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November 16th 2021

Augmented online manipulation: an interdisciplinary perspective

Opening of #AIweek2021 and #SophIASummit2021

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Augmented online manipulation : an interdisciplinatory perspective

NOVEMBER 16TH - 2:15 PM

Opening of the #AIWEEK2021 #SophIASummit2021

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Outline

- General overview:
- Algorithms and market strategies: from conventional algorithms to AI
  - Competition law and economics perspective (Frédéric Marty)
  - Algorithmic perspective (Benoît Rottembourg)
- Issues and examples of algorithmic manipulations' consequences
  - Algorithms and behavioral economics (Jeanne Mouton)
  - Algorithms and legal challenges (Julie Charpenet)
- Tackling algorithmic induced concerns
  - Legal answers (Julie Charpenet)
  - Technical responses (Benoît Rottembourg)

Characterizing the issue (1/3)

- Price discriminations practices based on customer segmentations and misleading choice architectures both offline and online are rather commons on markets and cannot be only attributed to AI implementation

- However, online transactions are prone to be based on such discriminatory and manipulatives practices

1) A logged universe involving consumer identification and its online behavioral record processing.

2) See for instance, the implementation of dark patterns in the framework of EU GDPR enforcement (e.g. Nataliia Bielova's work on consent to data collection, exploitation)

Related literature

Characterizing the issue (2/3)

How can AI implementation make things worse?

- At the level of discrimination - possibility of implementing a personalization of offers (rapid attachment of a consumer, even if not already identified on the website, to a very specific customer segment)
    - Price personalization
    - Versioning (designing the product and its core characteristics according to the expectations and the expertise of each consumer, a strategy easier to implement in Industry 4.0 models)
- At the level of dark patterns - moving from a uniform and static dark pattern to a personalized and dynamic dark pattern in that it adjusts to observed behavior of each consumer (augmented dark pattern)

Characterizing the issue (3/3)

Our purpose:

Illustrating these strategies and providing some insights about their regulation both at the legal and technical levels

A competition law and economics perspective

Consumers' deception and manipulation tend to distort competition

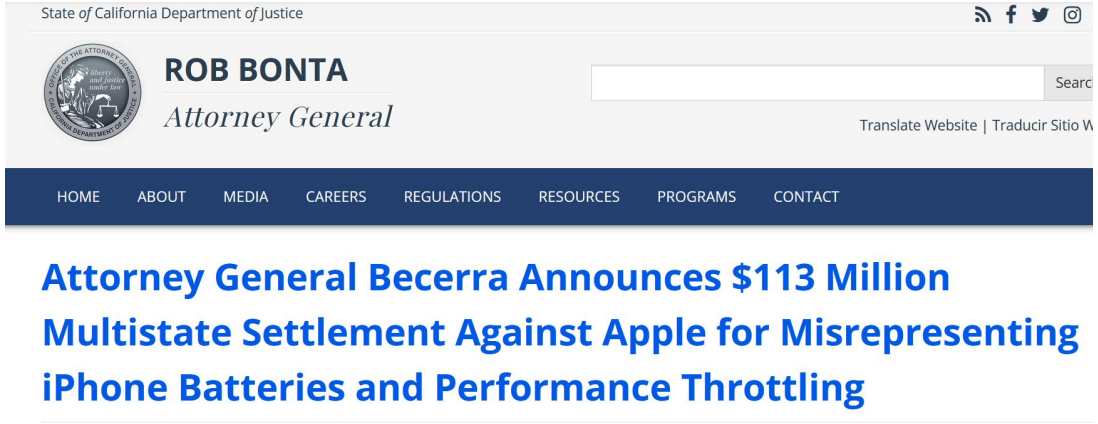
The impacts of deceptive strategies

- Impact on consumers (undue consumer surplus extraction, choice distortion)

- Impact on the competitive process
  - Two examples
    - California State v Apple (November 18th 2020)
    - FTC v Zoom (November 9th 2020) – "deception distorts competition"

The Apple case

- The settlement resolves allegations that the company made misrepresentations about iPhone batteries and software updates that throttled processing performance in order to manage insufficient battery power in its phones
- “Throttling” refers to the purposeful reduction in system performance to prevent the automatic shutdown of phones with aging batteries



The Zoom case

- Deceptive and unfair methods of competition related to security
- Two dissenting opinions (Slaughter and Chopra)
  - “Zoom sold its customers on the idea that it was an easy-to-use service that took “security seriously.” However, when examining the company’s engineering and product decisions, a different reality emerges”.
  - “When companies need to act quickly to exploit an opportunity, deploying deception to steal users or sales from competing players is tantalizing”.

Office of Commissioner
Rohit Chopra

UNITED STATES OF AMERICA
Federal Trade Commission
WASHINGTON, D.C. 20580

DISSENTING STATEMENT OF COMMISSIONER ROHIT CHOPRA

Regarding Zoom Video Communications, Inc.
Commission File No. 1923167

November 6, 2020

Consequences on the market process (1/2)

- The competition cannot longer play it role
  - Undermining existing dominant positions
  - Creating opportunities for new entrants
- The competition paradox: allowing past innovators to recoup their investments but preventing them to compromise the access to market of today ones
  - Preserving a free and undistorted competition (EU competition law)
  - Guaranteeing the transparency and the fairness of P2B transactions (EU Regulation of June 2019)
  - Proposals of a Digital Markets Act (December 2020): ensuring constestability and fairness on digital markets
  - Google Shopping judgment: requiring an equal access for complementors (November 2021) – case of self-preferencing strategies

Consequences on the market process (2/2)

Competition law enforcement must sanction abuses of dominant positions

- How to detect such practices if algorithms tend to become black-boxes?
- How to characterize a competitive harm?
  - False positive issues: some practices are only a rational adjustment to market signal (surge pricing for instance, see Uber)
- How to balance competitive harms and efficiency gains?
  - Extracting and processing data reinforce algorithms performance – drawing a dividing line for defining an excessive data extraction
  - Price discrimination itself can be efficiency enhancing

How to dissuade, remedy, and restore?

Manipulating consumers' behaviors

- Two types of Dark Patterns
  - Incentive to act against its own interest (bad nudge)
  - Impairing to act in accordance with its own interest (bad sludge)
- Exploiting consumers' cognitive bias (Thaler, 2018; Sunstein, 2019)
- A sludge case: EPIC Games complaint against Google (August 2020) – impairing Fortnite side-loading outside of the Play Store
- A dark pattern can both result from a biased choice architecture or from stimuli (solicitations)

Analysing dark patterns

Cartography and quantification - Luguri et Strahilevitz (2019)

- Mild dark patterns have a greater impact
- Consumers do not reject such practices
- Consumers do not observe strategies consisting in a progressive reduction of the quality of the service

Table 2: Revised Taxonomy of Dark Patterns

Category	Variant	Description
Nagging		Repeated requests to do something firm prefers
Social Proof	Activity messages	Misleading notice about other consumers' actions
	Testimonials	Misleading statements from customers
Obstruction	Roach Motel	Asymmetry between signing up and canceling
	Price Comparison Prevention	Frustrates comparison shopping
	Intermediate Currency	Purchases in virtual currency to obscure cost
Sneaking	Sneak into Basket	Item consumer did not add is in cart
	Hidden Costs	Costs obscured / disclosed late in transaction
	Hidden subscription / forced continuity	Unanticipated / undesired automatic renewal
	Bait & Switch	Customer sold something other than what's originally advertised
Interface Interference	Hidden information / aesthetic manipulation / false hierarchy	Important information visually obscured
	Preselection	Firm-friendly default is preselected
	Toying with emotion	Emotionally manipulative framing
	Trick questions	Intentional or obvious ambiguity
	Disguised Ad	Consumer induced to click on something that isn't apparent ad
	Confirmshaming	Choice framed in way that seems dishonest / stupid
Forced Action	Forced Registration	Consumer tricked into thinking registration necessary
Urgency	Low stock / high-demand message	Consumer falsely informed of limited quantities
	Countdown timer / Limited time message	Opportunity ends soon with blatant false visual cue

Category	Variant	Description	Source
Nagging		Repeated requests to do something the firm prefers	Gray et al. (2018)
Social proof	Activity messages	False/misleading Notice that others are purchasing, contributing	Mathur et al. (2019)
	Testimonials	False/misleading positive statements from customers	Mathur et al. (2019)
Obstruction	Roach motel	Asymmetry between signing up and canceling	Gray et al. (2018), Mathur et al. (2019)
	Price comparison prevention	Frustrates comparison shopping	Brignull (2020), Gray et al. (2018), Mathur et al. (2019)
	Intermediate currency	Purchases in virtual currency to obscure cost	Brignull (2020)
	Immortal accounts	Account and consumer info cannot be deleted	Bösch et al. (2016)
Sneaking	Sneak into basket	Item consumer did not add is in cart	Brignull (2020), Gray et al. (2018), Mathur

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	Preselection	Firm-friendly default is preselected	Bösch et al. (2016), Gray et al. (2018)
	Toying with emotion	Emotionally manipulative framing	Gray et al. (2018)
	False hierarchy/pressured selling	Manipulation to select more expensive version	Gray et al. (2018), Mathur et al. (2019)
	Trick questions	Intentional or obvious ambiguity	Gray et al. (2018),

	Confirmshaming	Choice framed in a way that makes it seem dishonorable, stupid	Brignull (2020), Mathur et al. (2019)
	Cuteness	Consumers likely to trust attractive robot	Cherie & Catherine (2019)
Forced action	Friend spam/social pyramid/address book leeching	Manipulative extraction of information about other users	Brignull (2020), Bösch et al. (2016), Gray et al. (2018)
	Privacy Zuckering	Consumers tricked into sharing personal info	Brignull (2020), Bösch et al. (2016), Gray et al. (2018)
	Gamification	Features earned through repeated use	Gray et al. (2018)
	Forced Registration	Consumer tricked into thinking registration necessary	Bösch et al. (2016)
Scarcity	Low stock message	Consumer informed of limited quantities	Mathur et al. (2019)
	High demand message	Consumer informed others are buying remaining stock	Mathur et al. (2019)
Urgency	Countdown timer	Opportunity ends soon with blatant visual cue	Mathur et al. (2019)
	Limited time message	Opportunity ends soon	Mathur et al. (2019)

Impairing the access of 3P innovations to market (1/2)

- Ezrachi and Stucke (2020) analyze the possibility of self-preferencing innovations in digital ecosystems (new services or products that can be developed by a complementor of the gatekeeper/pivot) using the innovation diffusion model of Rogers (2003)
  - Using dark-patterns as bad nudges and bad sludges

Ezrachi, A. and Stucke M. 2020. *Digitalisation and its impact on innovation*, R&I Paper Series 2020/07, October..

Rogers, E.M. 2003. *Diffusion of Innovations*, 5th edition, S&S International.

Impairing the access of 3P innovations to market (2/2)

Steps in the Dissemination process	Favorable pivot Strategy	Unfavorable Pivot Strategy
Knowledge	Ability to propose, to put forward	Reduce the possibilities of information about a potentially available innovation or access to information about how it works (by algorithmic manipulation of the search engine, for example, by de-referencing sites ...)
Persuasion	Ability to target, to demonstrate suitability for personalized needs; attention strategies; identification of possible early adopters and dissemination of personalized information to potential followers	Production of opposing opinions or creating frictions makes it more difficult to download or interoperate with the ecosystem's various services.
Decision	Personalized marketing; free trials; play on friends' recommendations.	Friction blocking: play on status quo behavioral bias - default settings are rarely changed by agents, regardless of their preferences
Implementation	Facilitation of adaptations, bug fixes	Users can be continuously redirected to less efficient options but dependent on the ecosystem.
Confirmation	Redirections by support tools towards the innovation	The pivot firm may degrade the performance of complementary services provided by the competitor to redirect consumers towards better-controlled service.

An example of algorithmic manipulation: self preferencing (more details in the discussion)

1) Favoring its own products or the ones of a specific third-party (case of prominent placement of a given product or service)
   - see Google Shopping (EU Commission, 2017; EU GC, 2021) and the procedure against Amazon (EU Commission, 2020)

2) Leveraging strategies
   - tying *à la* Microsoft – EU Commission, 2004

3) Compromising a level playing field through pre-installations and default settings
   - see Google Android – EU Commission, 2018

4) Extracting abnormal rents through obfuscation strategies
   - US procedure against Google on the advertising market, December 2020

Price discrimination and contractual conditions personalization

1. From 3rd order (segmentation-students, retired,…) to 1st order price discrimination
   - The price proposed equals the maximal capacity to pay of each consumer
2. Product designed according to each consumer technical expertise
3. Transaction prices manipulation
   - Price partitioning
   - Drip pricing

What could be the changes induced by AI implementation?

- Granularity
- Adjustment speed
- Predictive capacities

More rapidly, more efficiently, more profitably

- Dark patterns in an AI era - Augmented dark patterns and hyper-nudges (Yeung, 2017)

  - “Dynamic, interactive, intrusive, and incisively personalizable choice architectures […] that can be specifically designed to adapt and to exploit each individual user’s particular vulnerabilities” (Susser et al., 2019)

  - Personalisation and Waze-type adjustment (continuous and immediate update of the proposition according to the observed decision of the user)

A damage in terms of consumer's liberty of choice

AI is a tool for predicting preferences and future decisions

- A better understanding of future trends – now casting
  - Depending on data (4V – volume, variety, velocity, and veracity)
  - Depending on the investments in data and business analytics
    - See the acquisitions of Onavo by Facebook, Looker by Google
- Creating irreversibility, playing on addiction
  - Marketplaces and the move from *shopping then shipping* to *shipping then shopping*
- Distorting choice
  - Self-preferencing strategies would be easier to implement and even harder to detect

How AI may harm competition?

- Reinforcing the capacities of dominant platforms to act as gatekeeper and to exercise a private regulatory power
- The more the algorithms play as black-boxes, the easier to discriminate among trading partners and to self-prefer
- The stronger the capacity to accumulate data (4V), the more performant the algorithms developed
- See Acemoglu (2021) – data access and unfair competition
  - Abusive collection and retention of data may reinforce a data-based advantage
  - See the Everalbum case (FTC, 2021)

EU proposal for a regulation of AI and dynamic dark patterns

Consumers' choice manipulations, as market manipulations, are not considered as High-Stake Decisions (HSD) in the EU Commission proposal of April 2021

The need of external incentive to make a self-regulation effective

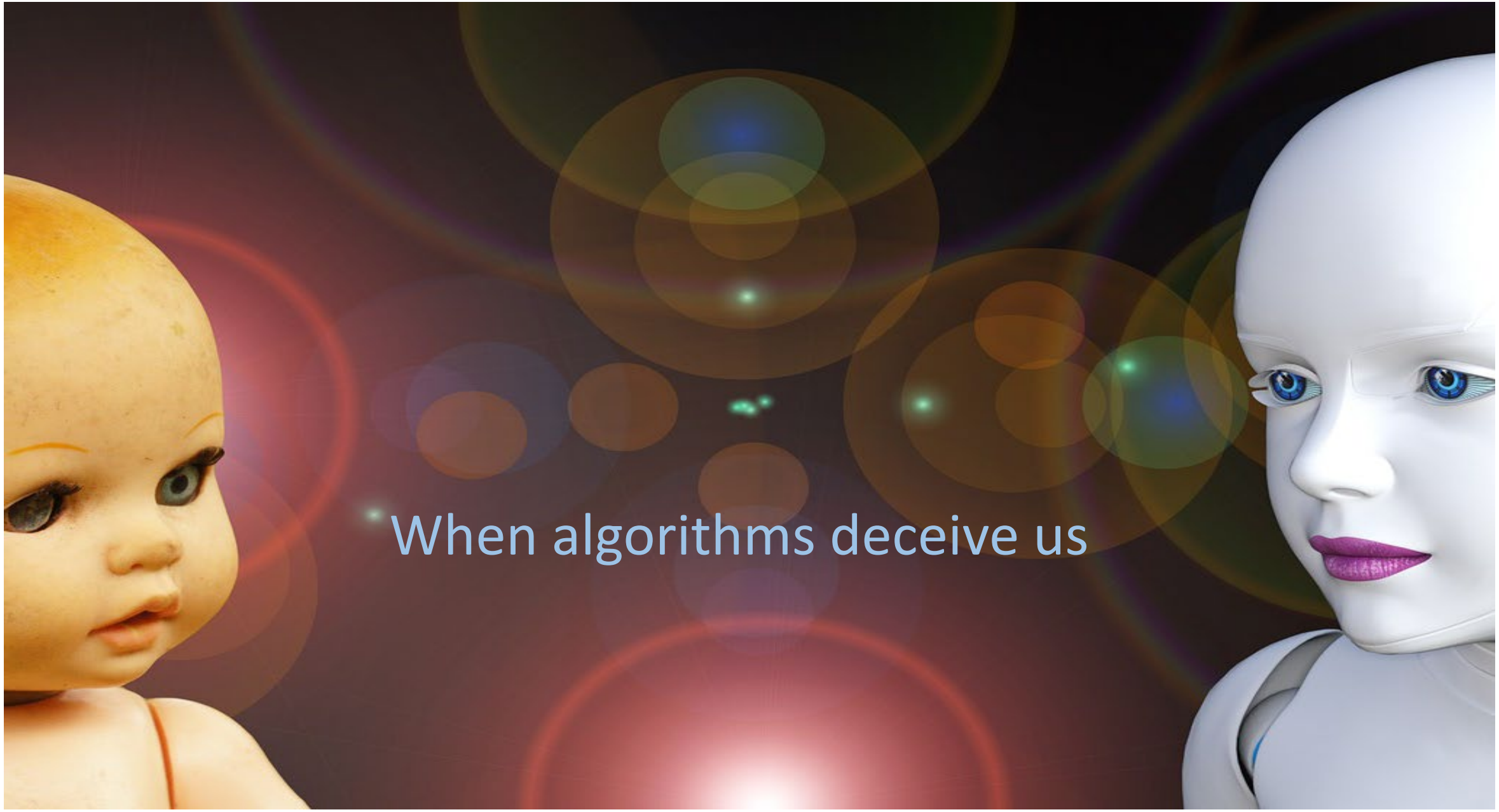
- Need of sanctions (cf. compliance model e.g. a procedural regulation model, see financial regulation)

- Need of an ex-ante regulation
  - Preventing harm under the constraint of preserving incentives to innovate
  - Protecting fundamental rights
  - Ensuring accountability (explainability)

A need to prevent damages as sanctions may fail to restore a free and undistorted competition

- Recognizing the interests and the limits of an ex-ante certification of algorithms
- Exploring the proper scope of self-regulation (Cusumano et al., 2021)
- Considering self-assessment tools
- Transparency, certification by an independent body (ESG requirements)

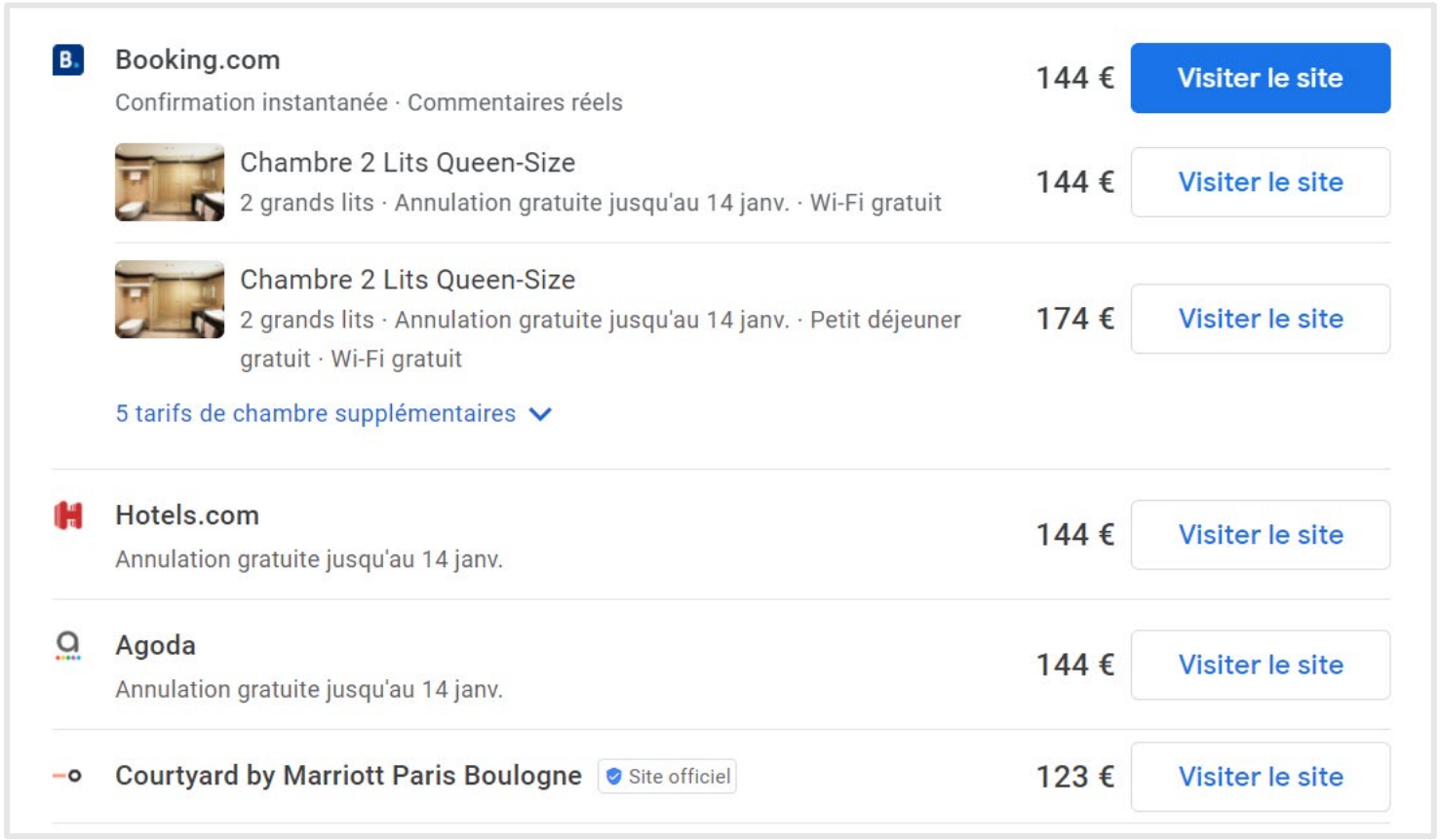
Algorithmic perspectives


When algorithms deceive us

What do the algorithms recommand to us?

An online travel agency

Do they guide us?
Or do they alter our consent?



What kind of algorithms are we dealing with?

- These are algorithms that produce decisions (recommendation, price, moderation) with the aim of maximizing an objective (economic, attentional, loyalty), under a set of constraints (stock, supplier contract, diversity, stability)
- These decisions take place in the context of a user session, at a given moment in the customer journey
- The objective, the set of constraints and the data used are only partially observable for the user (and the T&Cs are sometimes not straightforward or even false)
- These algorithms are becoming more and more efficient and opaque

Is Artificial Intelligence to blame?

We knew how to "cheat" before artificial intelligence, but it helps us do it significantly better

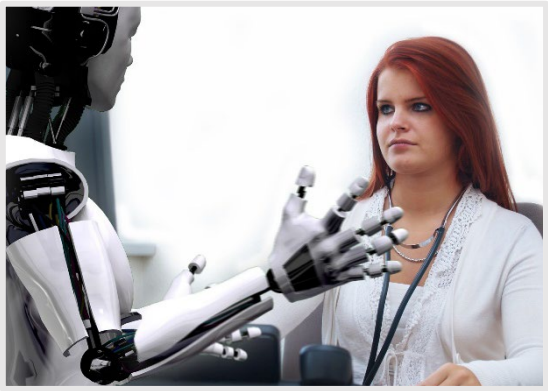
- Hundreds of parallel algorithms (A/B testing) that select on performance
- Models incorporating tens of thousands of variables describing the user, his family, his colleagues, his behavior and the products to be pushed
- Models capable of interpreting text and images and extracting explanatory factors
- “Flat" models: without categories, without social networks
- Unreadable models: without "weights" or rather with billions of weights
- Data sharing between giant platforms (e.g.: access to Facebook data by Tinder)
- Efficient proxies to track our fingerprints and projections to scale

Algorithms’ obsession is performance

- Performance optimization (number of clicks, retention, revenue, etc.) takes little or no account of the risks of bias or manipulation
    - *Ex: Instagram's "Nudity Premium“*
    - *Facebook tries to promote “counter-metrics”*
- Models are less and less explicit, so no one really writes "if (corpulence = obese) then censor the photo".
    - *Ex: "Fat women in bikinis censored" on Instagram.*
    - *Ex: "African-American protagonists" on Netflix.*
- Two algorithms from two competitors can learn collusion without human intervention and without explicit requirements
    - *Ex: MIT experiment*

Performance, performance & performance

- An algorithm can therefore discover a particular "elasticity" in a group of clients and exploit it without this group having any explicit meaning. Humans are limited by the simplicity of the instructions they can express
  - *Ex: Friday afternoon syndrome in travel*
  - *Ex: In travel, asking for 3 seats yields less cancellation*
  - *Ex: The size of the screen or ... the battery level*
- The biases or disloyalties of algorithms are not systematically deliberate, but sometimes the result of uncontrolled optimization based on human behavior that is itself biased
- And it is not easy to control oneself in a context of relentless innovation : *Ex: Deliveroo in Italy*



But it’s as old as sales no?

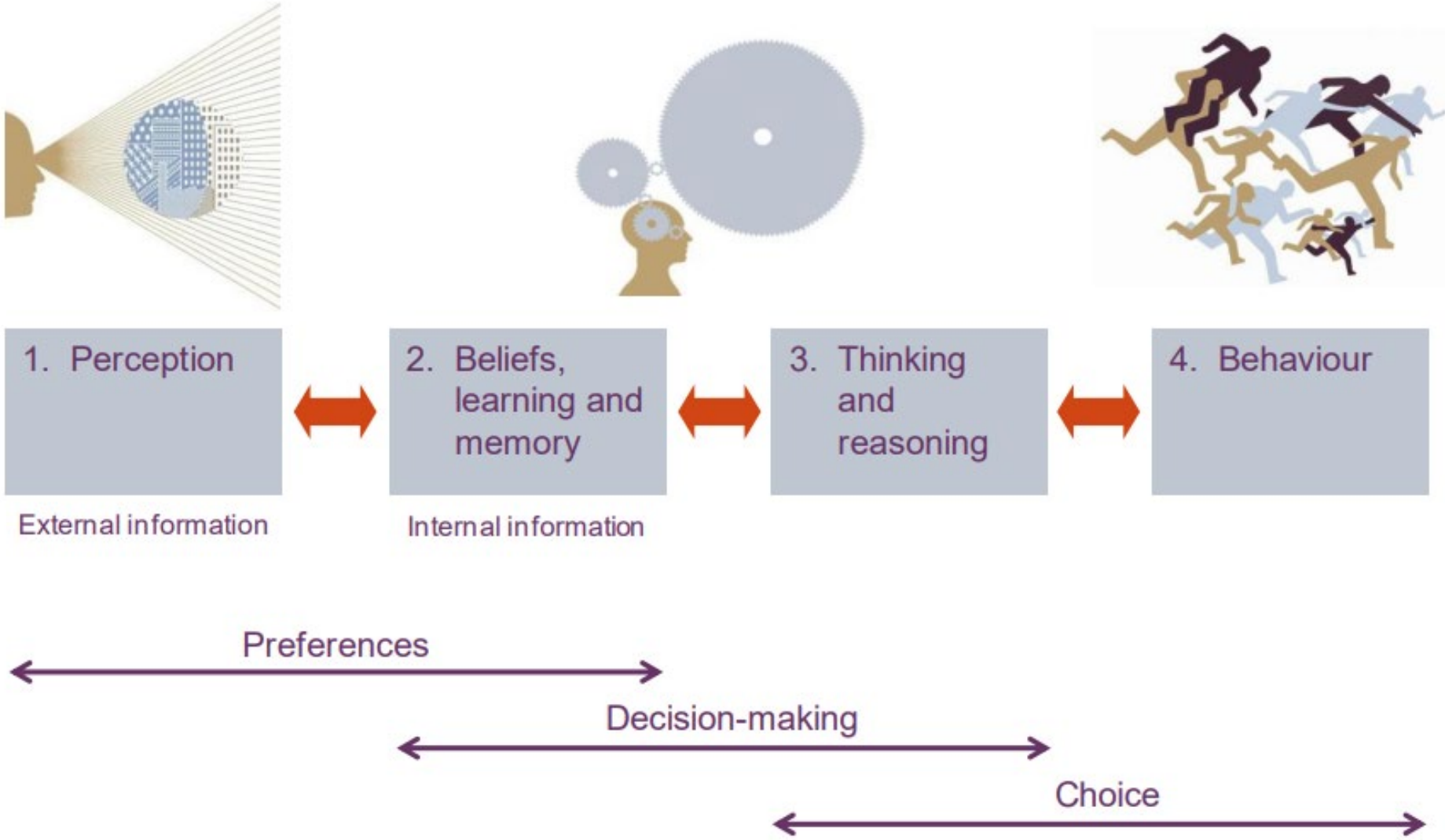
Issues and examples of algorithmic manipulations' consequences

- Algorithms and behavioral economics
- Algorithms and legal challenges

Algorithms and manipulations: insights from behavioral economics

Behavioral economics

Figure 2.1 Stylised representation of cognitive and behavioural processes involved in making choices



Source: Oxera.

Behavioral economics

- Human cognitive and behavioral characteristics result in constrained rationality and potential biases in decision marking and outcomes
- Behavioral economics: complement the traditional economics analysis by providing reasoning behind non rational humans behavior
  - It explains how consumers actually make decisions since we deviate from the model of an economic person

Cognitive biases are not exclusively linked to AI!

What are the cognitive biases of the users than can facilitate algorithmic manipulations?

- **Privacy paradox:** inconsistency between users' declarations on their privacy preferences and their behavior
  - Acquisti (2013)
  - Gerber N., Gerber B., et Volkamer (2018)
- **Privacy fatigue:** increasing difficulty in managing one's online personal data leads to individuals feeling a loss of control, which lead the users feeling exhausted and cynic about privacy breaches and their privacy management
  - Choi, Park et Jung (2017)
- **Selective exposition and confirmation bias** (Perrissol and Somat, 2009)
- The rationale decision-making process cannot explain users's choice regarding their privacy preferences
  - Waldman (2020): anchoring, framing, overchoice..

The consumer could be manipulated,
not knowing that he would be,
but is he?

How could the platform actually manipulate consumers?

- **Choice architects:** they think the content of the platform relatively to users' heuristics and biases to guide their choice (Weinmann, Schneider and Brocke, 2018)
- **Default choice option**: an easy way for the platform to set a high standard of personal data collection and processing
- **Dark patterns:** manipulation of the decision-marking of the users
- **« Micro-cliffhangers »:** online shopping website and film purchases
- **« Teaser rates »:** Exploiting several biases: difficulty to correctly self assess the effects of complex transactions and discounting future effects (Wagner, Eidenmuller, 2019)
- **Surge pricing algorithms**
  - The case of Uber (Chen, Mislove, Wilson 2015)
- **Behavioral advertising**

What are the incentives for the platform to manipulate their users?

- The biases from the users can be sources of innovation for the platform:
  - For the platform: more the platform collect data, better the algorithm performs, so all the biases enhancing data collection can push forward the innovation in the platform
  - For the companies using the platform: strategies of open-innovation (Mount, Martinez, 2014)

Are the consumers manipulated by algorithms?

Why are the price changing? Price discrimination?

- BBC, 2000, Amazon
  - Customers experiencing different prices
  - Spokeswoman for Amazon “it was testing what happens to buying behaviour when prices go up or down”
- « Does everyone has a price? » (Poort, Zuiderveen Borgesius, 2019)
  - Two consumers surveys
    - The drivers of consumers acceptance or rejection of price discrimination and dynamic pricing
    - More than half of the population claim never to have experienced online price discrimination
    - Vast majority finds it unfair and unacceptable
- Online airline tickets (Vissers, Nikiforakis, Bielova, Joosen, 2014)

The risks of consumers being manipulated by algorithms

- Growing concerns from the Regulators:

  - Proposal Artificial Intelligence Act (EU), 21/04/2021
    - Article 5: Prohibited artificial intelligence practices

  - UK CMA Report, Algorithms: How they can reduce competition and harm consumers, 19/01/2021
    - Example of hotel booking sites
    - **Theories of harms**
      - Opaque personalized pricing
      - Algorithms as a tool to manipulate choice architecture
      - Algorithmics discrimination
      - Unfair ranking and design

Balancing the efficiencies & risks linked to algorithmics manipulations

- Algorithmics consumers (Gal, 2016)
  - Virtues: speedier decision, analytical sophistication, reduce info and transaction costs,
  - New harms and risks: reduction in consumer's autonomy, manipulation and control of consumer's choices
- Wagner, Eidenmuller (2019) "Down by algorithms?"
  - 1rst price discrimination→ siphoning rents from consumers, exploit behavioral biases from the consumers incl. inability to assess long-term effects of complex transactions, microtargeted ads to shape consumers' preferences
    - 1rst price discrimination: efficiency problem or distributive justice?
- Avoiding consumers biases?
  - Gal, 2016; Sunstein, 2021
- Welfare effects of surge pricing (Castillo, 2019)

Issues and examples of algorithmic manipulations' consequences

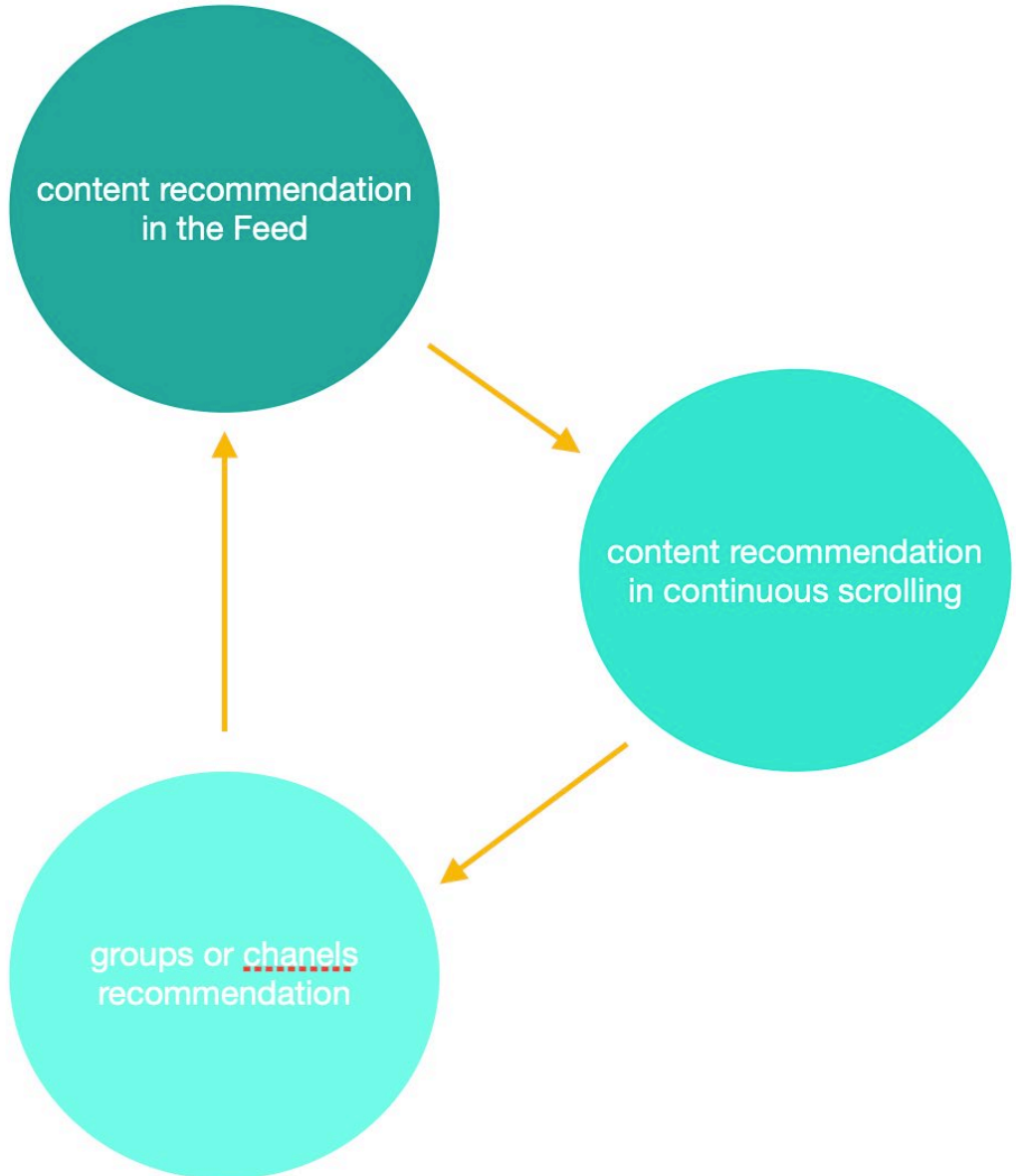
- Algorithms and legal challenges

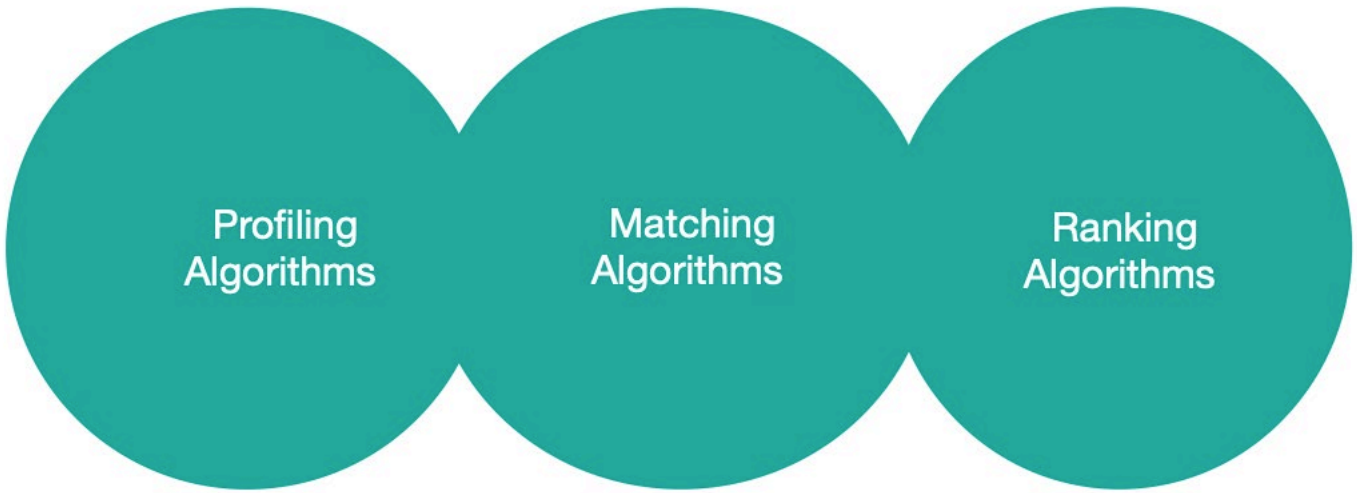
The algorithmic manipulation of information has consequences at 2 levels

Individual effect

Collective effect

3 levels of algorithmic intervention




Profiling
Algorithms
Matching
Algorithms
Ranking
Algorithms

3 algorithmic principles can be applied and combined

« Menu algorithms »

Ex-ante : content is classified by category and subcategory

Ex-post: The user chooses a category

Semantic algorithms

the algorithm matches the keywords that the user enters in the catalog which is

« Statistical algorithms »

Content is « pushed » to the user based on his habits and the content liked by his friends

costly but inclusive of the user

inexpensive but harmful it excludes the user

Very schematically, these algorithms work on the basis of :

Strong links:
proven preferences

Weak links:
preferences not established, to be confirmed

Statistical algorithms are by nature strong links. They recommend what I like or what my friend likes and will reinforce my interests, sacrificing exploration for exploitation.

echo chamber or « filter bubble »* + confirmatory bias = vertical confinement

* Eli Pariser. 2015. : filter bubble : « The state in which an Internet user finds himself when the information he accesses on the Internet is the result of a personalization set up without his knowledge. »

The example of YouTube's statistical recommendation algorithm

Empirical study on the YouTube recommendation algorithm the Conseil Supérieur de l'Audiovisuel, November 2019

70% of videos viewed were recommended through the algorithm.

From 1st iteration to the 3rd:

The recommendation is based mainly on videos watched by users who have also watched the video.

+

The algorithm also crosses the keywords of the starting video with the tags and title of the videos and the title of the channel.

At this stage, no opinion.

BUT

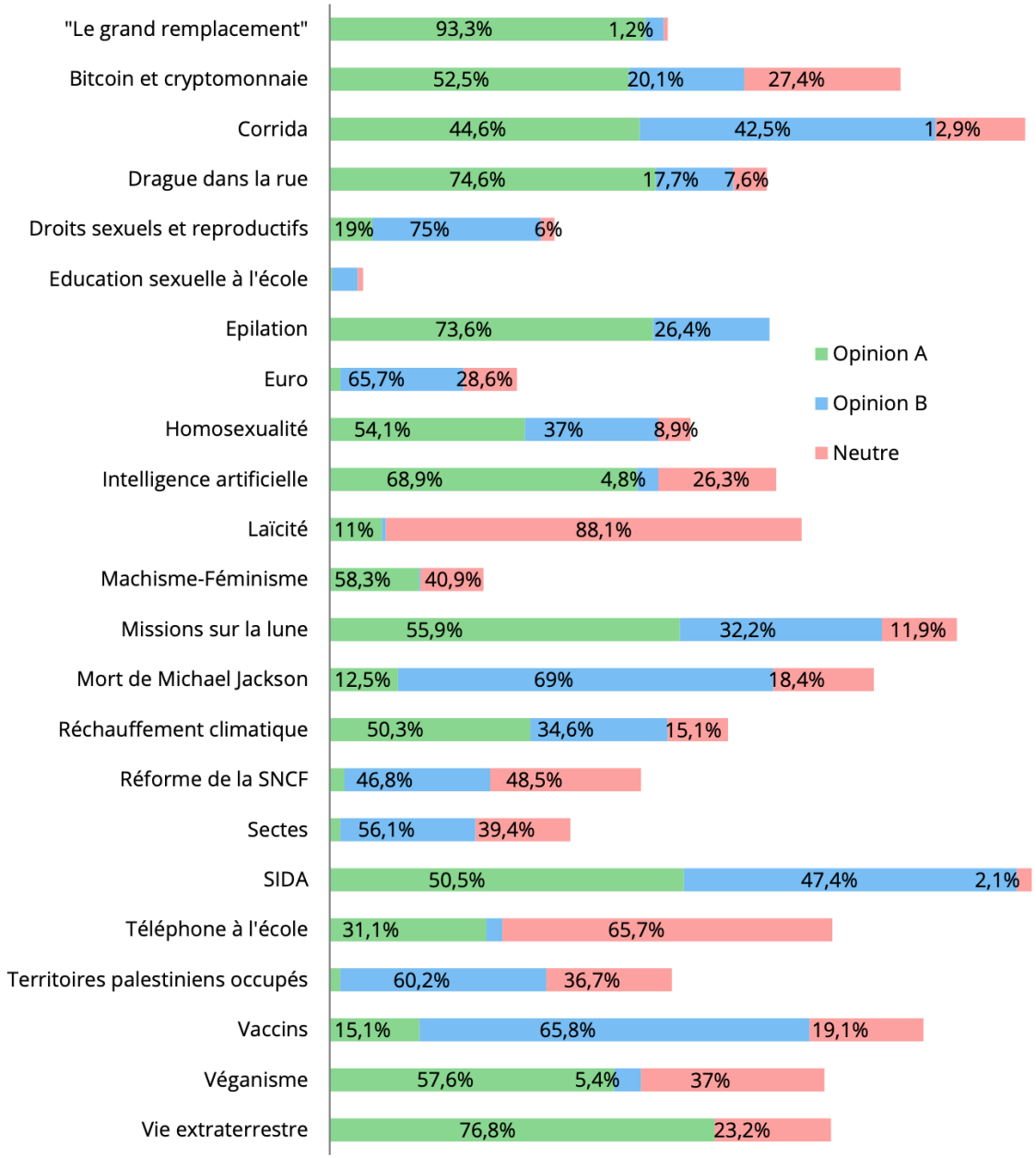
Only 20% of the videos offer a different opinion than the starting video.

This is due to the fact that certain opinions are over-represented because of the dynamism of certain communities.

The algorithm automatically leads the user to the most represented ideas which are often the most polarized. Indeed, neutral videos are very much in the minority.

Diversité des opinions dans les vidéos recommandées portant sur le thème de départ

(En nombre de vidéos et en pourcentage par thème, ordre alphabétique des thèmes)



@EtudeCSA

From the 3rd iteration:

We are in a capture logic

The duration of the videos is taken into account more

More and more popular videos

deviates from the initial themes even if it remains in related themes with regard to the browsing habits of similar profiles.

"rabbit hole » logic

with very bad consequences.

From vertical confinement to horizontal contagion.

Collectif effect, worring for Democracy for 2 reasons :

1. Handyside c. England, CEDH, 1976
« Freedom of expression applies not only to information and ideas that are favourably received or considered inoffensive or indifferent, but also to those that offend, shock and disturb (...). This is what pluralism, tolerance and the spirit of openness, without which there is no democratic society, demand. »

2. Profiling can result in the manipulation of political opinions in order to direct voting behavior.

- Council of Europe first recognized the threat of disinformation in 2015 in the context of a disinformation campaign orchestrated by Russia : Council recognized a potentiel « public damage »
- Loi française du 22 décembre 2018 loi relative à la lutte contre la manipulation de l'information.

Some exemples :
- Cambridge Analytica for the US presidential election.
- Current rise of the extreme right in Brazil and Italy

The Legal Responses

The legal responses in force

In France

- Loi pour une République Numérique, dite « Lemaire », du 7 octobre 2016
- Loi relative à la lutte contre la manipulation de l'information du 22 décembre 2018

In Europe

- Code of Practice on disinformation, April, 2018
- General Data Protection Regulation, April 27, 2016

Tackling algorithms related concerns

Legal dimensions

The legal responses in process

Digital Services Act, December 15, 2020

Proposal of Artificial Intelligence Act, April 21, 2021

How to tackle the issues raised by algorithmic manipulations? A technical perspective

Three main approaches to monitoring algorithms: enforcing algorithm compliance

- **→ Full transparency requirement**
- **→ Designing « explainable », « controllable » or « responsible » AI**
- **→ « black box » audit for behavioural testing**

Three main approaches to monitoring algorithms

- **↓ Full transparency requirement**
  - On the data used (training, running)
  - On the algorithm itself (Ex : Parcoursup)
  - On potential side effects
- **→ Designing « explainable », « controllable » or « responsible » AI**

- **→ « black box » audit for behavioral testing**

Three main approaches to monitoring algorithms

- **→ Full transparency requirement**
- **↓ Designing « explainable », « controllable » or « responsible » AI**
  - Local explanation to a decision: « what would happen if the kth variable was slightly higher ? If the user was a woman ? »
  - Symbolic control, embedded into the algorithm: « checking that the algorithm is balanced or fair with regard to some subset of customers »
  - Lots of work on « fairness by design » approaches
  - At the cross-road of symbolic AI and connectionist AI
- → « black box » audit for behavioral testing

Three main approaches to monitoring algorithms

- **→ Full transparency requirement**
- **→ Designing « explainable », « controllable » or « responsible » AI**

- **↓ « black box » audit for behavioral testing**
  - Assumes access to the data and a representative test environment from the platform
  - Digital testing cannot be manual or naive, otherwise it will not be representative (cf twitter)
  - Longitudinal follow-up is sometimes necessary to measure medium-term effects or seasonality

« black box » audit or « deep sampling » is still a challenge for both research and engineering: RegTech

Frugality and stealth

> Excessive sampling can disrupt the service

> Unbalanced sampling can distort the algorithm

> Too few samples make the proof invalid

> Platforms' algorithms are used to detect bots

Create undetectable "fake customers" covering relevant use cases

> Avoid the "diesel engine and CO2 emission" effect

> Navigation speed, typical path, mouse movements

> Requires a minimum of information/collaboration from the platform

Mathematical challenge as hard as recommendation algorithms themselves

In brief

- Platforms massively influence us in our purchasing decisions and cultural practices. Their algorithms progress with us. They gain in power and efficiency through their dominant position, their accumulated data and their deep connection with our behavior (boosted with artificial intelligence)
- Regulating these algorithmic practices cannot be done manually anymore
- We need algorithms and skilled auditors to monitor the algorithms of "big tech". We need legal tools (DSA, DMA) and we need to raise awareness of the notion of algorithmic compliance. Enforceability is key
- State services and regulatory authorities are becoming more muscular: creation of PEReN (Pôle d'Expertise de la Régulation Numérique), a service with national competence
- Public research must provide the steroids of algorithmic regulation, to rebalance the forces at work. Our modest project, Regalia (REGulation des ALgorithmes d'Intelligence Artificielle), contributes to this at Inria. There are many other approaches with different filters

Discussion

Annex : More on self-preferencing strategies

Discussion: more on self-preferencing

Press and Information

General Court of the European Union

PRESS RELEASE No 197/21

Luxembourg, 10 November 2021

Judgment in Case T-612/17
Google and Alphabet v Commission (Google Shopping)

The General Court largely dismisses Google's action against the decision of the Commission finding that Google abused its dominant position by favouring its own comparison shopping service over competing comparison shopping services

The General Court upholds the fine of €2.42 billion imposed on Google

*I. The General Court recognises **the anticompetitive nature** of the practice at issue*

First of all, the General Court considers that an undertaking's dominant position alone, even one on the scale of Google's, is not a ground of criticism of the undertaking concerned, even if it is planning to expand into a neighbouring market. However, the General Court finds that, **by favouring its own comparison shopping service on its general results pages through more favourable display and positioning, while relegating the results from competing comparison services in those pages by means of ranking algorithms, Google departed from competition on the merits.** On account of three specific circumstances, namely (i) the importance of the traffic generated by Google's general search engine for comparison shopping services; (ii) the behaviour of users, who typically concentrate on the first few results; and (iii) the large proportion of 'diverted' traffic in the traffic of comparison shopping services and the fact that it cannot be effectively replaced, the practice at issue was liable to lead to a weakening of competition on the market.

Next, the General Court considers that the present case relates to the conditions of supply by Google of its general search service by means of access to general results pages for competing comparison shopping services. It states, in that respect, that the general results page has characteristics akin to those of an essential facility inasmuch as there is currently no actual or potential substitute available that would enable it to be replaced in an economically viable manner on the market. However, the General Court confirms that not every practice relating to access to such a facility necessarily means that it must be assessed in the light of the conditions applicable to the refusal to supply set out in the judgment in *Bronner*, [2] on which Google relied in support of its arguments. In that context, the General Court considers that the practice at issue is based not on a refusal to supply but on a difference in treatment by Google for the sole benefit of its own comparison service, and therefore that the judgment in *Bronner* is not applicable in this case.

- Self-preferencing: generating bias impairing a competition by the merits
- The demonstration of a difference of treatment is sufficient to characterise a competition law infringement, no need to satisfy the criteria set by the Bronner judgment (regarding essential facilities doctrine)
  - Not a question of refusal of access to an essential facility (but a distorted access to market in an open digital ecosystem that makes no sense regarding its own rationality)
- An efficiency-based defense is possible, on principle
  - But….

> As regards the **effects of the practice at issue on competition**, the General Court recalls that an abuse of a dominant position exists where the dominant undertaking, through recourse to methods different from those governing normal competition, hinders the maintenance of the degree of competition in the market or the growth of that competition, and that that may be established merely by demonstrating that its conduct is capable of restricting competition. Accordingly, while

The DMA (December 2020) – how to tackle the SP issue?

Article 6

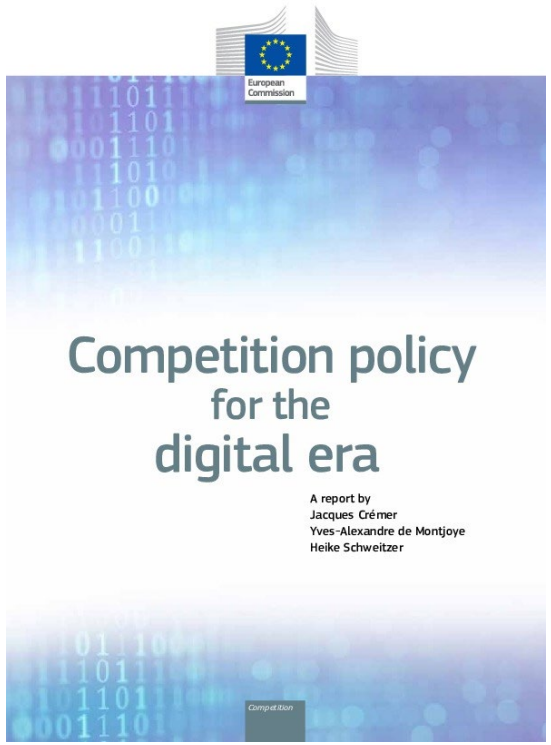
Obligations for gatekeepers susceptible of being further specified

1. In respect of each of its core platform services identified pursuant to Article 3(7), a gatekeeper shall:

(d) refrain from treating more favourably in ranking services and products offered by the gatekeeper itself or by any third party belonging to the same undertaking compared to similar services or products of third party and apply fair and non-discriminatory conditions to such ranking;

Per-se prohibition or a rule of reason? A debate

- Crémer et al,, 2019: "*Self-preferencing is not abusive per se but subject to an effects-test*" (p,7)



Per-se prohibition or a rule of reason? A debate

- Cabral et al., 2021: *"We believe self-preferencing is natural candidate for the 'black-list' of practices to be deemed anti-competitive and 'per-se' disallowed"* (p,13)

French case-law

- *Apple – ATT* (App Tracking Transparency) solicitation (17 March 2021 – 21-D-07)
  - Opt-in v opt-out regarding the sharing of personal data

- *Google* (7 June 2021 – 21-D-11)
  - Online advertising market

French case-law

Apple dec. 21-D-07: applying different rules for equivalent services can lead to SP

162. Sur ce point, l'Autorité estime, au stade préliminaire d'examen des mesures d'urgence, qu'il ne résultait pas des éléments produits au dossier qu'Apple appliquerait, en imposant la sollicitation ATT aux acteurs souhaitant pouvoir recourir au suivi de l'activité des utilisateurs sur les sites tiers, un traitement plus rigoureux que celui qu'elle s'appliquerait à elle-même pour des traitements similaires.

163. L'instruction de la saisine au fond permettra toutefois de déterminer si ce traitement constitue ou non une pratique anticoncurrentielle, notamment en ce qu'il produirait de la part d'Apple une forme de discrimination à son profit (ou « *self-preferencing* »).

Google dec. 21-D-11: favoring its own services leads to SP

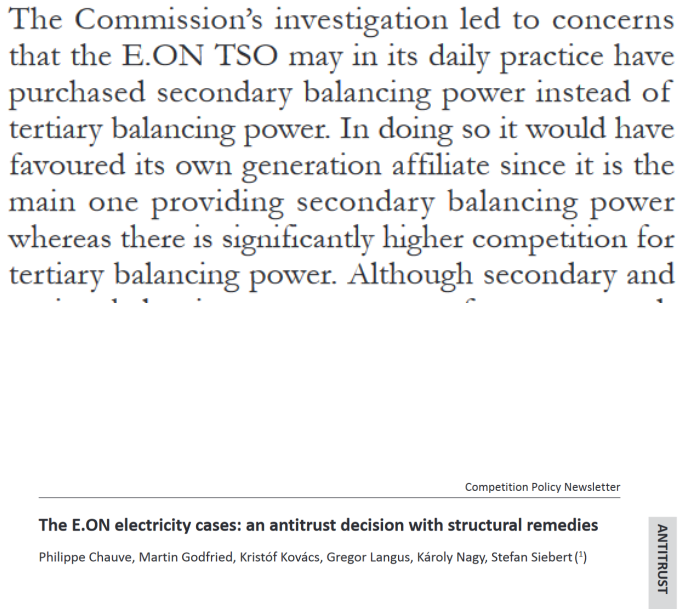
Premier grief

« Il est fait grief aux sociétés Google LLC (anciennement Google Inc.) et Google Ireland Ltd, en qualité d'auteures, et aux sociétés Alphabet Inc. et Google LLC, en qualité de société mère, d'avoir abusé de leur position dominante sur le marché européen des serveurs publicitaires pour éditeurs de sites web et d'applications mobiles en appliquant aux technologies tierces de plateformes de mise en vente d'espaces publicitaires non liés aux recherches des conditions techniques et contractuelles moins favorables que les conditions appliquées à leurs propres technologies.

Google LLC (anciennement Google Inc.) et Google Ireland Ltd ont notamment accordé à la plateforme de mise en vente d'espaces publicitaires Doubleclick Ad Exchange, désormais intégrée à Google Ad Manager, des conditions préférentielles pour l'achat des inventaires gérés par le serveur publicitaire Doubleclick for Publishers, désormais intégré à Google Ad Manager.

Autorité de la concurrence

Nihil novi sub sole: old cases



The Commission's investigation led to concerns that the E.ON TSO may in its daily practice have purchased secondary balancing power instead of tertiary balancing power. In doing so it would have favoured its own generation affiliate since it is the main one providing secondary balancing power whereas there is significantly higher competition for tertiary balancing power. Although secondary and

Competition Policy Newsletter

The E.ON electricity cases: an antitrust decision with structural remedies

Philippe Chauve, Martin Godfried, Kristóf Kovács, Gregor Langus, Károly Nagy, Stefan Siebert (1)

ANTITRUST

- Case law
  - EU Commission Microsoft 2004 (leveraging through bundling)
  - EU Commission E.On (COM/39.388 German Electricity Wholesale Market, November 26, 2008)
    - Balancing case
  - French Competition Authority 10-MC-01 *Navx* decision (30 June 2010)

A debate

- Should we ban self-prefencing?
- Senator Elisabeth Warren's proposal of regulating "platform utilities" (8 March 2019)
  - Marketplaces with an annual global revenue of $25 billion or more
  - If you own the platform, you cannot compete on it
- Law proposals of the US House Judiciary Committee: Anti-Monopoly Agenda (June 2021)
- Implementing an effects-based approach (case by case analysis by considering pro-efficiency effects)
- Limiting the prohibition to obvious anticompetitive cases
  - Exclusion of a specifically named competitor without objective explanation
  - Active inoperability – taking active step to render a service no longer interoperable