The Man Who Saw the Dangers."

A tech industry expert called Facebook's refusal to cooperate with investigators "the greatest cover-up in the history of the internet": Cadwalladr, Carole, "Cambridge Analytica a year on: 'a lesson in institutional failure,'" *The Guardian*, March 17, 2019, <https://www.theguardian.com/uk-news/2019/mar/17/cambridge-analytica-year-on-lesson-in-institutional-failure-christopher-wylie>.

Wired magazine said, "The company celebrated the work of Stillwell and Kosinski": Lapowsky, "The Man Who Saw the Dangers."

⁶⁵ Kroll, "Cloak and Data."

⁶⁶ Roose, Kevin, "How Facebook's Data Sharing Went From Feature to Bug," *The New York Times*, March 19, 2018, <https://www.nytimes.com/2018/03/19/technology/facebook-data-sharing.html>. (Other sources imply this restriction began in 2014.)

⁶⁷ Belu, Ioana, et al., "Micro-Targeting," Cambridge Disinformation Summit, YouTube video, 58:00, July 28, 2023, https://www.youtube.com/watch?v=x6bp7X1ed_E&ab_channel=CambridgeDisinformationSummit.

⁶⁸ Meredith, Sam, "Facebook-Cambridge Analytica: A timeline of the data hijacking scandal," CNBC, April 10, 2018, <https://www.cnbc.com/2018/04/10/facebook-cambridge-analytica-a-timeline-of-the-data-hijacking-scandal.html>; Lapowsky, "The Man Who Saw the Dangers."

⁶⁹ Rosenberg, "How Trump Consultants Exploited."

⁷⁰ Schwartz, "Facebook Failed to Protect."

⁷¹ Davies, "Ted Cruz using firm."

⁷² Kroll, "Cloak and Data."

⁷³ Kroll, "Cloak and Data."

⁷⁴ Kroll, "Cloak and Data."

⁷⁵ Kroll, "Cloak and Data."

⁷⁶ Confessore, "Data Firm Says."

⁷⁷ Davies, "Ted Cruz using firm."

⁷⁸ Kroll, "Cloak and Data."

-
- ⁷⁹ Gross, Terry, "Whistleblower Explains How Cambridge Analytica Helped Fuel U.S. 'Insurgency,'" NPR, October 8, 2019, <https://www.npr.org/2019/10/08/768216311/whistleblower-explains-how-cambridge-analytica-helped-fuel-u-s-insurgency#:~:text=In%202014%2C%20Wylie%20resigned%20from,Trump's%20presidential%20campaign%20and%20Brexit.>
- ⁸⁰ Svitek, "Cruz Ending Campaign."
- ⁸¹ Kroll, "Cloak and Data."
- ⁸² Breuninger, Kevin, "Paul Manafort gets additional 43 months in second Mueller sentence after ex-Trump campaign boss says he's 'sorry,'" March 13, 2019, <https://www.cnbc.com/2019/03/13/paul-manafort-gets-additional-43-months-in-second-mueller-sentence.html>.
- ⁸³ Kroll, "Cloak and Data."
- ⁸⁴ Kroll, "Cloak and Data."
- ⁸⁵ Pace, "Trump claims."
- ⁸⁶ "Company Intelligence Report 2016/080," DocumentCloud.org, December 13, 2016, <https://www.documentcloud.org/documents/3259984-Trump-Intelligence-Allegations>.
- ⁸⁷ Mayer, Jane, "How Russia Helped Swing the Election for Trump," *The New Yorker*, September 24, 2018, <https://www.newyorker.com/magazine/2018/10/01/how-russia-helped-to-swing-the-election-for-trump>.
- ⁸⁸ Osnos, Evan, David Remnick, and Joshua Yaffa, "Trump, Putin, and the New Cold War," *The New Yorker*, February 24, 2017, <https://www.newyorker.com/magazine/2017/03/06/trump-putin-and-the-new-cold-war#editorsnote>.
- ⁸⁹ U.S. Department of Justice, Office of Public Affairs, "Appointment of Special Counsel," May 17, 2017, <https://www.justice.gov/opa/pr/appointment-special-counsel>.
- ⁹⁰ Rosenberg, "How Trump Consultants Exploited."
- ⁹¹ Harbath, Katie, and Collier Fernekes, "History of the Cambridge Analytica Controversy," Bipartisan Policy Center, March 16, 2023, <https://bipartisanpolicy.org/blog/cambridge-analytica-controversy/>.
- ⁹² Rosenberg, "How Trump Consultants Exploited."
- ⁹³ Wylie, Christopher, "A Response to Misstatements in Relation to Cambridge Analytica: Introductory Background to the Companies," document submitted to British Parliament, 2018, <https://www.parliament.uk/globalassets/documents/commons-committees/culture-media-and-sport/Written-evidence-Chris-Wylie-supplementary.pdf>.
- ⁹⁴ Gray, Freddy, "His dark materials," *The Spectator*, May 18, 2019, <https://www.spectator.co.uk/article/his-dark-materials-16-may-2019/>.

-
- ⁹⁵ Cadwalladr, Carole, and Emma Graham-Harrison, "Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach," *The Guardian*, March 17, 2018, <https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election>.
- ⁹⁶ Confessore, Nicholas, "Assange Says WikiLeaks Rejected Request by Data Firm Tied to Trump," *The New York Times*, October 25, 2017, <https://www.nytimes.com/2017/10/25/us/julian-assange-wikileaks-trump.html>.
- ⁹⁷ Rosenberg, "How Trump Consultants Exploited."
- ⁹⁸ Examples: Rosenberg, "How Trump Consultants Exploited"; Kroll, "Cloak and Data."
- ⁹⁹ Graham-Harrison, Emma, Carole Cadwalladr, and Hillary Osborne, "Cambridge Analytica boasts of dirty tricks to swing elections," *The Guardian*, March 19, 2018, <https://www.theguardian.com/uk-news/2018/mar/19/cambridge-analytica-execs-boast-dirty-tricks-honey-traps-elections>.
- ¹⁰⁰ Cadwalladr, "Revealed."
- ¹⁰¹ Cadwalladr, Carole, "The great British Brexit robbery: how our democracy was hijacked," *The Guardian*, May 7, 2017, <https://www.theguardian.com/technology/2017/may/07/the-great-british-brexite-robbery-hijacked-democracy>.
- ¹⁰² Gehrke, Laurenz, "UK probe finds no evidence that Cambridge Analytica misused data to influence Brexit," *Politico*, October 7, 2020, <https://www.politico.eu/article/no-evidence-that-cambridge-analytica-misused-data-to-influence-brexite-report/>.
- ¹⁰³ Knight, "Life Inside S.C.L."
- ¹⁰⁴ Madrigal, Alexis C., "What Facebook Did to American Democracy," *The Atlantic*, October 12, 2017, <https://www.theatlantic.com/technology/archive/2017/10/what-facebook-did/542502/>.
- ¹⁰⁵ Watkins, Eli, "Cambridge Analytica announces closure," CNN, May 16, 2018, <https://www.cnn.com/2018/05/02/politics/cambridge-analytica-closure/index.html>.
- ¹⁰⁶ Shabong, Yadarisa, and Pushkala Aripaka, "Ex Cambridge Analytica boss banned over 'unethical services': UK agency," Reuters, September 24, 2020, <https://www.reuters.com/article/idUSKCN26F32D/#:~:text=Alexander%20Nix%20was%20a%20director,the%20disqualification%2C%20the%20Service%20said>.
- ¹⁰⁷ "Facebook ad campaign helped Donald Trump win election, claims executive," BBC, January 8, 2020, <https://www.bbc.com/news/technology-51034641>.
- ¹⁰⁸ Knight, "Life Inside S.C.L."
- ¹⁰⁹ Knight, "Life Inside S.C.L."
- ¹¹⁰ Kosinski, Michal, et al., "Mining Big Data to Extract Patterns and Predict Real-Life Outcomes," American Psychological Association, <https://psycnet.apa.org/fulltext/2016-57141-003.pdf>.

ID#240202SM1

PUBLISHED ON
MAY 9, 2024

The Cambridge Analytica Scandal: Psychographics, Facebook, and the 2016 US Elections

BY C. DANIEL GUETTA

Optional Handout A

In 2020, a leaked memo from a Facebook executive proclaimed that the company was “responsible” for Donald Trump’s election.¹ But the memo didn’t credit Cambridge Analytica, calling the data firm a “total non-event.”² Instead, the executive wrote, Trump had simply run a great Facebook ad campaign. In this telling, the Republican Party had succeeded in what political donor Rebekah Mercer and her father, billionaire Robert Mercer, had been hoping for all along: It replicated Barack Obama’s digital targeting strategy, bringing the campaign into the 21st century and putting the resulting competitive edge squarely in the grasp of the Republican candidate.

An important detail got lost in much of the breathless press coverage of the Cambridge Analytica scandal: The Trump campaign didn’t actually use psychographic targeting strategies at all.³ People who had worked on Texas Senator Ted Cruz’s campaign told *Mother Jones* they were not persuaded that the focus on psychological traits had made any difference in the primary election outcomes.⁴

Indeed, upon a closer look, even Cambridge Analytica CEO Alexander Nix’s slick pitches contained glaring errors. Touting his product onstage, he displayed GPS coordinates for an exemplary Iowa voter. But that voter actually lived in North Carolina. Nix reportedly repeated a phrase around the office: “Marketing materials aren’t given under oath.”⁵

As it turned out, the botched website rollout and the dated voter databases that plagued the Cruz campaign were not outliers. Cambridge Analytica had failed to meet expectations in more than one previous campaign: A staffer at John Bolton’s Super PAC called Cambridge Analytica data on which his organization spent \$1 million “comically bad.” But Bolton had just needed to attract the attention of Robert Mercer, the megadonor and part-owner of the firm.⁶

Cambridge Analytica made other glaring errors that had nothing to do with psychographic targeting. More than half of the Oklahoma voters it identified as Cruz supporters actually favored other candidates.⁷ Cambridge Analytica purchased television ads on behalf of

Republicans in Washington, D.C., a Democratic stronghold unlikely to be persuaded by even the most sophisticated campaign messaging.⁸ Some Trump campaign officials noted that Cambridge Analytica datasets didn't incorporate basic information, such as whether a voter had cast a ballot in the previous election.⁹

Cambridge Analytica had pitched to the Cruz campaign about an all-in-one database management product called Ripon, which it claimed would be "the future of campaigning."¹⁰ But once the campaign hired the firm, Ripon didn't materialize. Months passed. Finally, one of the Cambridge Analytica consultants confessed to a campaign official that the software didn't exist. "It'll never exist," he reportedly told the official.¹¹

Indeed, the Trump campaign primarily relied on data from the Republican National Committee, not Cambridge Analytica, a spokesperson told *Wired*.¹² The campaign didn't even use the proprietary trove of data Nix had bragged about onstage, favoring existing data compiled by the RNC instead.¹³

Before anecdotes about the firm's fumbling operations emerged in the wake of the scandal, some strategists simply didn't buy the idea that psychographic targeting could ever work. "I don't use personality data because I think it's nonsense," Republican data strategist Luke Thompson told NPR. "I don't think it's scientific, and I don't think it's derived from good foundations."¹⁴ Several experts on these techniques have also questioned whether any of Cambridge Analytica's work would have been effective in this respect.¹⁵

While research at the time—some of which had been conducted at Cambridge—did suggest that companies could guess at certain personality traits using digital breadcrumb trails, there wasn't much research indicating these personality assessments could accurately predict voting preferences. One unpublished dissertation found mixed evidence on the question; a 2009 paper from New York University found that political orientation was far more predictive of voting behavior than personality.¹⁶ There was even less research that suggested using psychographics could actually *change* a voter's mind.¹⁷ Even people who worked at Cambridge Analytica were unpersuaded by the psychographics angle: A staffer told BuzzFeed News that "at no point did they provide us any documentation that it would work."¹⁸

Asked to name a single election where psychographics had an impact on the results, Nix said, "We bake a cake, it's got 10 ingredients in it. Psychographics is one of them. It's very difficult to isolate exactly what the impact of that ingredient is."¹⁹

By some accounts, Cambridge Analytica's main achievements were in persuading political donors to invest in fringe ideas.

Psychographics and Microtargeting after 2016

In the years since the Cambridge Analytica scandal, social media companies have made it harder and more expensive to access user data.²⁰ In the 2018 fallout from the Cambridge

Analytica scandal, Facebook (now Meta) restricted access to its application programming interfaces (APIs), citing privacy concerns.²¹ Twitter (now X) and Reddit followed suit.

Psychographics largely fell out of the headlines after the scandal, but microtargeting has only gotten more precise in the ensuing years. “It’s definitely getting more sophisticated, it’s definitely becoming more powerful, it’s not getting less effective,” said Rafi Mendelsohn, vice president of marketing at social media intelligence company Cyabra, in a 2023 panel with researcher David Stillwell at the Cambridge Disinformation Summit. He said that while the proportion of fake social media accounts in 2016 was high, the quality of the accounts was quite low. More recent analysis of the 2022 midterm elections showed that fewer fake accounts were involved. Further, Mendelsohn said, the amount of information we leave online has exploded.²²

“If there’s one message that I try and get out there, it’s that if we’re just focusing on elections and vaccines, that’s the 1%. We’re missing the everyday of how we are being operated against. We are being targeted on any number of topics, or malicious actors, for whatever objectives,” Mendelsohn said.

Meta’s advertising revenue topped \$113 billion in 2022.²³ Microtargeting enables businesses to aim ads at hyper-specific populations, based on data-driven insights. Car companies now send driver behavior data to insurance providers,²⁴ and retailers are tinkering with facial recognition software.²⁵

Leading up to the 2024 elections pitting incumbent President Joe Biden against former President Donald Trump, many speculated that new AI tools would supercharge efforts to target voters, speeding up the process of generating voter information databases and offering a cheap means of designing subtly different campaign advertisements. In the early months of 2024, a deepfake voice recording of Biden was used in a robocall campaign dissuading New Hampshire voters from casting ballots in the primaries. Fake images of Trump smiling with Black people circulated in February and March.²⁶

Stillwell, now at Cambridge Judge Business School, gave the following example at the 2023 disinformation summit: “If I feed a large language model, ‘here’s a bunch of data about David Stillwell, write a personalized message to encourage David Stillwell to change his views about the climate,’ it will write a personalized message for me, and if I run a loop and do it 10 million times for different people, then now 10 million people have all got a personalized message,” Stillwell said. “... The near future, I suspect, is this kind of industrialization of microtargeting, to do it on a huge scale.”²⁷

It remains to be seen whether the advent of technologies like deep learning and generative AI will allow this kind of microtargeting, or whether, as in Cambridge Analytica’s attempts, the technology will prove no match for the complexity of the task at hand.

Endnotes

- ¹ Bosworth, Andrew, "Lord of the Rings, 2020 and Stuffed Oreos: Read the Andrew Bosworth Memo," *The New York Times*, January 7, 2020, <https://www.nytimes.com/2020/01/07/technology/facebook-andrew-bosworth-memo.html>.
- ² Bosworth, Andrew, Facebook.com, the post "in its entirety" on company website, <https://www.facebook.com/boz/posts/10111288357877121>.
- ³ Lapowsky, Issie, "What Did Cambridge Analytica Really Do for Trump's Campaign," *Wired*, October 26, 2017, <https://www.wired.com/story/what-did-cambridge-analytica-really-do-for-trumps-campaign/>.
- ⁴ Confessore, Nicholas, and Danny Hakim, "Data Firm Says 'Secret Sauce' Aided Trump; Many Scoff," *The New York Times*, March 6, 2017, <https://www.nytimes.com/2017/03/06/us/politics/cambridge-analytica.html>.
- ⁵ Kroll, Andy, "Cloak and Data: The Real Story Behind Cambridge Analytica's Rise and Fall," *Mother Jones*, May/June 2018, <https://www.motherjones.com/politics/2018/03/cloak-and-data-cambridge-analytica-robert-mercier/>.
- ⁶ Levinthal, Dave, and Carrie Levine, "Inside John Bolton Super PAC's deal with Cambridge Analytica," Center for Public Integrity, July 16, 2018, <https://publicintegrity.org/politics/inside-john-bolton-super-pacs-deal-with-cambridge-analytica/>.
- ⁷ Chen, Angela, and Alessandra Potenza, "Cambridge Analytica's Facebook data abuse shouldn't get credit for Trump," *The Verge*, March 20, 2018, <https://www.theverge.com/2018/3/20/17138854/cambridge-analytica-facebook-data-trump-campaign-psychographic-microtargeting>.
- ⁸ Confessore, "Data Firm Says."
- ⁹ Murray, Sara, et al., "Inside the Trump campaign's ties with Cambridge Analytica," March 21, 2018, <https://www.cnn.com/2018/03/21/politics/trump-campaign-cambridge-analytica/index.html>.
- ¹⁰ Kroll, "Cloak and Data."
- ¹¹ Kroll, "Cloak and Data."
- ¹² Lapowsky, "What Did Cambridge."
- ¹³ Lapowsky, "What Did Cambridge."
- ¹⁴ Thompson, Luke, interviewed by David Greene, "Why A GOP Strategist Turned Down Working With Cambridge Analytica," NPR, March 22, 2018, <https://www.npr.org/2018/03/22/595967438/why-a-gop-strategist-turned-down-working-with-cambridge-analytica>.
- ¹⁵ Gibney, Elizabeth, "The scant science behind Cambridge Analytica's controversial marketing techniques," *Nature*, March 29, 2018, <https://www.nature.com/articles/d41586-018-03880-4>.

¹⁶ Resnick, Brian, “Cambridge Analytica’s ‘psychographic microtargeting’: what’s bullshit and what’s legit,” Vox, March 26, 2018, <https://www.vox.com/science-and-health/2018/3/23/17152564/cambridge-analytica-psychographic-microtargeting-what>.

¹⁷ Resnick, “Cambridge Analytica’s.”

¹⁸ Taggart, Kendall, “The Truth About The Trump Data Team That People Are Freaking Out About,” BuzzFeed News, February 16, 2017, <https://www.buzzfeednews.com/article/kendalltaggart/the-truth-about-the-trump-data-team-that-people-are-freaking#.idXaV5yEy>.

¹⁹ Confessore, “Data Firm Says.”

²⁰ Ward, Isabella, “Disinformation Researchers Adjust to Restrictions From Platforms,” Bloomberg, December 7, 2023, <https://www.bloomberg.com/news/articles/2023-12-07/social-media-researchers-struggle-to-track-disinformation-on-x-meta>.

²¹ Schroepfer, Mike, “An Update on Our Plans to Restrict Data Access on Facebook,” Meta, company website, April 4, 2018, <https://about.fb.com/news/2018/04/restricting-data-access/>.

²² Belu, Ioana, et al., “Micro-Targeting,” Cambridge Disinformation Summit, YouTube video, 58:00, July 28, 2023, https://www.youtube.com/watch?v=x6bp7X1edE&ab_channel=CambridgeDisinformationSummit.

²³ “Meta Reports Fourth Quarter and Full Year 2022 Results,” Meta, company website, February 1, 2023, <https://investor.fb.com/investor-news/press-release-details/2023/Meta-Reports-Fourth-Quarter-and-Full-Year-2022-Results/default.aspx>.

²⁴ Hill, Kashmir, “Automakers Are Sharing Consumers’ Driving Behavior With Insurance Companies,” *The New York Times*, March 11, 2023, <https://www.nytimes.com/2024/03/11/technology/carmakers-driver-tracking-insurance.html>.

²⁵ Hill, Kashmir, “Which Stores Are Scanning Your Face? No One Knows,” *The New York Times*, March 10, 2023, <https://www.nytimes.com/2023/03/10/technology/facial-recognition-stores.html>.

²⁶ Brown, Matt, and David Klepper, “Fake images made to show Trump with Black supporters highlight concerns around AI and elections,” Associated Press, March 8, 2024, <https://apnews.com/article/deepfake-trump-ai-biden-tiktok-72194f59823037391b3888a1720ba7c2>.

²⁷ Belu, “Micro-Targeting.”