Article 102 TFEU as a Tool To Enforce Algorithmic Discrimination

Of End Consumers

Dr. Lena Hornkohl, Senior Research Fellow Max Planck Institute Luxembourg
A. Introduction

In this article, I discuss the role of EU abuse of dominance law as a tool to enforce algorithmic discrimination of end consumers.

How we will deal with the power vested in new technology and the growing economic power enjoyed by large digital corporations is one of the defining questions of our time. The increasing power often coincides with problematic anti-competitive behaviour. One example of such problematic behaviour is algorithmic discrimination of end consumers, which unites two important developments: (i) the direct interaction of dominant digital companies with end consumers on digital markets, and (ii) the usage of new and ever-evolving technology, such as machine-learning algorithms.

In this article, I investigate to what extent the versatile instrument of individual enforcement of EU abuse of dominance law can play a role. Some solutions for algorithmic discrimination have already been proposed outside of competition law, from regulation to individual enforcement of data protection, anti-discrimination and employment law. While some authors have discussed the interrelation of algorithms, big data, personalised pricing, and abusive discrimination, the digital economy's


technological developments have not been considered to the full extent in abuse of dominance law, and enforcement in practice is inexistent.

To this end, I first discuss how algorithms enable discrimination against end consumers. In the section, I focus on personalised conditions as a special form of discrimination and other examples of algorithmic abusive discrimination. After that, I explain the current EU abusive discrimination law approach and its take on algorithmic discrimination towards end consumers.

In the following section, I demonstrate that Article 102 TFEU can be used against discrimination of final consumers. I propose a new angle based on new categories of abusive discrimination. As I argue, algorithmic discrimination of end consumers constitutes an exploitative abuse in the sense of Article 102 TFEU. Concerning the categories, I propose that the first category only focuses on personalised pricing based on the consumer's individual willingness to pay and disregards other discriminatory conduct. The second category focuses on discrimination involving a geographical element, i.e. discrimination on the grounds of nationality and discriminations aimed at partitioning the single market as well as measures facilitating and reinforcing such conduct. The third category covers socio-political discrimination, i.e. all discrimination based on sex, race, colour, etc.

B. Algorithmic discrimination towards end consumers in the digital era

On digital markets today, end consumers regularly buy on marketplaces of dominant undertakings or use undertakings' digital platforms for social media or search queries. These platforms use or are often built on machine learning algorithms that determine the conditions of transactions. The main goal of machine learning algorithms is to discover patterns in data. Machine learning algorithms permit algorithmic models to increase their performance through learning from example.4

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3 This article relates to and draws from a longer research on a new framework for abusive discrimination in general. In this article, I turn to algorithmic discrimination as the most important form of abusive discrimination in practice.

4 See, generally, Shai Shalev-Shwartz and Shai Ben-David, ‘Understanding machine learning: From theory to algorithms’ (Cambridge University Press 2014).
Where algorithms are used to set prices or determine other transaction conditions, they can achieve a highly sophisticated differentiation of prices and other conditions and can divide end consumers into certain categories. Accordingly, several aspects of algorithms have been described as particularly problematic and potentially entailing abusive anti-competitive discriminatory behaviour. Algorithmic discrimination refers to those discriminatory acts that are based on decisions made by machine learning algorithms.\(^5\) Reported examples range from personalised pricing and advertisings, on the one hand, to other differential treatments based on ethnicity, age and gender and more, on the other hand.\(^6\) Personalised pricing and other forms of price discrimination\(^7\) are used increasingly in the digital context, as data mining and big data analysis allow companies better to assess consumers' individual preferences and reservation prices. Next to personalised prices, also other personalised conditions and targeted advertising could be problematic.\(^8\)

Next to discrimination in the context of personalisation, big data analysis also makes it easier to determine the nationality, location, sex, religion, etc., of consumers and discriminate based on these features. While algorithms are meant to reduce human biases,\(^9\) human biases can also be perpetuated and aggravated through them.\(^10\) Biases can occur in modelling, training and usage of algorithms.\(^11\)

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7 See Botta and Wiedemann (n 2), 3383, 384.  
8 This paper refers largely to price discrimination but the concepts mutatis mutandis apply also to other conditions of transactions.  
11 See for an overview of biases and a corresponding taxonomy, David Danks and Alex J London, ‘Algorithmic Bias in Autonomous Systems’ in Carles Sierra (ed), Twenty-Sixth International Joint
When they appear in the modelling of the algorithm, they are deliberately introduced.\textsuperscript{12} In modelling, algorithmic processing bias, for example, is the use of a statistically biased estimator in the algorithm.\textsuperscript{13} There are sometimes good reasons to introduce such a statistically biased estimator, for example, when it is used to offset a small sample size in the training data.

The training data itself might also be a source for biases. Training data representing experience should help the algorithm to find the appropriate answer.\textsuperscript{14} If the training data is influenced by historical biases or certain groups of the population are misrepresented in the sample, algorithms will very likely learn to make biased decisions.\textsuperscript{15} In the case of the so-called unequal ground truth, in training, discrimination can happen even if the training data is unbiased. Ground truth as used in the context of machine learning algorithms means checking the results of machine learning for accuracy against the real world.\textsuperscript{16} With ground truth, machine learning tries to achieve the best available approximation of reality. If data relating to capacities, risks or other target variables does not accurately represent the characteristics of different populations, i.e., represents an unequal ground truth, the algorithm will also take a biased decision.\textsuperscript{17}

Lastly, biases can arise if a specific algorithm is used in a situation for which it was not designed.\textsuperscript{18} A so-called transfer context bias can materialise if an algorithm designed to


\textsuperscript{12} See generally to the question of biased processes Toon Calders and Indrė Žliobaitė, ‘Why Unbiased Computational Processes Can Lead to Discriminative Decision Procedures’ in Bart Custers and others (eds), \textit{Discrimination and Privacy in the Information Society: Data Mining and Profiling in Large Databases} (Springer 2013).

\textsuperscript{13} Danks and London (n 11).

\textsuperscript{14} See Shalev-Shwartz and Ben-David (n 4), 19, 33.

\textsuperscript{15} See Hacker (n 1), 1147 and Danks and London (n 11) with further examples of biased training data.


\textsuperscript{17} Hacker (n 1), 1148; Ferrer Aran and others (n 11).

\textsuperscript{18} Ferrer Aran and others (n 11).
predict an outcome in a given population group is applied to a different population group with different variables.\textsuperscript{19}

C. The current approach in EU abusive discrimination law and algorithmic discrimination towards end consumers

Several regulatory instruments and proposals close to competition law deal with certain specific aspects of abusive algorithmic discrimination. Art. 7(1) P2B-Regulation,\textsuperscript{20} for example, obliges providers of online intermediation services that their terms and conditions need to contain a description of any differentiated treatment. Furthermore, Article 6(1)(k) of the recently proposed Digital Markets Act\textsuperscript{21} requires gatekeepers to "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". Still, these regulatory instruments do not focus on algorithmic discrimination of end consumers.

Competition law, in particular abusive of dominance, could fill this gap but does not play a role at the moment. In case a dominant company uses algorithms to discriminate vis-à-vis end consumers, be it in the form of personalised pricing or other forms of differentiation, this behaviour could constitute an exploitative abuse\textsuperscript{22} in the sense of Article 102 TFEU. In this section, I will, first, explain the current case law and, second, demonstrate that in applying current theories and enforcement practices of Article 102 TFEU and its subparagraph c, enforcement of abusive algorithmic discrimination of end consumers seems unlikely.

\textsuperscript{19} Danks and London (n 11).
\textsuperscript{22} Exclusionary conduct focuses on conduct directly harming competitors of the dominant undertaking, only indirectly harming consumers, while an exploitative abuse directly harms customers (or suppliers) or consumers, see generally European Commission, Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [2009] OJ C 45/7 (Commission Guidance on Article 102); also Pinar Akman, 'The Role of Exploitation in Abuse under Article 82 EC' [2009] CYELS 165.
I. The fragmented abusive discrimination case law

Abusive discrimination, in general, has so far primarily been assessed under Article 102c TFEU. Only in very few older cases, the Commission used Article 102 TFEU directly and, surprisingly, often when final consumers were affected by the discrimination. One example is the 1998 Football World Cup case\(^\text{23}\), where the organisers required spectators to have an address in France in order to be able to purchase tickets for the world cup. Another example is the Deutsche Post decision\(^\text{24}\), where mail originating from Germany was given preferential treatment over letters having a foreign origin. Both constituted abuses in the view of the European Commission.

For Article 102c TFEU, the existing case law is greatly fragmented and undogmatic. Only essential prerequisites are widely accepted: a dominant company must apply dissimilar conditions to equivalent transactions or equivalent conditions to different transactions.\(^\text{25}\) The dominant undertaking can objectively justify discrimination,\(^\text{26}\) although justification is rarely accepted.\(^\text{27}\)

The further conditions of abusive discrimination for a long time were less straightforward in case law. According to Article 102c TFEU, a discriminatory abuse of a dominant position consists of "applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage". The wording of this specific subparagraph c of Article 102 TFEU actually covers only discrimination involving exploitative secondary line injuries\(^\text{28}\) of the dominant undertakings' customers.\(^\text{29}\) The fact that "trading parties" should be placed at a "competitive disadvantage" shows that Article

\(^\text{27}\) Botta and Wiedemann (n 2), 404.
\(^\text{28}\) Primary-line injuries cause harm on the level of the dominant firm while secondary-line injuries cause harm on the downstream market(s), see, inter alia, Layne-Farrar and Stuart (n 25), para 9.2.
102c TFEU is not aimed at protecting the dominant undertakings' rivals or final consumers but the customers of dominant undertakings.\(^{30}\) Concerning "trading party" mainly, the Treaty could have otherwise used the term "undertaking" like other provisions.\(^{31}\) Final consumers can also not compete with one another and, ergo, cannot be placed at a "competitive disadvantage" and are not "trading partners".\(^{32}\)

Nevertheless, the Court and the Commission have traditionally used Article 102c TFEU to address all kinds of abusive discrimination without a clear framework and by openly disregarding the conditions of Article 102c TFEU. Still, it did not apply Article 102c TFEU on discriminations vis-à-vis end consumers. Beyond that, many different scenarios were enforced under Article 102c TFEU. In the famous United Brands\(^ {33}\) and other following cases,\(^ {34}\) neither the Commission nor the Court paid any attention to the provision's competitive disadvantage criterion. Instead, the assessment often focused on discrimination based on nationality and the conduct's market partitioning effects.\(^ {35}\) In other instances, the Commission and CJEU based exclusionary discrimination cases on Article 102c TFEU, sometimes together with other subparagraphs, such as Article 102a or

\(^{30}\) Geradin and Petit (n 29), 9.

\(^{31}\) See hereto also Pinar Akman, ‘To Abuse, or not to Abuse: Discrimination between Consumers’ [2007] EL Rev 492, 498.

\(^{32}\) John Temple Lang and Robert O’Donoghue, ‘Defining Legitimate Competition: How to Clarify Pricing Abuses Under Article 82 EC’ [2002] Fordham Int’l LJ 83, 115; Geradin and Petit (n 29), 9; Damien Gerard, ‘Price Discrimination Under Article 82 (2) (C) Ec: Clearing Up the Ambiguities’ Global Competition Law Centre Research Paper on the Modernisation of Article 82 EC 2005, 17; disagreeing Akman (n 31), 498, who argues that consumer can be in competition with one another; discussed also by Botta and Wiedemann (n 2), 390, who cautiously advocate to include consumers.


\(^{35}\) Layne-Farrar and Stuart (n 25), para 9.87.
b TFEU at the same time.\textsuperscript{36} These involve exclusionary primary-line\textsuperscript{37} and secondary-line\textsuperscript{38} discrimination cases. Even in most of the actually enforced exploitative secondary-line injury cases, exclusionary or primary-line conduct was addressed simultaneously.\textsuperscript{39} In practice, the Commission tends to focus on exclusionary cases and does not use Article 102c TFEU following its actual purpose.

Tides turned with the famous 2018 \textit{MEO}-judgment\textsuperscript{40}, where the CJEU, for the first time, assessed in detail the "competitive disadvantage"-criterion and interpreted Article 102c TFEU closer to its wording. The Court took an effects-based approach. It held that "it is necessary to examine all the relevant circumstances in order to determine whether price discrimination produces or is capable of producing a competitive disadvantage" by "distorting competition" between downstream trading parties,\textsuperscript{41} a concept which also clearly seems to cover entities that can compete with one another, i.e. not end consumers. The judgment also clarified that the threshold to prove a competitive disadvantage is lower than in an exclusionary case. "Capable" of distorting competition is lower than the Commissions standard for exclusionary conduct as laid down in the Commission Guidance on Article 102, which uses the word "likely".\textsuperscript{42} Moreover, as mentioned in MEO, a "distortion" of competition also constitutes a lower threshold than a "restriction" of competition.\textsuperscript{43}

\footnotesize{\textsuperscript{36} \textit{Irish Sugar v Commission} (n 34); \textit{British Airways v Commission} ECLI:EU:T:2003:343; C-95/04 \textit{P British Airways v Commission} ECLI:EU:C:2007:166.

\textsuperscript{37} See case 85/76 \textit{Hoffmann-La Roche v Commission} ECLI:EU:C:1979:36; \textit{British Airways v Commission} ECLI:EU:C:1975:174; T-24/93, T-25/93, T-26/93 and T-28/93 \textit{Cooparitaire Vereining "Suiker Unie" UA and others v Commission} ECLI:EU:T:1996:139; \textit{British Airways v Commission} (n 36); \textit{British Airways v Commission} (n 36); C-209/10 \textit{Post Danmark I} ECLI:EU:C:2012:172; see also \textit{Van den Bergh Foods Limited} (Case 98/531) Commission Decision [1998] OJ C 246/1, where the wording of Article 102c TFEU is used but the provision itself is not mentioned.

\textsuperscript{38} \textit{British Airways v Commission} (n 36); \textit{British Airways v Commission} (n 36); T-301/04 \textit{Clearstream v Commission} ECLI:EU:T:2009:317.

\textsuperscript{39} \textit{British Airways v Commission} (n 36); \textit{British Airways v Commission} (n 36).

\textsuperscript{40} \textit{MEO – Serviços de Comunicações e Multimédia SA v Autoridade da Concorrência} (n 26).

\textsuperscript{41} ibid, para 28, 37.

\textsuperscript{42} Commission Guidance on Article 102, para 19; see hereto Cyril Ritter, ‘Price discrimination as an abuse of a dominant position under Article 102 TFEU: MEO’ [2019] CMLR 259, 269; Botta and Wiedemann (n 2), 392.

\textsuperscript{43} Ritter (n 42), 271; Botta and Wiedemann (n 2), 392.}
No new development or enforcement has taken place since MEO to clarify the judgment, which is quite demonstrative for the Commissions enforcement priorities on exclusion. In this context, it is worth mentioning that, contrary to the other cases mentioned above, MEO is a preliminary ruling case and does, ergo, not stem from Commission enforcement. Yet, MEO remains the current standard, while it is unclear if the Commission would not find a loophole to continue the quite extensive prior application of Article 102c TFEU.

II. No enforcement of abusive discrimination towards end consumers

Under the current approach, especially after the MEO judgment, algorithmic discrimination towards end consumers will not play a major role in Article 102c TFEU enforcement. As mentioned, the focus of the Commission’s enforcement policy of Article 102c has been exclusionary, only rarely exploitative conduct; mostly, both have been assessed together. In general, for Article 102 TFEU, the Commission gives priority to exclusionary, seldomly enforcing exploitative conduct. Even if the Commission returned to broader enforcement of, for example, geographic discrimination cases against the clear wording of Article 102c TFEU, this would not help for algorithmic discrimination of end consumers. Final consumers have, rightfully in the context of Article 102c TFEU, played no role in the actual enforcement practice. As mentioned above, proper application of Article 102c TFEU close to its wording would also exclude final consumers. Article 102 TFEU directly could apply for final consumers. The rare application cases, the mentioned 1998 French World Cup case and the Deutsche Post case, did involve discrimination against final consumers. Yet, the Commission did not openly discuss the issue that Article 102 TFEU was applied towards end consumers. It also seems that the Commissions motives in enforcing these cases lie more in the internal market than the competition sphere, which might be justified as further discussed below. Nevertheless, the cases are quite old and, taking into account the general Commission focus on

46 Botta and Wiedemann (n 2), 389.
exclusion rather than exploitation. It comes at no surprise that, so far, no individual enforcement case of abusive algorithmic discrimination of end consumers exist.

**D. The missed potential of Article 102 TFEU – A future approach**

The lack of individual enforcement of abusive algorithmic discrimination ignores the huge capabilities of algorithms to perpetuate or exacerbate existing biases and discriminate in general. The current take further underestimates the possibility that Article 102 TFEU could play in addressing algorithmic discrimination by dominant companies with powerful competition tools. This is even more surprising, as we have witnessed the emergence of giant internet companies in the last 10 to 20 years, who have become quasi-monopolies with cross-market significance and powerful technology. These companies more and more deal with final consumers themselves, an attribute particular to digital markets.

In this section, I propose to overcome the current shortcomings and explain how Article 102 TFEU can be used to its full potential with regard to algorithmic discrimination vis-à-vis end consumers. First, I argue that abusive discrimination of end consumers constitutes an exploitative abuse in the sense of Article 102 TFEU directly. Second, I discuss that algorithmic discrimination is an abusive conduct in the sense of Article 102 TFEU. Yet, I do not propose that every problematic behaviour constitutes an abuse of dominance. In this article, I simply want to demonstrate the possibilities for further enforcement. A case-by-case assessment as well as the possibility for objective discrimination, as also indicated in the special subparagraph c of Article 102 TFEU, should remain, even if Article 102 TFEU is used directly.

**I. Exploitative abusive discrimination against end consumers**

I argue that Article 102 TFEU covers exploitative abusive discrimination against end consumers, such as algorithmic discrimination.

The established case law and wording of Article 102c TFEU holds that end consumers are not covered by subparagraph c. Even though one could still try to interpret "trading parties" in a way to include final consumers, however, final consumers cannot be placed at a "competitive disadvantage" in the sense of MEO and per the wording of Article 102c
The competing relationship that Akman\textsuperscript{47} refers to and that might exist between end consumers to purchase a product is not the competitive relationship that the "competitive disadvantage" criterion refers to because the consumers are not active on a market in the sense of Article 102c TFEU.

However, this does not entail that discrimination of end consumers falls outside of Article 102 TFEU altogether and that consumers cannot be harmed by abusive discriminatory behaviour, on the contrary. The following four arguments demonstrate that exploitative abusive discrimination of end consumers should fall in the scope of Article 102 TFEU directly.

First, as a legal argument, Article 102 TFEU can be used directly to cover end consumers' discrimination. Article 102c TFEU is only an example (\textit{Regelbeispiel}) of abusive conduct. Subparagraphs a-d do not exhaustively regulate what constitutes abuse.\textsuperscript{49} Article 102 TFEU directly remains relevant and captures non-typical abuses. While only very few older cases mention Article 102 TFEU directly itself in a discrimination context,\textsuperscript{50} there are at least precedents.

Second, historically, the negotiation documents for the Treaty of Rome show that the original intention of the abuse of dominance provision was first and foremost to prohibit exploitation, also involving final consumers.\textsuperscript{51} The drafter's intention was not to intervene with dominance \textit{per se} but to protect those who dealt with a dominant company and its abusive practices directly, i.e. to cover exploitation.\textsuperscript{52} In case of abusive discrimination in digital markets, dominant companies face end consumers.

\textsuperscript{47} Akman (n 31), 497.
\textsuperscript{48} ibid, 498, 499.
\textsuperscript{50} See 1998 Football World Cup (n 23); Deutsche Post (n 24).
\textsuperscript{52} Akman (n 51), 295.
In the drafting process, the early German proposal prevailed, according to which only an abuse of dominance should be prohibited.\(^\text{53}\) According to von der Groeben, the later first European Commissioner for Competition, exclusionary abuses were not supposed to be covered by the abuse of dominance provision but by rules of "unfair competition" regulated separately from the abuse of dominance prohibition.\(^\text{54}\) While the final text included exclusion, the delegations clearly accepted the concept of exploitation for abuse of dominance.\(^\text{55}\) The final text demonstrates that specifically in the explanatory subparagraphs of Article 102 TFEU.\(^\text{56}\) The current focus of Article 102 TFEU and abusive discrimination on exclusionary conduct is misplaced.

Third, the Commission's consumer welfare approach taken seriously supports more rigorous enforcement of abusive behaviour aimed directly at consumers.\(^\text{57}\) In the last 20 years, the Commission has formally adopted a consumer welfare approach to the interpretation of competition law, including abuse of dominance. In the Commission Guidance on Article 102, for example, the Commission stated that they would "focus on those types of conduct that are most harmful to consumers."\(^\text{58}\) In some cases, the Court has also followed a consumer welfare approach, even though not as stringent as the Commission.\(^\text{59}\) This is in line with the EU Treaties' overall objective to consider consumer protection while defining other policies.\(^\text{60}\) Applying the consumer welfare standard

\(^{53}\) Regierungskonferenz für den gemeinsamen Markt und Euratom, Synoptische Darstellung über die Wettbewerbsregeln für die Unternehmen (Zweiter Teil, Titel II, Kapitel 1, Abschnitt 1, Artikel 40-43 des Artikelentwurfs Mar. Com. 17) Brussels, 9 October 1956.


\(^{55}\) Schweitzer (n 51), 136.


\(^{58}\) Commission Guidance on Article 102, para 5, 19.

\(^{59}\) C-52/09 Konkurrensverket v TeliaSonera Sverige ECLI:EU:C:2011:83, paras 21-24; see hereto also Lianos (n 57), 32–37.

\(^{60}\) Article 12 TFEU.
consistently, discrimination that is harmful to consumers should be prohibited. This
should also entail digital discrimination by undertakings directly towards end consumers.
Finally, a practical argument relates to the different interactions on digital markets. In the
brick-and-mortar world before the rise of digital giants, dominant companies rarely dealt
with end consumers directly. Conversely, consumers faced non-dominant intermediaries.
Thus, discrimination of end consumers was seldom viewed as problematic in the past
and, therefore, not an enforcement priority. Now, on digital markets, dominant digital
companies directly interact with final consumers and, thus, final consumers are directly
exposed to possible discriminatory or other harmful conduct of digital companies.
Abusive discrimination law could give the appropriate remedy.

II. Algorithmic discrimination as abusive conduct

Building on the before, in this section, I assess whether abusive discrimination law is the
appropriate tool in addressing such conduct manifested or supported by algorithms and
how abusive discrimination law can be applied to these categories. I take the view that
algorithmic discrimination can constitute an abusive conduct in the sense of Article 102
TFEU. I propose three categories and discusses their implications: (1) personalised
pricing, (2) geographic discrimination, and (3) socio-political discrimination. For all
categories, undertakings remain the right to justify discrimination based on objective
grounds.

1. Personalised pricing as an exploitative abuse under Article 102 TFEU

Concerning personalised pricing based on the consumers' individual willingness to pay, I
broadly support views taken in the academic literature before. Economists agree that
price discrimination generally has ambiguous effects on consumer welfare. When it
comes to fist degree price discrimination, personalised pricing, economists concur that

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61 Townley, Morrison and Yeung (n 2); Maggiolino (n 2); Graef (n 2); Botta and Wiedemann (n 2).
62 First-degree or perfect price discrimination means that a firm can sell different units of output
for different prices according to customers' individual willingness to pay. Second-degree price
discrimination means that a firm sets a menu of prices for different versions of the product. Third-
degree price discrimination means that a firm sets different prices for different groups of
customers with certain observable characteristics.
undertakings are able to extract all consumer surplus because they can charge the maximum a consumer is willing to pay.\textsuperscript{63}

Nevertheless, past analysis has disregarded the (i) historical foundations of Article 102 TFEU and (ii) several essential current developments. Regarding (i), the prohibition of discrimination historically played a major role in abuse of dominance law. In the ECSC Treaty as well as in the drafting process of the Treaty of Rome, the prohibition of discrimination was much broader than the wording of Article 102c TFEU nowadays suggests. Article 60(1) ECSC Treaty covered discriminations by all undertakings, not just dominant ones.\textsuperscript{64} During the drafting of the Treaty of Rome, differences arose between the German delegation, who wanted to focus on price discrimination\textsuperscript{65} and the French delegation, who wanted a broader discrimination provision\textsuperscript{66}. Compromises were found in including only subparagraph c of today’s Article 102 TFEU.\textsuperscript{67} Nevertheless, this historical context demonstrates the essential role of abusive non-discrimination law that directly protects those who deal with a dominant company.

Concerning (ii), the technological developments of the digital economy already touched upon above have not been taken into account to the full extent in abusive discrimination law. Past authors under-estimated the increasing possibilities for first-degree price discrimination in personalised pricing.\textsuperscript{68} Algorithmic big data analytics have increased the possibility to shift to first-degree price discrimination because undertakings are gaining a tremendous amount of information to differentiate the price for each consumer better and accurately.\textsuperscript{69} Today, undertakings still do not have all the information on their

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\item Article 60(1) ECSC prohibited “pricing practices […], in particular: […]; discriminatory practices involving, within the common market, the application by a seller of dissimilar conditions to comparable transactions, especially on grounds of the nationality of the buyer. […].”
\item Schweitzer (n 51), 132.
\item Entwurf eines Protokolls über die Sitzungen der Arbeitsgruppe vom 3.-5.9.1956 in Brüssel, 10 September 1956.
\item Schweitzer (n 51), 132.
\item See still Gerard (n 32), 5; Geradin and Petit (n 29), 6, who state that perfect price discrimination is unlikely to occur in practice.
\item Ezrachi and Stucke (n 2), 485, 486; White House, ‘Big data and differential pricing’ Report published in February 2015, available at:
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customers and, thus, individual pricing might still be not possible. However, big data analytics and their ever-growing advancements are more and more able to set prices ever closer to the consumers' reservation price. The closer undertakings technology comes in estimating the consumers' reservation price, the more consumer surplus can be captured by firms.

An assessment of conduct involving personalised pricing or other personalised conditions needs to follow sound economic arguments. In the vein to honour the above-indicated consumer welfare approach, I propose the following steps. As a first step, the question needs to be if discriminatory behaviour coincides with output decrease. In that case, discrimination does not even lead to further inclusion of consumers who previously could not afford the product or service. Thus, if output decreases, such discrimination is harmful to consumers and should, in any case, be unlawful. However, with personalised pricing, output usually increases because more consumers might be able to afford the product.

Then, the second step must focus on aggregated consumer welfare and assess the extent to which the dominant undertaking can extract the overall consumer surplus. Any discrimination that leads to a transfer from aggregated consumer welfare to producer welfare should not be allowed under a consumer welfare approach. As mentioned above, economists agree that undertakings can extract all consumer surplus when it comes to first degree price discrimination. Due to its negative effect on consumer welfare, perfect price discrimination should usually be prohibited under Article 102, in the context of a

70 Ezrachi and Stucke (n 2), 96.
71 Consumer surplus is the excess of a price a consumer would be willing to pay rather than go without the product, over what the consumer actually does pay. Producer surplus is the difference between the amount a producer is paid for a product and the producer's cost of providing it, i.e. the profit. In economics, consumer welfare is often used as a synonym for consumer surplus.
72 Equally Graef (n 2), 545, Doris Hildebrand, 'The equality and social fairness objectives in EU competition law: The European school of thought' [2017] Concurrences 1, 8; see also Maggiolino (n 2).
73 OECD, 'Price Discrimination - Background note by the Secretariat' DAF/COMP(2016)15, 10.
case-by-case assessment and by considering the possibility for objective justification. Outside of digital markets, as explained, first-degree or perfect price discrimination is still a theoretical problem. Nevertheless, as indicated above, with the digital economy’s mentioned personalised pricing tools, undertakings can set prices closer and closer to the consumers’ reservation price. The closer the undertakings get to consumers’ reservation price, the more problematic the conduct must be concerning abusive discrimination because firms can increasingly capture the consumer surplus, an effect also condemned by economists dealing with price discrimination.

2. Geographic discrimination and Article 102 TFEU

In the context of algorithmic discrimination towards end consumers, I have demonstrated above that the use of algorithms and big data analysis can contain tremendous potential for geographic discrimination. With such tools, it becomes increasingly easy to determine end consumers’ domicile, origin and nationality and distinguish between customers based on these features. Furthermore, the above-mentioned algorithmic biases could result in such a geographic discrimination, for example, when algorithms make biased decisions due to a misrepresented group of the population from another Member State. Yet, Article 102 TFEU’s usage for geographic discrimination has previously been criticised.75 Here, I take a different standpoint and argue that geographic discrimination manifested or supported by algorithms can be enforced under Article 102 TFEU.

It could be argued that internal market law itself constitutes a valuable tool for addressing such geographic discriminations and one does not need Article 102 TFEU.76 However, the applicability of internal market law to private undertakings is highly disputed in jurisprudence and academia.77 While valuable arguments can be made to include private

75 Geradin and Petit (n 29), 41; Gerard (n 32), 27; OECD (n 73), 30.
76 OECD (n 73), 30.
undertakings in internal market law,\textsuperscript{78} this does not exclude the application of Article 102 TFEU. Competition law, including abuse of dominance, is the Treaty instrument specifically designed to tackle the problematic behaviour of undertakings. \textit{A fortiori}, dominant undertakings should not be exempt from their special responsibility not to abuse their dominant power.

Such an interpretation also coincides with the historical and systematic interpretation of abusive discrimination and its close connection to the internal market objective of competition law and Article 102 TFEU especially. The creation of a common market (now internal market) was key to the EU founding fathers.\textsuperscript{79} They wanted to achieve political integration and European cohesion through economic integration. The creation of a common market alone was not sufficient, though. In the \textit{Spaak Report} as well as during the negotiations of the Treaty of Rome, the role of competition policy to achieve the common market objective was stressed multiple times.\textsuperscript{80} Competition law was understood as being complementary to the common market. The inclusion of competition rules in the Treaty aimed at preventing private undertakings from re-erecting the barriers to trade that would otherwise fall because of the free movement rules.\textsuperscript{81} Even today, competition law is deeply connected to the internal market, as the competition rules' wording underline the fundamental connection between both concepts. Article 101(1) and Article 102(1) TFEU refer to the incompatibility with the internal market.\textsuperscript{82}

Thus, geographic discriminations and, in particular, the partitioning of the internal market must be relevant to Article 102 TFEU and abusive discrimination. Considering the role of

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\textsuperscript{78} See for an overview of arguments Müller-Graff (n 77).


\textsuperscript{81} Intergouvernemental Committee of the Messina Conference, Report of the Heads of Delegation to the Ministers of Foreign Affairs (Spaak Report), 21 April 1956, 53.

competition law and abuse of dominance for the maintenance of the internal market, abusive algorithmic geographic discrimination should constitute a distinct category of abuse under Article 102 TFEU. As internal market law eradicated cross-border discriminations by Member States, discrimination by dominant undertakings should not frustrate the internal market. Still, here the possibility to objectively justify discriminatory conduct should remain.

3. Socio-political discrimination and Article 102 TFEU

Finally, algorithmic discrimination can take the form of socio-political discrimination. Socio-political discrimination covers all discrimination based on grounds such as sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation, which have not been discussed in the context of Article 102 TFEU yet. I argue that socio-political algorithmic discrimination should fall under Article 102 TFEU as well.

In that regard, non-economic goals need to be included in EU abuse of dominance and abusive discrimination law. Concerning algorithmic abusive discrimination, especially fairness and social cohesion, play an essential role. That does not represent that economic reasons play no role. It merely brings abuse of dominance law in accordance

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83 See Article 21 Charter of Fundamental Rights of the European Union.
85 See, on fairness and social cohesion in the competition context, Jonathan B Baker and Steven C Salop, ‘Antitrust, Competition Policy, and Inequality’ [2015] Geo L J 1; Lina Kahn and Sandeep Vaheesan, ‘Market Power and Inequality: The Antitrust Counterrevolution and its Discontents’ [2017] Harv Law Policy Rev 235; Alfonso Lamadrid de Pablo, ‘Competition Law as Fairness’ [2017] JECLAP 147; Hildebrand (n 72); Francesco Ducci and Michael Trebilcock, ‘The Revival of Fairness Discourse in Competition Policy’ [2019] Antitrust Bull 79; Lianos (n 84); Niamh Dunne, ‘Fairness and the Challenge of Making Markets Work Better’ [2020] MLR 1; see also Ezrachi (n 84), 53, who held that EU competition law may be applied and developed in the light of other policy concerns such as public health, social protection, consumer protection, environmental concerns, investment, transportation, and regional development.
86 Baker and Salop (n 85), 25.
with other goals of the Treaty. Furthermore, including non-economic goals, such as fairness, must not necessarily collide with economic efficiency, but fairness norms could be used to select among various efficient scenarios.\(^{87}\)

Several arguments can be made to include non-economic goals in abuse of dominance law. First, systematic and historic arguments call to include non-economic goals in competition law and Article 102 TFEU in particular.\(^{88}\) The competition provisions do not stand on their own but are part of a more general European legal order and constitutional framework.\(^{89}\) Protocol No 27 on the internal market and competition refers to Article 3 TEU. Article 3 TEU mentions various non-economic goals as the Union’s general goals that could have relevance in Article 102 TFEU. As general goals of the Union, they also have to be taken into account when it comes to competition policy. The CJEU equally has underlined that competition law plays a role in accomplishing the broader tasks of the Union.\(^{90}\)

Second, recent developments in business ethics must be applied to abuse of dominance law. In business ethics, calls have been made to understand corporations or firms as political actors.\(^{91}\) According to this so-called “political theory of the firm”, corporations are not seen as purely economic institutions but also actors within the political arena.\(^{92}\)

Applied to EU law, competition law as the primary EU framework for undertakings should consider the implications and responsibilities companies have for society. For abuse of dominance, in particular, the discussions mentioned above during the drafting of the

\(^{87}\) See in detail Lianos (n 84), 65–72.

\(^{88}\) See in detail Lianos (n 57), 37–46.

\(^{89}\) David J Gerber, ‘Law and the Abuse of Economic Power in Europe’ [1987] Tul L Rev 58, 90; Lianos (n 57), 38; Claassen and Gerbrandy (n 84), 8; Jebsen and Stevens (n 84), 449.

\(^{90}\) See case law cited by Lianos (n 57), 36.


\(^{92}\) Crane, Matten and Moon (n 91).
Treaty of Rome had already concluded that it was not the economic power per se but the misuse of economic power that was viewed as worrisome. If, according to the firm’s political theory, all corporations bear responsibility for their societal impact, a fortiori, dominant undertakings are under such obligation as well.

Again, it could be argued that fundamental rights and anti-discrimination law itself could address socio-political discrimination. The CJEU has held in Egenberger and Bauer that the principle of equality and non-discrimination are enforceable on a horizontal level. However, just like with geographic discrimination, this does not entail that Article 102 TFEU plays no role concerning algorithmic socio-political discrimination.

Concerning abusive algorithmic discrimination, in particular, dominant undertakings’ behaviour can directly affect consumers and society. Consumers naturally are citizens with citizens’ rights and interests besides economic concerns. Due to the growing power of online platforms, the related lock-in and network effects, consumers are also increasingly becoming dependent on them. This is particularly worrisome when taking the overall increasing market concentration levels into account and the accompanying dependencies as well as the large potential for the above-mentioned biases.

Discrimination and different treatment of consumers by such companies have a significant impact on consumers. Therefore, such dominant companies have significant influence and power over consumers, which they must use responsibly. This also includes

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93 Ciepley (n 91), 141.
94 Case C-414/16 Vera Egenberger v Evangelisches Werk für Diakonie und Entwicklung e.V. ECLI:EU:C:2018:257.
95 Case C-569/16 and C-570/16 Stadt Wuppertal v Maria Elisabeth Bauer and Volker Willmeroth v Martina Broßonn ECLI:EU:C:2018:871.
97 See Ducci and Trebilcock (n 85), 82.
responsibility for non-economic concerns. Considering the societal responsibility and impact of dominant internet companies and consumers increasing dependence on them, Article 102 TFEU cannot shirk its responsibility.

**E. Conclusion**

Technological developments will give dominant digital companies further possibilities to recourse to algorithmic discriminatory conduct, such as personalised pricing. Moreover, algorithms are prone to biases affecting final consumers. In this article, I have demonstrated how Article 102 TFEU can be used as a tool to enforce problematic conduct. In that sense, personalised pricing, geographical and socio-economic abusive algorithmic discrimination of end consumers by dominant digital companies can constitute an abuse of dominance under Article 102 TFEU directly, subject to the possibility for objective justification in a case-by-case assessment.

Open questions remain here. To ameliorate enforcement, guidelines by competition authorities or even reversals of the burden of proof could be discussed. Even if the Commission would not want to give up its enforcement priorities on exclusion, national competition authorities could step in. Moreover, as consumers are the target of the abusive conduct themselves, private enforcement implications need to be considered. In that regard, collective redress through group or representative actions could be an option that would also disburden competition authorities. However, collective consumer redress for competition law is still largely underdeveloped in Europe.