Uses and abuses of AI in election campaigns

Alistair Knott
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- Mine the internet for information about voters’ personalities;
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Overview

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The company’s (somewhat) new angle:

- Mine the internet for information about voters’ personalities;
- Use this information to for ‘microtargeting’ of campaign material to voters.

Both those steps involve AI techniques.
Overview

There will be three parts to the talk:

- Models for inferring people’s personality from their online footprint
- From Cambridge University to Cambridge Analytica
- Cambridge Analytica’s role in the Brexit and Trump campaigns
The OCEAN measure is a set of personality dimensions used by many social psychologists. It emerged in the 80s and 90s.
Background: the OCEAN personality measure

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- Conscientiousness
- Extraversion
- Agreeableness
- Neuroticism
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- Neuroticism

These dimensions mainly emerge from factor analysis on lengthy self-assessment personality questionnaires.
Kosinski and colleagues’ 2015 paper

In 2015, Michal Kosinski and colleagues from Cambridge University’s Psychometric Centre published a paper that gathered a lot of attention. [Youyou et al., 2015]
Kosinski and colleagues’ 2015 paper

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- With 65 Likes, the model was as accurate as a ‘friend’…
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For a demo, see https://applymagicsauce.com/demo.html.
Kosinski and colleagues’ 2015 paper
The day Kosinski published these findings, he had two phone calls:

- one threatening a lawsuit
- one offering a job.

Both came from Facebook.
Repercussions of Kosinski’s paper

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After a couple of weeks, Facebook Likes became private by default.

[Graessegger and Krogerus, 2017]
Aside: the power of Facebook Likes

The power of Facebook Likes has been appreciated for some time.

- Around 2010, Google realised that Likes provided a proprietary source of information about web search rankings that could be exploited in a rival search engine.
- That’s why they developed Google+.
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Kogan started a company, Global Science Research (GSR) that reimplemented the model.

- SCL ran a project that used Mechanical Turk to access a large pool of Facebook profiles, hoovering up tens of thousands of individuals’ demographic data—names, locations, birthdays, genders—as well as their Facebook Likes.
- The same information was captured for each subject’s Facebook friends (on average 350 of them).

[Davies, 2015]
Aleksandr Kogan and GSR

In 2015, Kogan’s business partner claimed to ‘own a massive data pool of 40+ million individuals across the US—for each of whom they had generated detailed personality profiles’.

[Davies, 2015]
Where Cambridge Analytica came from

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SCL

SCL is a behavioural research and strategic communication company.
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- Based on results, communications will be specifically targeted to key audience groups to modify behavior in accordance with the goal of the client.

[Wikipedia, 2017]
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It was founded in the 90s by Nigel Oakes (ex-Saatchi & Saatchi).
It started in the 90s with commercial work: targeted advertising.

It then moved into political communications (particularly in the developing world), and military psyops.

It has influenced elections in Italy, Latvia, Ukraine, Albania, Romania, South Africa, Nigeria, Kenya, Mauritius, India, Indonesia, Thailand, Taiwan, Colombia (…) 

It has worked on ‘counter-radicalisation’ in Pakistan and Yemen.

It has helped Nato counter Russian propaganda in eastern Europe. (‘Recoding the mass consciousness to turn patriotism into collaborationism’)

[Wikipedia, 2017]
[Doward and Gibbs, 2017]
[Cadwalladr, 2017]
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At IBM, they pioneered statistical natural language processing.
Renaissance
Natural language processing (NLP) is now basically applied statistics.

- You can tell a lot about a document from the words it contains.
- *Structures of words* are more informative than single words.
- The way words in a document are organised into structures can be characterised statistically.
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Some techniques:

- Hidden Markov models of language
- Statistical parsers
- Statistical machine translation
What quant methods make Renaissance so good?

Some guesses:

- Sentiment analysis, information extraction on news items
- Good models of many languages
- Well-designed complex statistical models
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- Well-designed complex statistical models
Cambridge Analytica is an offshoot of SCL, created in 2013 to participate in US politics. Bob Mercer was one of the main investors in the company. Politically, Mercer is ultra-conservative. He's one of the main funders of the far-right Breitbart website. Steve Bannon (until recently exec chairman of Breitbart) was a VP on the board of Cambridge Analytica. Its CEO is Alexander Nix.
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SCL + Bob Mercer: Cambridge Analytica
Cambridge Analytica’s database

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The company ‘buys personal data from a range of different sources, like land registries, automotive data, shopping data, bonus cards, club memberships, what magazines you read, what churches you attend.’
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[Nix displays the logos of globally active data brokers like Acxiom and Experian—in the US, almost all personal data is for sale. For example, if you want to know where Jewish women live, you can simply buy this information, phone numbers included.]

[Graessegger and Krogerus, 2017]
Now Cambridge Analytica aggregates this data with the electoral rolls of the Republican party and online data and calculates an [OCEAN] personality profile. Digital footprints suddenly become real people with fears, needs, interests, and residential addresses.

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[Graessegger and Krogerus, 2017]

‘Nix likes to boast that Analytica’s personality model has allowed it to create a personality profile for every adult in the U.S—220 million of them, each with up to 5,000 data points.’

[Anderson and Horvath, 2017]
Analytica in the Brexit campaign

In November 2015, Leave.EU (founded by Arron Banks, supported by Nigel Farage's UKIP) announced it had commissioned Cambridge Analytica to support its online campaign using OCEAN-based microtargeting. (No money changed hands.)

'Everywhere he went, Kosinski had to explain that he had nothing to do with this company.'

Meanwhile, Aleksandr Kogan moved to Singapore, married, and changed his name to 'Aleksandr Spectre'.

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In 2016, Analytica started to work for Trump's campaign.

Trump talks a lot about 'another Brexit' during his campaign.

Jared Kushner and Jason Miller [on his campaign team] told Andy Wigmore of Leave.EU (in 2015, prior to Analytica) that 'the holy grail is Artificial Intelligence'.

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[Cadwalladr, 2017]
How was AI used in the Brexit and Trump campaigns?

Some caveats:

- All election data analysis companies like to claim they have the magic sauce when their politician wins.
- People speaking on behalf of Cambridge Analytica are salesmen.
- Hedge fund computer programs are ‘the blackest of black boxes’.
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In a presentation, Nix showed how psychographically categorized voters can be differently addressed, based on the example of gun rights.

- ‘For a highly neurotic and conscientious audience the threat of a burglary—and the insurance policy of a gun.’ [An image shows the hand of an intruder smashing a window.]

- ‘Conversely, for a closed and agreeable audience: people who care about tradition, and habits, and family.’ [An image shows a man and a child standing in a field at sunset, both holding guns, shooting ducks.]

[Graessegger and Krogerus, 2017]
1. Campaign actions targeted to voters’ personality types.

On the day of the third debate between Trump and Clinton, Trump’s team tested 175,000 different ad variations for his arguments, in order to find the right versions above all via Facebook.

- The messages differed for the most part only in microscopic details, in order to target the recipients in the optimal psychological way: different headings, colors, captions, with a photo or video.

- This fine-tuning reaches all the way down to the smallest groups, Nix explained in an interview. ‘We can address villages or apartment blocks in a targeted way. Even individuals.’

[Graessegger and Krogerus, 2017]
1. Campaign actions targeted to voters’ personality types.

‘Trump’s striking inconsistencies, his much-criticized fickleness, and the resulting array of contradictory messages, suddenly turned out to be his great asset: a different message for every voter.’

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(Analytica’s targeting was not always microscopic. For many purposes it divided the US population into just 32 personality types.)

[Graessegger and Krogerus, 2017]
How was AI used in the Brexit and Trump campaigns?

1. Campaign actions targeted to voters’ personality types.

Facebook was the key to the whole Brexit campaign, said Andy Wigmore [Leave.EU’s communications director].

- A Facebook Like was their most ‘potent weapon’. ‘Because using artificial intelligence, as we did, tells you all sorts of things about that individual and how to convince them with what sort of advert.’

[Cadwalladr, 2017]
How was AI used in the Brexit and Trump campaigns?

2. Clever methods for delivering targeted messages to voters.
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(i) ‘Dark posts’: sponsored news-feed-style ads in Facebook timelines that can only be seen by users with specific profiles.

[Graessegger and Krogerus, 2017]
2. Clever methods for *delivering* targeted messages to voters.

(ii) **Canvassing apps.** From July 2016, Trump’s canvassers were provided with an app with which they could identify the political views and personality types of the inhabitants of a house. It was the same app provider used by Brexit campaigners.

[Graessegger and Krogerus, 2017]
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(iii) Twitter bots. (Useful resource: http://politicalbots.org/)
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In the Brexit campaign:

- Of 1.5 million tweets with hashtags related to the referendum sampled between 5 June and 12 June, 54 per cent were pro-Leave and 20 per cent were pro-Remain. But a third—half a million tweets—were generated by just 1 per cent of the 300,000 sampled accounts. This level of activity suggests that many of these are scripted bots. Throughout the period, the Brexit bots were much more active, tweeting more than three times as often as the Remain bots.

[Howard and Kollanyi, 2016]
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In the Trump campaign:

- [During the first presidential debate,] we find that (1) Twitter traffic on pro-Trump hashtags was roughly double that of the pro-Clinton hashtags, (2) about one third of the pro-Trump twitter traffic was driven by bots and highly automated accounts, compared to one fifth of the pro-Clinton Twitter traffic.

   [Kollanyi et al., 2016a]
How was AI used in the Brexit and Trump campaigns?

2. Clever methods for \textit{delivering} targeted messages to voters.

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In the Trump campaign:

- Not only did the pace of pro-Trump activity increase over time, but the gap between pro-Trump and pro-Clinton activity widened from 4:1 during the first debate to 5:1 by election day.

- The use of automated accounts was deliberate and strategic throughout the election, most clearly with pro-Trump campaigners and programmers who carefully adjusted the timing of content production during the debates, strategically colonized pro-Clinton hashtags, and then disabled activities after Election Day.

[Kollanyi et al., 2016b]
The fallout

David Magerman (one of Renaissance's IBM computational linguists) has just been sacked for publicly criticising Mercer's politics.

Cambridge Analytica is not willing to comment on alleged ongoing talks with Theresa May.

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References


