

DATA 605

Ethical & Legal Issues in

Data Science

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AGENDA

- Questions?
- Cambridge Analytica Case Discussion
- Ethical Theories
- Class Discussion - Breakout

Discussion

The Cambridge Analytica Data Apocalypse Was Predicted in 2007

<https://www.wired.com/story/the-cambridge-analytica-data-apocalypse-was-predicted-in-2007/>

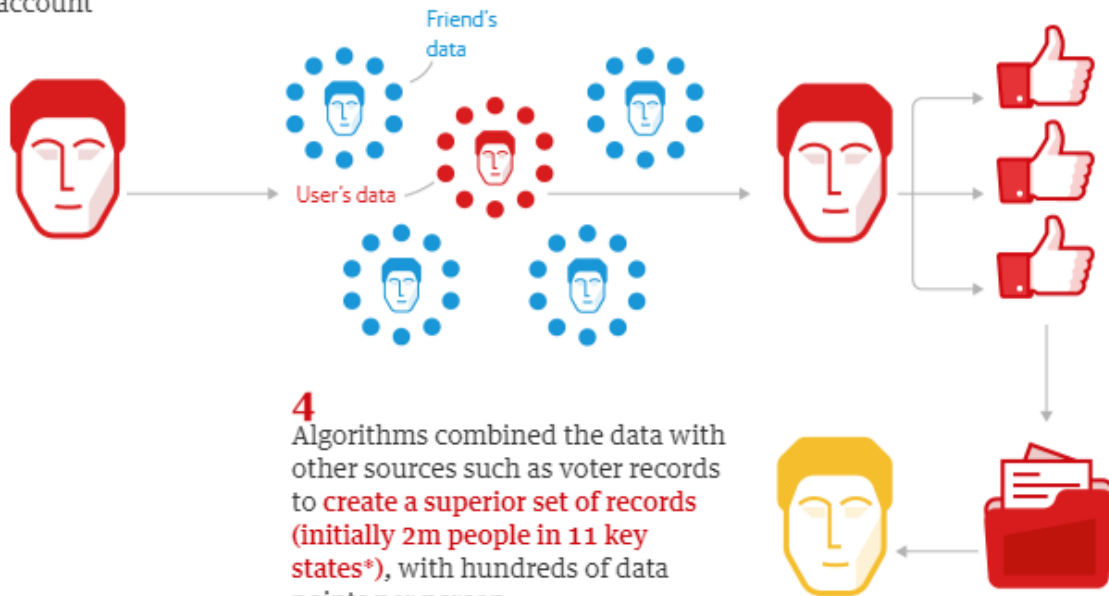
In the 2010s, personal data belonging to millions of Facebook users was collected without their consent by British consulting firm Cambridge Analytica, predominantly to be used for political advertising. The data was collected through an app called "This Is Your Digital Life", developed by a data scientist and his company Global Science Research in 2013. The app consisted of a series of questions to build psychological profiles on users and collected the personal data of the users' Facebook friends via Facebook's Open Graph platform. The app harvested the data of up to 87 million Facebook profiles. Cambridge Analytica used the data to provide analytical assistance to the 2016 presidential campaigns.

1 Approx. 32,000 US voters ('seeders') were **paid \$2-5 to take a detailed personality/ political test** that required them to log in with their Facebook account

2 The app also **collected data such as likes and personal information** from the test-taker's Facebook account, as well their **friends'** data, amounting to over 50m people's raw Facebook data

3 The **personality quiz results** were paired with their Facebook data - such as **likes** - to seek out psychological patterns

4 Algorithms combined the data with other sources such as voter records to **create a superior set of records (initially 2m people in 11 key states*)**, with hundreds of data points per person. These individuals could then be targeted with **highly personalised advertising** based on their personality data



Guardian graphic. *Arkansas, Colorado, Florida, Iowa, Louisiana, Nevada, New Hampshire, North Carolina, Oregon, South Carolina, West Virginia

Cambridge Analytica: How 50M Facebook Records were Hijacked

Cambridge Analytica – narratives and counter-narratives

Topic	Narrative	Counter-Narrative
Regulation	Imposing government regulations to limit data collection or use would impede innovation and research; limiting economic growth as well as research about human behavior.	Self-regulation is not working; hence, the Cambridge Analytica event. Regulations, throughout history provide safeguards that consider the views and standard of society especially keeping in mind the most vulnerable groups.

Cambridge Analytica – narratives and counter-narratives

Topic	Narrative	Counter-Narrative
Responsibility	Users are and should continue to be responsible for their own data. If users consent to the terms of service and in exchange receive a service (e.g., a free Facebook account), this is a fair and beneficial exchange.	Data Scientists and others handling data should be responsible for protecting sensitive data and/or implications of collection. Current consent practices are not sufficient given the scale and technical capabilities of data scientists/companies. In addition, many users are unaware of potential use cases.

Cambridge Analytica – narratives and counter-narratives

Topic	Narrative	Counter-Narrative
Purpose and Usefulness	Data-driven models are useful for many things, like predicting human behavior (e.g., who will purchase a particular product at a given point in time)	Is the purpose of a particular model to explain, understand, and develop insights, or just to predict? Also, various predictors change over time, so models must be recalibrated and updated as time passes.

Addressing Data Ethics

So how do you address the Ethics questions at an organizational level:

- Form an executive level “**Ethics Committee**” which will ask the question, “What is the right level of ethical data you can capture and use for Digital Marketing?”
- Form a **Data Governance committee** in partnership with Ethics committee that will control the data being used and why/how it is used?
- Consider **categorizing your data inventory** into Systems of Record, Shared Data Assets, Enrichment Data, and Opportunistic Data
- Customer data should be truly **treated as an asset** and treated like physical assets. This will provide lineage on how the data is getting used
- **Invest in a Data Catalog platform** that will and MUST provide clear line of sight on “how” data is getting used within the enterprise
- Get a clear picture (probably a maturity model) on your companies **Data Literacy** [How does your company use Data for decision making?]
- **STOP using Data Extracts** in desktops, mobile phones, MS Excel, or others [I know you use it :)]. Use a standardized data platform instead where your Data usage can be tracked and monitored
- **Carefully consider building and using machine learning and cognitive algorithms** that can use social media data for personality analysis. Have a good handle on how these automated algorithms use data
- **Monitor and track** usage of 3rd Party datasets

Revisiting Ethics, Morals and Law

ETHICS – principles that govern a person's behavior or the conduct of an activity ([governs professional interactions](#))

MORALS – concerned with the principles of right and wrong behavior and the goodness and badness of a human character ([governs private, personal interactions](#))

LAW – system of rules that a particular country or community recognizes as regulating the actions of its members and may enforce by imposition of penalties ([governs society as a whole](#))

Field of Ethics

Traditionally divided into three areas:

1. **meta-ethics** – which deals with the nature of the right or the good, as well as the nature and justification of ethical claims (does not tell us what we can or can't do)
2. **normative ethics** – which deals with the standards and principles used to determine whether something is right or good
3. **applied ethics** – which deals with the actual application of ethical principles to a particular situation

Examples

meta-ethics (philosophical) : abortion is wrong, honesty is a virtue, slavery is evil, wrong to kill

normative ethics (practical) : is it wrong to kill one person to save many lives?
Golden Rule

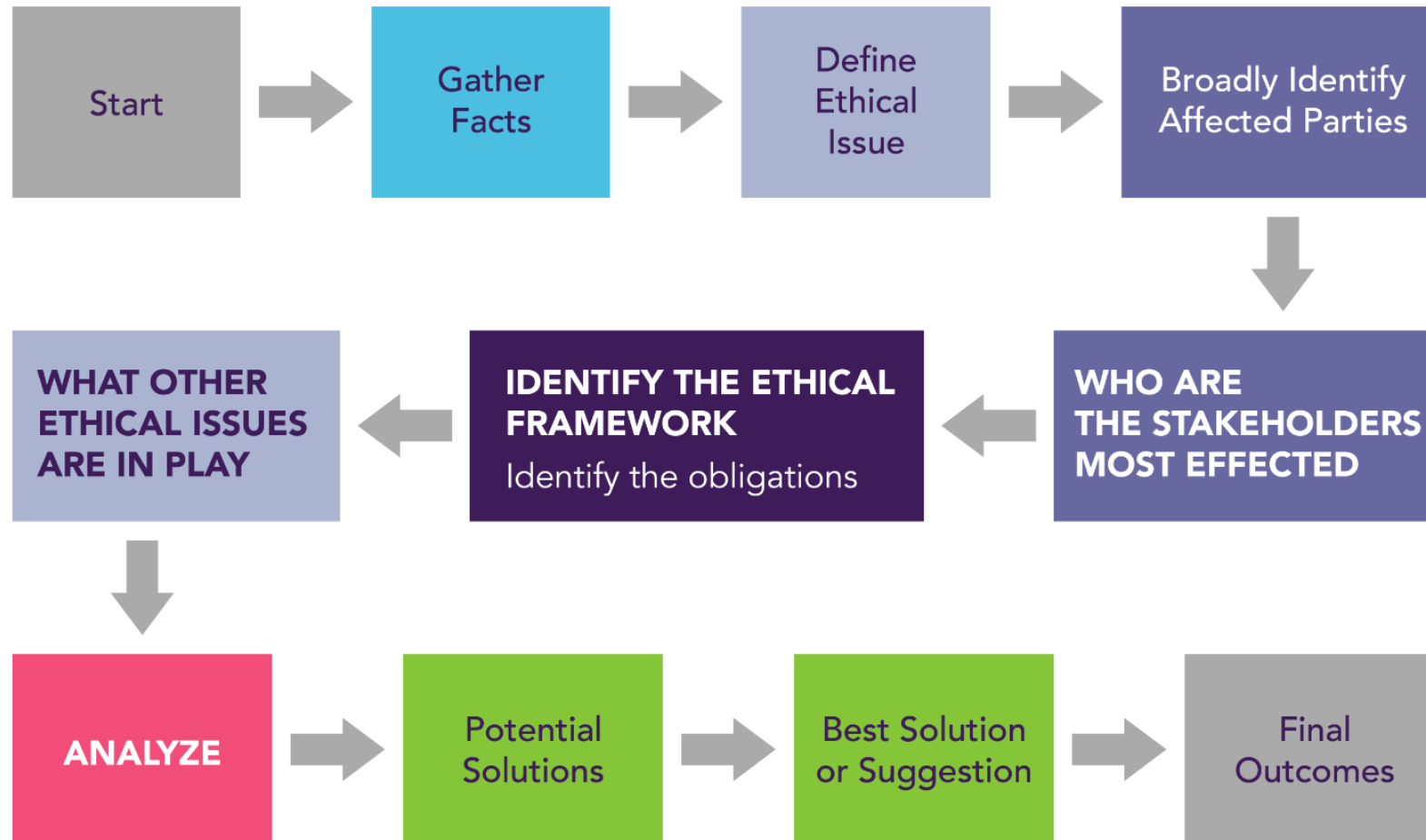
applied ethics (policy making) : death penalty, sex before marriage, gay/lesbian rights, animal rights

Best-Known Ethical Theories

- Utilitarianism, a type of consequence-based theory
 - <https://www.youtube.com/watch?v=-a739VjqdSI>
- Moral absolutism or duty-based theories
 - <https://www.youtube.com/watch?v=8blys6JoEDw>
- Virtue-based ethics, focused on individual decision-making
 - <https://www.youtube.com/watch?v=PrvtOWEXDIQ>
- Stakeholder theory
 - <https://www.youtube.com/watch?v=vD9XJKZmXEs>
- Metaethics (which includes moral realism and cultural relativism)
 - <https://www.youtube.com/watch?v=FOoffXFpAlU>

Frameworks to Guide Ethical Decision Making

	Consequentialist	Duty	Virtue
Deliberative Process	What kind of outcomes should I produce (or try to produce)?	What are my obligations in this situation and what are the things I should never do?	What kind of person should I be (or try to be) and what will my actions show about my character?
Focus	Directs attention to the future effects of an action, for all people who will be directly or indirectly affected by the action	Directs attention to the duties that exist prior to the situation and determines obligations	Attempts to discern character traits (virtues and vices) that are, or could be, motivation the people involved in the situation
Definition of Ethical Conduct	Ethical conduct is the action that will achieve the best consequences	Ethical conduct involves always doing the right thing: never failing to do one's duty	Ethical conduct is whatever a fully virtuous person would do in the circumstances
Motivation	Aim is to produce the most good	Aim is to perform the right action	Aim is to develop one's character



The Ethicist Framework

Applying the Framework to Cases

- Recognize an Ethical Issue
- Consider the Parties Involved
- Gather all the Relevant Information
- Formulate Actions and Consider Alternatives
- Decide and Consider It
- Act
- Reflect on the Outcome

Relativism and Subjective Relativism

Relativism

- No universal standards of right and wrong
- One person can say “X is right,” another can say “X is wrong,” and both can be correct

Subjective relativism

- Each person decides right and wrong for himself or herself
- “What’s right for you may not be right for me”

Case for/against Subjective Relativism

FOR:

- Well-meaning and intelligent people can have totally opposite opinions about moral issues
- Ethical debates are disagreeable and pointless

AGAINST:

- Blurs line between doing what you think is right and doing what you feel like doing
- Makes no moral distinction between the actions of different people
- Subjective relativism and tolerance are two different things
- Decisions may not be based on reason
- Conclusion: Not a workable ethical theory

Cultural Relativism

- What is “right” and “wrong” depends upon a society’s actual moral guidelines
- These guidelines vary from place to place and from time to time
- A particular action may be right in one society at one time and wrong in another society or at another time

Case for/against Cultural Relativism

FOR:

- Different social contexts demand different moral guidelines
- It is arrogant for one society to judge another

AGAINST:

- Because two societies do have different views about right and wrong doesn't mean they ought to have different views
- It doesn't explain how an individual determines the moral guidelines of a particular society
- What if there are no cultural norms?
- It doesn't account for evolution of moral guidelines
- It provides no way out for cultures in conflict
- Existence of many acceptable practices does not imply all practices are acceptable (many/any fallacy)
- Societies do, in fact, share certain core values
- Only indirectly based on reason
- Conclusion: Not a workable ethical theory

Divine Command Theory

- Good actions: those aligned with God's will
- Bad actions: those contrary to God's will
- Holy books reveal God's will
- We should use holy books as moral decision-making guides

Case for/against Divine Command Theory

FOR:

- We owe obedience to our Creator
- God is all-good and all-knowing
- God is the ultimate authority

AGAINST:

- Different holy books disagree on certain teachings
- Divine command theory is impractical because society is multicultural, secular
- Some modern moral problems not directly addressed in scripture
- Based on obedience, not reason
- Conclusion: Not a workable ethical theory for our purposes

Ethical Egoism

- Each person should focus exclusively on his or her self-interest
- Morally right action: that action that provides self with maximum long-term benefit

Case for/against Ethical Egoism

FOR:

- It is practical since we are already inclined to do what's best for ourselves
- It is better to let other people take care of themselves
- The community can benefit when individuals put their well-being first
- Other moral principles are rooted in the principle of self-interest

AGAINST:

- An easy moral philosophy may not be the best moral philosophy
- We know a lot about what is good for someone else
- Self-interest can lead to blatantly immoral behavior
- Other moral principles are superior to principle of self-interest
- People who take the good of others into account lead happier lives
- By definition, does not respect the ethical point of view
- Conclusion: Not a workable ethical theory

Class Discussion

- Scenario 1
- Scenario 2
- Scenario 3

Do Research on the Following Topic

How has information technology affected the field of ethics in the past two decades?

Other References

[Ethics Codes: History, Context, and Challenges](#)

[Data Science Code of Professional Conduct](#)