Against Ethics in Data Mining

For a Political Discussion of a Political Issue

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Introduction

Terms like **data mining**, **data science**, **big data**, **machine learning**, or **algorithmic decision-making** point toward a set of practices that have come to play important roles in a variety of domains.

These roles are increasingly under scrutiny.

Angela Merkel: internet search engines are 'distorting perception'

A lack of transparency about algorithms is endangering debate, German chancellor tells media conference

▲ Angela Merkel at the media conference in Munich on Tuesday. Photograph: Sven Hoppe/EPA

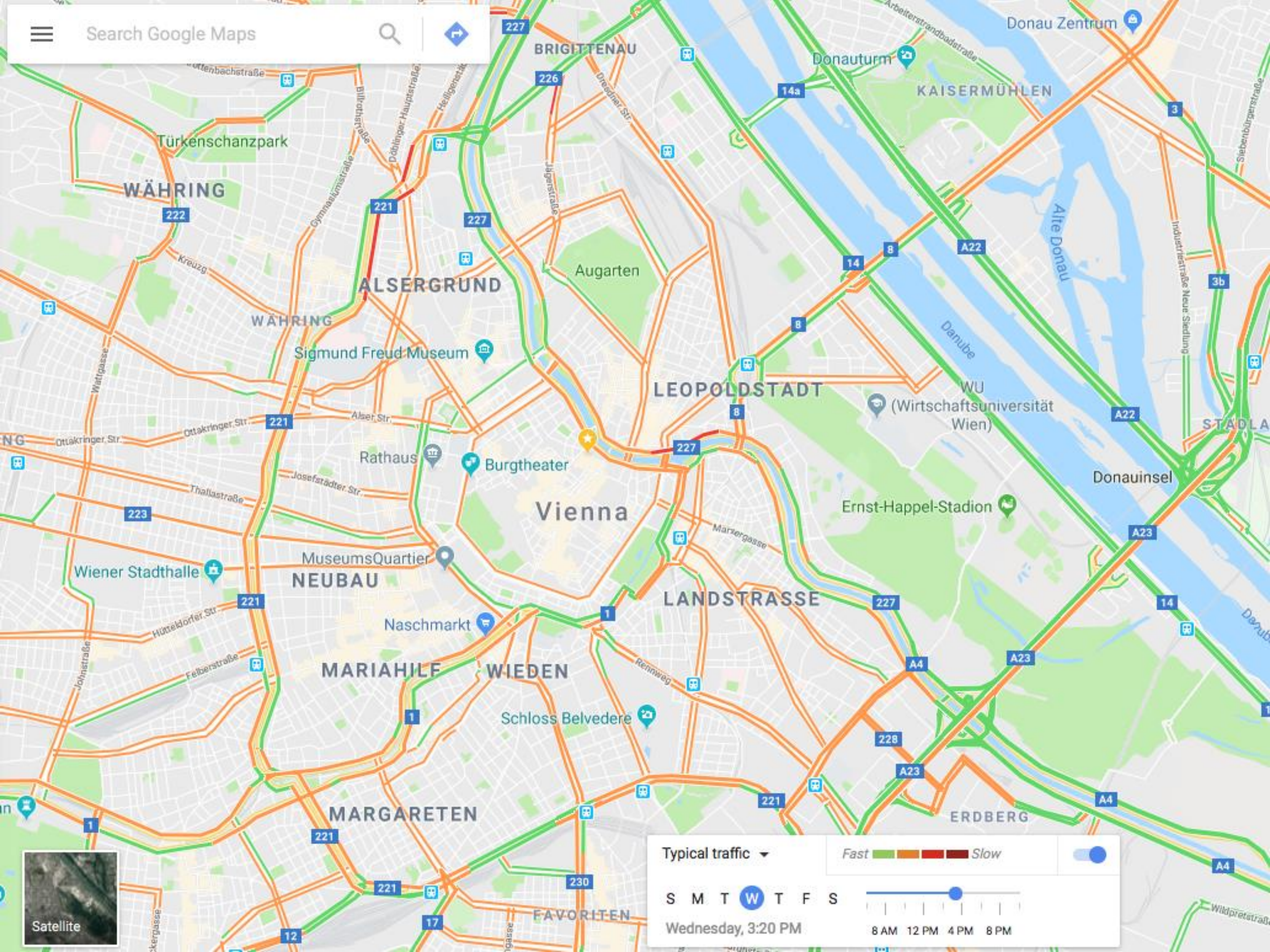
Angela Merkel has called on major internet platforms to divulge the secrets of their algorithms, arguing that their lack of transparency endangers debating culture.

The German chancellor said internet users had a right to know how and on what basis the information they received via search engines was channelled to them.

Four aspects of (big) data (mining)

These four aspects characterize our situation:

- Computerization has facilitated (automated) data collection and created operating environments where capture, analysis, and generated outputs form **integrated systems**;
- Very **large data pools**, often comprised of transactional data (logged behavior) or non-traditional data (e.g. cultural tastes, sensor data) provide potentially deep views into society;
- Traditional and non-traditional **analytical techniques** (e.g. machine learning) describe, classify, filter, recommend, predict, or decide;
- Increasingly "decentered, non-traditional societies" (Giddens 1990) have "exploded into a multiplicity of activities and statuses" (Lazzarato 2006) and "the class system has become highly complex and differentiated" (Saunders 1989); they are **more and more often organized around market forms** that reward (economic) actors able to "act in an uncertain world" (Callon, Lascoumes, Barthe 2001).



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Areas of **decision-making** like dynamic pricing, hiring, criminal justice and policing, access to credit and insurance, and information diffusion are some of the most emblematic **problem areas**.

The dominant paradigm

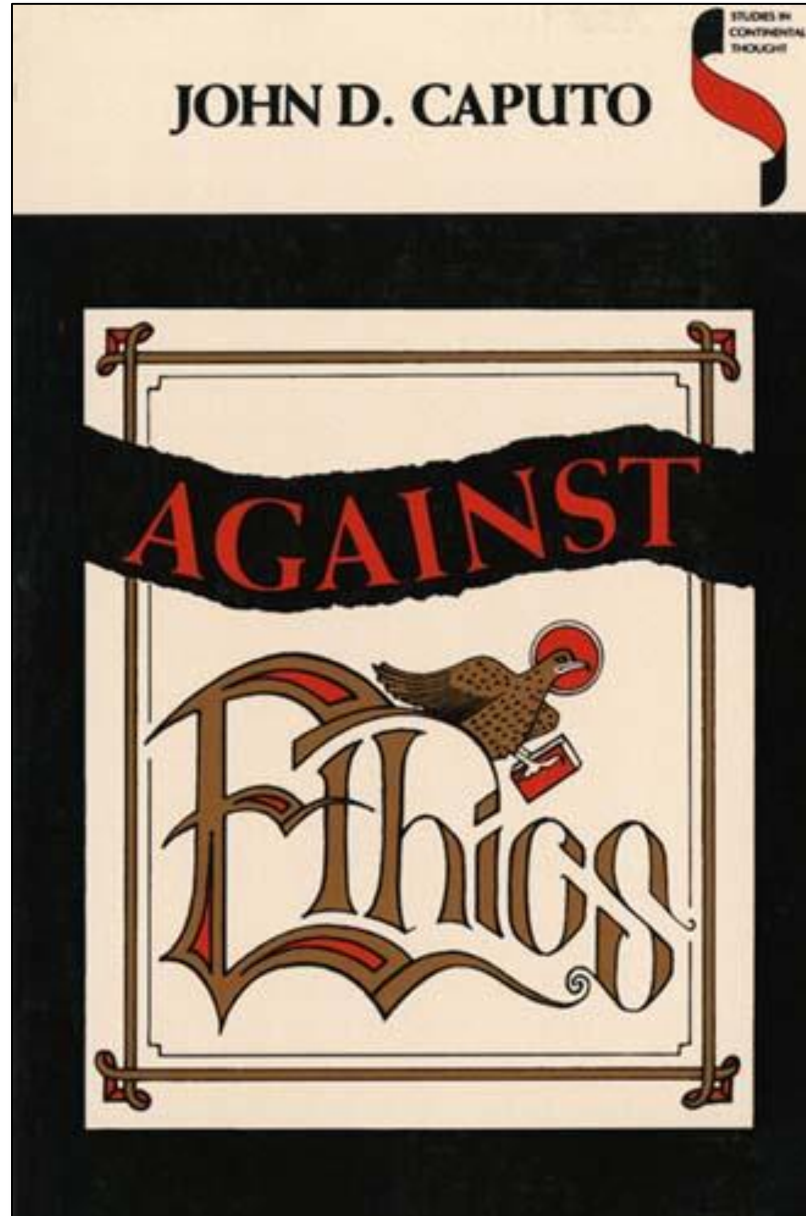
Over the last years, there has been a rise in publications that identify **ethical issues, problems, or challenges** in and around data mining.

This generally involves the discussion of specific methodological dimensions, applications, and outcomes (in business, government, and academic research) from the perspective of an **implicit or explicit (liberal) normative framework**.

This work focuses on the behavior and decisions of individual actors or actor groups engaging in data work and often yields explicit guides such as ***Ten Simple Rules for Responsible Big Data Research*** (Zook et al. 2017).

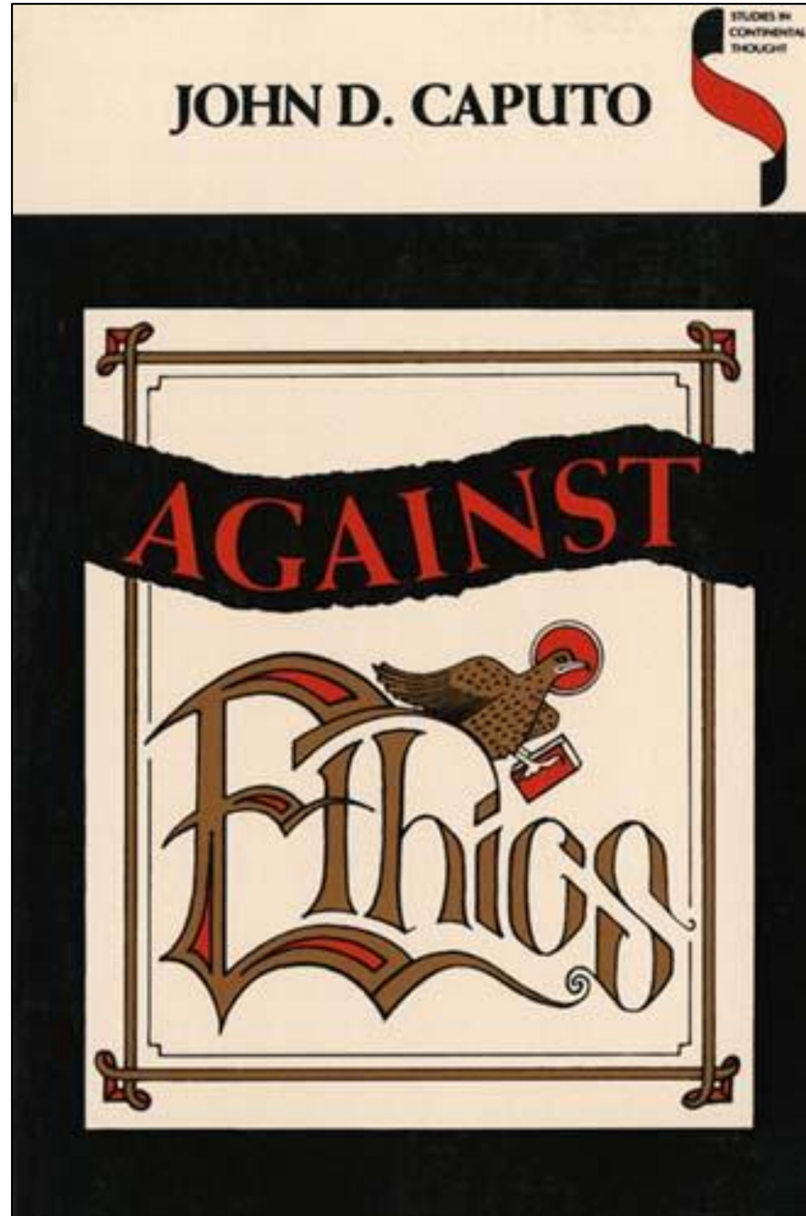
Some inspiration

"*Who, after all, wants to be found wanting in the matter of ethics? Who wants to risk having no ethics, or questioning its good name? I am, I have been until now, when I found my nerve (or lost my senses) quite intimidated by the word 'ethics.' Its discursive prestige has been too much for me.*" (Caputo 1993, 1)



Some inspiration

"*Deconstruction issues a warning that the road ahead is still under construction, that there is blasting and the danger of falling rock. Ethics, on the other hand, hands out maps which lead us to believe that the road is finished and there are superhighways all along the way. […] Life in general […] is a rather more difficult, risky business than ethics would allow.*" (Caputo 1993, 4)



From ethics concerns to political critique

If "[e]thics makes safe" (Caputo 1993), I want to argue that a political critique needs to show how data mining challenges societies in ways that put the spotlight on their **fundamental conflictuality**.

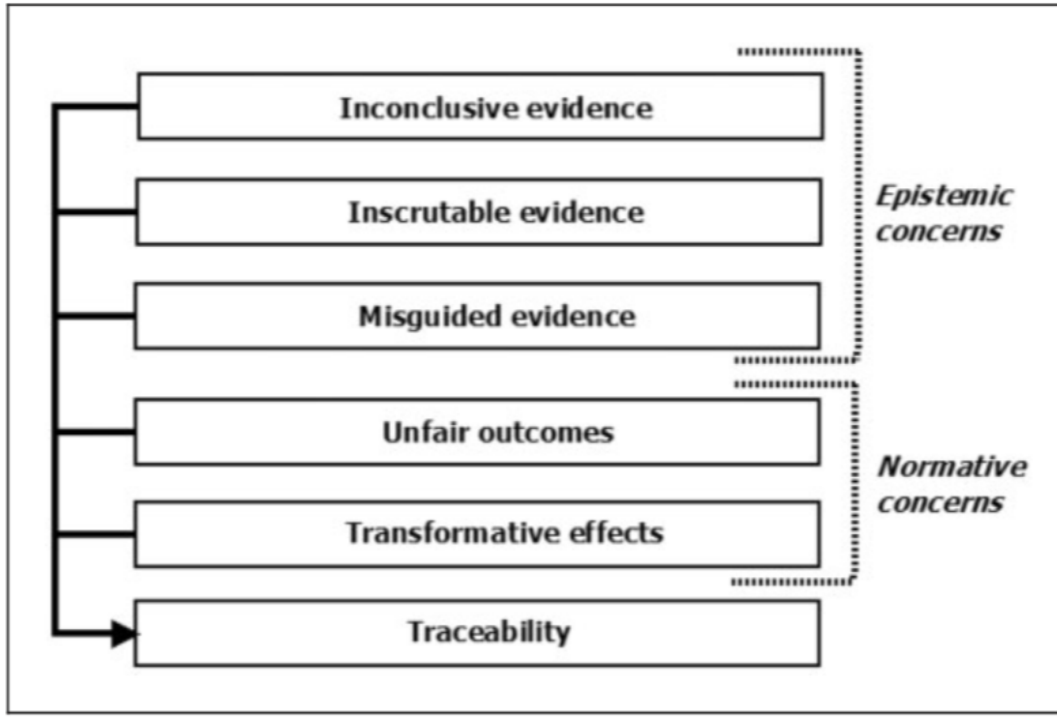
Can a perspective focusing on conduct adequately deal with a phenomenon **entangled in collective and institutional matters**?

What can **(critical) academics** contribute to our understanding of this increasingly technological world?

"The work of an intellectual is not to mold the political will of others; it is, through the analyses that he does in his own field, to **re-examine evidence and assumptions, to shake up habitual ways of working and thinking, to dissipate conventional familiarities**, to re-evaluate rules and institutions and starting from this re-problematization (where he occupies his specific profession as an intellectual) to participate in the formation of a political will (where he has his role as a citizen to play)." (Foucault 1989)

Ethics and data mining

The ethics debate has the merit of making technological aspects more relatable and constitutes and **excellent starting point**.



Brent Daniel Mittelstadt, Patrick Allo, Mariarosaria Taddeo, Sandra Wachter and Luciano Floridi. 2016. *The Ethics of Algorithms: Mapping the Debate.* Big Data & Society 3(2)

This presentation

This presentation explores three directions for a critical appraisal of data mining **in the context of contemporary society,** its broader technological state and normative makeup:

1) The epistemology of data mining

2) Data mining and social critique

3) Data mining and economic dynamics

1) The epistemology of data mining

In order to grasp the societal challenges posed by data mining, we have to engage it not just as a series of applications, but as "**machineries of knowing**" (Knorr Cetina 1999) that come with specific epistemological entanglements.

Argument: data mining is often used to perform "**interested readings of reality**" that detect patterns in data as they relate to desired operational outcomes.

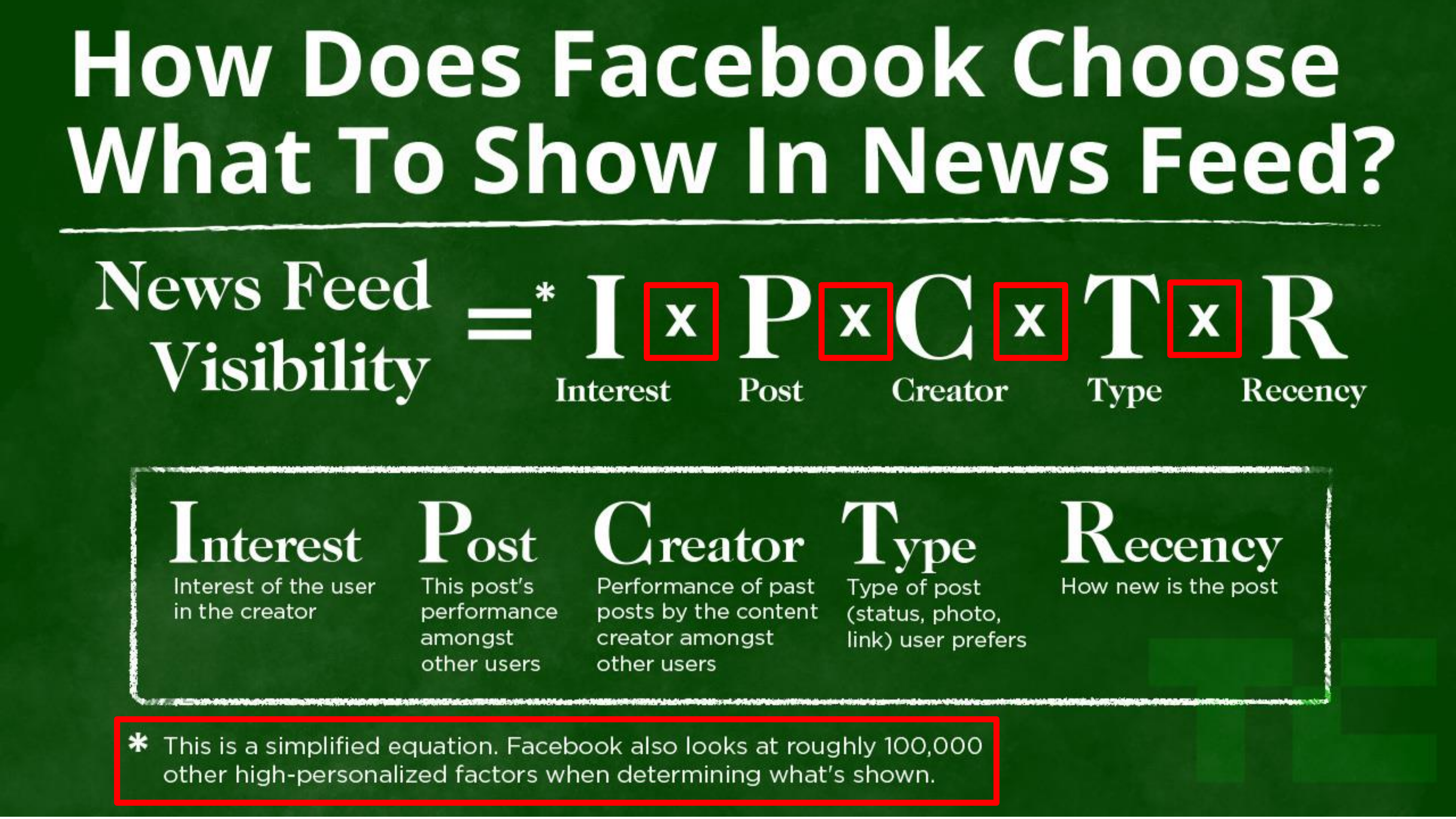
Data mining

Terms like data mining point toward a landscape of algorithmic techniques that take some data as input and and returns a **meaningful output**.

Explicit decision-making is based on two general **types of models**:

- Model is based on explicitly coded rules (e.g. journal impact factor);
- Model is statistically derived by processing (or "learning from") data labeled in relation to a target variable (e.g. spam filter);

In the second case, the normative "core" is shifted towards the **empirical made data**, the **target variable**, and some **process of labeling**.



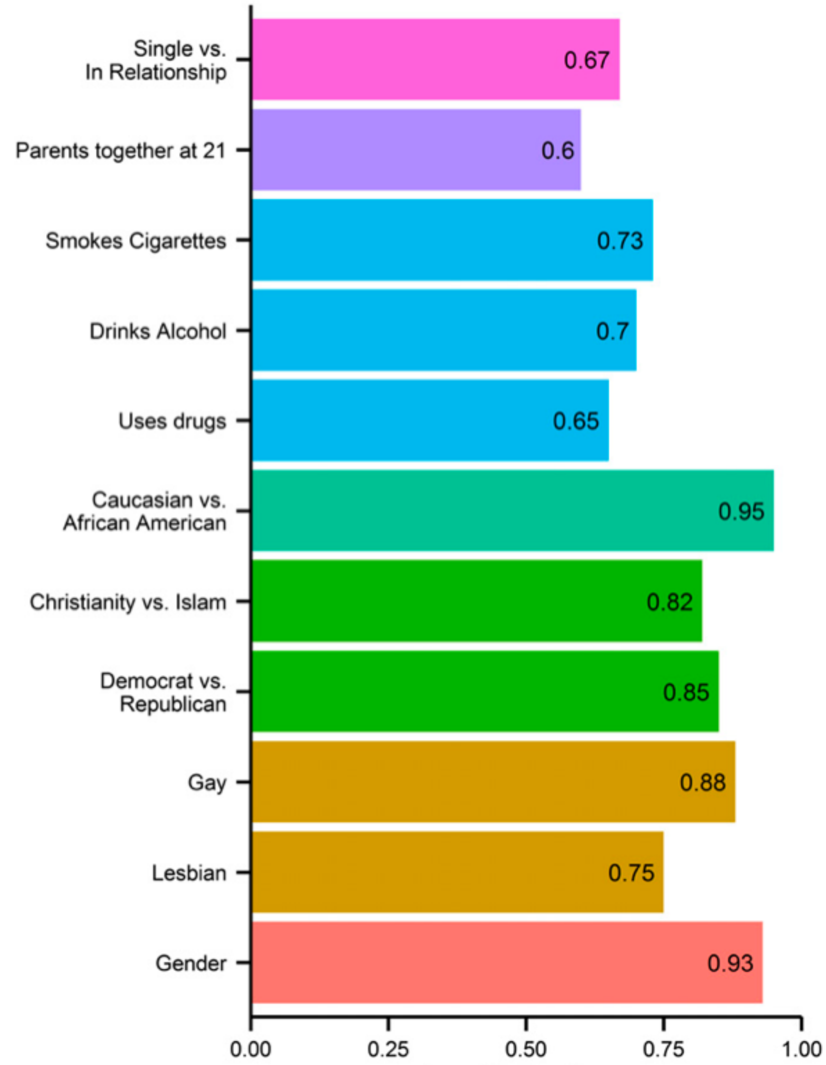
We move from "*what should the formula be according to our ideas about relevance?*" to "***what has our testing engine identified as the optimal parameters given our operational goal of more user interaction****?*".

Reading structured reality

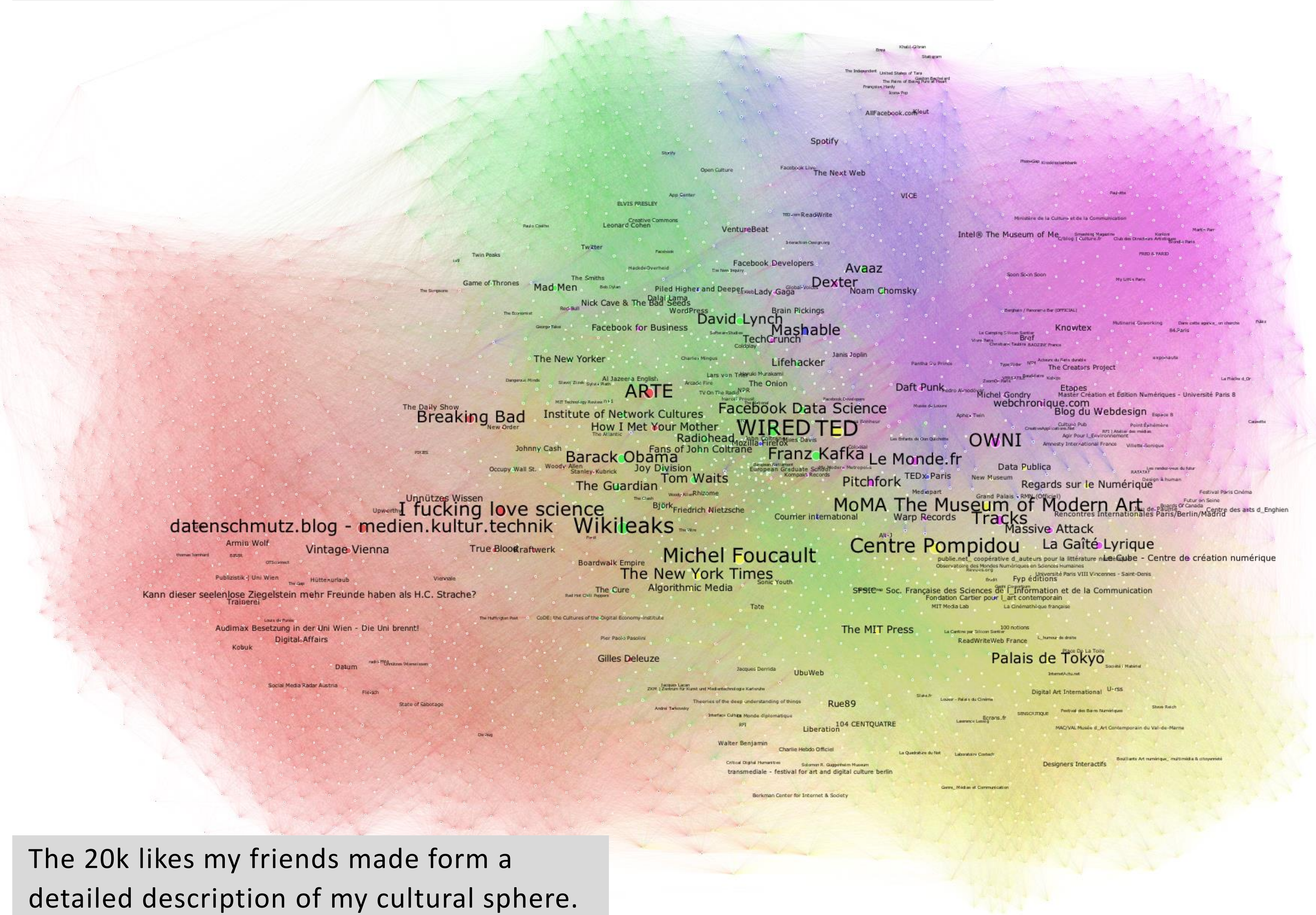
"*Facebook Likes can be used to automatically and accurately predict a range of highly sensitive personal attributes including: sexual orientation, ethnicity, religious and political views, personality traits, intelligence, happiness, use of addictive substances, parental separation, age, and gender.*" (Kosinski, Stillwell, Graepel 2013)

The data used in this study does not include profile fields or friends' data.

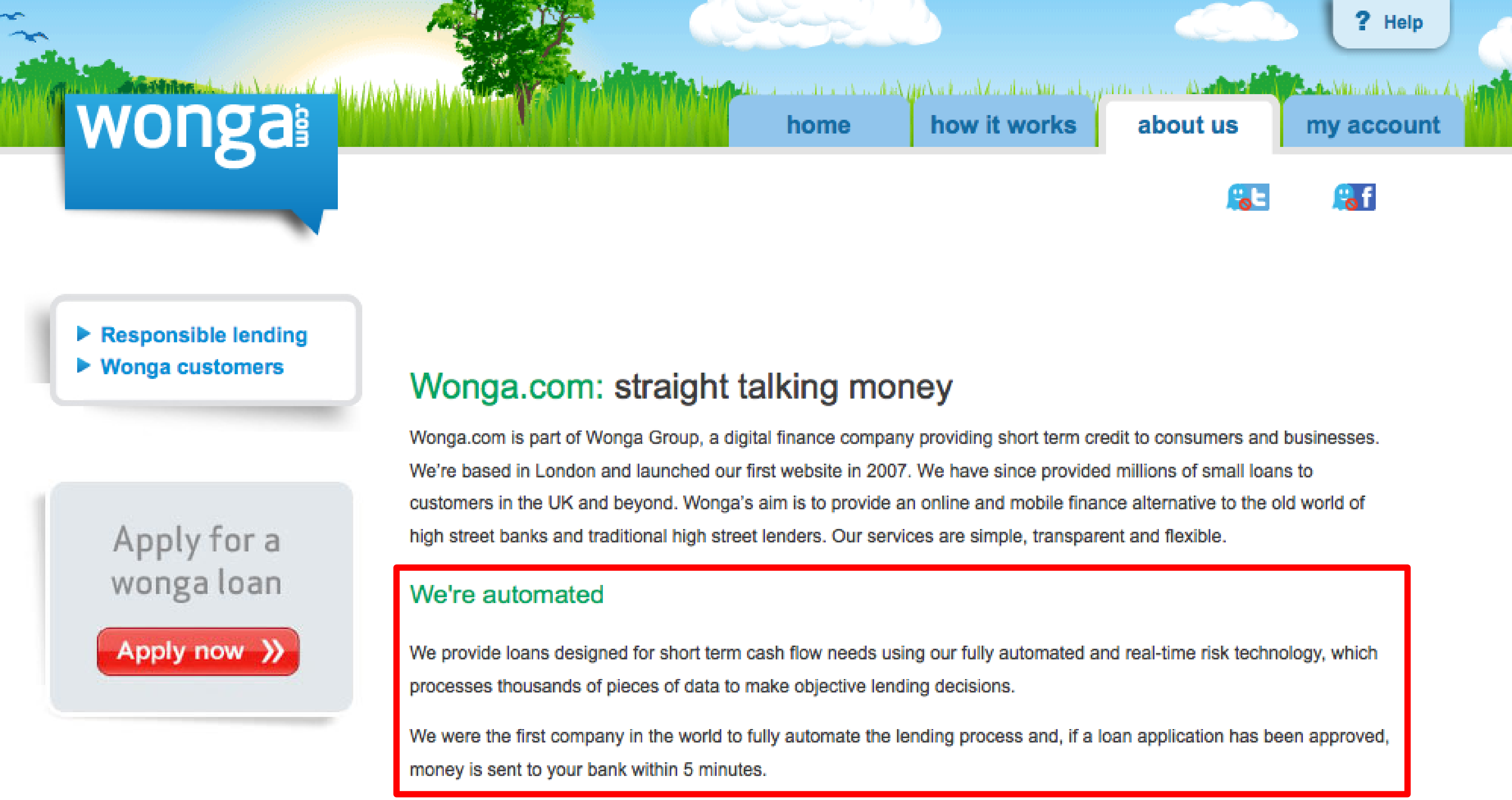
In stratified and differentiated societies, **seemingly "innocent" variables correlate strongly** with class, gender, race, etc.



My Facebook Like Network around 2013, with Netvizz and Gephi



The 20k likes my friends made form a detailed description of my cultural sphere.



The "risk technology" is trained by associating "thousands of pieces of data" with a past cases of defaulting or not defaulting on loans. **Every signal receives meaning as predictor for defaulting on credit.**

Common ethical critiques

The **most common ethical critiques** that question claims to "objectivity" and "impartiality" include:

- Probabilistic assessments are turned into "hard" decisions;
- The relationships between input signals and outputs are inscrutable or opaque;
- Datasets can be flawed in various ways;
- Labeling can solidify organizations' existing biases;

The strength of these critiques is to make these elements visible in much detail. But the focus is **on the methodological embeddings and uses** of data mining and less the specificity of the modes of knowing it mobilizes.

A broader perspective can highlight other issues.

From universalism to perspectivism

Data mining is part of a larger **shift in understandings of knowledge**:

"[T]he classification of knowledge will not be a fixed and unalterable pattern […], but a series of quite widely varying schematisms, each constructed for a specific purpose […] in accordance with a particular point of view or philosophic orientation." (Shera 1952)

This indicates a further shift from "**metrological realism**" to "**accounting realism**" where the "'equivalence space' is composed not of physical quantities (space and time), but of a general equivalent: money" (Desrosières 2001).

Machine learning, in particular, allows for a **deep embedding of "interestedness**" into practices and infrastructures.

Psychological targeting as an effective approach to digital mass persuasion

S. C. Matz[a,1], M. Kosinski[b,2], G. Nave[c], and D. J. Stillwell[d,2]

The expansion of market forms

By **lowering transaction cost**, information technology has facilitated the organization of many activities around market forms.

"[B]y imposing a mathematically precise form upon previously unformalized activities, capture standardizes those activities and their component elements and thereby prepares them […] for an eventual transition to market-based relationships." (Agre 1994)

Some heatedly debated instances of algorithmic structuring concern **platforms that enact some kind of market structure** – e.g. Facebook News Feed (posts), Google Search (documents), Uber (transportation), etc.

Data and algorithms are used to **optimize transactions**, often with explicit appeals to **democratic values** or **consumer benefit**.

Algorithmic coordination affords **interested optimization**.

Revealed preference

At the center of the guiding rationale lies the theory of "**revealed preference**", which holds that "the individual guinea-pig, by his market behaviour, reveals his preference pattern" (Samuelson 1948). This fuels and justifies the use of feedback signals as "votes".

The ethical critique identifies the problem and proposes alternative guiding values in the context of information access.

"Personalisation algorithms reduce the diversity of information users encounter by excluding content deemed irrelevant or contradictory to the user's beliefs. Information diversity can thus be considered an enabling condition for autonomy." (Mittelstadt et al. 2017)

What would it mean if algorithms were to "**act ethically**"?

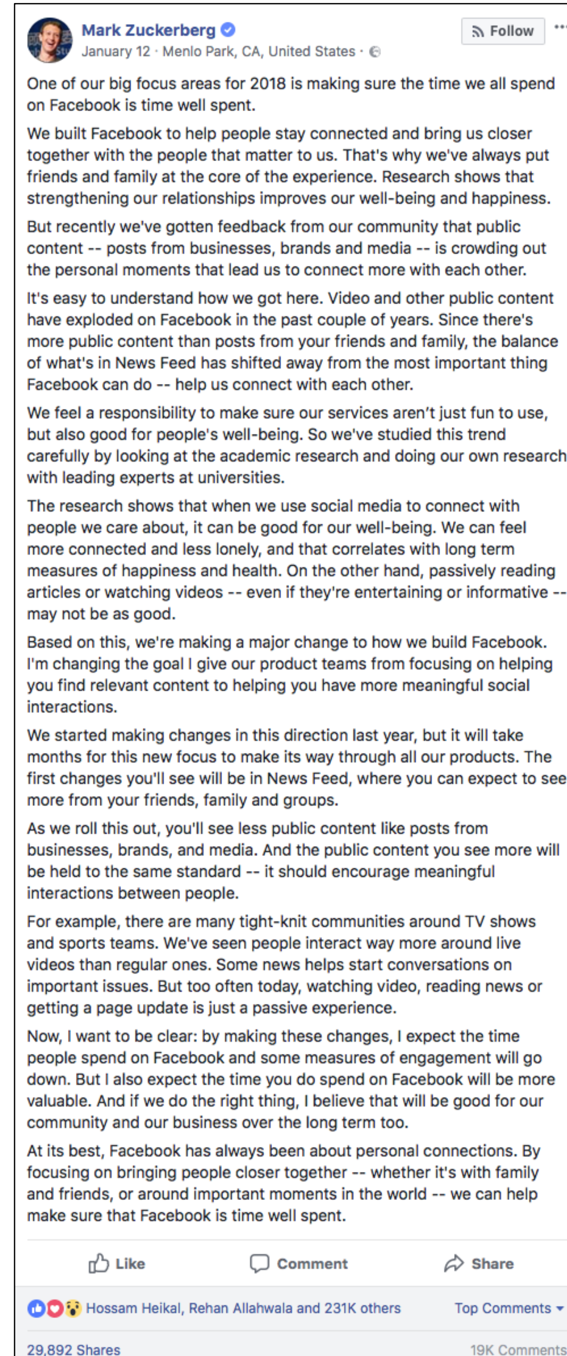
Acting ethically

"[W]e're making a major change to how we build Facebook. I'm changing the goal I give our product teams from focusing on helping you find relevant content to helping you have more meaningful social interactions. [...] Now, I want to be clear: by making these changes, I expect the time people spend on Facebook and some measures of engagement will go down. But I also expect the time you do spend on Facebook will be more valuable. And if we do the right thing, I believe that will be good for our community and our business over the long term too." (Zuckerberg 2018)

Here, values seem to **clash** directly with the ad-driven business model and the IPO logic.

Data mining calls for more **descriptive ethics**!

What is the role of the **scholar** in this?



Mark Zuckerberg
January 12 · Menlo Park, CA, United States ·
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One of our big focus areas for 2018 is making sure the time we all spend on Facebook is time well spent.

We built Facebook to help people stay connected and bring us closer together with the people that matter to us. That's why we've always put friends and family at the core of the experience. Research shows that strengthening our relationships improves our well-being and happiness.

But recently we've gotten feedback from our community that public content -- posts from businesses, brands and media -- is crowding out the personal moments that lead us to connect more with each other.

It's easy to understand how we got here. Video and other public content have exploded on Facebook in the past couple of years. Since there's more public content than posts from your friends and family, the balance of what's in News Feed has shifted away from the most important thing Facebook can do -- help us connect with each other.

We feel a responsibility to make sure our services aren't just fun to use, but also good for people's well-being. So we've studied this trend carefully by looking at the academic research and doing our own research with leading experts at universities.

The research shows that when we use social media to connect with people we care about, it can be good for our well-being. We can feel more connected and less lonely, and that correlates with long term measures of happiness and health. On the other hand, passively reading articles or watching videos -- even if they're entertaining or informative -- may not be as good.

Based on this, we're making a major change to how we build Facebook. I'm changing the goal I give our product teams from focusing on helping you find relevant content to helping you have more meaningful social interactions.

We started making changes in this direction last year, but it will take months for this new focus to make its way through all our products. The first changes you'll see will be in News Feed, where you can expect to see more from your friends, family and groups.

As we roll this out, you'll see less public content like posts from businesses, brands, and media. And the public content you see more will be held to the same standard -- it should encourage meaningful interactions between people.

For example, there are many tight-knit communities around TV shows and sports teams. We've seen people interact way more around live videos than regular ones. Some news helps start conversations on important issues. But too often today, watching video, reading news or getting a page update is just a passive experience.

Now, I want to be clear: by making these changes, I expect the time people spend on Facebook and some measures of engagement will go down. But I also expect the time you do spend on Facebook will be more valuable. And if we do the right thing, I believe that will be good for our community and our business over the long term too.

At its best, Facebook has always been about personal connections. By focusing on bringing people closer together -- whether it's with family and friends, or around important moments in the world -- we can help make sure that Facebook is time well spent.

Like Comment Share

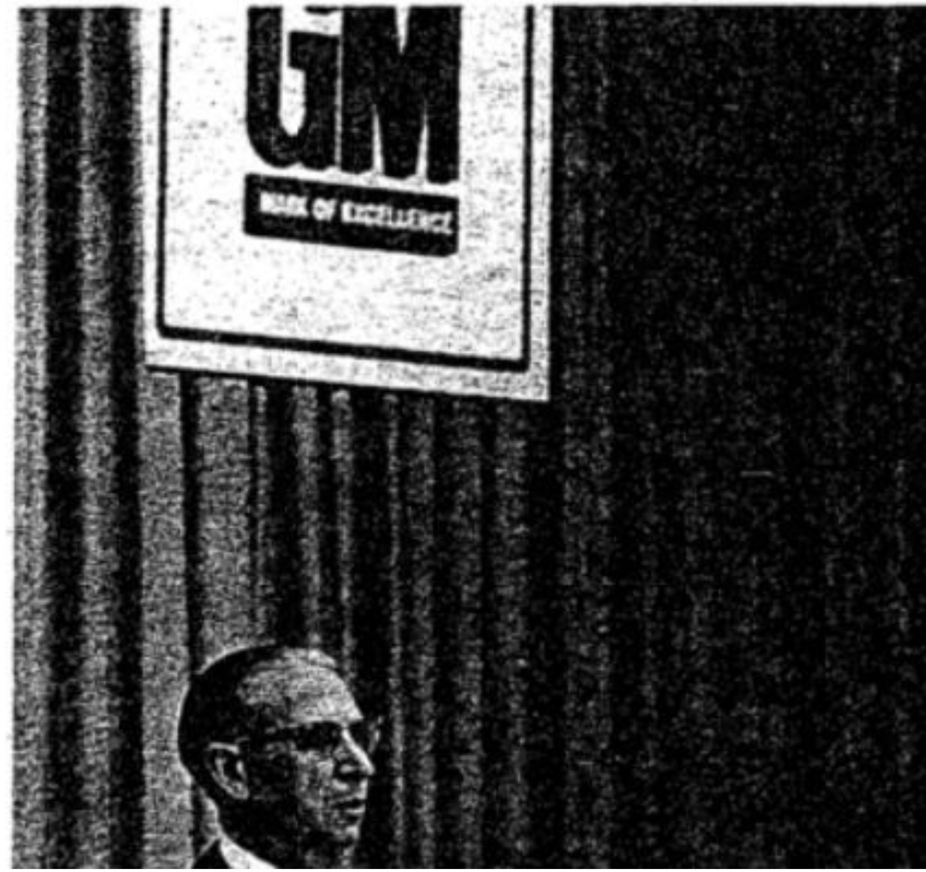
Hossam Heikal, Rehan Allahwala and 231K others
Top Comments

29,892 Shares
19K Comments

A Friedman doctrine—

The Social Responsibility Of Business Is to Increase Its Profits

By MILTON FRIEDMAN



"[T]he doctrine of 'social responsibility' involves the acceptance of the socialist view that political mechanisms, not market mechanisms, are the appropriate way to determine the allocation of scarce resources to alternative uses." (Friedman 1970)

There are **hard political debates** lurking in the background.

Making unsafe

The **deep entanglement** between algorithmic data analysis, economic thinking, and organizational practice in business and government requires an examination of **techno-institutional forms of computerization,** their effects, and their normative commitments.

We need to question not just methodologies and uses, but epistemological commitments and "**legitimizing myths**":

"In our complex society, affected by both sophisticated communication technology and unequal allocations of resources and skills, the marketplace's inevitable bias supports entrenched power structures or ideologies. […] **A diversity of perspectives first requires a corresponding diversity of social experiences and opportunities.**" (Ingber 1984)

2) Data mining and social critique

Data mining is concerned with **assessing differences and similarities** between entities in a dataset in the context of some task or decision.

The **desire to discriminate** – in "decentered, non-traditional societies" (Giddens 1990) that complicate "signaling" (Spence 1973) – lies at the heart of the practice, raising specific issues in areas like hiring, credit, or criminal justice.

"We have stipulated that the employer cannot directly observe the marginal product prior to hiring. What he does observe is a plethora of personal data in the form of observable characteristics and attributes of the individual, and it is these that must ultimately determine his assessment of the lottery he is buying." (Spence 1973)

Discrimination

In the Anglo-American context, this mostly concerns the treatment of members of "**protected classes**" of people.

The issue highlight previously mentioned issues, in particular:

- The relationships between input signals and outputs are inscrutable or opaque;
- Datasets can be flawed in various ways;
- Labeling can solidify organizations' existing biases;

Decentered societies are **not without correlative structure**.

Lists of the most **specific** elements for white and black men from a text analysis of 526K OkCupid profiles (Rudder 2010).

Discrimination

"An action can be found discriminatory, for example, solely from its effect on a protected class of people, even if made on the basis of conclusive, scrutable and well-founded evidence." (Mittelstadt et al. 2017)

This more difficult problem arises from the idea that **reality is biased**:

“Data mining takes the existing state of the world as a given, and ranks candidates according to their predicted attributes in *that* world.” (Barocas & Selbst 2014)

Decisions are based on the traces from societies characterized by **centuries of inequality and domination**. Data mining can make these inequalities actionable.

Proposed solutions focus on "disparate impact detection" (Barocas & Selbst 2015) and compensation strategies that implement "**fair affirmative action**" (Dwork et al. 2011)

Discrimination

These strategies raise **complicated questions**:

- How to define and delimit protected classes?
- What are the risks of collecting data containing these class attributes?
- What are the broader societal effects of such classifications?
- Can these strategies be transferred to different national contexts?

How could a critique look like that moves beyond procedural fairness and inquires into the social values that provide the **moral legitimation** for certain applications of datamining?

The extension of data collection and mining facilitates the generalization of the credit score mechanism. Every gesture counts and there are real consequences.

Economic morality

Data mining is part of our increasing capacity and willingness to read reality in economic terms by **constantly checking behavior and culture** against monetary utility and by adapting outcomes.

The outcome may be bounded diversity in conjunction with an **"economic morality"** (Allen 2012) that is measured by economic utility and merit, and makes economic vulnerability a liability.

Wider sets of available data may reduce the influence of group discrimination and foster **permanent and personalized meritocracy**.

"Meritocracy has shifted from impersonal technology to a situation where the relation between abilities and rewards has been deeply personalised." (Allen 2012)

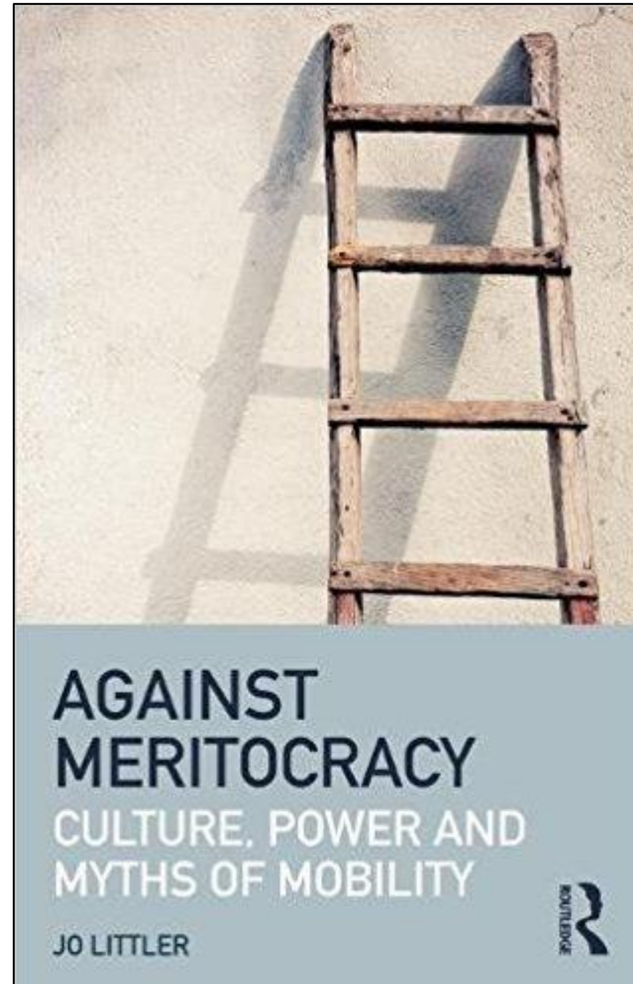
"Meritocracy has become an idea as uncontroversial and as homely as 'motherhood and apple pie'." (Littler 2013)

Meritocracy

"Indeed, nowadays meritocracy seems to be simply another version of the inequality that characterises all societies." (Dahrendorf 2005)

While Dahrendorf still criticized "academic achievement" as central measure, big data facilitates a broader/narrower understanding of "merit", seen as **behavior in line with economic morality**, establishing a powerful disciplinary mechanism.

"Meritocracy, as a potent blend of an essentialised notion of 'talent', competitive individualism and belief in social mobility, is mobilised to both disguise and gain consent for the economic inequalities wrought through neoliberalism." (Littler 2013)



Competition

The notion of meritocracy points to the central role of **competition** in our cultural and moral imaginaries.

Foucault (2004) argues that the key **difference between classical liberalism and neoliberalism** is not the belief in markets, but whether specialization and exchange or competition are the source of wealth creation.

"Competition is important primarily as a discovery procedure whereby entrepreneurs constantly search for unexploited opportunities that can also be taken advantage of by others". (Hayek (2002 [1968])

The extension of **competitive constellations** (e.g. into the public sector) multiplies opportunities for data-based decision-making.

"Why do we believe in competition? Why do we, at least many of us, think of it as a beneficial societal institution? Which particular kind of competition is at the heart of this belief?" (Werron 2015)

Focusing on outcomes

If data mining provides **new "levers on 'reality'"** (Goody 1977), new forms of designating winners and losers, is the focus on procedural fairness enough?

[–] **JustHereForGiner** 95 points 25 days ago

What specific measures are you taking to insure these technologies will decrease inequality rather than increase it? How will it be placed in the hands of its users and creators rather than owners?

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[–] AAAS-AMA AAAS AMA Guest [S] 41 points 25 days ago

YLC: That's a political question. I'm merely a scientist. For starters, we publish our research. Technological progress (not just AI) has a natural tendency to increase inequality. The way to prevent that from happening is through progressive fiscal policy. Sadly, in certain countries, people seem to elect leaders that enact the exact opposite policies. Blaming AI scientists for that would be a bit like blaming metallurgists or chemists for the high level of gun death in the US.

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3) Data mining and economic dynamics

Discussions on the social and political implications of large-scale data collection have mainly revolved around issues of **privacy** and **discrimination**, focusing on relationship between **powerful organizations** on the one hand and **surveilled individuals** on the other.

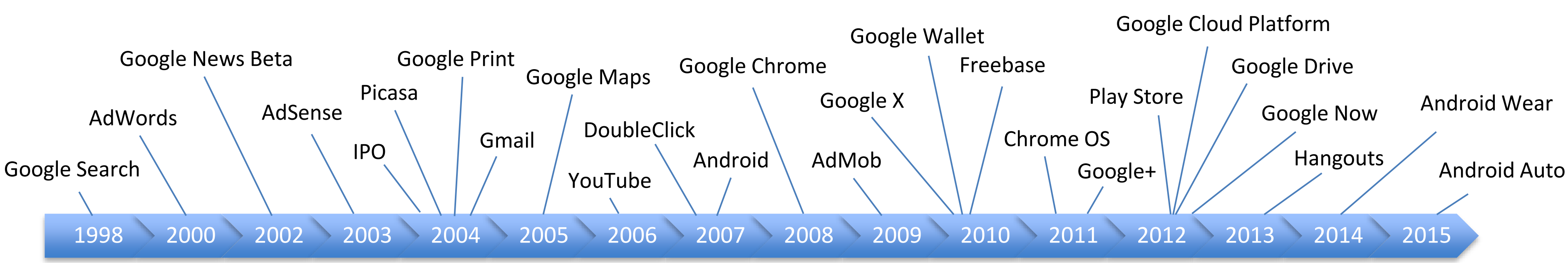
But the capacity to accumulate and process data can also play an important role in how companies **develop and compete with one another**.

Internet companies have been **asserting their dominance** in specific sectors, and the ongoing "computerization" / "datafication" of ever more markets has **facilitated their expansion** into new ones.

Data power and corporate expansion

Objective: to understand the relationship between Internet companies' development, **specific capabilities**, and market dynamics.

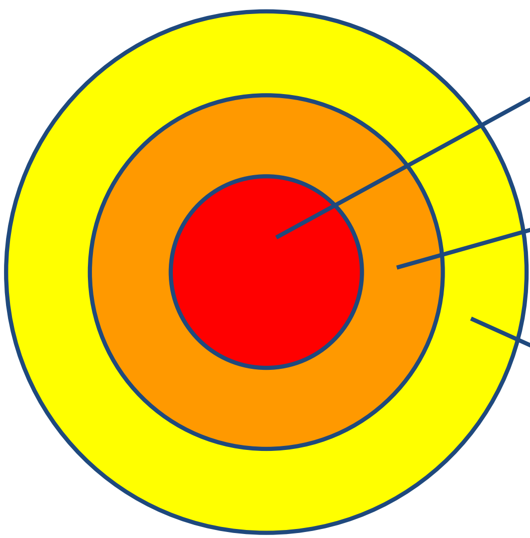
Timeline: Google's expansion from search to self-driving cars;



Does Google expand away from search or **do things become more similar to search**? What kind of expansion is this?

Concentric diversification

"A concentric diversification strategy is one where the firm seeks to move into activities which mesh to some degree with the present product line, technological expertise, customer base, or distribution channels." (Thompson & Strickland 1978)



Core: established business, mastery of process and product, steady revenues;

Extension layer: mastery of process and product, but not yet established and generating significant revenue;

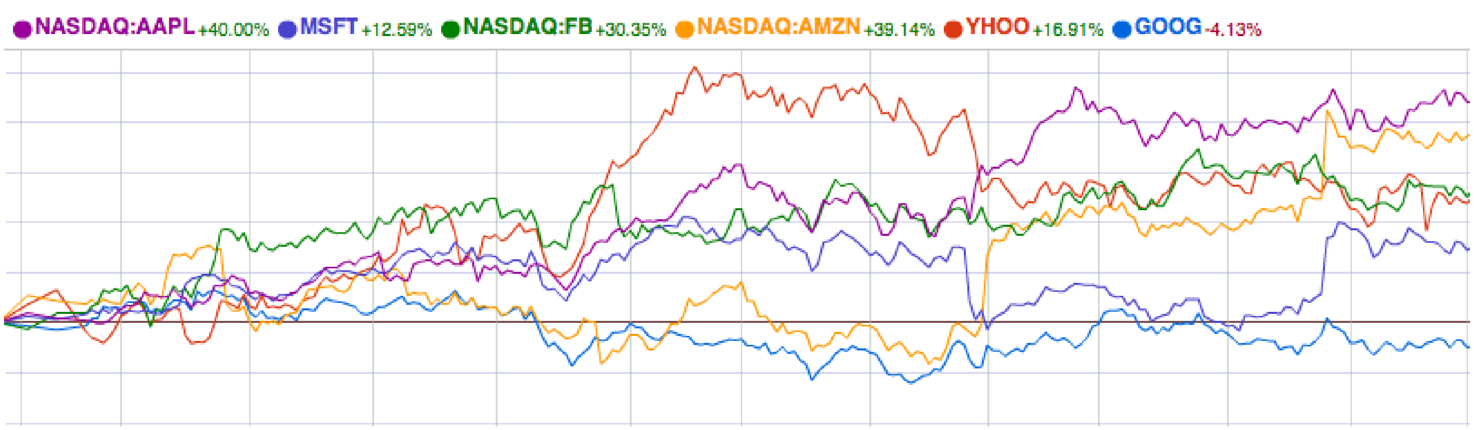
Expansion layer: experimental process and product, "competence testing";

Main questions

Are the expansions we are seeing concentric diversification "as usual", or is there **something specific** about the IT/Internet sector?

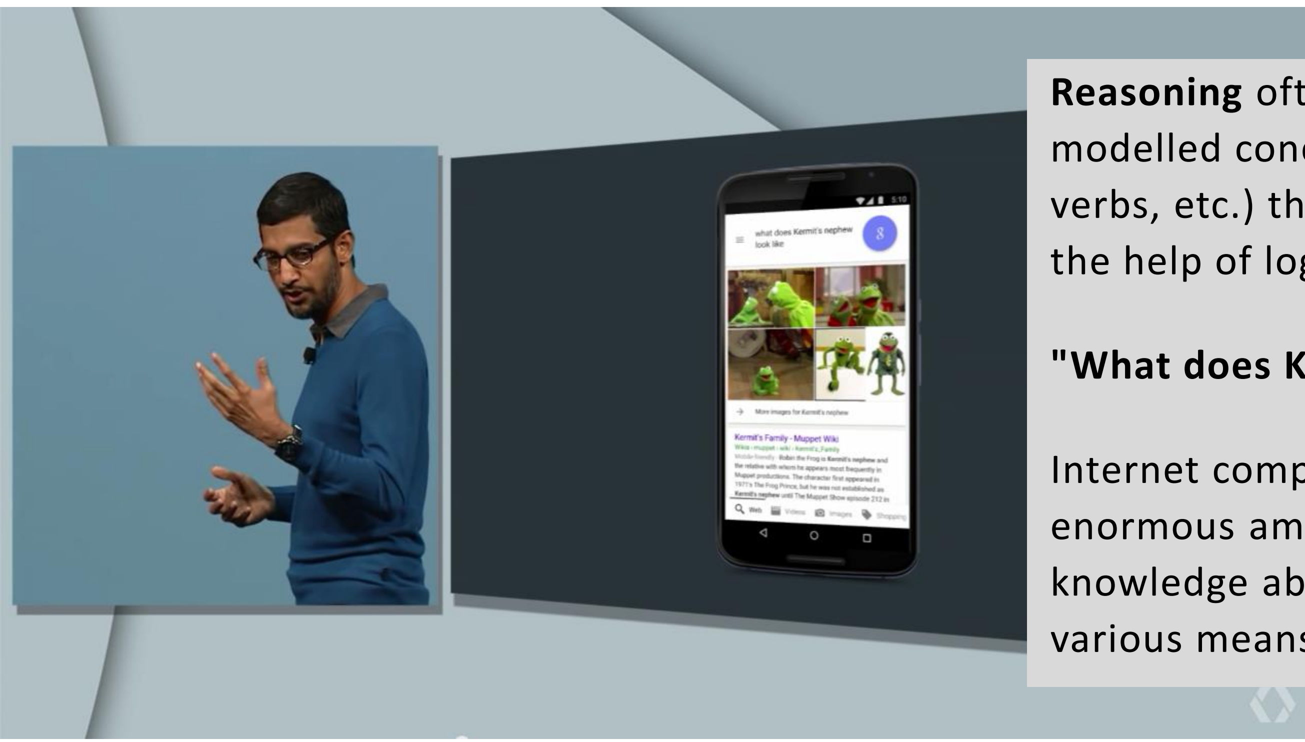
What drives this expansion? Are there capabilities or "assets" that **transfer more easily** to other sectors?

What kind of **dynamics and relationships** would this imply and what are the consequences?



Example 1: Google's knowledge

In order to computerize further tasks and activities, companies like Google invest in the capacity to **recognize** and **reason about** the "real world".



Reasoning often relies on explicitly modelled concepts (entities, relations, verbs, etc.) that can be used to infer with the help of logical rules.

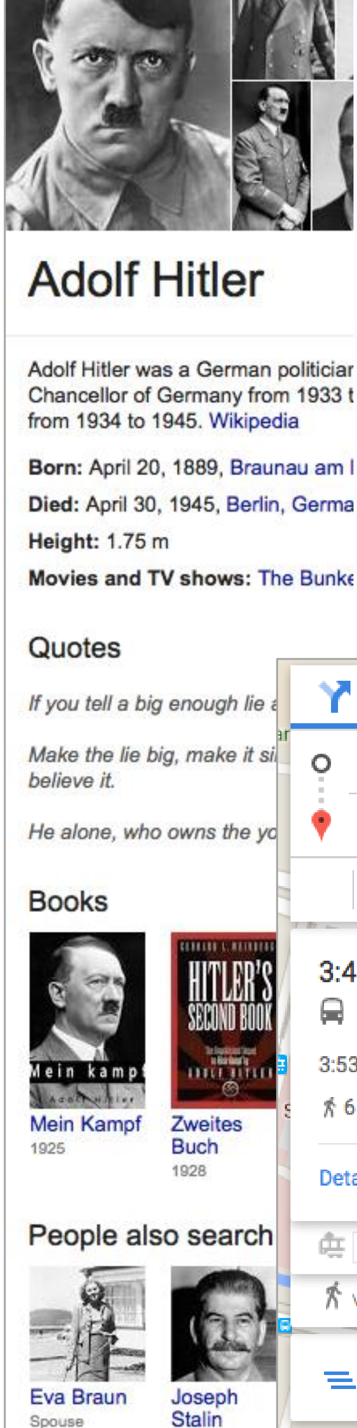
"What does Kermit’s nephew look like?"

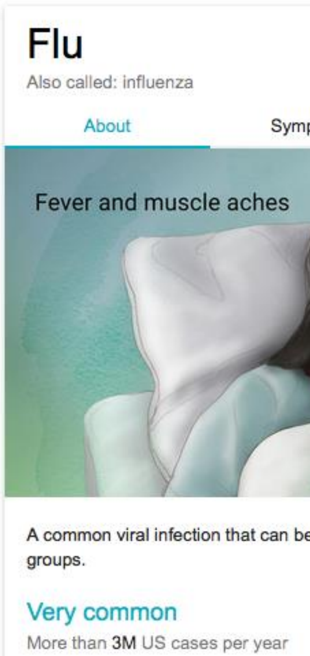
Internet companies have compiled enormous amounts of ontology-type knowledge about various domains by various means.

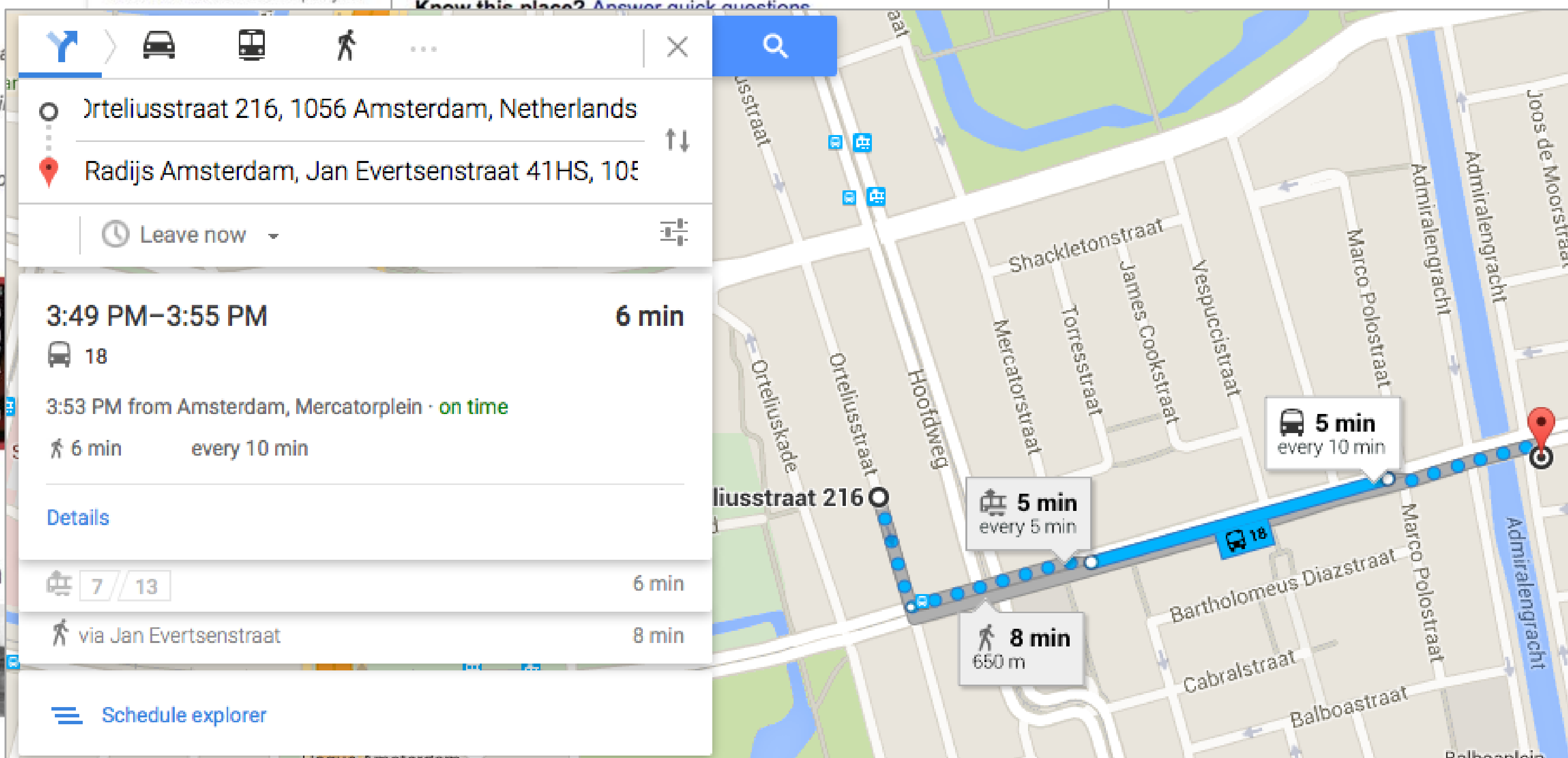
To produce its bases of **declarative knowledge**, Google combines existing collections (Freebase, Wikidata, Maps, etc.), algorithmic concept extraction, various partnerships, crowdsourcing, and loads of manual work.

These knowledge bases can be used in a variety of products and for interconnection.

Situated knowledge is gleaned from feedback and use-in-context; it allows for appreciation of cultural significance, personalization, "nowcasting", etc.





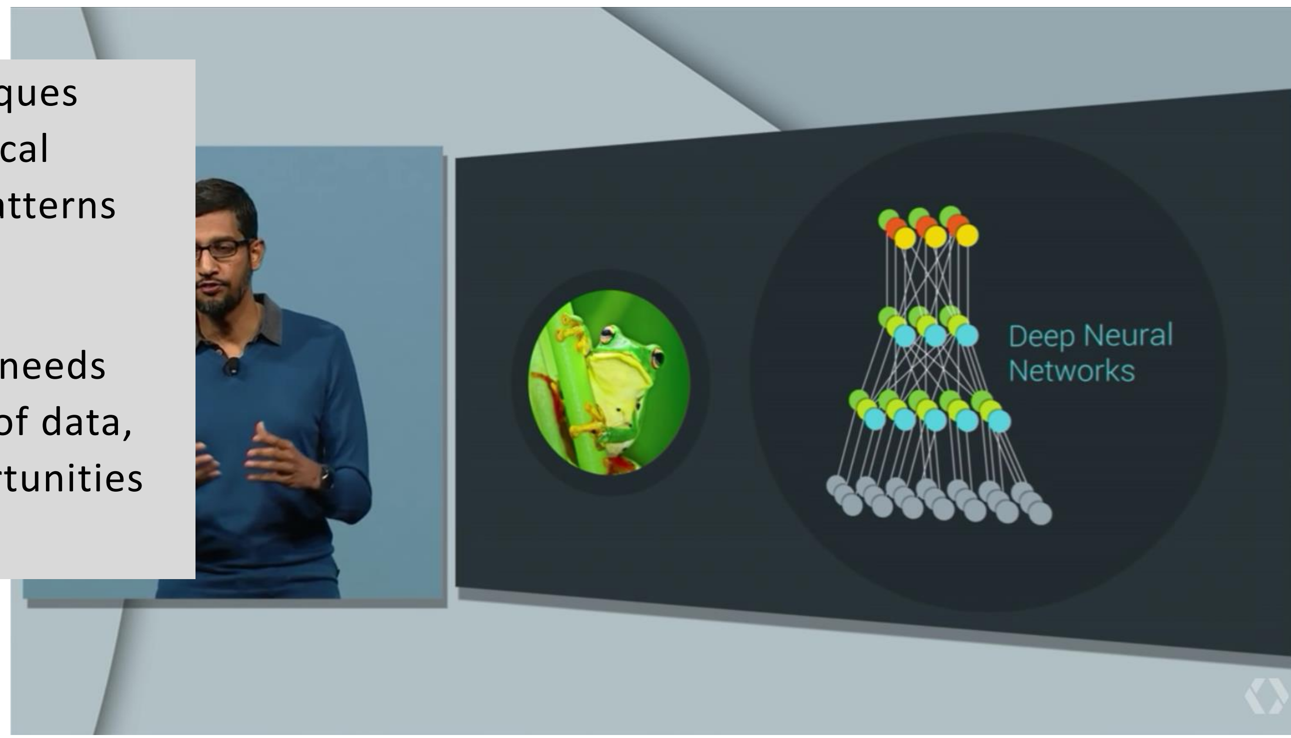


Example 1: Google's knowledge

To **recognize** the world, connections between messy, unformalized data (sensory inputs, natural language, etc.) and modeled domains have to be made.

Machine learning techniques (neural networks, statistical classifiers, etc.) detect patterns and classify.

To do this very well, one needs people with PhDs, loads of data, fast machines, and opportunities for feedback (training).

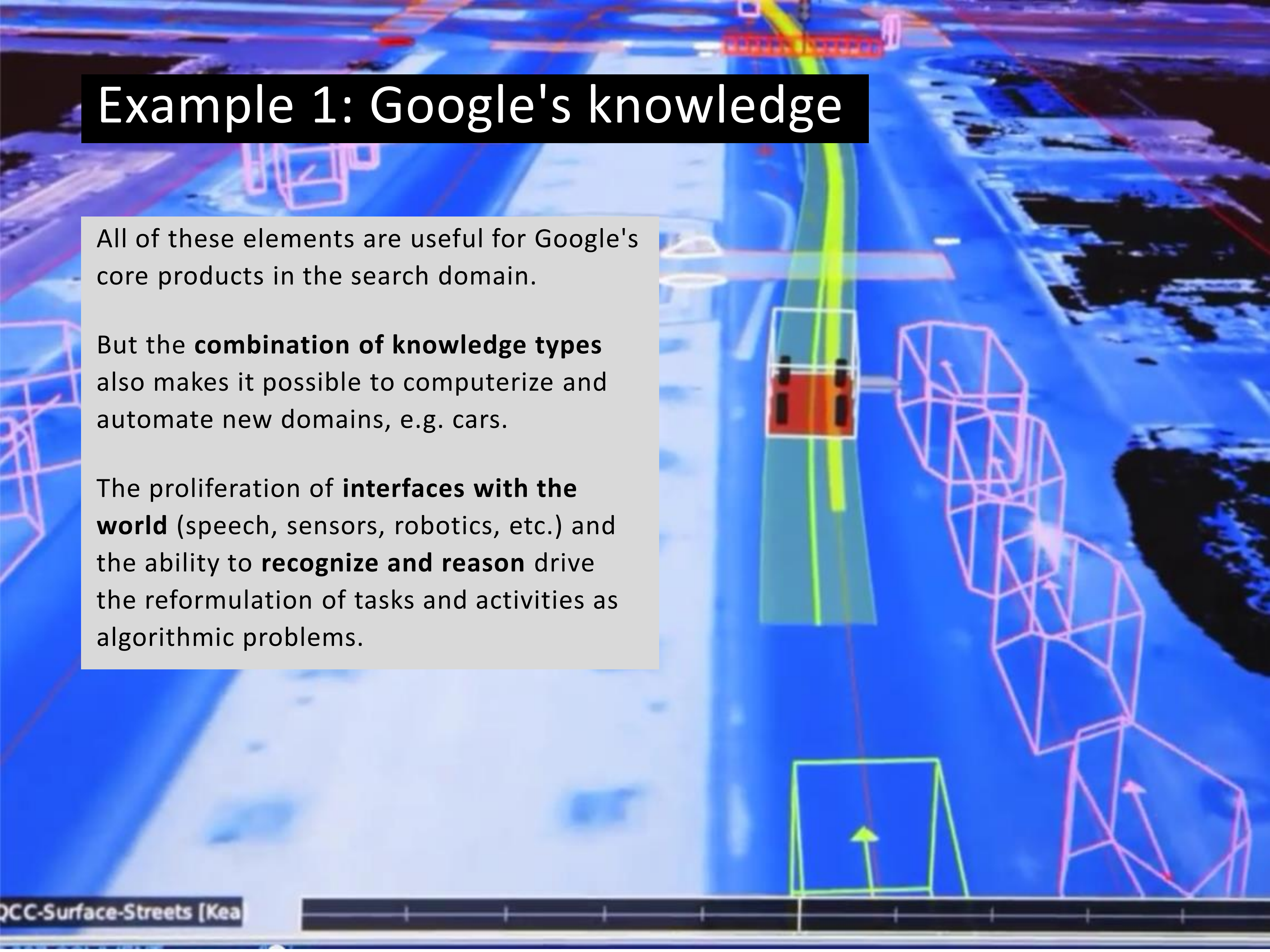


Example 1: Google's knowledge

All of these elements are useful for Google's core products in the search domain.

But the **combination of knowledge types** also makes it possible to computerize and automate new domains, e.g. cars.

The proliferation of **interfaces with the world** (speech, sensors, robotics, etc.) and the ability to **recognize and reason** drive the reformulation of tasks and activities as algorithmic problems.

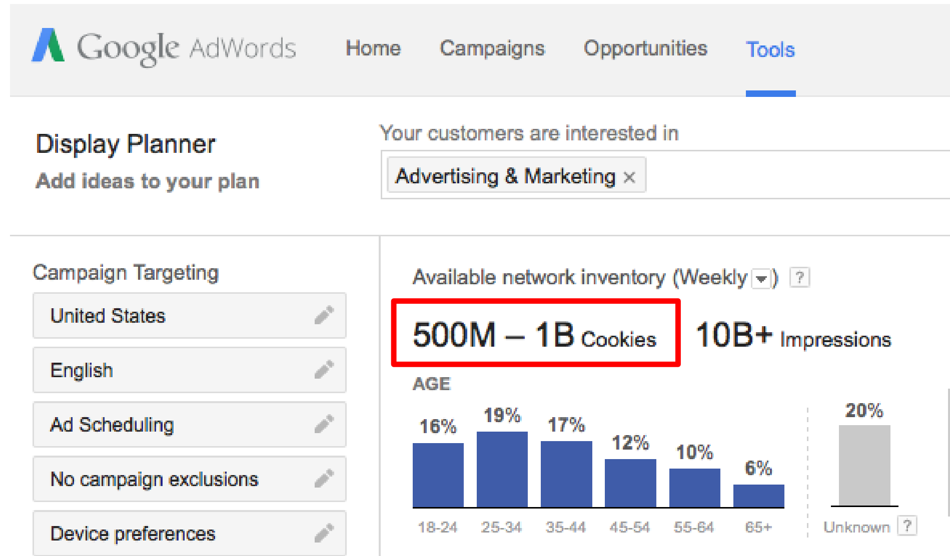


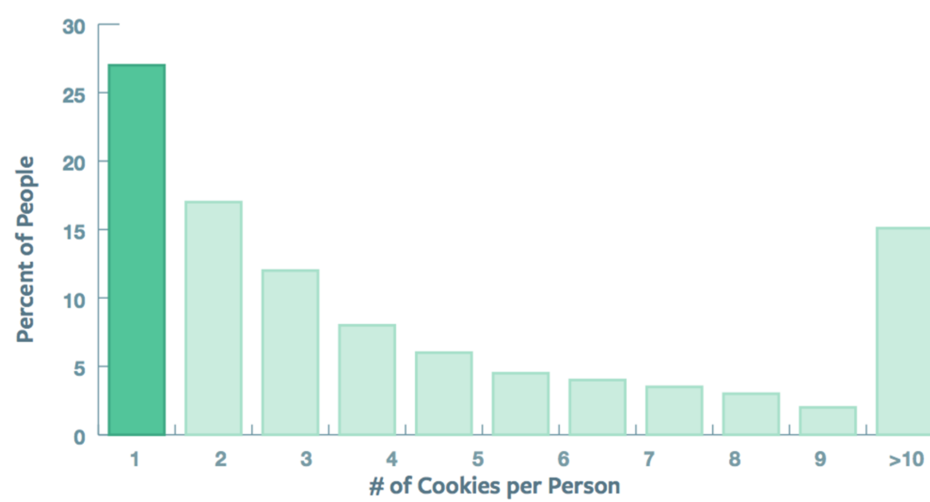
Example 2: Facebook's Identity Business

Advertising networks (e.g. AdSense, DoubleClick) track and target ***cookies*** rather than real users.

But users reply on different devices, browsers, and apps that are difficult to link to a single user.

"*Cookie-based measurement is misleading at best [...] cookie proliferation fragments the user journey, distorting any analysis of a user's path to conversion.*" (Atlas Solutions 2015)

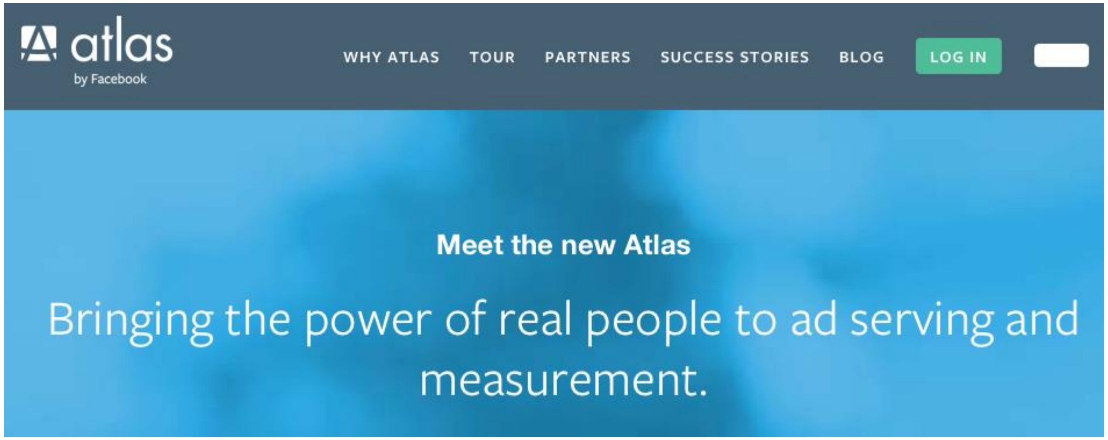




Example 2: Facebook's Identity Business

"*Facebook writes a version of the user's Facebook ID into the Atlas cookie.*" (Atlas Solutions 2015)

Facebook merges fragmented (cookie) identities into "***real people***".



Because of its 1.44B social media users, Facebook can enter a new business - ad serving platform services - with ***a considerable advantage over competitors***: the capacity to track users across devices, browsers, and apps.

Four Asset Classes

Various types of data
content data, transactional data, formalized conceptual data, crowdsourced data, connective data, etc.

Accumulated algorithmic competence
in-house competence, knowledge management, recruitment and retention, takeovers, ties with academia and open source, training and testing capacities for statistical models, etc.

Logistics and management
process management, server farms and datacenters, security, legal power and patents, etc.

User base and economies of scale
user lock-in, cross-marketing, standard setting capacity, etc.

From Asset Classes to Technological Systems

To assess how these elements affect power dynamics, one needs to move from asset classes (e.g. "information", Stigler 1961) to "**technological systems**" (Gille 1978), i.e. coherent technological ensembles that define modes of production, circulation, development, and valorization.

The value of assets is intrinsically tied to the technological system and there are **strong incentives to extend the system** to make the assets more valuable.

For example, statistical sorting algorithms have existed for a long time; but only now are they becoming very useful and valuable.

Shifts in power

"Shift in power exacerbating existing inequalities: Better data-driven insights come with a better understanding of the data objects and of how best to influence or control them. **Where the agglomeration of data leads to concentration and greater information asymmetry, significant shifts in power can occur** away from: i) individuals to organisations (incl. consumers to businesses, and citizens to governments); ii) traditional businesses to data-driven businesses given increasing returns to scale and potential risks of market concentration and dominance; iii) governments to data-driven businesses where businesses can gain much more knowledge about citizens than governments can; and iv) lagging economies to data-driven economies." (OECD 2014, 7)

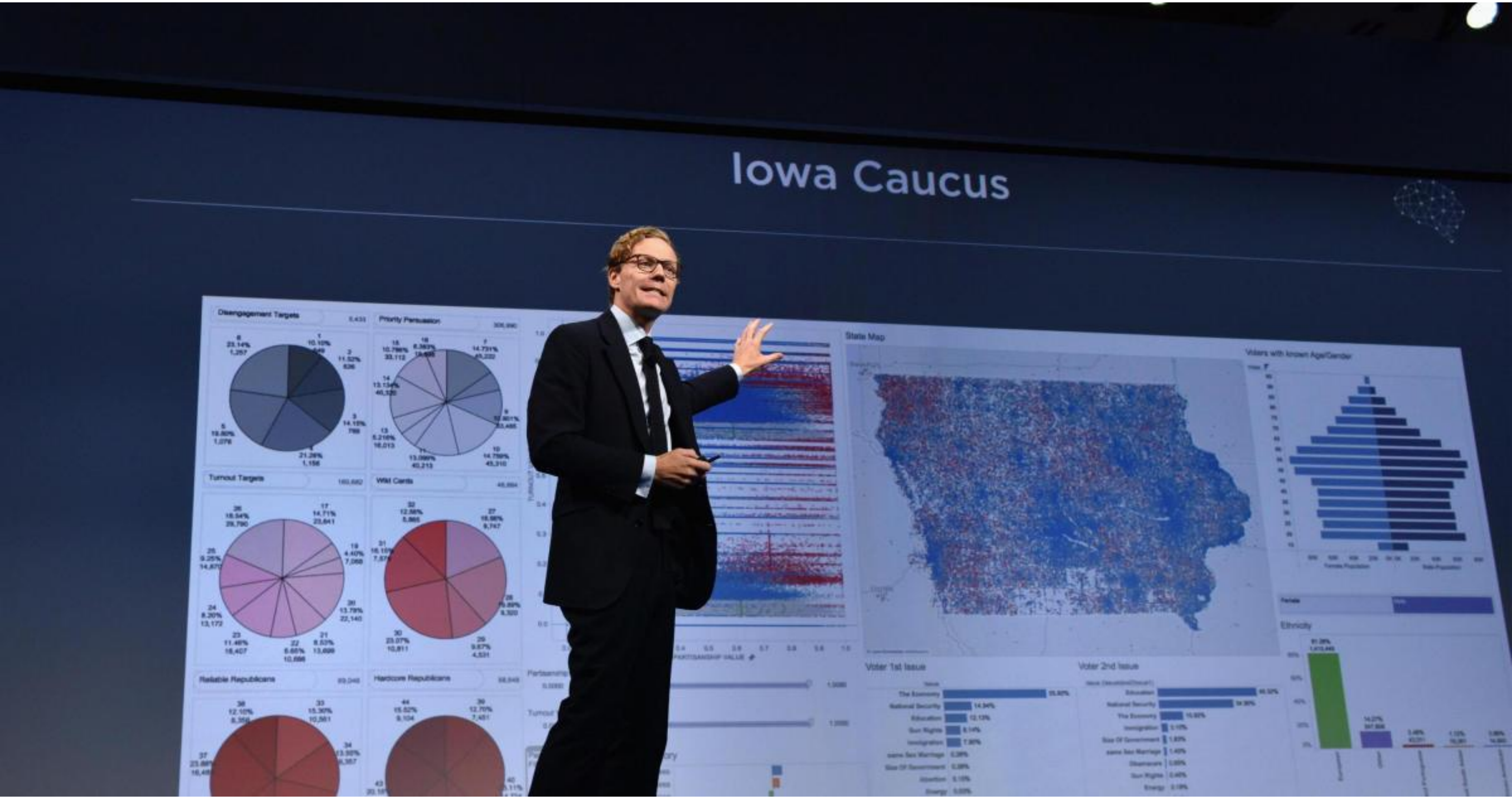
"[I]f the critical resource in many multi-sided markets is data (not merely to target advertising, but also to optimize the products and services themselves), then the firms with a competitive advantage in the four 'V's of data are not merely in the best position to dominate their own sectors – **they are also poised to take over adjacent fields**." (Grunes & Stucke 2016)

Shifts in media power

From a purely economic framing of platforms as "**intermediaries**" to a wider understanding as "**mediators**" and "curators of public discourse" (Gillespie 2010).

"New operators such as Google, Microsoft, Yahoo! and Apple, as well as the new, rising social media firms, such as Facebook or Twitter, should by now be included in the list of the most powerful media organisations worldwide." (Centre for Media Pluralism and Media Freedom 2013)

Do we accept "winner takes all" dynamics and cross-sector ownership / expansion in the media sector? There is a tradition of limiting concentration and **foster diversity in "media-like" domains**.



How to approach the concentration of data and data-fueled market power from a systemic perspective?

Market dynamics as power

The current wave of "computerization" is both the driver and result of the search for concentric diversification.

Since assets are cumulative and transfer well between and into new sectors, there are strong **economies of scale in and between markets**.

"Big Data can help prolong monopolies in at least two ways: data-driven network effects and this unique 'nowcasting' radar. " (Grunes & Stucke 2016,)

The extension of the emerging technological system affects **market mechanisms, market structure, and strategic incentives** – and therefore the fundamental relationships between companies, governments, and users.

Data power – in a large sense – becomes effective as **economic power**.

REPORT \ TECH \ FACEBOOK

We still have no idea what really happens on Facebook

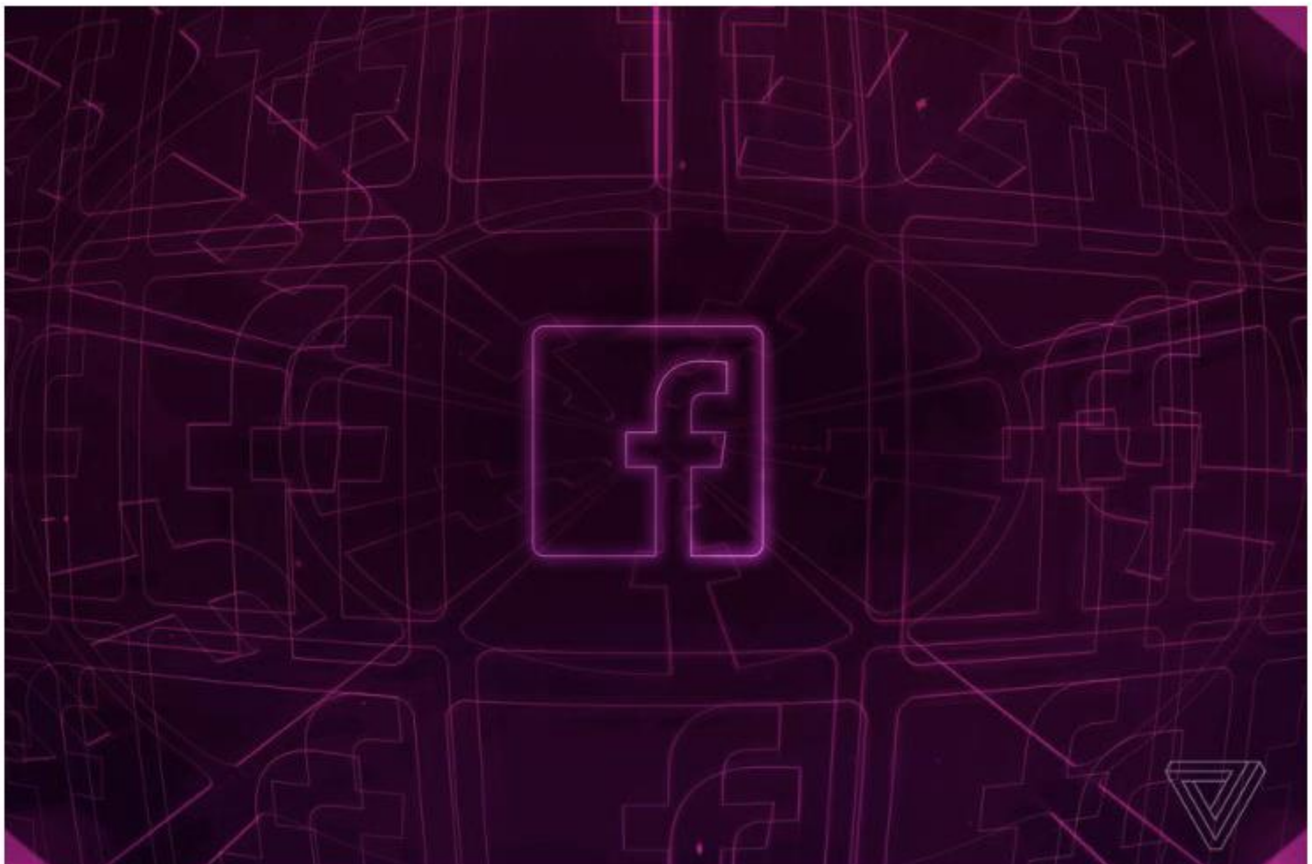
5

Researchers want more data — but Facebook isn't sharing

By Russell Brandom | @russellbrandom | Mar 15, 2018, 8:49am EDT

What primes? Privacy or the legitimate public interest to know what happens?

SHARE



NOW TRENDING

Drake drops in to play Fortnite on Twitch and breaks the record for most-viewed stream

Conclusions

These three perspectives raise issues that are both more fundamental and more conflictual that common ethical critiques would allow:

- The epistemological makeup of data mining challenges the idea of a "tool to be used". It ties knowing tightly to outcome optimization and ties into larger social, cultural, technological, and economic transformations (Thrift 2005).
- While it may be possible to "repair" the most egregious cases of unfair discrimination, data mining has the capacity make permanent, fine-grained distinctions, challenging "uncontroversial" social values.
- Changes in "industrial materiality" have been show to accelerate the drive toward monopolization and concentric diversification, affecting domains concerned with information flow and democratic life.

These are not *problems* that can be *solved*, but deeply conflictual areas that challenge our societies and their political institutions.

Conclusions

An relying exclusively on **individualist ethics** focusing on conduct risks missing the inherent conflictual character of the problems at hand.

Making these problems "unsafe" means reframing them as complex, ambiguous, and contradictory and **challenge the possibility of a shared understanding of "the good life"**.

This means that common critiques have to question their deep and often **under-examined entanglement with liberal normative frameworks** by asking (at least) three questions:

- Which principles do notions like privacy, transparency, accountability, autonomy, etc. rest on? What idea of a "good" do they imply?
- What is my critique leaving unexamined and where do I draw the radius of possible intervention?
- What are alternatives modes of reasoning I could draw on? Where do values come into conflict?

Conclusions

I believe that **deepening computerization** will require renewed efforts in thinking about political means to set limits: the **General Data Protection Regulation** is not a recommendation, nor "ten quick rules".

The **relationship between technology and social stratification** needs to be explored in more depth, including thinking about mechanisms for compensation.

For certain infrastructures, **public alternatives** may be a real possibility, **antitrust** may be more realistic.

The greatest challenge is to create the conditions for **more substantial conversations** that allows for interpenetration between officials, academics, and businesses and are not dominated by slogans and outrage.

Thank you!

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http://thepoliticsofsystems.net