Chapter 3: Software Wars

How Digital Analytics Has Changed Elections

Donald Trump's digital campaigning in the 2016 presidential election showed how big data and micro-targeting can win votes. The continuing evolution of these digital techniques will change the type and style of politicians we elect – and more importantly, it will mean more power for rich groups to influence elections in ways we don't understand.

ONE SUNDAY AFTERNOON IN May 2016, Theresa Hong, a digital communications specialist with several years' experience in political campaigns, was at home in San Antonio, Texas, when her phone pinged.

'Theresa – this is Brad Parscale. Are you able to write anything?'

Theresa knew Brad pretty well – like her, he orbited the city's PR scene. A moderately successful tech entrepreneur from Kansas, Brad had lived in San Antonio since graduating from university in the late 1990s. In 2010, after a few years hustling a living with various digital businesses, he was asked to build a website for Donald Trump's real estate division and impressed his employer with his loyalty and hard work.[1] When Trump declared his bid for the Republican nomination Brad was drafted in to run the digital campaign. Although the Republican Convention wasn't until June 2016, by late April it was increasingly clear that Trump would be the nominee, and Brad was well-placed to work on the presidential campaign, too.

Brad and Theresa share more than just a profession and right-leaning politics. Both are in their early forties and slightly punkish. Theresa has a sleeve tattoo, while Brad has a ZZ Top-style beard. More importantly, both are workaholics who answer work-related text messages on a Sunday.

'Sure – what's the deadline?' she replied, while eating enchiladas.

'Monday evening or Tuesday. We need to write a digital plan for the campaign.'[2]

Every political campaign now has a 'digital plan'. It's industry talk that refers to the gurus, content producers, targeted ads and eye-wateringly large numbers that now feature in every election. We'll never replace door-to-door canvassing, which studies find is still the most effective technique to persuade voters, but no one serious runs elections without a digital plan these days. Brad's plan was to make the campaign the most data-driven in history: to take the philosophy of Silicon Valley and apply it to politics. Out with intuition and gut feeling; in with testing, measurement and scientific precision. He knew they would raise less money and have less support from the media or beltway pundits than the formidable Clinton machine, the likely opponent. So he decided he would use data to 'hack' the election.[3]

Once the nomination – and the contract – was secured, Brad's team set up shop in a nondescript San Antonio building, just off a busy freeway, intentionally out of the spotlight. He reported to Jared Kushner, who ran the campaign. 'It started up as four people in a room, and Brad saying "make cool stuff",' Theresa said later. It grew rapidly, and they soon took over the whole third floor of the building, adding cafeteria tables to the large, empty rooms.[4] The Republican Party heavyweights moved in, including Gary Coby, head of advertising for the Republican National Convention (RNC). So did Cambridge Analytica, the UK data analytics firm, who sent thirteen staffers led by chief product officer Matt 'Oz' Oczkowski, who had enormous biceps and a habit of walking around the office carrying a golf club. 'One of the smartest motherfuckers I ever met,' Theresa wrote about him later.[5] The department soon become known as 'Project Alamo'; as the campaign got into full swing, several dozen people, short of sleep and fuelled by pizza and Dr Pepper, relentlessly bombarded millions of Americans online with pro-Trump content. It was the largely unseen front line in the most peculiar election in living memory. More than an election, this was an information war.

Project Alamo

The data-led approach to elections pre-dates the internet – the Republican Party boasted in the 1890s that it possessed a complete mailing list of voters, with names, addresses and ages.[6] But, as we've moved online, the political campaigns have followed us there. For decades political parties

have been building up increasingly detailed insights using shopping data, web browsing history and voter records to help with their targeting and messaging. In 2008, for example, analysts working for Barack Obama assigned a pair of scores to every voter in the country that predicted how likely they were to cast a ballot, and whether they supported his campaign.[7] Hillary Clinton, too, had an extremely sophisticated system of targeting voters online.[8] Every election now is a mini arms race. And this time the Republican Party turned to a company, Cambridge Analytica, in order to get the edge on the opposition.

It was not a coincidental choice. One of Cambridge Analytica's key investors is the billionaire businessman and Trump backer Robert Mercer, a famously reclusive computer programmer who made his fortune as co-chief executive of the New York-based hedge fund, Renaissance Technologies. RenTech, as it is known, uses big data and sophisticated algorithms to predict trends in global markets and place winning bets on them. In this world tiny gains, a fraction of a per cent here or there, can yield huge rewards. In 2013 Cambridge Analytica was set up as an offshoot of a company called 'Strategic Communications Laboratories' (SCL), which had extensive experience in branding and influencing public opinion, specialising in military and intelligence psychological operations, or 'psy-ops' – tasks like persuading young men not to join Al-Qaeda. The idea was to figure out how to apply these techniques to politics – and especially to help the Republican Party, which Mercer felt had fallen behind the Democrats in their digital campaigning.[9] Mercer invested a load of money into the new company. Cambridge was also part of a tight pro-Trump network: Steve Bannon, until recently boss of *Breitbart* and Trump's first head of strategy, was also a board member of Cambridge Analytica until he joined the administration.

From their inception Cambridge Analytica followed the Mercer bible. They built up a database of around 5,000 data points on some 230 million Americans. Some of the data was purchased from commercially available sources – web browsing histories, purchasing, income and voter records, car ownership and so on – and some was collected through Facebook and telephone surveys.[10] They were initially part of Ted Cruz's campaign for the Republican nomination, but once he dropped out of the Republican race, the company transferred to Trump. They brought their data to Project Alamo, and the RNC threw their own massive dataset – known as Voter Vault – into the pot too, and got to work.

Cambridge's main role inside Project Alamo was to use this data to build what they called 'universes'.[*] Each was a key target group for the Trump campaign, such as American mums who hadn't voted before and were worried about childcare; pro-gun males living in the Midwest; Hispanics who were worried about national security, and so on. Dozens of these highly focused universes were created – and their members were modelled in terms of how 'persuadable' they were. It might seem odd to build categories like this based on spending patterns or web browsing history but, as I showed in Chapter One, that's how big data analysis works. With enough data, you can build up a surprisingly detailed account of someone. For example, Cambridge Analytica discovered during the electoral race that a preference for cars made in the US was a strong indication of a potential Trump voter.[11] So if consumer data records showed someone had recently bought a Ford but the RNC data revealed they hadn't voted for years, they should be ranked as a highly persuadable target.

Everything about the Alamo was data-driven, and mostly built around these universes. Presidential elections in America use an electoral college system – each state has an allocated number of college votes based on population size, and the winner of the state takes them all. To become president, candidates need 270 electoral college votes. Project Alamo's analysts identified 13.5 million persuadable voters in sixteen battleground states, and modelled which combinations of those voters would yield a winning number.[12] From that, a computerised dashboard offered recommendations about rally locations, which doors to knock and where to direct emails, letters and TV advertising.

The largest room in Alamo was called 'the bull pen'. This is where Theresa and her 'creatives' worked. Much of Theresa's day was taken up by designing what people like her call 'content'. Matt Oczkowski would tell her what each universe cared about, and she would tailor something for them. 'The data drove the content and it was a great marriage,' Theresa later said. Alamo tested their messaging relentlessly. Gary Coby sent out multiple versions of fundraising emails and thousands of versions of Facebook ads and quickly worked out which performed best. They tested web pages for donations with red buttons, green buttons and yellow buttons. They even tested which unflattering picture of Hillary performed best.[13]

In 2017 I visited Project Alamo to interview Theresa for the BBC series, *The Secrets of Silicon Valley*. It was the middle of the summer in Texas, so indescribably hot. I flew into nearby Dallas and drove three hours to San

Antonio to find Theresa waiting for me outside that tall, nondescript building off a busy freeway. I was the first journalist to be allowed inside the building, Theresa said, although by then it was completely empty. Theresa walked me from vacant room to vacant room, reminiscing about the all-nighters during the campaign. After my tour she pulled out her laptop and showed me some of the ads she'd designed and sent out into the world. One such ad was aimed at a universe defined by Cambridge Analytica as 'working mothers concerned about childcare'. It was the usual shtick – a soft voice narrating, the presentation of a happy-but-concerned family, and the message that Trump is worried, just like you. But Trump himself was absent. 'This is warm and fuzzy,' said Theresa. 'For that audience there, we wanted a softer approach.' For other universes, Trump was front and centre.

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This relentless arms race using sophisticated big data techniques is not going to slow down. Every election is becoming datafied in this way – spread by a network of private contractors and data analysts who offer these techniques to political parties all over the world. Several months before Trump's victory, for example, the group campaigning for the UK to leave the European Union took a very similar approach. A few months after the referendum, Vote Leave's campaign director Dominic Cummings wrote a handful of long blogs explaining why they won. Although he rejects any single 'why', it's clear that he thinks data was instrumental:

> One of our central ideas was that the campaign had to do things in the field of data that have never been done before. This included a) integrating data from social media, online advertising, websites, apps, canvassing, direct mail, polls, online fundraising, activist feedback and some new things we tried such as a new way to do polling . . . and b) having experts in physics and machine learning do proper data science in the way only they can – i.e. far beyond the normal skills applied in political campaigns. We were the first campaign in the UK to put almost all our money into digital communication then have it partly controlled by people whose normal work was subjects like quantum information . . . If you want to make big improvements in communication, my advice is – hire physicists, not communications people from normal companies.

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Just like Brad, Cummings set up Vote Leave like a Silicon Valley start-up, with physicists, data, innovation and constant testing of ads or messages. One especially smart move involved inviting people to guess the results of all 51 matches in the Euro 2016 football tournament with the chance of winning £50 million, in exchange for their phone number, email, home address and a score of 1–5 in respect of how likely they were to vote for staying in the EU.[14] This, of course, fed into the models.

Cummings estimates that they served up around one billion targeted adverts during the Brexit campaign, mostly via Facebook (they spent £2.7m with a company called AggregateIQ, who specialise in targeted Facebook adverts). Like the Trump campaign they ran many different versions, testing them in an interactive feedback loop.*[15]

The evolution never stops. In the 2017 UK general election, the Labour Party took a different approach, although the overall aim – to change the information environment – was the same.[16] Rather than sponsored ads, Jeremy Corbyn's fans produced huge volumes of 'organic' content themselves and shared it in tightly networked groups, meaning their messages – real things written by real people – reached far more people and were more believable than they would otherwise have been. There was also an ecosystem of left-wing 'alternative news' outlets that churned out widely shared and hyper-partisan pro-Corbyn stories. Corbyn Snapchatted during a brunch with the rapper Jme – it seems unlikely that this was an idea that he came up with himself. One of Labour's videos, 'Daddy, why do you hate me?' was a fictional conversation between a little girl and her dad set in 2030, about why he had voted for Theresa May. It was emotive, misleading, mawkish and potentially offensive – and viewed millions of times in two days.

Labour also relied on the technical stuff, and quietly but effectively used data modelling to identify potential Labour voters, and then test them with messages.[17] They used an in-house tool called 'Promote' which combined Facebook information with Labour voter data, allowing senior activists to send locally based messages to the right (i.e. persuadable) people.[18]

The key to understanding why these tactics can be so effective was revealed a few years back, almost by accident. During the 2012 US presidential election, millions of voters told the world about their little civic

act by posting *I voted* on Facebook. The company worked out that friends who saw these posts were themselves slightly more likely to vote as a result – so much so, in fact, that Facebook may have increased turnout by 340,000 people. Bear in mind that the presidential race in 2000 was won by just 537 votes – if Facebook had showed 'I voted' posts to potential Democrat voters in Florida in that election, it might have swung the entire election. According to Robert Epstein, a psychologist at the American Institute for Behavioral Research and Technology, based on the win margins in national elections around the world, Google could determine the outcome of 'upwards of 25 per cent' of them based on how it displayed search results.[19] There is no evidence that Facebook or Google have or would do such a thing, intentionally or otherwise – but it does illustrate that whoever controls information has immense power, and that even small changes in the online environment can be critical.

Facebook, in case you've not been paying attention, is a highly effective mechanism for advertisement delivery, because of how finely grained it can target users (one technique in particular, known as Lookalike Audiences, is highly regarded among those in the know).[20] Both Corbyn and Vote Leave relied heavily on Facebook as a mechanism to reach audiences.[21] But neither used it as much as Brad Parscale did on the Trump campaign. Over the course of the campaign Alamo spent around $70 million on Facebook advertising, running up to one hundred adverts a day, and often thousands of versions of each, constantly tweaking to see which version performed best.[22] Brad told *CBS* in October 2017 that Facebook made the difference, allowing him to reach people who had previously been unreachable. 'It lets you get to places you'd never get to with TV ads.'

I have run Facebook adverts myself. Back in 2010 I used Facebook to target ads at supporters of radical right-wing political parties in Europe, asking them to fill in a survey for my research organisation, Demos. It's not easy. Big-spending clients therefore sometimes get help from Facebook directly. Brad told CBS *60 Minutes* that he emailed Facebook and Google, asking for embedded staff – and even insisted that they were Republicans. 'I want to know every single secret button and click you have', he told them. 'I want to know everything you'd tell Hillary's team, and then some.' Sitting in Alamo, alongside Cambridge Analytica, were seconded staff from Facebook and Google, whose job it was to ensure Trump got the most bang for his buck. I know this because Theresa pointed out where they were sitting, and couldn't sing their praises highly enough. '[Facebook] gave us

the white glove treatment', she told me as we walked around. 'They were our hands-on partners, as far as being able to utilise the platform effectively.'[23]

I was surprised when Theresa told me that social media employees – and ones who shared the campaign's political views – were working directly with the Trump team, but perhaps I shouldn't have been. By now we've all got used to the idea that sophisticated cookies and tracking software follow us around the web. But this isn't only to bombard us with holidays, make-up or jeans: it can be used just as easily to promote politicians. We are put unwillingly and unknowingly into 'buckets' or 'universes' by clever data analysts who obsess over 'click through rates' and 'conversion'. For campaign managers we are 'targets' to be 'hit' with political content. We used to call this sort of thing propaganda. Now we call it 'a behavioral approach to persuasive communication with quantifiable results', and give awards to the people who are best at it.[24]

Left unchecked, the continued evolution of these techniques will change how we form political choices, what sort of people we elect, and even whether we think our elections are truly free and fair.

Modern mass-party politics has always been about programmatic offers – broad-based appeals that could build large alliances. This is important, because as the social scientist Francis Fukuyama argues in *Political Order and Political Decay*, political parties with broad programmes allow citizens with different and varied interests to collectively organise and shape policy. The alternative is squabbling, divisive special-interest groups. (This also helps citizens who are on the losing side to accept defeat, because they know they might win next time.)[25]

Big data, however, points to a more personalised model: work out who people are, find the one thing they care about, and zero in on that. Persuasive adverts have always been used in politics – remember 'Labour isn't Working'? – but instead of sending out a mass advert to millions, campaigns can now target a specific set of voters, each with specific promises and pledges, based on what they already care about.

This is a radical change with far-reaching consequences. It is important that everyone receives the same message – or at least knows what others are receiving. That's how we are able to thrash out the issues of the day. If everyone receives personalised messages, there is no common public debate – just millions of private ones. In addition to narrowing the scope of political debate (research suggests that candidates are more likely to campaign on

polarising issues when the forum is not public), this will diminish political accountability. Hyper-personalisation incentivises politicians to make different pledges to different 'universes' of users. But how can we hold anyone to account if there is no clear, single set of promises that everyone can see and understand? And how do we even know if we're getting the real Trump anyway? When I was at Alamo, Theresa told me that *she* wrote many of Donald Trump's Facebook posts. That was odd. I'd always assumed Trump wrote his own posts. I'd read many of them, and they certainly sounded like him. Nope, it was Theresa, sitting in her San Antonio office. 'I channelled Mr Trump,' she told me, smiling. 'How do you channel someone like Donald Trump?' I asked. 'A lot of believe mes, a lot of alsos, a lot of verys . . . he was really wonderful to write for. It was so refreshing. It was so authentic.' She seemed unaware of the irony.

Personalisation causes problems for regulators too, of course. Because ads are so personalised, and delivered to unique users, it is more difficult to check whether they are accurate. UK law prevents candidates from making false claims about each other. But Facebook allows people to use so-called 'dark posts' – non-public posts that only the targeted people can see, and quality assurance is extremely hard.[26]

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In the mad dash to get an edge, each political party rushes to adopt the latest techniques, rarely considering where it might take us all. Several journalists – myself included – have become mildly obsessed over whether Project Alamo used one specific micro-targeting technique known as 'psychographics'. This is the stuff Kosinski showed me in Chapter One: trying to figure out people's personality traits and designing adverts based on that. Cambridge Analytica have used this technique in the past, and claim that they can predict the personality type of every single adult in the US. They tried this during their work on the Ted Cruz campaign, though it's not clear how well any of it worked.[27] Then, in March 2018, a former Cambridge Analytica whistleblower told the *Observer* that a major part of company's powerful data sets were derived from Facebook data they had accessed in an improper fashion. The resulting furore led to several days of front page media coverage, the UK's Information Commissioner seeking a warrant to look at Cambridge Analytica's databases, and billions of dollars being wiped off Facebook's value.[28]

Shortly after returning from San Antonio I managed to secure an interview with Cambridge Analytica CEO Alexander Nix. As I walked in to the ordinary looking office in central London – all offices are normal looking, except those of tech firms – I spotted a framed posted with a picture of Trump and a quote from famed US pollster Frank Luntz: 'There are no longer any experts except Cambridge Analytica. They were Trump's digital team who figured out how to win.' Rows of employees were sitting staring at screens: project managers, IT specialists and data scientists.[29] On a shelf in Nix's glass office were copies of *The Bad Boys of Brexit*, the book written by UKIP donor Arron Banks, and *Stealing Elections* by John Fund. He seemed perfectly happy with these techniques, and said that micro-targeting was just getting started and represented the future of campaigning. 'It's going to be a paradigm shift . . . and that is the way the world is moving.' I asked whether Nix used psychographics during the Trump campaign, and he denied it. So did Brad Parscale, in his *60 Minutes* interview.[30] (Cambridge Analytica also strongly deny allegations that they obtained Facebook data illegally or used it without the proper permissions.)

I understand why people get nervous about psychographics, because the idea feels extremely manipulative. And of course it matters that data is harvested and used legally and ethically. But in one sense this is a distraction. The bigger picture is the way that companies like Cambridge Analytica understand our inner thoughts, rather than a distinct technique.[*] After all, just imagine what personality targeting will be possible with 'the internet of things'. There are lots of stories these days about how internet-enabled devices present a security risk – like your fridge or baby monitor getting hacked. But think about what the explosion of everyday life data will do for political campaigns. Consider it: within a decade your fridge data will know what time you eat, your car will know where you've been, and your home assistant device will work out your approximate anger levels by the tone of your voice. I guarantee this data will be gobbled up by political analysts. By cross-referencing fridge data against the number of emotional words in your Facebook posts, Cambridge Analytica or some other company will correlate that you're more angry when you're hungry. Further analysis will calculate that people who are angry are more likely to vote for 'law and order candidates'. Armed with your fridge data, smart car data, work calendar data and Facebook data, your smart TV will fire a personalised, crime-related ad at you just at the moment you're starting to feel peckish.[31]

I've no idea where it will end. Give it a few years and, just as you're relaxing in some virtual reality paradise, a Trump avatar-bot will roll up, and know precisely how to press your buttons.

In the long run, the constant A/B testing and targeting like this might even encourage a different *type* of politician, because it promises to turn politics into a behavioural science that relies on triggers and nudges rather than publicly aired argument.*[32] It is reasonable to assume this approach would most help politicians with flexible campaign promises, the ones who flap around in the breeze, make hundreds of contradictory statements, and change their minds at every propitious moment, because that creates more content for people like Theresa to package up and sell to voters.[33] Perhaps the politicians of the future will be those with the fewest ideas and the greatest talent for being non-committal and vague. I can imagine a campaign team asking their candidate to pre-record hundreds of contradictory messages, which they could then fire at different audiences. If every voter is a data point who receives, not messages from politicians, but a perfectly targeted machine-generated advert, finely tuned and retuned to suit a particular personality and mood, an algorithm which runs itself and improves iteratively, without making any serious effort to engage with you – then elections will become little more than software wars.

But the more politics becomes a question of smart analysis and nudges rather than argument, the further power will shift away from those with good ideas and towards those with good data and lots of money.

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It turned out that Project Alamo was a small piece of a much bigger puzzle in which influential people battled over the shape of reality. Robert Mercer had also invested in *Breitbart News* – best described as a right-wing *Huffington Post* that specialises in stories castigating liberals, bad Muslims, and the 'mainstream media' – which became a highly influential source of anti-Clinton and pro-Trump news.

According to the academic Jonathan Albright, the US election was dominated by a 'micro-propaganda machine', a network of thousands of web pages from the radical right hyper-linking to each other and spreading 'false, hyper-biased, and politically loaded information'. Many used advanced tracking cookies that followed users around the web, advanced programmatic ad delivery and AI content optimisation to serve up more conspiracy theories to the so-inclined.[34]

It is increasingly clear that Russian president Vladimir Putin was engaged in this information war too. For some years, the Russian Government has known that covert media manipulation online can subtly shift public opinion in ways that promote its interests – supporting far-left and far-right parties across Europe and firing up campaigns of internet disinformation throughout the Ukrainian crisis. During the US election the Russian Government took these Cold War techniques up several notches. Thousands of paid content producers pushed out pro-Trump or anti-Hillary content, flooding feeds and overwhelming serious hashtags with nonsense, making them unusable. Russian hackers ran very big Facebook pages, which created the illusion of grassroots support for Trump. They allegedly hacked Hillary Clinton's private emails and shared them with the whistleblowing site WikiLeaks – who leaked them slowly over the campaign, and to good effect. They also ran an aggressive campaign of paid advertising on Facebook and Google.

I won't tell this story in full here, because it is still unfolding (at the time of writing, the investigation into alleged collusion between the Trump campaign and the Russian Government is ongoing).[*] But it seems that the purpose was obviously the same as Alamo: to win the information war, shape people's reality and use the internet to subtly shift opinion in new and hidden ways.

Importantly, the Russian meddling didn't always display a pro-Trump agenda. Just as often, the aim was to sow discord and disharmony more generally.[35] After the shooting at Marjory Stoneman Douglas High School in Parkland, Florida in February 2018, Russian bots and trolls started posting inflammatory content about gun control *on both sides of the argument*. The same thing happened after shootings in Las Vegas, the NFL protests and high-profile news stories about sexual misconduct. According to former CIA Director Mike Pompeo, this now constitutes a 'serious threat' to democracy – not because it might decisively swing an election, but rather because it chips away at social cohesion and public confidence in the democratic system itself. The Kremlin doesn't care what the US law is on gun control – but if the American people are arguing, the Russian government believes it is winning.

The scale of the Russian disinformation effort was staggering, but hardly surprising. Democracies with free media, fair elections and an open internet are more subject to international meddling than closed autocracies (and if some of the projections I set out in the next chapter about future unemployment are correct, 'paid content producer' whose job it is to

influence online opinion might one day be a very desirable position). To their credit, the tech firms – especially Facebook – rushed to promise action after this was revealed, restricting political ad purchasing and hiring more people to manually review the content. Twitter created an 'Advertising Transparency Center' to show how much money each campaign spent on advertising, the identity of the organisation funding the campaign and what targeting demographics were used. Mark Zuckerberg seems to have had a Damascene moment towards the end of 2017, when he acknowledged that the company needed to behave more like a responsible publisher that takes editorial decisions, rather than as a neutral platform that treats all information equally. This will certainly help. There are also measures governments can take too, such as bringing election laws up to speed, which I discuss at the end of this book.

But even this will not eradicate the problem entirely, because a networked world where everyone is posting from everywhere all the time is simply impossible to control completely. This is more than Russian influence: democracies can no longer effectively police their information borders. Facebook's dream to connect the world also means connecting Russian bots with British voters and gullible news outlets, fake news purveyors with floating voters, and Theresa Hong with worried American mothers who have never voted before.

Every election has become an arms race, and the problem with arms races is that they are very difficult to slow down. Big Tech has built the infrastructure for selling stuff – some of the most sophisticated and connected configurations man has ever dreamt up – and now these infrastructures have been repurposed to win elections. In the red corner: a multi-billion-dollar business of influence and control which gets more accurate and targeted every year. In the blue corner: a handful of weak and dated election rules designed for the era of mass broadcast and door-to-door canvassing.

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The night of the 2016 election started well for Democrats – early exit polls looked good, and analysts confidently predicted a comfortable win for Hillary Clinton. David Remnick, editor of the *New Yorker*, drafted an essay about the country's first woman president. Producers at Fox News predicted they'd be calling the race for the Democrats before midnight East Coast

Time. Even the Republican Party seemed to be preparing for a round of buck-passing.[36]

But as the evening rolled on, there were signs that things weren't going according to the script. Votes in Florida were taking longer than expected to count, and in a handful of early reporting precincts there were more pro-Trump votes than pollsters had anticipated. Turnout in Ohio among white working-class voters was rumoured to be high. Michigan and Wisconsin still hadn't called. Surveying all this, David Chalian, Political Director at CNN, told his producer Terence Burlij at 9.15p.m. that he thought Trump might actually win. 'He looked at me like I was crazy. You could sense that the night was different.'[37]

After weeks working in San Antonio, Brad Parscale had decamped to Trump Tower in New York for the results and was closely reviewing every scrap of news. Darrell Scott, a member of Trump's transition team, found Brad on the fourteenth floor, running through scenarios on his laptop. 'How we looking?' he asked. Brad told him they'd over-performed almost everywhere, pointing at the screen.[38] Darrell texted Matt Sheldon, a Republican publicist. 'The computer guys are already saying that he's going to win,' he wrote. 'Parscale's throwing a paper airplane right now across the room.'

As the mood was lifting in Trump Tower, the atmosphere at Clinton HQ was very different. Aides stopped doing live on-location interviews and started frantically calling contacts in key states, to figure out what was going on. At 10p.m., the TV monitors in the Clinton press room switched from running the cable news feeds back to old promo material. 'That felt like a turning point,' said one CNN producer who was present.[39]

At approaching 11p.m., the result everyone was waiting for was finally announced: Trump had won Florida, a key battleground state where he had no ground game and had been polling badly. Soon after, Ohio, another swing state, went the same way. Analysts, not for the first time that night, recalculated Clinton's road to victory. She needed to win Pennsylvania (worth 20 electoral college votes), Michigan (16) and Wisconsin (10) in order to reach the magic number of 270. 'Her path is getting narrower and narrower,' CNN anchor Jake Tapper told viewers.[40]

According to Jim Margolis, who'd been a senior advisor on both Obama campaigns, people inside the Clinton war room were phoning their people on the ground in Wisconsin and Michigan to figure out why those states hadn't yet declared for Clinton when all the polls had pointed to an easy win

for her.[41] After all, these states had gone Democrat in the last six presidential elections. If they held, she was still in the game.

Except that a few months earlier Brad, sitting inside Project Alamo, reviewing Cambridge Analytica's universes, had realised they were winnable. The models suggested there were enough swing voters and non-voters who could be persuaded to vote for Trump. He shifted budgets around to focus on these Rust Belt states.[42] 'I took every nickel and dime I had out of everywhere else, and I moved it to Michigan and Wisconsin,' he later told *60 Minutes* on CBS. Jared Kushner told Trump to start campaigning in Pennsylvania, too. At the time several pundits said this was mad – it was on the wrong side of the much-vaunted 'blue wall' of solid Clinton territory. But Brad was following the data.

At approaching 2a.m. East Coast Time, Trump won Pennsylvania, pushing him to 263 electoral college votes, and the door for Hillary was closing fast. Half an hour later AP News projected that Trump had won Wisconsin – taking him across the victory line. It seemed apt that it was Wisconsin, the state that no one thought possible except the data guys inside Alamo. Trump was the first Republican to carry the state since Reagan in 1984. A few minutes later Clinton called Trump and conceded. She'd won the popular vote by two million votes, but she didn't win in the places where it counted.

As Trump took to the stage for his victory speech a couple of hours later, Brad – who at six foot five towered over the delighted crowd – looked out over the assembled supporters. He glanced over at Darrell Scott and simply said, 'I told you'.

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Far too many otherwise-intelligent people, unable to comprehend Trump's popularity, believe that voters were duped by Brad or Theresa, or even by Vladimir Putin, into ticking the box for Trump. Those involved are happy to propagate this myth, because it's good for business. Ever since Cambridge Analytica were credited, in multiple outlets, as the geniuses behind his victory, trade has been booming. 'It's like drinking from a fire hose,' Oczkowski said in a recent interview. 'Aside from Antarctica, we've gotten interest from every continent.'[43]

The truth is less straightforward. Obviously many factors led to Trump's win – economic stagnation, his dreary opponent and the white working-class revolt. And as Richard Hofstadter famously wrote, there is a

'paranoid' style in American politics, which stems from the fear that shadowy, powerful interests are doing the Republic down.[44] There's certainly some partisanship at play, too. I don't recall similar levels of outrage when it was revealed in 2012 that President Obama's team had placed voters into 30 buckets and ranked them according to persuadability, and that Google's Eric Schmidt advised the campaign. Liberals were apparently extremely comfortable with the idea when it was their guy doing it. That was a mistake.

But, in a relatively close race with two unpopular candidates and a small number of key marginal districts, Project Alamo probably *was* decisive. Brad's decision to bet the house on digital, Cambridge Analytica's refined universes and the hands-on help from Facebook all meant Trump could reach enough of the right people in the right districts with the right messages at the right time. Throw in a load of trolls and bots nudging the online debates his way, and that was enough to swing it. When the final counts were made public, it was revealed that Trump won Pennsylvania by 44,000 votes out of six million cast, Wisconsin by 22,000 and Michigan by 11,000. These are tiny numbers – less than one per cent of the votes. If they had gone to Clinton, as projected, she would have been elected president.

Not all elections will be this close. But, soon enough, nearly all will be run with similar combinations of big data, algorithms, granular targeting and supposedly organic and authentic content. This isn't a story about Trump 'stealing' an election. Who wins and loses is less important than whether the integrity of elections themselves are at risk. Elections are comprised of hardware and software. The hardware is the technical rules by which people get to have their say on who governs them – accurate counts, polling stations, a means to register as a candidate and so on. But elections also depend on software: people should be left to make their minds up freely and with a clear head, based on a sound understanding of their interests and accurate information. If some people can unduly influence that election software in ways that we are barely aware of, then elections aren't really free and fair. Unless we can understand the techniques employed and hold those who employ them accountable, there is a chilling prospect that whoever owns the data also owns the future, because they can hack the software – and this might just be enough to make a difference. Meet the new boss. Same as the old boss. But now armed with algorithms and big data.