AFFINITY PROFILING AND DISCRIMINATION BY ASSOCIATION IN ONLINE BEHAVIOURAL ADVERTISING

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Affinity profiling - grouping people according to their assumed interests rather than solely their personal traits - has become commonplace in the online advertising industry. Online platform providers use behavioural advertisement (OBA) and can infer very sensitive information (e.g. ethnicity, gender, sexual orientation, religious beliefs) about individuals to target or exclude certain groups from products and services, or to offer different prices.

OBA and affinity profiling raise at least three distinct legal challenges: privacy, non-discrimination, and group level protection. Current regulatory frameworks may be ill-equipped to sufficiently protect against all three harms. I first examine several shortfalls of the General Data Protection Regulation (GDPR) concerning governance of sensitive inferences and profiling. I then show the gaps of EU non-discrimination law in relation to affinity profiling in terms of its areas of application (i.e. employment, welfare, goods and services) and the types of attributes and people it protects.

I propose that applying the concept of 'discrimination by association' can help close some of these gaps in legal protection against OBA. This concept challenges the idea of strictly differentiating between assumed interests and personal traits when profiling people. Failing to acknowledge the potential relationship – be it directly or indirectly - between assumed interests and personal traits could render non-discrimination ineffective. Discrimination by association occurs when a person is treated significantly worse than others (e.g. not being shown an advertisement) based on their

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relationship or association (e.g. assumed gender or affinity) with a protected group.

Crucially, the individual does not need to be a member of the protected group to receive protection. Protection does not hinge on whether the measure taken is based on a protected attribute that an individual actually possesses, or on their mere association with a protected group. Discrimination by association would help to overcome the argument that inferring one's 'affinity for' and 'membership in' a protected group are strictly unrelated. Not needing to be a part of the protected group, as I will argue, also negates the need for people who are part of the protected group to 'out' themselves as members of the group (e.g. sexual orientation, religion) to receive protection, if they prefer. Finally, individuals who have been discriminated against but are not actually members of the protected group (e.g. people who have been misclassified as women) could also bring a claim.

Even if these gaps are closed, challenges remain. The lack of transparent business models and practices could pose a considerable barrier to prove non-discrimination cases. Finally, inferential analytics and AI expand the circle of potential victims of undesirable treatment in this context by grouping people according to inferred or correlated similarities and characteristics. These new groups are not accounted for in data protection and non-discrimination law.

I close with policy recommendations to address each of these legal challenges for OBA and affinity profiling.

Keywords: advertising, algorithmic bias, artificial intelligence, data protection, discrimination, discrimination by association, equality, European Union, fairness, General Data Protection Regulation, group privacy, machine learning, non-discrimination law, privacy, profiling

CONTENTS

I. THE TROUBLE WITH AFFINITY PROFILING[1]

Advertisement practices are nothing new; they reach back to the late 1950's when their primary goal – as it is today –

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was to learn about customers in order to offer them products and services.[2] However, today's advertisements pose new challenges. Digital technologies are now devised to peer further into the needs, interests, and motivations of customers. Behavioural advertising, online profiling and 'behavioural targeting'[3] have become common tactics for suppliers to more effectively[4] offer products[5] to customers in the digital environment.[6]

Modern targeted and behavioural advertisements typically involve advertising networks that connect advertisers and publishers using targeting technologies and associated

PF2\180114, DeepMind Technologies Limited, The Alan Turing Institute, EPSRC grant EP/N510129/1, the Miami Foundation, and the Luminate Group.

[2] Ryan Calo, *Digital Market Manipulation*, 82 GEORGE WASH. LAW REV. 995, at 997 (2013); in general on this topic see ROBERT B. CIALDINI & ROBERT B. CIALDINI, INFLUENCE: THE PSYCHOLOGY OF PERSUASION (2007).

[3] For more details on OBA see Sophie C. Boerman, Sanne Kruikemeier & Frederik J. Zuiderveen Borgesius, *Online behavioral advertising: A literature review and research agenda*, 46 J. ADVERT. 363–376 (2017); Edith G. Smit, Guda Van Noort & Hilde AM Voorveld, *Understanding online behavioural advertising: User knowledge, privacy concerns and online coping behaviour in Europe*, 32 COMPUT. HUM. BEHAV. 15–22 (2014); Steven C. Bennett, *Regulating online behavioral advertising*, 44 J MARSHALL REV 899 (2010); Aleecia McDonald & Lorrie Faith Cranor, *Beliefs and behaviors: Internet users' understanding of behavioral advertising* (2010); Chang-Dae Ham & Michelle R. Nelson, *The role of persuasion knowledge, assessment of benefit and harm, and third-person perception in coping with online behavioral advertising*, 62 COMPUT. HUM. BEHAV. 689–702 (2016).

[4] Sandra C. Matz et al., *Psychological targeting as an effective approach to digital mass persuasion*, 114 PROC. NATL. ACAD. SCI. 12714–12719 (2017); on how companies want to capture our attention to sell goods and services JAMES WILLIAMS, STAND OUT OF OUR LIGHT: FREEDOM AND RESISTANCE IN THE ATTENTION ECONOMY (2018).

[5] The term "Surveillance Capitalism" captures these practices see Shoshana Zuboff, *Big other: surveillance capitalism and the prospects of an information civilization*, 30 J. INF. TECHNOL. 75–89 (2015); SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER (2019).

[6] Calo, *supra* note 3 at 1002-1004; in general on the topic of nudging see RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS (2009).

databases to match individual users to target audiences.[7] User data, background databases and other information can be used to create predictive profiles from data collected by tracking technologies, and explicit profiles from data provided by the user.[8] These profiles are used to offer products to target groups and exclude others, or to offer products at different prices. The perfect match is then found via real time bidding in which advertisers compete against one another to place an advertisement on a publisher's website.

These modern advertising techniques pose a threefold legal challenge: advertising can (1) potentially violate privacy and (2) unlawfully discriminate against users who (3) receive inadequate legal protection as groups. Each of these challenges are unpacked in the remainder of this article.

First, with regard to privacy, the concept of 'affinity profiling', or profiling which does not directly infer sensitive data ("special category data") but rather measures an 'affinity' with a group defined by such data, could render inapplicable the EU General Data Protection Regulation's (GDPR) higher privacy protections against processing of sensitive data (Art 9). Failing to acknowledge a potential relationship between assumed interests and personal traits would render these higher data protection standards inapplicable to 'affinity groups', despite such interests having strong and potentially invasive disclosive power.[9]

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[7] ARTICLE 29 DATA PROTECTION WORKING PARTY, *Opinion 2/2010 on online behavioural advertising, 00909/10/EN WP 171* at 5 (2010), https://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2010/wp171_en.pdf (last visited Mar 22, 2019); Frederik J. Zuiderveen Borgesius, *Personal data processing for behavioural targeting: which legal basis?*, 5 INT. DATA PRIV. LAW 163–176, at 164 (2015); Chris Jay Hoofnagle et al., *Behavioral Advertising: The Offer You Can't Refuse*, 6 HARV POL REV 273, at 275 (2012).

[8] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 8 at 7.

[9] On how Facebook 'likes' can reveal intimate information see Michal Kosinski, David Stillwell & Thore Graepel, *Private traits and attributes are predictable from digital records of human behavior*, 110 PROC. NATL. ACAD. SCI. 5802–5805 (2013); for an overview on what sensitive information can be disclosed using inferential analytics see Christopher Burr, Nello Cristianini & James Ladyman, *An Analysis of the Interaction Between Intelligent Software Agents and Human Users*, 28 MINDS MACH. 735–774 (2018).

Moreover, even if assumed interests are classified as revealing sensitive information, the General Court of the European Court of Justice[10] (ECJ) and legal scholars (see section IV) believe that for these higher protections to apply to inferential analytics, data controllers must have the intention to draw sensitive inferences and be using source data which provides a reliable basis to learn about sensitive data. If these prerequisites are not met, which may be the case in 'affinity profiling', the inferences drawn will not be considered special category data or be subject to the stricter protections enshrined in Art 9.

To ensure that sensitive affinity profiling is classified as a type of sensitive data processing within the scope of the GDPR, these artificial thresholds of intent and reliability would need to be abandoned. For platform providers it is not important to learn sensitive details about one particular user (intention), or to accurately (reliability) place users into groups or audiences (e.g. women). As advertising has a high tolerance for classification errors, it is sufficient that users that seemingly behave similarly enough to the assumed group to be treated as a member of it (e.g. being shown ads for women's shoes).

Second, with regards to EU non-discrimination law, the legal status of 'affinity groups' or groups based on inferred interests remains unclear. I will show that failing to acknowledge the potential relationship – be it directly or indirectly - between assumed interests and personal traits could render non-discrimination regulation ineffective.

I will show that the key question that will face courts and scholars going forward is this: do affinity groups have equivalent legal status to protected groups? For example, would the affinity group 'interested in Muslim culture' have equivalent legal status to the group 'religion'?

Answering this question is critical: if users are segregated into groups and offered or excluded different products,

[10] Case T‑190/10, Kathleen Egan and Margaret Hackett v European Parliament, 2012 E.C.R. I–165, http://curia.europa.eu/juris/document/document.jsf?text=&docid=121109&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=291855 (last visited Jul 31, 2018).

services, or prices on the basis of affinity, it could raise discrimination issues.[11] The legal status of 'affinity groups' thus determines which - if any- type(s) of claim(s) can be made under non-discrimination law.

If this question is answered positively, individuals can appeal to direct discrimination. For direct discrimination to occur, less favourable actions must be explicitly based on protected grounds or attributes (e.g. ethnicity), or a known proxy thereof. To receive relief, a claimant must be part of the protected group ('direct discrimination'). Affinity groups could be seen as equivalent to protected groups on the basis that the affinity group (e.g. 'interested in Muslim culture') is defined against an explicit protected attribute (e.g. 'religion') or an strong proxy for that attribute (e.g. 'headscarf wearer').[12]

If answered in the negative, meaning an affinity group is not seen as equivalent to a protected group, individuals would have to go the route of indirect discrimination. Indirect discrimination can occur when different effects for protected groups result from otherwise 'seemingly neutral provisions, criteria, or practices'[13]. In this case, advertisements shown based on assumed affinities would be treated as a type of 'neutral provision' because affinity groups are not seen as equivalent to protected groups. To establish discrimination

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[11] On how higher prices are offered to lower income populations see Jennifer Valentino-DeVries, Jeremy Singer-Vine & Ashkan Soltani, *Websites Vary Prices, Deals Based on Users' Information*, WALL STREET JOURNAL, December 24, 2012, https://www.wsj.com/articles/SB10001424127887323777204578189391813881534 (last visited Mar 23, 2019); this study "found that ZCTAs with higher percentages of Asian residents were more likely to be quoted one of the higher prices" Jeff Larson, Surya Mattu & Julia Angwin, *Unintended Consequences of Geographic Targeting*, TECHNOL. SCI., at 4 (2015), https://static.propublica.org/projects/princeton-review/princeton-review-methodology.pdf.

[12] See e.g. Case C‑188/15, Asma Bougnaoui, Association de défense des droits de l'homme (ADDH) v Micropole SA, formerly Micropole Univers SA, 2017 E.C.R. I–204, para 31-32, http://curia.europa.eu/juris/document/document.jsf?text=&docid=188853&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=5935273 (last visited Aug 5, 2019) where the Court left open if the ban of a headscarf at the workplace is direct or inidirect discrimination.

[13] This term is used in all EU non-discrimination directives.

under these conditions, the claimant must prima facie show that the neutral provision could disproportionately affect a protected group when compared with others in a similar situation. In practice, this would mean that the claimant would need to show that a sufficient percentage of the members of the affinity group are likely to be members of a protected group (which would receive disproportionately negative treatment), for instance by appealing to demographic statistics. To receive relief, the claimant would need to be a member of the disadvantaged protected group.

While remedies are available via direct and indirect discrimination, they alone may be insufficient to fully protect affected parties. I argue that the concepts of direct[14] and indirect[15] discrimination by association can help increase algorithmic accountability and fairness in online behavioural advertising.

Applying the concept of 'discrimination by association'[16] to OBA is unprecedented, but a potentially powerful tool in the quest for more algorithmic accountability. Discrimination by association protects individuals that experience adverse treatment (e.g. not being shown a job advertisement based on assumed gender or gender affinity) without the need to be a member of the protected group. Protection is granted on the basis of an individual's association with a group defined by legally protected attributes (or an accepted proxy) which have led to differential treatment or results (e.g. being shown advertisements for lower paying jobs).

This could have implications for OBA for three main reasons: first, it would overcome the argument that inferring one's 'affinity for' and 'membership in' a protected group are strictly unrelated. If an interest group is seen as equivalent to

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[14] Case C-303/06, S. Coleman v Attridge Law and Steve Law, 2008 E.C.R. I–415, http://curia.europa.eu/juris/document/document.jsf?text=&docid=67793&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=6050215 (last visited Mar 26, 2019).

[15] Case C-83/14, CHEZ Razpredelenie Bulgaria AD v Komisia za zashtita ot diskriminatsi, 2015 E.C.R. I–480, http://curia.europa.eu/juris/document/document.jsf?docid=165912&doclang=EN (last visited Mar 26, 2019).

[16] See CASE C-303/06, *supra* note 15; and CASE C-83/14, *supra* note 16.

a protected group, it does not matter whether the measure taken is based on a protected attribute that an individual possesses or because they are somehow associated with the protected group (e.g. having an interest in a specific culture). In such a case claims under direct discrimination by association are possible. Second, both direct and indirect discrimination require the claimant to be a member of the protected group in order to receive relief. As a result, to invoke either type of claim under non-discrimination law, affected parties may need to 'out' themselves (e.g. in relation to sexual orientation or religion). This could be a problem, as there might be reasons an individual may not wish to disclose potentially sensitive personal attributes. I argue that discrimination by association - not needing to be a part of the protected group to bring a claim - negates the need for people who are part of the protected group to 'out' themselves as members of the group in order to receive protection. Finally, because claimants do not need to be a member of the protected group, individuals who have received discriminatory treatment but are not actually members of the protected group (e.g. people who have been misclassified as women) could also bring a claim. Both wrongly and accurately classified people who suffered adverse treatment because of their assumed affinity and interests can claim relief via discrimination by association.

Most interestingly, an ECJ judgement shows that certain seemingly neutral actions can also constitute direct discrimination (by association).[17] If affinity profiling is seen as direct discrimination, almost no legal justification will be available to publishers or advertisers.[18] Even if affinity profiling is 'only' seen as indirect discrimination, economic and business concerns alone are unlikely to justify differential results (see section VIII). However, practical challenges remain such as the lack of algorithmic transparency and opaque business models that will make it difficult for affected parties to demonstrate prima facie discrimination.

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[17] CASE C-83/14, *supra* note 16 at para 129 (4).

[18] EVELYN ELLIS & PHILIPPA WATSON, EU ANTI-DISCRIMINATION LAW at 173 (2012).

Finally, with regards to legal protection for groups, even with the most generous interpretation of data protection and non-discrimination law a further problem remains. Profiling and inferential analytics disrupt fundamental tenets of data protection and non-discrimination law. Profiling can occur without identifying an individual and often without using any personal data, rendering data protection law inapplicable.[19] Constructed groups do not necessarily map onto legally protected characteristics based on historical lessons[20]; and thus fall outside the scope of non-discrimination law. Both legal frameworks must be revised to account for the privacy of 'ad hoc' groups to overcome these shortcomings. [21]

The paper will examine all three problems: privacy protection, non-discrimination and group privacy. First, I explore the regulation around the collection and legitimate uses of sensitive data and inferences and reveal current limitations and loopholes in the GDPR. I then examine EU non-discrimination law and shed light on the lack of comprehensiveness in terms of the types of decision-making and people it protects. I then focus on direct and indirect discrimination by association and explore its potential to close current accountability gaps in relation to OBA and affinity profiling. I then discuss the concept of group privacy as a necessary tool to close existing gaps in privacy and non-discrimination protection. Finally, I discuss current governance strategies and close with a set of recommendations on what kind of transparency tools should be offered to users to increase algorithmic transparency and accountability in OBA.[22]

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[19] Sandra Wachter, *Data protection in the age of big data*, 2 NAT. ELECTRON. 6, at 7 (2019).

[20] Alessandro Mantelero, *AI and Big Data: A blueprint for a human rights, social and ethical impact assessment*, 34 COMPUT. LAW SECUR. REV. 754–772, at 765 (2018).

[21] Brent Mittelstadt, *From Individual to Group Privacy in Big Data Analytics*, 30 PHILOS. TECHNOL. 475–494, at 476 and 485 (2017).

[22] It is worth noting that this article does not examine consumer protection law, such as Directive 2006/114/EC concerning misleading and comparative advertising and Unfair Commercial Practices Directive (2005/29/EC). While potentially relevant, these frameworks go beyond the scope of this article.

II. PRIVACY AND OBA

The most self-evident concern with OBA is its potential to violate privacy.[23] Internet technologies can be used to track users across the web over time and gather information about their surfing behaviour and interests.[24] This information is then used to build profiles which can be very privacy invasive, revealing user's explicit and subconscious interests, personality traits, and behaviours.[25] Among other things tailored advertising can be based on those profiles.[26] To tailor advertising to specific users, ad networks use cookies[27] that record information about the user and remember users if they return to specific websites or visit partner sites.[28] Sites sometimes also add additional information such as zip code, age and gender based on user activity (e.g. queries). Each piece of information helps the ad network to serve appropriate ads for the user.[29] Boerman et al.[30] provide an extensive

[23] Tal Zarsky, *Privacy and Manipulation in the Digital Age*, 20 THEOR. INQ. LAW 157, at 158 (2019); Bennett, *supra* note 4 at 904.

[24] See for example Bin Bi et al., *Inferring the demographics of search users: Social data meets search queries*, *in* PROCEEDINGS OF THE 22ND INTERNATIONAL CONFERENCE ON WORLD WIDE WEB 131–140 (2013); Alvaro Ortigosa, Rosa M. Carro & José Ignacio Quiroga, *Predicting user personality by mining social interactions in Facebook*, 80 J. COMPUT. SYST. SCI. 57–71 (2014); Zijian Wang et al., *Demographic Inference and Representative Population Estimates from Multilingual Social Media Data*, *in* THE WORLD WIDE WEB CONFERENCE 2056–2067 (2019).

[25] On this topic see Matz et al., *supra* note 5.

[26] Omer Tene & Jules Polenetsky, *To track or do not track: advancing transparency and individual control in online behavioral advertising*, 13 MINN JL SCI TECH 281, at 282-283 (2012); ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 8 at 7.

[27] Andrew McStay, *I consent: An analysis of the Cookie Directive and its implications for UK behavioral advertising*, 15 NEW MEDIA SOC. 596–611, at 597 (2013); on the "myriad" of different tracking cookies see Jonathan R. Mayer & John C. Mitchell, *Third-party web tracking: Policy and technology*, *in* 2012 IEEE SYMPOSIUM ON SECURITY AND PRIVACY 413–427, at 8-9 (2012).

[28] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 8 at 6.

[29] Bennett, *supra* note 4.

[30] Boerman, Kruikemeier, and Zuiderveen Borgesius, *supra* note 4 at 364 have found evidence of widespread use of inferential analytics.

overview of the methods (e.g. flash cookies and device fingerprints[31]) as well as characteristics and data tracked in behavioural advertising. According to them, profiles are built from various types of data such as clicking and page reading behaviour, geolocation, videos watched and search queries[32] as well as app use data, purchases, posts on social media, and e-mails.[33]

The constant collection and evaluation of personal data enables companies to gain very intimate insights into the lives of their customers. Using sensitive tags to target users has become common practice.[34] Many scholars have long been aware of these issues,[35] with some believing that advertisers will continue to increasingly rely on personalised and targeted advertising in the future.[36] Potentially sensitive information

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[31] Ibrahim Altaweel, Nathan Good & Chris Jay Hoofnagle, *Web privacy census*, TECHNOL. SCI., at 6ff (2015), https://techscience.org/a/2015121502/.

[32] For an overview of existing methods of OBA see Boerman, Kruikemeier, and Zuiderveen Borgesius, *supra* note 4 at 364.

[33] Frederik Zuiderveen Borgesius, *Improving privacy protection in the area of behavioural targeting*, INF. LAW SER., at 1 (2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2654213.

[34] Juan Miguel Carrascosa et al., *I always feel like somebody's watching me: measuring online behavioural advertising*, *in* PROCEEDINGS OF THE 11TH ACM CONFERENCE ON EMERGING NETWORKING EXPERIMENTS AND TECHNOLOGIES 13, at 1-2 (2015).

[35] See for example VIKTOR MAYER-SCHÖNBERGER & THOMAS RAMGE, REINVENTING CAPITALISM IN THE AGE OF BIG DATA (2018); Tene and Polenetsky, *supra* note 27; Bennett, *supra* note 4; Frederik J. Zuiderveen Borgesius, *Singling out people without knowing their names–Behavioural targeting, pseudonymous data, and the new Data Protection Regulation*, 32 COMPUT. LAW SECUR. REV. 256–271 (2016); Calo, *supra* note 3; VIKTOR MAYER-SCHÖNBERGER & KENNETH CUKIER, BIG DATA : A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK AND THINK (2013); Tal Z. Zarsky, *Mine your own business: making the case for the implications of the data mining of personal information in the forum of public opinion*, 5 YALE JL TECH 1 (2002); Danielle Keats Citron & Frank Pasquale, *The scored society: due process for automated predictions*, 89 WASH REV 1 (2014); FRANK PASQUALE, THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION (2015).

[36] Among others Boerman, Kruikemeier, and Zuiderveen Borgesius, *supra* note 4 at 363; V. Kumar & Shaphali Gupta, *Conceptualizing the evolution and future of advertising*, 45 J. ADVERT. 302–317, at 303 (2016); Don Schultz, *The future of advertising or whatever we're going to call it*, 45

such as religious or political beliefs, sexual orientation, race or ethnicity, physical or mental health status, or sex or gender identity can be inferred from online behaviour without users ever being aware.[37] For example, researchers suggested that Facebook can infer sexual orientation (and other sensitive characteristics) based on a user's interactions with the platform.[38]

III. DISCRIMINATION AND OBA

Discrimination is also a common concern with OBA among scholars. According to Ezrachi,[39] from an economic perspective the 'rise of behavioural discrimination' and price discrimination can limit the autonomy of consumers in choosing products and limit their power on the free market. [40] However, privacy, personalisation and price discrimination are not the only concerns with OBA. A landmark study by Latanya Sweeney[41] revealed how OBA can reinforce racial stereotypes, stigmatise users, and possibly illegally discriminate. Her study showed that names associated with black people prompted mores ads by "instantcheckmate.com' - indicating an arrest - than was the case for names associated with white people. The causal root of this finding is not self-

J. ADVERT. 276–285, at 208 (2016); Roland T. Rust, *Comment: Is Advertising a Zombie?*, 45 J. ADVERT. 346–347 (2016).

[37] Sandra Wachter & Brent Mittelstadt, *A Right to Reasonable Inferences: Re-thinking Data Protection Law in the Age of Big Data and AI*, 2 COLUMBIA BUS. LAW REV., at 510 (2019), https://cblr.columbia.edu/wp-content/uploads/2019/07/2_2019.2_Wachter-Mittelstadt.pdf (last visited Sep 25, 2018).

[38] José González Cabañas, Ángel Cuevas & Rubén Cuevas, *Facebook use of sensitive data for advertising in Europe*, ARXIV PREPR. ARXIV180205030, at 1-2 (2018); on the revealing power of Facebook "likes" see Kosinski, Stillwell, and Graepel, *supra* note 10.

[39] Ariel Ezrachi & Maurice E. Stucke, *The rise of behavioural discrimination*, EUR. COMPET. LAW REV., at 485-490 (2016).

[40] On this topic see also Frederik Zuiderveen Borgesius & Joost Poort, *Online price discrimination and EU data privacy law*, 40 J. CONSUM. POLICY 347–366 (2017).

[41] Latanya Sweeney, *Discrimination in online ad delivery*, ARXIV PREPR. ARXIV13016822 (2013).

evident; it may be rooted in the methods advertisers use to market their product (e.g. search criteria, ad text, and bids), or alternatively could reflect the clicking behaviour of users. The optimisation of OBA algorithms towards higher clickthrough rates can inadvertently reinforce stereotypes.[42]

Unfortunately, this is not the only example of discriminatory OBA. In general, research suggests that algorithms can be inadvertently biased favouring men over women for STEM jobs on platform such as Facebook Ads, Google Ads, Instagram and Twitter.[43] This trend cannot be attributed entirely to algorithmic reinforcement of stereotypes: ProPublica published a series of reports showing that Facebook allows advertisers to exclude certain groups for example based on ethnicity (e.g. for housing, employment and credit)[44] or gender.[45] A news article also indicated that Facebook used the 'likes' of users to infer sexual orientation, and allowed advertisers to serve young LGBT* users "gay cure" advertisements.[46] Only recently Facebook announced a change to their policy when placing ads in relation to housing, jobs or credit (e.g. ethnicity, age, gender or zip code), and

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[42] *Id.* at 14.

[43] L. Elisa Celis, Anay Mehrotra & Nisheeth K. Vishnoi, *Fair Online Advertising*, ARXIV PREPR. ARXIV190110450, at 3 (2019).

[44]Terry Parris Jr Julia Angwin, *Facebook Lets Advertisers Exclude Users by Race*, PROPUBLICA (2016), https://www.propublica.org/article/facebook-lets-advertisers-exclude-users-by-race (last visited Mar 24, 2019); Ariana Tobin Julia Angwin, *Facebook (Still) Letting Housing Advertisers Exclude Users by Race*, PROPUBLICA (2017), https://www.propublica.org/article/facebook-advertising-discrimination-housing-race-sex-national-origin (last visited Mar 24, 2019); Ariana Tobin Jeremy B. Merrill, *Facebook Moves to Block Ad Transparency Tools — Including Ours*, PROPUBLICA (2019), https://www.propublica.org/article/facebook-blocks-ad-transparency-tools (last visited Mar 24, 2019)..

[45] Jeremy B. Merrill Ariana Tobin, *Facebook Is Letting Job Advertisers Target Only Men*, PROPUBLICA (2018), https://www.propublica.org/article/facebook-is-letting-job-advertisers-target-only-men (last visited Mar 24, 2019).

[46] Helena Horton & James Cook, *Facebook accused of targeting young LGBT users with "gay cure" adverts*, THE TELEGRAPH, August 25, 2018, https://www.telegraph.co.uk/news/2018/08/25/facebook-accused-targeting-young-lgbt-users-gay-cure-adverts/ (last visited Mar 30, 2019).

removed classes such as race, ethnicity, sexual orientation and religion as general targeting options.[47]

However, Facebook still allows advertisers to create custom or personally identifiable information (PII) based audiences (matching visitors of pages with Facebook users e.g. via Pixel),[48] to target people based on gender, location, age, language, "look alike audiences,"[49] source audiences[50] (e.g. fans of a Facebook page) and detailed targeting.[51] Detailed targeting allows advertisers to target or exclude people based on preferences, intents or behaviours (e.g. travel, time spent on the network, education, pages they engage with, relationship status, income, children, political affiliation) for users in certain locations.[52] Speicher et al thus suggest that

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[47] Doing More to Protect Against Discrimination in Housing, Employment and Credit Advertising | Facebook Newsroom, , https://newsroom.fb.com/news/2019/03/protecting-against-discrimination-in-ads/ (last visited Mar 24, 2019); this promise was made in the past as well see Ariana Tobin, *Facebook Promises to Bar Advertisers From Targeting Ads by Race or Ethnicity. Again.*, PROPUBLICA (2018), https://www.propublica.org/article/facebook-promises-to-bar-advertisers-from-targeting-ads-by-race-or-ethnicity-again (last visited Mar 24, 2019).

[48] What Facebook ad targeting options can I choose when creating my audience?, , FACEBOOK ADS HELP CENTRE , https://en-gb.facebook.com/business/help/717368264947302 (last visited Mar 24, 2019).

[49] Which Facebook describes as "A Lookalike Audience is a way to reach new people who are likely to be interested in your business because they're similar to your best existing customers." About Lookalike Audiences for Facebook ads | Facebook Ads Help Centre, , https://www.facebook.com/business/help/164749007013531?helpref=page_content (last visited Mar 24, 2019); on the privacy risks of this method see Giridhari Venkatadri et al., *Privacy risks with Facebook's PII-based targeting: Auditing a data broker's advertising interface*, *in* 2018 IEEE SYMPOSIUM ON SECURITY AND PRIVACY (SP) 89–107 (2018).

[50]Source Audience, , FACEBOOK ADS HELP CENTRE , https://en-gb.facebook.com/business/help/475669712534537 (last visited Mar 24, 2019).

[51] How does Facebook detailed targeting work?, , FACEBOOK ADS HELP CENTRE , https://en-gb.facebook.com/business/help/182371508761821 (last visited Mar 24, 2019).

[52] Please note some of these options are US only see facebook-ad-targeting-options-infographic-wordstream-large.jpg (1200×9932), , https://wordstream-files-prod.s3.amazonaws.com/s3fs-public/styles/simple_image/public/images/media/images/facebook-ad-

the concerns raised above remain because proxy data can be used in lieu of explicit sensitive characteristics, and platform data can be linked to public (e.g. voter registration) and private datasets (e.g. via data brokers) to gain intimate insights about users.[53] According to Speicher et al similar approaches seem to be taken by platforms such as Twitter, Pinterest, LinkedIn and YouTube.[54]

These examples demonstrate that affinity profiling and bias are more than a technical challenge. It is also a societal challenge[55] arising from implicit and explicit biases[56] and stereotypical thinking. They reveal that discriminatory behaviour can be profitable, which can incentivise companies to allow advertisers to exclude specific groups.[57]

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targeting-options-infographic-wordstream-large.jpg?PeigrhU16lAK1OfTZlYtlFcIhGzY8voF&itok=ElCWLJ3F (last visited Mar 24, 2019).

[53] Till Speicher et al., *Potential for Discrimination in Online Targeted Advertising Till Speicher MPI-SWS MPI-SWS MPI-SWS*, 81 *in* PROCEEDINGS OF THE CONFERENCE ON FAIRNESS, ACCOUNTABILITY, AND TRANSPARENCY (FAT*) 1–15, at 5 (2018).

[54] *Id.* at 2.

[55] To name a few CATHY O'NEIL, WEAPONS OF MATH DESTRUCTION: HOW BIG DATA INCREASES INEQUALITY AND THREATENS DEMOCRACY (2017); VIRGINIA EUBANKS, AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR (2018); SAFIYA UMOJA NOBLE, ALGORITHMS OF OPPRESSION: HOW SEARCH ENGINES REINFORCE RACISM (2018).

[56] On the challenges of detecting bias in data sets see Matt J. Kusner et al., *Counterfactual Fairness* (2017); Chris Russell et al., *When worlds collide: integrating different counterfactual assumptions in fairness*, *in* ADVANCES IN NEURAL INFORMATION PROCESSING SYSTEMS 6396–6405 (2017); Cynthia Dwork et al., *Fairness Through Awareness*, ARXIV11043913 CS (2011), http://arxiv.org/abs/1104.3913 (last visited Feb 15, 2016); Sorelle A. Friedler, Carlos Scheidegger & Suresh Venkatasubramanian, *On the (im) possibility of fairness*, ARXIV PREPR. ARXIV160907236 (2016), https://arxiv.org/abs/1609.07236 (last visited Nov 11, 2016); Nina Grgic-Hlaca et al., *The case for process fairness in learning: Feature selection for fair decision making*, *in* NIPS SYMPOSIUM ON MACHINE LEARNING AND THE LAW (2016); Celis, Mehrotra, and Vishnoi, *supra* note 44; Speicher et al., *supra* note 54.

[57] Muhammad Ali et al., *Discrimination through optimization: How Facebook's ad delivery can lead to skewed outcomes*, ARXIV PREPR. ARXIV190402095, at 1 (2019).

IV. AFFINITY PROFILING, SPECIAL CATEGORY DATA AND THE GDPR

When first confronted with the issues of affinity profiling, Facebook explained not to infer ethnicity, but only affinity with a specific culture based on a user's interaction with the platform (e.g. likes, friends, groups).[58] How does this argument fit with European data protection law?

Under Art 9 GDPR the processing of sensitive data is only allowed under certain circumstances. Art 9 provides an exclusive list of data types that necessitate higher levels of protection, including ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership and data concerning a natural person's sex life or sexual orientation.

This list does not cover all known types of data that can cause stigma and discrimination. For example, sex and gender are not included in the list. The Article 29 Working Party has discussed this lack of comprehensiveness in an advice paper and suggested to expand the definition of sensitive data in future regulation to at least include information about financial status, minors, geolocation and profiles.[59] This is a sensible approach because financial status and geolocation, for example, are known to be strong proxies for gender/sex and ethnicity. It is noteworthy, however, that the Working Party did not propose to include gender/sex as a type of sensitive data, even though this type of data can cause discrimination.[60] In the end the Working Party's proposal was not adopted in the GDPR. This is a worrying result as all these types of data can be the root of unfair or unjust treatment.

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[58] Alex Hern, *Facebook's "ethnic affinity" advertising sparks concerns of racial profiling*, THE GUARDIAN, March 22, 2016, https://www.theguardian.com/technology/2016/mar/22/facebooks-ethnic-affinity-advertising-concerns-racial-profiling (last visited May 15, 2019).

[59] ARTICLE 29 DATA PROTECTION WORKING PARTY, *Advice paper on special categories of data ("sensitive data"), Ares(2011)444105 - 20/04/2011* at 7 and 10 (2011), http://ec.europa.eu/justice/data-protection/article-29/documentation/other-document/files/2011/2011_04_20_letter_artwp_mme_le_bail_directive_9546ec_annex1_en.pdf (last visited Oct 1, 2017).

[60] For an extensive discussion on several laws failing to guard against sensitive inferences Wachter and Mittelstadt, *supra* note 38.

Following the advice paper of the Article 29 Working Party[61] on the definition of personal data and the phrasing in Art 9 GDPR (arg.'revealing'), it is safe to assume that 'special category data' covers both sensitive data and data that can be sensitive by inference. In other words, 'special category data' is not limited to data that directly reveals sensitive information such as "religion", but also includes data from which sensitive information can be concluded (e.g. a picture showing a person wearing religious attire).[62]

With regards to inference, academics disagree on the requirements for personal data to be transformed into sensitive data.[63] For some, the intention to infer sensitive attributes is necessary to re-classify the data. For example, if a pizzeria delivers food to customers in a drug abuse centre, their addresses are not considered sensitive data because the pizzeria is presumably not interested in inferring their health status.[64] Similarly, it has been suggested that if sensitive data is only captured coincidentally it should not be classified as sensitive, unless the type of data is known to contain sensitive content. Following this reasoning, it has been argued that images captured by CCTV camera of visitors of "gay meeting spots" would not be considered sensitive data unless the purpose of the camera was to record "gay meeting spots".[65] The same has been argued for camera footage capturing people wearing religious attire.[66] Conversely, the Article 29

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[61] The advice paper reads '[t]he term "data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, trade-union membership" is to be understood that not only data which by its nature contains sensitive information is covered by this provision, but also data from which sensitive information with regard to an individual can be concluded. ' ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 60 at 6.

[62] On this issue in relation to CCTV and pictures that allow sensitive inferences see Alexander Nguyen, *Videoüberwachung insensitiven Bereichen*, 35 DATENSCHUTZ DATENSICHERHEIT 715–717, at 715 (2011).

[63] For an overview on this academic debate see Wachter and Mittelstadt, *supra* note 38 at 560-568.

[64] Sebastian Schulz, *DS-GVO Art. 9 Verarbeitung besonderer Kategorien personenbezogener Daten*, *in* DATENSCHUTZ-GRUNDVERORDNUNG VO (EU) 2016/679 , at Rn 11-14 (Peter Gola ed., 1 ed. 2017).

[65] Nguyen, *supra* note 63 at 517.

[66] Schulz, *supra* note 65 at Rn 12-13.

Working Party has argued that camera footage is particularly problematic because it can reveal ethnic origin or health status.[67]

In addition to the intention to infer sensitive information, some scholars argue that the data collected needs to also provide a reliable basis to infer sensitive attributes to be classified as special category data. For example, pornographic browsing history is seen as sufficient to infer sexual orientation, geolocation of cell phones at political events can be used to infer political beliefs, and names, country of birth, and addresses provide a reliable basis to infer ethnicity or religious beliefs.[68] It has also been argued that reliability does not need to be unambiguously proven for the classification to apply; it is sufficient that a data controller can realistically make these assumptions taking into account the purpose of data collection (intent).[69] In contrast, other scholars deny that the aforementioned data types have sufficient sensitive disclosive power to qualify as special category data.[70]

The General Court[71] has previously affirmed that reliability is a necessary precondition to transform personal data into sensitive data. In *Kathleen Egan and Margaret Hackett v European Parliament* the complainants requested access to the names of the personal assistants of a member of the European Parliament. The personal assistants did not want this information to be disclosed arguing that their working relationship could be used to infer their political stances. The Court ruled that an employment relationship is not sufficiently reliable to draw inferences about political beliefs.[72]

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[67] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 60 at 8.

[68] Alexander Schiff, *DS-GVO Art. 9 Besonderer Kategorien personenbezogener Daten*, *in* DATENSCHUTZ-GRUNDVERORDNUNG , at Rn 26-27 (Eugen Ehmann & Martin Selmayr eds., 1 ed. 2017).

[69] *Id.* at Rn 20-22.

[70] Schulz, *supra* note 65 at Rn. 12-13.

[71] CASE T‑190/10, *supra* note 11 at para 101.

[72] The Court explains that '[f]urthermore, in response to the applicants' argument that data concerning former MEP assistants were previously accessible, the Parliament argued, in its defence, that it cannot release such data, as they would reveal the assistants' political opinions and would therefore be sensitive data within the meaning of Article 10 of Regulation

What does this mean for affinity profiling? In order for Art 9 GDPR to apply, sensitive data or data that is sensitive by inference has to be collected or processed. The argument not to infer ethnicity and only infer an affinity with an ethnicity is problematic. Failing to acknowledge the power of sensitive disclosures about a person's life made possible by assuming their interests will render the higher protection in GDPR inapplicable.

However, even if this potential disclosive power is acknowledged, intentionality and reliability are problematic thresholds when applied to targeted advertising and especially affinity profiling. Sensitive attributes do not need to be intentionally inferred. For example, as mentioned above Facebook explained that they have no intention to infer sensitive traits, but only to assume an affinity.[73] Despite this lack of intention, Facebook was accused to infer very intimate details about their users by proxy (e.g. ethnicity, sexual orientation, political views).[74] If proxy data (e.g. assumed interests) can reveal sensitive traits without any intention to do so it shows that this artificial threshold to turn personal data into sensitive data is misguided. If this view is continued, companies could learn sensitive information about users without necessarily being bound to the higher safeguards and standards in GDPR that normally accompany such data. In effect, they will be able to advertise to users based on sensitive characteristics, or an affinity with such characteristics, without incurring the legal safeguards this normally brings.

The question of reliability is also a red herring and very problematic for advertisements. The question is not only

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No 45/2001 (see paragraph 84). However, that argument, which, moreover, is not in any way substantiated, cannot, in any event, make up for the fact that the contested decision failed to show why disclosure of those data would specifically and effectively undermine their right to privacy within the meaning of Article 4(1)(b) of Regulation No 1049/2001.' *Id.* at para 101.

[73] Hern, *supra* note 59.

[74] Julia Angwin, *supra* note 45; Horton and Cook, *supra* note 47; Alex Hern, *Facebook lets advertisers target users based on sensitive interests*, THE GUARDIAN, May 16, 2018, https://www.theguardian.com/technology/2018/may/16/facebook-lets-advertisers-target-users-based-on-sensitive-interests (last visited Aug 6, 2019).

whether sensitive information can be reliably inferred, but also how these inferences change the way advertisers and platform providers treat their users. It is of course also problematic that sexual orientation for instance is inferred, be it directly or by "affinity," but the harm continues after the inference is drawn. Platform providers tailor content (e.g. ads, news feeds, search results) based on these assumptions (e.g. based on assumed gender). Platforms do not necessarily care whether they fully accurately place users into certain groups; rather, what matters is whether the user behaves similarly enough to the assumed group to be treated as a member of the group. The opportunity cost of showing ads intended for women to men that have been misclassified is very low. The business model of OBA has sufficient tolerance built-in to accommodate relatively high rates of misclassification. This tolerance does not, however, benefit misclassified users who are offered inaccurate or discriminatory content and may suffer as a result. The focus on reliability is therefore misguided. People will be treated differently based on their assumed affinity, regardless of whether this assumption is in fact correct.

If the reliability requirements advanced by the General Court and some scholars is upheld, it could render Art 9 inapplicable to affinity profiling. This is problematic given that affinity profiling (which does not require an intention to infer sensitive data) could cause the same privacy harms as direct collection and inference of sensitive data.

The Article 29 Working Party offers a more generous definition in their guidelines on sensitive data.[75] This definition is operationalised in their guidelines on OBA, where they argue that 'if an ad network provider processes individual behaviour in order to 'place him/her' in an interest category indicating a particular sexual preference they would be processing sensitive data.'[76] This view aligns with The European Data Protection Board's opinion on inferred political views.[77]

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[75] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 60 at 6.

[76] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 8 at 20.

[77] THE EUROPEAN DATA PROTECTION BOARD, *Statement 2/2019 on the use of personal data in the course of political campaigns* at 1 (2019),

This view leads to higher data protection standards around the usage of special category data. Art 9 GDPR only permits a limited range of cases for using such data. One of these cases is explicit consent, which is a higher bar than informed consent as described in Art 7 GDPR. Legitimate interests (Art 6(2)(f)) or the necessity to fulfil a contract (Art 6(1)(b) GDPR) cannot be used to collect special category data.[78] Following this, the Working Party has explained in their OBA guidelines that data controllers will need to seek explicit consent to collect sensitive data and that 'in no case would an opt-out consent mechanism meet the requirement of the law.'[79]

These processing requirements, arbitrary thresholds and the conflicting views of the General Court and the Article 29 Working Party leave affinity profiling in an unclear legal grey area. If the argument holds that affinity profiling does not predict or infer sensitive information about the data subject, but only assumes an interest with a protected group, data controllers might not need to comply with Art 9 GDPR. Only standard provisions regarding personal data (either opt-in Art 7 GDPR or opt-out Art 21 GDPR) could apply to affinity profiling. Even if affinity profiling is classified as a type of sensitive data processing, the intentionality and reliability thresholds to turn personal data into sensitive data might prevent the higher protections of Art 9 GDPR from applying, even though the privacy harms of sensitive data and assumed affinity can be the same.

V. EU NON-DISCRIMINATION LAW AND AFFINITY PROFILING

As the previous section showed Art 9 GDPR could prove ineffective at protecting against privacy invasive inferential

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https://edpb.europa.eu/sites/edpb/files/files/file1/edpb-2019-03-13-statement-on-elections_en.pdf (last visited Mar 31, 2019).

[78] Of course Art 9 GDPR offers other legitimate bases to collect special category data such as uses in the realm of employment, vital interests of the data subject or research. These, however, are less likely to form a legitimate basis for advertisement. In other words, if advertisers want to use special category data, it is very likely that explicit consent will be the only legitimate grounds.

[79] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 8 at 20.

analytics. Privacy is not, however, the only concern with affinity profiling. Concerns with discrimination might also arise. If only certain groups are shown an ad (possibly even with different product prices) or excluded from the audience, and these groups share protected characteristics (e.g. gender, sexual orientation, religious beliefs), non-discrimination law becomes relevant. This section will first shed light on the scope and limits of EU non-discrimination law, and then demonstrate how the concept of 'discrimination by association' could be used to close some of the current loopholes in the law and offer greater protection against affinity profiling.

EU non-discrimination law has its roots in both primary[80] and secondary law[81]. Both these regulations have different scopes, different ways of enforcement, and apply to different actors.[82] Primary and secondary non-discrimination law prohibits two types of discrimination: direct and indirect discrimination

Direct discrimination means that an individual or group are treated less favourably in comparison to others in a similar situation, and the treatment is based on a protected ground (e.g. ethnicity) without any justification rooted in the law. [83] In the context of OBA direct discrimination is rarer than indirect discrimination because an advertiser or platform provider is not likely to confess that a protected ground formed the basis for a decision.

Indirect discrimination refers to a seemingly 'neutral provision, criterion or practice'[84] (e.g. the decision to show certain ads to people based on their assumed interests) that affects protected groups in a significantly more negative way than others in a comparable situation, and thus results in

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[80] ELLIS AND WATSON, *supra* note 19 at 13; for fantastic an overview of the scope, history and effectiveness of EU non-discrimination law see SANDRA FREDMAN, DISCRIMINATION LAW (2011); and also MARK BELL, ANTI-DISCRIMINATION LAW AND THE EUROPEAN UNION (2002).

[81] ELLIS AND WATSON, *supra* note 19 at 19-21.

[82] *Id.* at 20.

[83] *Id.* at 142.

[84] This is stated in all EU Non-Discrimination Directives, see also Christopher McCrudden, *The New Architecture of EU Equality Law after CHEZ: Did the Court of Justice Reconceptualise Direct and Indirect Discrimination?*, EUR. EQUAL. LAW REV. FORTHCOM., at 3 (2016).

differential results.[85] Indirect discrimination can be legally justified when a legitimate aim is pursued and the means to achieve it are necessary and proportionate.[86] Statistics can play a significant role in establishing legitimacy because the claimant must provide evidence to prove that differential effects occurred (more on that below).

To the benefit of claimants, only prima facie discrimination must be demonstrated to bring a direct or indirect discrimination case. Once prima facie discrimination is successfully raised, the burden of proof shifts to the alleged offender who must refute it.[87]

To prove direct discrimination an identifiable victim also does not need to be found because a potential harm does not need to occur in practice.[88] In other words, it is not necessary that the discriminatory practice (e.g. only showing job ads to men) resulted in negative effects (e.g. less women applying for a job).

Finally, in both cases of discrimination intent does not need to be proven.[89] Even good faith and well-intentioned practices can amount to discrimination if the adverse result of the treatment disproportionately affects members of protected groups in comparison with others in a similar situation.[90] Even with the best intentions platform providers can commit direct or indirect discrimination.

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[85] ELLIS AND WATSON, *supra* note 19 at 143.

[86] This is stated in the EU non-discrimination directives.

[87] On prima facie discrimination and shifting the burden of proof see Sandra Fredman, *The reason why: Unravelling indirect discrimination*, 45 IND. LAW J. 231–243, at 235 (2016) and see for example Art 19 Directive 2006/54/EC, Art 15 of Directive 2000/78/EC, Art 8 of Directive 2000/43/EC as well as EU Directive 97/80/EC on Shifting Burden of Proof in Sex Discrimination Cases.

[88] In relation to racist job ads see Case C‑54/07, Centrum voor gelijkheid van kansen en voor racismebestrijding v Firma Feryn NV, 2008 E.C.R. I–397, at para 25, http://curia.europa.eu/juris/liste.jsf?language=en&jur=C,T,F&num=C-54/07&td=ALL (last visited Mar 24, 2019).

[89] ELLIS AND WATSON, *supra* note 19 at 167.

[90] EUROPEAN UNION AGENCY FOR FUNDAMENTAL RIGHTS AND COUNCIL OF EUROPE, HANDBOOK ON EUROPEAN NON-DISCRIMINATION LAW at 239-242 (2018 edition ed. 2018), https://fra.europa.eu/sites/default/files/fra_uploads/1510-fra-case-law-handbook_en.pdf.

A. Primary law

The widest scope of non-discrimination exists in the primary law of the European Union. Art 21 of the EU Charter of Fundamental Rights states '[a]ny discrimination based on any ground 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 shall be prohibited.' This is a non-exclusive list that is sector-neutral. However, these provisions only apply to EU institutions and institutions of the Member States if they implement European Law. Thus, only public bodies of the EU and public bodies of the Member States in matters of EU law are bound by these provisions.[91]

B. Secondary Law

In contrast, secondary law applies to both the private and the public sectors. Compared with primary law, the protections defined in secondary law are limited both in terms of the types of people protected and the sectors covered. However, the directives must be in accordance with the Charter. Three sectors are addressed in secondary law: employment, the welfare system, and access to goods and services, including housing.[92]

1. Race and ethnicity

The most far reaching protection in secondary law can be found in the Racial Equality Directive (2000/43/EC)[93]. Art 3 of the Directive prohibits discrimination based on race or ethnicity in the context of employment, access to the welfare system, social protection, education, as well as goods and

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[91] See Art 51 EU Charter of Fundamental Rights.

[92] ELLIS AND WATSON, *supra* note 19 at 22-42; FREDMAN, *supra* note 81 at 109-153.

[93] COUNCIL DIRECTIVE 2000/43/EC OF 29 JUNE 2000 IMPLEMENTING THE PRINCIPLE OF EQUAL TREATMENT BETWEEN PERSONS IRRESPECTIVE OF RACIAL OR ETHNIC ORIGIN, , OJ L 180 (2000), http://data.europa.eu/eli/dir/2000/43/oj/eng (last visited Aug 5, 2019).

services. With regards to OBA, these protections extend to unjustified discrimination based on ethnicity– be it directly or indirectly – in advertisements offering jobs or (ads for) goods and services (e.g. products, loans, insurance, housing). Such discriminatory advertisements are illegal, unless legally justified.

2. Gender

Equality between men and women is guaranteed in two directives: the Gender Equality Directive (recast) (2006/54/EC)[94] and the Gender Access Directive (2004/113/EC)[95]. Both frameworks cover less ground than the Racial Equality Directive.[96] The Gender Equality Directive guarantees equality in employment. However, equal treatment is only guaranteed for social security and not in the broader welfare system, including social protection and access to healthcare and education.[97] In most cases (not) showing job ads based on gender is illegal (because the ads are within the realm of employment, a protected sector), unless legally justified.

The Gender Access Directive (Art 3(3)), as opposed to the Racial Equality Directive, excludes media content, advertisements, and education from its scope[98]. Originally it

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[94] DIRECTIVE 2006/54/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 5 JULY 2006 ON THE IMPLEMENTATION OF THE PRINCIPLE OF EQUAL OPPORTUNITIES AND EQUAL TREATMENT OF MEN AND WOMEN IN MATTERS OF EMPLOYMENT AND OCCUPATION (RECAST), , OJ L 204 (2006), http://data.europa.eu/eli/dir/2006/54/oj/eng (last visited Aug 5, 2019).

[95] COUNCIL DIRECTIVE 2004/113/EC OF 13 DECEMBER 2004 IMPLEMENTING THE PRINCIPLE OF EQUAL TREATMENT BETWEEN MEN AND WOMEN IN THE ACCESS TO AND SUPPLY OF GOODS AND SERVICES, , OJ L 373 (2004), http://data.europa.eu/eli/dir/2004/113/oj/eng (last visited Aug 5, 2019).

[96] On the hierarchy of protected groups and the political reasons see Dagmar Schiek, *Broadening the scope and the norms of EU gender equality law: Towards a multidimensional conception of equality law*, 12 MAASTRICHT J. EUR. COMP. LAW 427–466, at 438 (2005).

[97] EUROPEAN UNION AGENCY FOR FUNDAMENTAL RIGHTS AND COUNCIL OF EUROPE, *supra* note 91 at 22.

[98] Other legitimate aims that limit the scope of the Directive are named in Recital 16 '[d]ifferences in treatment may be accepted only if they are justified by a legitimate aim. A legitimate aim may, for example, be the

was planned to coverer a vast range of sensitive areas such as social assistance, education, media, advertising, and taxation, but these sectors were ultimately not included.[99]

3. Religion or belief, disability, age or sexual orientation

Comparatively speaking EU law offers the least protection against discrimination based on religion or beliefs, disability, age, and sexual orientation. These attributes are only protected in the context of employment (Employment Directive, 2000/78/EC)[100], but not in relation to the welfare system or goods and services. As it currently stands EU law allows advertisements offering goods and services (including housing as well as financial services or insurance) to discriminate based on these traits.

Since 2008 the so-called Horizon Directive[101] has been under discussion. The Directive aims to implement 'the principle of equal treatment between persons irrespective of religion or belief, disability, age or sexual orientation' beyond the realm of employment. Despite debate lasting over eleven

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protection of victims of sex-related violence (in cases such as the establishment of singlesex shelters), reasons of privacy and decency (in cases such as the provision of accommodation by a person in a part of that person's home), the promotion of gender equality or of the interests of men or women (for example single-sex voluntary bodies), the freedom of association (in cases of membership of single-sex private clubs), and the organisation of sporting activities (for example single-sex sports events).'

[99] EUROPEAN PARLIAMENT'S DIRECTORATE-GENERAL FOR PARLIAMENTARY RESEARCH SERVICES, *Gender Equal Access to Goods and Services Directive 2004/113/EC -European Implementation Assessment* at I-7, http://www.europarl.europa.eu/RegData/etudes/STUD/2017/593787/EPRS_STU(2017)593787_EN.pdf (last visited Mar 26, 2019); Schiek, *supra* note 97 at 429-430 rightly criticises the limited scope (due to lobbing efforts of [insurance] industry) of the Directive .

[100] COUNCIL DIRECTIVE 2000/78/EC OF 27 NOVEMBER 2000 ESTABLISHING A GENERAL FRAMEWORK FOR EQUAL TREATMENT IN EMPLOYMENT AND OCCUPATION, , OJ L 303 (2000), http://data.europa.eu/eli/dir/2000/78/oj/eng (last visited Aug 5, 2019).

[101] COUNCIL DIRECTIVE 2000/43/EC OF 29 JUNE 2000 IMPLEMENTING THE PRINCIPLE OF EQUAL TREATMENT BETWEEN PERSONS IRRESPECTIVE OF RACIAL OR ETHNIC ORIGIN, *supra* note 94.

years, the Directive remains in draft form. The current draft does not address the gaps in non-discrimination law based on sex or gender. [102]

Of course, Member States can and sometimes do grant higher protection to more groups and in relation to more sectors. For example, some Member States grant higher protection for gender inequality in areas such as media, advertisement and education.[103] The downside of this situation is that a harmonised standard for non-discrimination does not exist at a European level.[104]

4. Sectoral divergence in protected groups

Depending on the area in which ads are served, different groups will be protected. Ads in the context of employment must adhere to the safeguards against discrimination in relation to employment. Other types of ads will generally fall within the realm of protection of equal access to goods and services.

Ads in the context of employment must adhere to the highest legal standards because here the law offers protection to the broadest set of groups (i.e. ethnicity, gender, religion or belief, disability, age or sexual orientation). Given that companies[105] have been accused of favouring men or even excluding women from seeing job ads despite such practices likely being illegal under the Gender Equality Directive, this topic is of critical concern.

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[102]For an overview of the regulatory history of anti-discrimination law and the Horizon Directive see Mark Bell, *Advancing EU anti-discrimination law: the European Commission's 2008 proposal for a new directive*, 3 EQUAL RIGHTS REV. (2009).

[103] EUROPEAN PARLIAMENT'S DIRECTORATE-GENERAL FOR PARLIAMENTARY RESEARCH SERVICES, *supra* note 100 at I-38 and also for an overview of how the Member States have implemented the framework.

[104] For an overview of the fragmented standards across the EU Member States see EUROPEAN NETWORK OF LEGAL EXPERTS IN GENDER EQUALITY AND NON-DISCRIMINATION, *A comparative analysis of non-discrimination law in Europe* (2018), doi:10.2838/939337.

[105] Celis, Mehrotra, and Vishnoi, *supra* note 44; Ariana Tobin, *supra* note 46.

When offering goods and services gender and ethnicity, as opposed to religion or belief, disability, age or sexual orientation, can also not be used to restrict access. However, the Gender Access Directive allows gender (but not ethnicity) to be used as a factor to discriminate in relation to content of media and advertising and education. It is indeed problematic that media and advertising are excluded from the scope, seen as they are means to inform about the availability of goods and services.[106]

As mentioned above, it is safe to assume that employment ads fall within the protection in relation to employment and are thus a *lex specialis* to the Gender Access Directive. Unlike other types of ads concerned with goods and services, gender-based discrimination is therefore not allowed in employment advertising, unless it constitutes a 'genuine occupational requirement'[107]. At the same time, it is unclear how this would relate to ads to inform about housing or credit, since this is also covered in the Gender Access Directive, which allows gender discrimination in relation to advertising. Ellis and Watson believe that '[s]uppliers of goods and services can therefore target their advertising to either men or women but must supply the goods or services advertised to both sexes on the same terms.'[108] However, di Torella is concerned with the fact that there is a 'challenge of distinguishing 'goods' (included in the Directive) from 'advertisement of goods' (not included in the Directive).'[109] In addition, these gaps mean

[106] Similar concerns have been raised by a Greek expert who explains that 'the 'vague' exclusion of 'the content of media and advertising' 'cannot mean that offers of and information on supply of goods and services in the media are excluded, the more so as the directive concerns goods and services available to the public' Susanne Burri & Aileen McColgan, *Sex Discrimination in the Access to and Supply of Goods and Services and the Transposition of Directive 2004/113/EC* 196, at 17.

[107] The textbook example is e.g. a female model for women's clothes.

[108] ELLIS AND WATSON, *supra* note 19 at 368.

[109] Eugenia Caracciolo di Torella, *The principle of gender equality, the goods and services directive and insurance: A conceptual analysis*, 13 MAASTRICHT J EUR COMP L 339, at 343 (2006).

that the Gender Access Directive cannot entirely prevent stereotypical, offensive, and sexist advertising.[110]

Lastly, EU law does not offer protection against discrimination against age, sexual orientation or disability when offering goods and services. Once again, Member State law can establish (and sometimes has) higher levels of protection.[111]

VI. THE OPEN PROBLEM AND THE FUTURE

Thus far I have analysed privacy and discrimination problems associated with affinity profiling. By claiming not to collect or infer sensitive data, but rather to only assume an affinity or interests, companies might not need to adhere to the higher protection afforded to sensitive data processing in the GDPR (Art 9). The lack of comprehensive non-discrimination law in Europe further erodes the protection available to data subjects against affinity profiling. The law applies to a limited number of protected grounds and contexts.

The applicability of direct discrimination to affinity profiling leaves much to be desired. If courts and regulators do not view affinity profiling as using protected attributes or accepted proxies, people possessing these attributes may not be able to raise direct discrimination claims. Even if affinity profiling is seen as directly using protected traits, the argument that inferring an affinity for a protected group is completely different than inferring protected attributes about a user is problematic and might render the regulation inapplicable. Even if these hurdles are overcome, the claimant might not want to openly acknowledge that they possess a particular trait (e.g. sexual orientation, religion) when bringing a claim. And finally, people who are subjected to

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[110] Burri and McColgan, *supra* note 107 at 6; strongly criticising these exemptions see Caracciolo di Torella, *supra* note 110 at 343 who writes that "[a]lthough the unequal treatment in these fields has been justified in light of its clash with the fundamental right to freedom of expression, it is difficult to envisage how the exploitation of women in the media can be regarded as a fundamental right."

[111] For an overview see Burri and McColgan, *supra* note 107 and also in relation to offensive, sexist advertisements and Member State law.

discriminatory ads based on an inaccurate classification or grouping may not receive any protection, as they do not possess the discriminated protected trait (e.g. men that are shown discriminatory ads intended for women).

Indirect discrimination provides a more promising alternative route to raise claims against advertisers. Targeting source or "look alike" audiences, while not based on protected grounds, can still lead to differential results for protected groups. For example, excluding people from seeing ads based on their assumed interest in part-time work could lead to differential results, if it can be shown that a large portion of part-time workers are women.

In these cases, members that share these attributes could bring a claim provided that the other conditions (i.e. the existence of a comparison group, adverse and less favourable treatment, causality, and lack of justification) are met. Apart from the challenge of gathering the evidence necessary to meet the conditions for a claim, two additional problems remain. First, claimants might not want to openly and publicly discuss their sensitive attributes. Second, as with direct discrimination, people that were served the discriminatory ads but do not share the attributes of the target audience (e.g. job ads aimed at gay users that are unintentionally shown to a straight user due to algorithmic misclassification of sexual orientation) may not be eligible to make a claim because they are not a member of the protected group.

VII. DISCRIMINATION BY ASSOCIATION AND AFFINITY PROFILING

The legal concept of 'discrimination by association', which is a type of direct discrimination, may offer a way forward. The concept has been recognised by the ECJ, the ECHR and some national courts.[112] Applying the concept to advertising

[112] In relation to homophobic banters against a heterosexual man see Lord Justice Laws, Lord Justice Sedley & Lord Justice Lawrence Collins, English v Thomas Sanderson Ltd [2008] EWCA Civ 1421 (2008), http://www.bailii.org/ew/cases/EWCA/Civ/2008/1421.html (last visited May 11, 2019); in Poland in relation to sexual orientation see Szczegóły

would solve many of the weaknesses of discrimination law in the context of affinity profiling outlined above.

A. Direct discrimination by association: the case Coleman

Discrimination by association was first proposed in the ECJ judgement of the 2008 case *S. Coleman v Attridge Law and Steve Law* (C-303/06; henceforth 'Coleman'). According to this judgement, protections against direct discrimination apply not only to people who possess the protected characteristics in question, but also to people who experience discrimination because of their "association" [113] with the protected group.

Ms. Coleman [114] had sued her employer for not agreeing the give her more flexible working hours to take care of her disabled child and was eventually dismissed. She compared herself with a group of other parents in the firm who had been granted such privileges for their non-disabled children. She claimed to be discriminated against in the workplace because of her child's disability.[115] The Court agreed, ruling that her treatment constituted direct discrimination on the basis of her child's disability. This type of discrimination constitutes direct discrimination by association.[116] According to this concept, a

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orzeczenia V Ca 3611/14 - Portal Orzeczeń Sądu Okręgowego w Warszawie, , http://orzeczenia.warszawa.so.gov.pl/details/asocjacja/154505000001503_V_Ca_003611_2014_Uz_2015-12-14_001 (last visited May 11, 2019); EUROPEAN UNION AGENCY FOR FUNDAMENTAL RIGHTS AND COUNCIL OF EUROPE, *supra* note 91 at 51-52.

[113] CASE C-303/06, *supra* note 15 at para 64 (2).

[114] *Id.* at para 26.

[115] Under Art 2(1) to (3) of the Directive 2000/78/EC.

[116] Note that the Court never uses this term see Bell, *supra* note 103 at 8; for a view that the judgement created the concept of direct (but not indirect) discrimination by association see Andrea Eriksson, *European Court of Justice: Broadening the scope of European nondiscrimination law*, 7 INT. J. CONST. LAW 731–753, at 751-752 (2009); and Gabriel von Toggenburg, *Discrimination by association: a notion covered by EU equality law?*, 3 EUR. LAW REPORT. 82–87, at 86 (2008); Lisa Waddington, *Carers, gender, and employment discrimination-What does EU Law offer Europe's*

claimant does not need to possess a protected attribute herself, but rather merely suffer the consequences of the discriminatory behaviour which is based on her relationship with her child, or the person(s) possessing the protected attribute.[117] The Court arguably does not limit discrimination by association to disability, because the rationale of the Employment Directive is to combat all types of discrimination in the workplace.[118]

Coleman marks a significant turning point for non-discrimination law. It shows that '[n]ot only does [anti-discrimination law] protect the person with a protected characteristic (ethnicity, sex, disability), it also shields somebody who does not but is associated with such a person.'[119] Claimants therefore do not need to be part of a protected group, but rather merely experience the adverse effects directed at the group.[120]

Carers?, *in* BEFORE AND AFTER THE ECONOMIC CRISIS: WHAT IMPLICATIONS FOR THE" EUROPEAN SOCIAL MODEL"? 101–128, at 124 (2011).

[117] CASE C-303/06, *supra* note 15 at para 61 (1).

[118] The argument is made based on para 50 of the judgment, which reads "[a]lthough, in a situation such as that in the present case, the person who is subject to direct discrimination on grounds of disability is not herself disabled, the fact remains that it is the disability which, according to Ms Coleman, is the ground for the less favourable treatment which she claims to have suffered. As is apparent from paragraph 38 of this judgment, Directive 2000/78, which seeks to combat all forms of discrimination on grounds of disability in the field of employment and occupation, applies not to a particular category of person but by reference to the grounds mentioned in Article 1." Marcus Pilgerstorfer & Simon Forshaw, *Transferred Discrimination in European Law: Case C-303/06, Coleman v Attridge Law;[2008] ICR 1128,[2008] IRLR 722 (ECJ)*, 37 IND. LAW J. 384–393, at 392-393 (2008); similar view see Bell, *supra* note 103 at 8; also in favour Eriksson, *supra* note 117 at 751; a view that only direct discrimination by association exists (and not indirect) and only in areas such as disability see Catalina-Adriana Ivanus, *Discrimination by Association in European Law*, 2 EUR. LAW PERSP BUS, at 121 (2013), http://www.businesslawconference.ro/revista/articole/an2nr1/17%20Ivanus%20Catalina%20EN.pdf.

[119] Catalina-Adriana Ivanus, *Discrimination by Association in European Law*, 2 PERSP BUS LJ 116, at 117 (2013).

[120] It has been criticised that the Court did not define the required relationship/closeness of the victim and the protected group to fall under this concept see Eriksson, *supra* note 117 at 751.

What does 'discrimination by association' mean for OBA? This will depend on whether one deems the interests group in which users are put close enough to protected traits in EU Directives. For example is "Hispanic affinity"[121] close enough to "race" or "ethnicity" within the meaning of the Racial Equality Directive? Is the interest category "Vogue readers" close enough to "sex" in the sense of the Gender Equality Directive?

In relation to ethnicity the Court ruled in Chez that the 'concept of ethnicity, […] has its origin in the idea of societal groups marked in particular by common nationality, religious faith, language, cultural and traditional origins and backgrounds.'[122] The Court[123] stated that this will not be the case if characteristics are used (e.g. country of birth) that do not link to any of these traits.[124]

If one wishes to argue that these interest groups do not map on to protected groups in the law, direct discrimination cases will not be possible. Of course the avenue through indirect discrimination is still open (see section V.B).

If, conversely, one wishes to argue that affinity profiling does correspond to protected traits, direct discrimination claims are - in general - possible. However, if it is argued that advertisers are not directly using or inferring protected traits of an individual, but only assuming a person's interests in the protected group, this could mean that direct discrimination claims are not possible. In other words, the argument made is this: advertisements are shown to you based not on your ethnicity, but rather on your interest in a given ethnicity. Even if this argument is accepted, discrimination by

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[121] Dexter Thomas, *Facebook tracks your "ethnic affinity" — unless you're white*, VICE NEWS (2016), https://news.vice.com/en_us/article/paqeez/facebook-tracks-your-ethnic-affinity-unless-youre-white (last visited Aug 11, 2019).

[122] CASE C-83/14, *supra* note 16 at para 46.

[123] Case C-668/15, Jyske Finans A/S v Ligebehandlingsnævnet, acting on behalf of Ismar Huskic, 2017 E.C.R. I–278, at para 33, http://curia.europa.eu/juris/document/document.jsf?text=&docid=189652&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=7165960 (last visited Aug 11, 2019).

[124] Erica Howard, *EU Equality Law: three recent developments*, 17 EUR. LAW J. 785–803, at 66 (2011).

association can offer a solution. Individuals whom experience an adverse action based on their association with a protected group could receive protection based on assumed interests (or assumed association) with a protected group, without the need to be a member of it.

An important implication of 'discrimination by association' is that it allows associated individuals to raise a discrimination claim against actions based on their assumed interests, rather than just actions based on their protected traits. Moreover, claimants can do so regardless of whether they are actually a member of the discriminated group. Arguably, individuals who are actually members of the group can also take this path, meaning they do not need to prove or publicly declare their membership in the group.[125] This can be extremely valuable for claimants that might prefer not to publicly disclose their sensitive traits (e.g. religion, disability, sexual orientation).

Discrimination by association could increase algorithmic accountability in advertising cases in several ways. First, if affinity profiling is seen as directly using protected traits, it could constitute direct discrimination (or by association) which means legal justification is only possible if the aforementioned non-discrimination directives explicitly name a possible exception.

Second, the concept of discrimination by association could widen the circle of potential claimants. If direct discrimination occurred against, for example, a religious group, then Christians who have been misclassified as Buddhists could also make a claim as victims of direct discrimination (by association) if they experienced adverse treatment.[126]

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[125] A similar argument was used by the Polish Court in relation to a gay worker who was dismissed because he attended the Pride parade see Szczegóły orzeczenia V Ca 3611/14 - Portal Orzeczeń Sądu Okręgowego w Warszawie, *supra* note 113.

[126] If one wishes to argue that affinity profiling is assuming that someone is for example Christian (rather than thinking they are interested in this religion) when in fact they are not, the concept of discrimination by perception could apply. The legal consequences are the same for discrimination by association and perception. See for example Howard, *supra* note 125 at 800 who believes that "Discrimination by assumption" can be read into the Directives based on the Coleman judgment.

Third, discrimination by association also has practical advantages for claimants who are in fact part of a protected group and feel unlawfully treated, but do not want to 'out' themselves in order to bring a claim. Owing to the fact that group membership is not a precondition to warrant protection, affected parties could bring a claim under discrimination by association instead of appealing to normal direct discrimination, which might require publicly disclosing sensitive attributes.

Finally, as is generally true of direct discrimination cases, an abstract victim is sufficient to shift the burden of proof from the claimant to the accused. This means that if a certain practice is discriminatory it does not matter whether the practice actually had negative effects.[127] For example, prima facie direct discrimination has been seen in advertisements against recruiting "immigrants"[128] and public statements against recruiting gay football players.[129] In these cases an identifiable victim was not required. It was not necessary to demonstrate that fewer "immigrants" or fewer gay people applied for the job for the claims of discrimination to be successful.

B. Indirect discrimination by association: the case Chez

The Coleman case has established direct discrimination by association as a standard concept in non-discrimination law. As mentioned before it could be argued that major companies do not use protected attributes to make decisions or serve advertisements, but rather use affinity or assumed interests which are not equivalent to protected traits in non-discrimination law.

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[127] CASE C-54/07, *supra* note 89 at para 41(3); Case C-81/12, Asociația Accept v Consiliul Național pentru Combaterea Discriminării,, 2013 E.C.R. I–275, at para 62, http://curia.europa.eu/juris/document/document.jsf?docid=136785&doclang=EN (last visited Mar 26, 2019).

[128] CASE C-54/07, *supra* note 89 at para 41(3)..

[129] CASE C-81/12, *supra* note 128 at para 62.

At the same time, it could be problematic to see affinity profiling as completely different from the usage of protected grounds. This is because affinity or interests (e.g. friends, likes[130] and groups) can potentially reveal or correlate with protected attributes of a user. These interest groups could be proxies for a user's sensitive characteristics and personal life without the user being aware. For example, research suggests that friends[131] are a strong indication of identity and even sexual orientation.[132]

However, even if one sees affinity groups as distinct from protected traits, indirect discrimination as well as indirect discrimination by association might still occur. Further, it may be possible to treat discriminatory OBA as direct discrimination (by association) where almost no legal justification exists. This could potentially pose legal challenges for advertisers in the future.

Indirect discrimination by association was introduced in a case heard by the ECJ in 2015, *CHEZ Razpredelenie Bulgaria AD v Komisia za zashtita ot diskriminatsi* (C‑83/14, 2015; henceforth 'Chez').[133] The case centred around Ms. Nikolova, a shop owner in Bulgaria. Her establishment was situated in a primarily Roma populated area. Ms. Nikolova herself was not of Roma descent.[134] She felt discriminated against because her electricity meters were situated at an unreachable height of six meters above the ground. This made it impossible for her to monitor her electricity consumption.[135] The reason to install the meters at this height was to prevent tempering.[136]

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[130] Kosinski, Stillwell, and Graepel, *supra* note 10.

[131] On how friends of friends can be used to infer personality traits see Kristen M. Altenburger & Johan Ugander, *Monophily in social networks introduces similarity among friends-of-friends*, 2 NAT. HUM. BEHAV. 284 (2018).

[132] Carter Jernigan & Behram F. T. Mistree, *Gaydar: Facebook friendships expose sexual orientation*, 14 FIRST MONDAY (2009), https://firstmonday.org/ojs//index.php/fm/article/view/2611 (last visited Jan 28, 2019).

[133] CASE C‑83/14, *supra* note 16.

[134] *Id.* at para 49.

[135] *Id.* at para 22-29.

[136] *Id.* at para 113.

Indirect discrimination occurs if a protected group is treated significantly less favourably as a result of a seemingly 'neutral provision criteria or practice'[137] (i.e. meter installation) which do not explicitly use protected attributes. An argument made to support Ms. Nikolova's claim was that in areas where the majority of the population was not of Roma descent, the electricity meters were situated significantly lower to the ground.[138] This gave rise to the idea that differential treatment in offering goods and services based on race or ethnicity[139] was occurring, even though Ms. Nikolova was not of Roma descent.

Malone has convincingly argued that this case has born the notion of indirect discrimination by association.[140] Similar to the Coleman case, the claimant does not need to be part of the stigmatised collective to suffer discrimination. Moreover, the claimant does not even need to have a close relationship with the community. Rather, Malone explains that any 'third party damage'[141] suffered from indirect racial discrimination entitles the victim(s) to protection. Initially, as in the Coleman case, the Advocate General (AG)[142] referred to some sort of relationship with the stigmatised community (i.e. 'wholesale and collective character'[143]), but this restriction did not appear

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[137] *Id.* at para 109.

[138] *Id.* at para 22-23.

[139] Art 3(1)(h) Directive 2000/43/EC.

[140] Michael Malone, *The Concept of Indirect Discrimination by Association: Too Late for the UK?*, 46 IND. LAW J. 144–162, at 150-151 (2017); also in favour of this view see Erica Howard, *EU anti-discrimination law: Has the CJEU stopped moving forward?*, 18 INT. J. DISCRIM. LAW 60–81, at 65 (2018) who also argues that Chez and Coleman also prohibit "discrimination by perception" which means - as she writes - "discrimination because someone perceives a person to be, for example, of a particular ethnic origin or sexual orientation, when they are not."

[141] Malone, *supra* note 141 at 151.

[142] Case C‑83/14, Opinion of Advocate General Kokott, CHEZ Razpredelenie Bulgaria AD,, 2015 E.C.R. I–170, http://curia.europa.eu/juris/document/document.jsf?text=&docid=162873&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=7180188 (last visited Aug 11, 2019).

[143] *Id.* at para 147.

in the final judgement.[144] It can therefore be assumed that no personal relationship is needed to warrant protection.[145]

With this landmark judgement the Court established the notion that a claimant can sue for indirect discrimination by association despite not being part of the protected group, and not having a close relationship with it.

The significance of the judgement in Chez goes even further. The Court left open the possibility that the practice in question (meter installation) is direct discrimination by association. A decision on this classification was ultimately left to the national court. [146] Leaving this issue open is significant because the boundaries between direct and indirect discrimination can easily blur, and offenders are not likely to admit illegal reasons are behind their actions.

What does this mean for affinity profiling? Advertisements based on the correlation of interests could lead to undesired differential results for protected groups. Platform providers may not actually be interested in inferring sensitive attributes, but rather merely want to identify correlations in the interests of their users. To use a stereotypical example, if a user visits Jazz or Blues websites, they might also see ads for Caribbean food. The decision to show food advertisements is not based on 'race' or 'ethnicity' but rather on the statistical correlation that suggests that people who have an interest in a certain type of music also enjoy a certain type of food. The decision to show Jazz enthusiasts advertisements for Caribbean food can be seen as a 'seemingly neutral provision, criterion, or practice'. Nonetheless unlawful differential results could still occur if statistical evidence shows that an interest in Caribbean food and jazz music is more likely to occur among a particular ethnic group, and this group is treated less favourably than others without any justification (more on that below).

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[144] Malone, *supra* note 141 at 151.

[145] Rossen Grozev, *A Landmark Judgment of the Court of Justice of the EU–New Conceptual Contributions to the Legal Combat against Ethnic Discrimination*, 15 EQUAL RIGHTS REV. 168–187, at 173 (2015).

[146] CASE C‑83/14, *supra* note 16 at para 129 (4); McCrudden, *supra* note 85.

Such correlations are not unrealistic. As mentioned above, research suggests that personal interests[147] and friends[148] are a strong indication of one's personality. These sources can paint a very privacy invasive picture and reveal or correlate with sensitive traits such as sexual orientation.[149]

The ECJ's judgements in Coleman and Chez have three important implications for OBA. If affinity profiling is not seen as inferring or using protected traits, because the interest groups are seen as sufficiently distinct from protected categories such as "race" and "ethnicity" as described in the directives, no claims against direct discrimination could be brought. However, claims under indirect discrimination are possible if it can be shown that actions based on assumed affinity or interest groups lead to adverse and differential results for a protected group (and anyone associated with this group) in comparison with others in a similar situation.

This means both claims under indirect discrimination as well as indirect discrimination by association are then possible. This could have interesting implications for OBA. First, as revealed in Coleman, it is not necessary for the claimant to be part of the disadvantaged group (e.g. men being shown advertisements for lower paying jobs because they have been classified as women). Likewise, as revealed in Chez, the claimant also does not need to have a close relationship with the protected group (e.g. she does not need to be an active member of the women's movement).

Second, as I argued above, the logical conclusion of not needing to be a member of the protected group is that a person who is in fact a member of the protected group does not need to prove it or 'out' themselves. Third, because the Court left open in Chez whether direct or indirect discrimination by association occurred[150], it may also be possible to see the practice of placing ads based on affinity as direct discrimination (or by association) with almost no justification (more on that below). This could pose legal challenges for many advertising practices.

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[147] Kosinski, Stillwell, and Graepel, *supra* note 10.

[148] Altenburger and Ugander, *supra* note 132.

[149] Jernigan and Mistree, *supra* note 133.

[150] CASE C-83/14, *supra* note 16 at para 129 (4).

Of course, as discussed above, the claimant needs to demonstrate that they have suffered a particular disadvantage, must identify a comparator that is treated more favourably and demonstrate a disproportionately negative effect on a protected group. An indication of less favourable treatment in advertising could be seen in differential pricing or exclusion from goods and services or jobs, which will be discussed in the next section.

1. Particular disadvantage that is significantly more negative in its effects on a protected group

To bring a successful claim a particular disadvantage must occur for one of the protected groups in comparison to a particular person or group in a similar situation in a protected sector: employment, welfare, or goods and services. Interestingly enough, the Court explained that 'particular disadvantage' within the meaning of that provision does not refer to serious, obvious or particularly significant cases of inequality, but rather denotes that it is particularly persons of a given racial or ethnic origin who are at a disadvantage because of the provision, criterion or practice at issue.'[151] The low bar for the notion of 'particular disadvantage' is very relevant for cases of discriminatory advertisements which might otherwise be seen as "trivial."

Conversely, some Member State case law suggests that a certain threshold of disadvantage must be met. The implementation assessment of the Gender Access Directive states that the issue of differential pricing is underexplored because it is sometimes seen as 'trivial.'[152] For example, in Sweden differential prices for haircuts for men and women are seen as 'trivial" issues.[153] Despite the ECJ[154] having struck

[151] *Id.* at para 129(4).; Grozev, *supra* note 146 at 176 explains that "particular disadvantage" and "less favourable treatment" should be seen as comparable in their severity.

[152] EUROPEAN PARLIAMENT'S DIRECTORATE-GENERAL FOR PARLIAMENTARY RESEARCH SERVICES, *supra* note 100 at I-38.

[153] *Id.* at I-36.

[154] Case C-236/09, Association belge des Consommateurs Test-Achats ASBL, Yann van Vugt, Charles Basselier v Conseil des ministres, 2011 E.C.R. I–100, at para 30-34,

down a provision in the Gender Access Directive in 2012 that allowed insurance companies to have different prices based on gender, some Member States such as Estonia, Hungary, and (to a lesser degree) Finland still allow these practices, which is an issue that the Commission raised.[155]

In the context of data protection law and the safeguards around automated decision-making with legal and significant effects (Article 22 GDPR), the Article 29 Working Party explains that price discrimination[156] can be seen as a type of automated decision that impacts individuals significantly. Data subjects receive additional protection under data protection law on this basis. Potential parallels can be found between EU non-discrimination law and the notion of 'particular disadvantage,' and the Article 29 Working Party's' concept of legal and significant effects (e.g. differential pricing especially credit, health, or decisions relating to education or employment)[157] in the GDPR. It can be argued that discriminatory advertisements as described in the Article 29 Working Party's guidelines on automated decision-making can be interpreted as a type of particular disadvantage.

Despite this, practical challenges remain. Individuals will often not be aware that they are discriminated against. In the

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http://curia.europa.eu/juris/document/document.jsf?text=&docid=80019&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=5960483 (last visited Aug 6, 2019); which is very much inline with Schiek who has previously criticised this provision by stating that '[o]ne of the purposes of equality law is deeply individualistic: no one shall be judged on the basis of assumptions in line with group characteristics. Again, the insurance argument is a perfect test case. ' Schiek, *supra* note 97 at 436; it is interesting to note that the EC issued non-binding guidelines afterwards explaining that some gender based differences in premiums are still possible see European Commission, *Guidelines on the application of Council Directive 2004/113/EC to insurance, in the light of the judgment of the Court of Justice of the European Union in Case C-236/09 (Test-Achats)Text with EEA relevance* at point 14.

[155] EUROPEAN PARLIAMENT'S DIRECTORATE-GENERAL FOR PARLIAMENTARY RESEARCH SERVICES, *supra* note 100 at I-23.

[156] ARTICLE 29 DATA PROTECTION WORKING PARTY, *Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679, 17/EN WP 251rev.01* at 22 (2018), http://ec.europa.eu/newsroom/article29/document.cfm?doc_id=49826.

[157] *Id.* at 21-22.

offline world this might be a simpler problem. Consumers, for example, have the ability to compare prices in different stores. Similarly, consumers would know if a vendor refuses to sell products to them. In the online world discriminatory treatment can be much harder to observe. Consumers may not know whether they or others have been offered a better price or (not) shown ads and therefore have been excluded from the market. Without algorithmic transparency and more transparent business models, it will be hard to prove prima facie discrimination and thus shift the burden of proof to the alleged offender.

2. Disproportionately affected in a negative way (a comparator)

Apart from demonstrating that a 'particular disadvantage' occurred, the claimant needs to find a group that is treated more favourably. This means that the claimant will need to show that the disputed measure negatively affected a protected group 'considerably more'[158] or 'far more'[159] than others in a similar situation.

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[158] In this case the Court held that "[t]he Court has consistently held that indirect discrimination on grounds of sex arises where a national measure, albeit formulated in neutral terms, puts considerably more workers of one sex at a disadvantage than the other (see, to that effect, Case C‑1/95 Gerster [1997] ECR I‑5253, paragraph 30; Case C‑123/10 Brachner [2011] ECR I‑10003, paragraph 56; and Case C‑7/12 Riežniece [2013] ECR, paragraph 39)." Case C‑363/12, Z. v A Government department, The Board of management of a community school, 2014 E.C.R. I–159, at para 53, http://curia.europa.eu/juris/document/document.jsf?text=&docid=149388&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=7177526 (last visited Aug 11, 2019).

[159] In this case it was stated "it is apparent from the settled case-law of the Court that indirect discrimination arises where a national measure, albeit formulated in neutral terms, works to the disadvantage of far more women than men (see, in particular, judgments in Brachner, C‑123/10, EU:C:2011:675, paragraph 56 and the case-law cited, and Elbal Moreno, C‑385/11, EU:C:2012:746, paragraph 29)." Case C‑527/13, Lourdes Cachaldora Fernández v Instituto Nacional de la Seguridad Social (INSS), Tesorería General de la Seguridad Social (TGSS), 2015 E.C.R. I–215, at para 28, http://curia.europa.eu/juris/document/document.jsf?text=&docid=163658&

Unfortunately, Europe does not have a clear yardstick and the European case law varies noticeably in this regard. For example, in a Spanish case in relation to part time work, the ECJ acknowledged that if 80% of the affected group are women, the adverse action constitutes discrimination.[160]

The aforementioned study[161] also shows the importance of statistics to prove differential results and refers to a summary of ECJ's jurisprudence that can be found in the AG Léger's opinion in the Nolte case:[162]

> '[I]n order to be presumed discriminatory, the measure must affect "a far greater number of women than men" [Rinner-Kühn682] or "a considerably lower percentage of men than women" [Nimz, 683 Kowalska684] or "far more women than men" [De Weerd685]. Cases suggest that the proportion of women affected by the measure must be particularly marked. In Rinner-Kühn, the Court inferred the existence of a discriminatory situation where the percentage of women was 89 %. In this instance, per se the figure of 60 % [...] would therefore probably be quite insufficient to infer the existence of discrimination.'[163]

In relation to different rights for part time workers, potential discrimination was seen as sufficiently proven in

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pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=7178115 (last visited Aug 11, 2019).

[160] Isabel Elbal Moreno v Instituto Nacional de la Seguridad Social (INSS), Tesorería General de la Seguridad Social (TGSS), C-385/11, , at para 31, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62011CJ0385&from=EN (last visited Mar 26, 2019).

[161] EUROPEAN UNION AGENCY FOR FUNDAMENTAL RIGHTS AND COUNCIL OF EUROPE, *supra* note 91 at 242ff.

[162] Case C-137/93 Opinion of Advocate General Leger, Inge Nolte v. Landesversicherungsanstalt Hannover, 1995 E.C.R. I–438, at para 56-58, http://curia.europa.eu/juris/showPdf.jsf?text=&docid=99269&doclang=EN (last visited Mar 26, 2019).

[163] EUROPEAN UNION AGENCY FOR FUNDAMENTAL RIGHTS AND COUNCIL OF EUROPE, *supra* note 91 at 242-243.

cases where 87.9 %[164] or 87 %[165] of part-time employees were women. Here the abstract danger of a protected group being affected at a large percentage was seen as sufficient.

At the same time the EJC ruled in R*egina v Secretary of State for Employment, ex parte Nicole Seymour-Smith and Laura Perez* (C-167/97)[166] that a measure (i.e. to only allow appeals against unfair dismissal after 2 years of continuous employment) that effected 77.4% men and 68.9% women did not amount to indirect discrimination against women's rights to appeal.

It remains open of whether an 80-90% threshold is normatively acceptable or desirable, or whether this threshold should be situated lower.

Practically speaking, in OBA finding a comparable group that is significantly treated differently can be difficult due to a lack of transparency in algorithmic decision-making and business practices. Not knowing the optimisation conditions or decision rules of algorithms make it difficult to prove a case. If for example an employer decides that only people taller than 1 meter 80 cm should be hired, it will be easy to establish prima facie discrimination.[167] In this case we know the rule (hiring strategy) and can find statistical evidence to show that, while the rule does not directly use gender as a discriminating factor, it would nonetheless affect women

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[164] Joint cases C-4/02 and C-5/02, Hilde Schönheit v Stadt Frankfurt am Main and Silvia Becker v Land Hessen, 2003 E.C.R. I–583, at para 63-64, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62002CJ0004&from=EN.

[165] Case C-1/95, Hellen Gerster v Freistaat Bayern, 1997 E.C.R. I–452, at para 33, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:61995CJ0001&from=GA (last visited Mar 26, 2019).

[166] Case C-167/97, Regina v Secretary of State for Employment, ex parte Nicole Seymour-Smith and Laura Perez, 1999 E.C.R. I–60, at para 63-64, http://curia.europa.eu/juris/showPdf.jsf?text=&docid=44408&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=6007788 (last visited Mar 26, 2019); see also David Jacobus Dalenberg, *Preventing discrimination in the automated targeting of job advertisements*, 34 COMPUT. LAW SECUR. REV. 615–627, at 623 (2018).

[167] Inspiration taken from the Federal Labour Court in Germany, 8 AZR 638/14, 18 February 2016 and Lufthansa's policy of only hiring pilots taller than 1.65 m.

disproportionately. In the online world, we often do not know the rules and attributes on which we are profiled and whether these attributes correlate with protected characteristics. Further, we do not know who else is in our profiling group, which other groups exist, and how we are treated in comparison to others. This makes it difficult to prove that a protected group was disproportionally negatively affected. Trade secrets and business secrecy have formed a strong barrier in the past to algorithmic accountability and fairness.[168] To remedy this, more transparency is needed.

On the positive side, if a comparable group can be found (and a particular disadvantage occurred), the burden of proof is shifted from the claimant to the accused. Only prima facie discrimination must be shown to shift this burden, at which point the accused must prove lawful behaviour.

This can be done in two ways. First, by demonstrating that there was no causal link between the prohibited ground and the differential treatment, meaning the same effect would have happened if the claimant would have had a different age, gender, ethnicity, etc.[169] Alternatively, the accused can show that even though differential treatment occurred, it was justified because a legitimate aim was pursued in a necessary and proportionate manner.[170] If neither condition can be established the alleged offender will be liable for discrimination, regardless of their actual intent.[171]

VIII. JUSTIFICATION OF DISCRIMINATION

Since differential treatments and results for protected groups can be lawful under certain circumstances, it is

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[168] Sandra Wachter, Brent Mittelstadt & Luciano Floridi, *Why there is no right to explanation in the General Data Protection Regulation*, 7 INT. DATA PRIV. LAW, at 85-89 (2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2903469; Jeremy B. Merrill, *supra* note 45; ProPublica Data Store, *COMPAS Recidivism Risk Score Data and Analysis*, PROPUBLICA DATA STORE (2016), https://www.propublica.org/datastore/dataset/compas-recidivism-risk-score-data-and-analysis (last visited May 7, 2019).

[169] ELLIS AND WATSON, *supra* note 19 at 167.

[170] This is mentioned in all EU non-discrimination directives.

[171] ELLIS AND WATSON, *supra* note 19 at 167.

necessary to take a closer look at how discrimination can be justified. Both direct and indirect discrimination can be justified under certain circumstances. As discussed in section V, direct discrimination is only lawful if it is explicitly named in the non-discrimination directives (e.g. 'genuine occupational requirement'[172] or Recital 16 of the Gender Goods and Service[173] Directive). Indirect discrimination is only lawful if a legitimate aim is pursued and the measure is necessary and proportionate.[174]

Unfortunately, European case law does not have a clear standard for what constitutes a legitimate interest.[175] At a minimum, some economic justifications can be seen as legitimate.[176] This much has been ruled in relation to less stricter employment labour laws to alleviate the burden for

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[172] For example Art 4 of COUNCIL DIRECTIVE 2000/78/EC OF 27 NOVEMBER 2000 ESTABLISHING A GENERAL FRAMEWORK FOR EQUAL TREATMENT IN EMPLOYMENT AND OCCUPATION, *supra* note 101.

[173] E.g. single-sex private clubs or single-sex sports events.

[174] As stated in all the EU non-discrimination directives.

[175] For a strong critique of the broad possibilities of legitimising indirect discrimination through the frameworks themselves (Art 2[2] of the Employment Directive) as well as the incoherence of the jurisprudence of the ECJ over the years see ELLIS AND WATSON, *supra* note 19 at 409-418; for a further overview of the Court's accepted legitimate aims see LIMITS AND POTENTIAL OF THE CONCEPT OF INDIRECT DISCRIMINATION, at 33-35 (Christa Tobler & Europäische Kommission eds., Ms. completed in September 2008 ed. 2008).

[176] The Court ruled that '[e]ven supposing that this last argument put forward by OTE seeks to assert a legitimate aim falling within policy on economic development and job creation, it nevertheless constitutes a mere generalisation insufficient to show that the aim of the measures at issue is unrelated to any discrimination on grounds of sex ' Case C-196/02, Vasiliki Nikoloudi v Organismos Tilepikoinonion Ellados AE, 2005 E.C.R. I–141, at para 52, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62002CJ0196&from=LV (last visited Mar 26, 2019).

small businesses[177], to serve customer preferences[178], as well as in relation to the exclusion from the pension scheme based on objectively justified economic grounds.[179] At the same time the ECJ on various occasions has ruled that – at least for the public sector - economic interests (e.g. cutting public expenditure[180] or increasing costs[181]) and for private industry

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[177] The Court stated that "where it is not established that undertakings which are not subject to that system employ a considerably greater number of women than men. Even if that were the case, such a measure might be justified by objective reasons not related to the sex of the employees in so far as it is intended to alleviate the constraints weighing on small businesses." Case C-189/91, Petra Kirsammer-Hack v Nurhan Sidal, 1993 E.C.R. I–907, at para 36 (2), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A61991CJ0189 (last visited Aug 7, 2019).

[178] NB this was a direct discrimination case (which also needs a legitimate aim to be lawful) in relation to regulating the midwife profession. The Court stated that provisions favouring women over man are justified because "[i]t must however be recognized that at the present time personal sensitivities may play an important role in relations between midwife and patient." Case C-165/82, Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland, 1983 ECR -311, at para 20, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:61982CJ0165&from=EN (last visited Aug 7, 2019).

[179] Here it was for the national court to decide if the measure corresponded to a real need, is necessary and appropriate. The sole fact that this measure affected more women than men was not sufficient to claim indirect discrimination see Case C-170/84, Bilka - Kaufhaus GmbH v Karin Weber von Hartz, 1986 E.C.R. I–204, at para 36, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:61984CJ0170&from=EN (last visited Mar 26, 2019).

[180] For example the aim of restricting public expenditure was not sufficient to justify differential treatment between men and women see JOINT CASES C-4/02 AND C-5/02, *supra* note 165 at para 84; in a different case it was found that budgetary considerations alone are not a legitimate interest see CASE C-196/02, *supra* note 177 at para 53; for more details on economic justification see Justyna Maliszewska-Nienartowicz, *Direct and indirect discrimination in European union law–how to draw a dividing line*, 3 INT. J. SOC. SCI. 41–55, at 44 (2014).

[181] In this case it was found that "[s]o far as the justification based on economic grounds is concerned, it should be noted that an employer cannot justify discrimination arising from a job-sharing scheme solely on the ground that avoidance of such discrimination would involve increased costs." Case C-243/95, Kathleen Hill and Ann Stapleton and the Revenue

(policy of neutrality vis-à-vis its customers/customer satisfaction)[182] cannot be the sole justification for discriminatory measures. Similarly the Court ruled that 'while budgetary considerations may underpin the chosen social policy of a Member State and influence the nature or extent of the measures that that Member State wishes to adopt, such considerations cannot in themselves constitute a legitimate aim within the meaning of Article 6(1) of Directive 2000/78'[183].

Commissioners and the Department of Finance, 1998 E.C.R. I–298, at para 40.

[182] In relation to customer complaints against employees providing IT services wearing a headscarf the Court ruled that "[i]t follows from the information set out above that the concept of a 'genuine and determining occupational requirement', within the meaning of that provision, refers to a requirement that is objectively dictated by the nature of the occupational activities concerned or of the context in which they are carried out. It cannot, however, cover subjective considerations, such as the willingness of the employer to take account of the particular wishes of the customer." CASE C‑188/15, *supra* note 13 at para 40, but it was for the national court to decide whether the action should be seen as indirect or direct discrimination which has implication on possible justifications see at para 31-32; conversely, the Court also ruled that "[a]s regards, in the first place, the condition relating to the existence of a legitimate aim, it should be stated that the desire to display, in relations with both public and private sector customers, a policy of political, philosophical or religious neutrality must be considered legitimate." Case C-157/15, Samira Achbita and Centrum voor gelijkheid van kansen en voor racismebestrijding v G4S Secure Solutions NV, 2017 E.C.R. I–203, at para 37, http://curia.europa.eu/juris/document/document.jsf?text=&docid=188852&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=6030648 (last visited Mar 26, 2019), however, it was for the referring court to decide if this measure is appropriate and necessary see at para 44.

[183] Case C‑530/13, Leopold Schmitzer v Bundesministerin für Inneres, 2014 E.C.R. I-2359, at para 41, http://curia.europa.eu/juris/document/document.jsf;jsessionid=2B048F172EB0BF34DF98B12B741BB63A?text=&docid=159446&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=5492658 (last visited Aug 3, 2019); same view also in Joint cases C‑159/10 and C‑160/10, Gerhard Fuchs, Peter Köhler v Land Hessen,, 2011 E.C.R. I–508, at para 74, http://curia.europa.eu/juris/document/document.jsf?text=&docid=107924&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=5492745 (last visited Aug 3, 2019).

Of course it can be argued that different standards might apply to public and private entities. However, it seems unlikely that the ECJ would allow a completely different interpretation of the directives for industry compared to the public sector.[184] It seems more likely that a fair balance of interests must be established that acknowledges that legitimate aims are different from budgetary reasons or competitiveness.[185]

While the jurisprudence is inconsistent, the Court's preference for an overarching societal aim (e.g. social and employment policy[186]) rather than pure economic interests can be seen in the case law when assessing what constitutes a legitimate aim. For example, the Court accepted legitimate aims such as public safety in relation to the police force[187], more job security for people over the age of 40 at the expense of younger people[188], integration of people without a secondary

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[184] See also LIMITS AND POTENTIAL OF THE CONCEPT OF INDIRECT DISCRIMINATION, *supra* note 176 at 6 and 33 who believes that budgetary reasons alone can never constitute a legitimate aim.

[185] Inline with ELLIS AND WATSON, *supra* note 19 at 412 who write that "legitimate aims are distinguishable from purely individual reasons particular to the employer's situation, such as cost reduction or improving competitiveness, although it cannot be ruled out that a national rule may recognize, in the pursuit of those legitimate aims, a certain degree of flexibility for employers."

[186] Legitimate social-policy objective is a legitimate aim according to settled case law see Case C-173/13, Maurice Leone, Blandine Leone v Garde des Sceaux, ministre de la Justice, Caisse nationale de retraite des agents des collectivités locales, 2014 E.C.R. I-2090, at para 53, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62013CJ0173&from=EN (last visited Aug 13, 2019).

[187] Access to posts and vocational training with firearms were restricted for women as they are more often the victims of assassinations. It was left to the national court to decide if the legitimate aim is pursued in a necessary and proportionate manner see Marguerite Johnston and Chief Constable of the Royal Ulster Constabulary, C-222/84, , at para 62 (1986), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:61984CJ0222&from=GA (last visited Aug 7, 2019).

[188] Whilst the legitimate aim was lawful and shorter notice periods for people under the age of 25 were seen as justified, the provision was still unlawful because 'the legislation is not appropriate for achieving that aim,

degree into the job market and higher education[189], forced retirement to offer job opportunities for the youth[190], age limitations for safety reasons[191], or compensation for career breaks to take care of children[192].

Other legitimate aims according to Maliszewska-Nienartowicz are 'ensuring coherence of the tax system; the safety of navigation, national transport policy and environmental protection in the transport sector; protection of ethnic and cultural minorities living in particular region;

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since it applies to all employees who joined the undertaking before the age of 25, whatever their age at the time of dismissal.' Case C-555/07, Seda Kücükdeveci v Swedex GmbH & Co. KG., 2010 E.C.R. I–21, at para 34 and 40, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62007CJ0555 (last visited Aug 7, 2019).

[189] However, the provision was seen as not suitable to achieve this legitimate interest and thus deemed unlawful see Case C-88/08, David Hütter v Technische Universität Graz, 2009 E.C.R. I–381, at para 46 and 50, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62008CJ0088 (last visited Aug 7, 2019).

[190] The case centred around dentists. Whether or not this measure was necessary and appropriate was left for the national court to decide see Case C-341/08, Domnica Petersen v Berufungsausschuss für Zahnärzte für den Bezirk Westfalen-Lippe, 2010 E.C.R. I–4, at para 68 and 74, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62008CJ0341 (last visited Aug 7, 2019).

[191] In relation to maximum age for recruitment of firefighters see Case C‑229/08, Colin Wolf v Stadt Frankfurt am Main, 2010 E.C.R. I–3, at para 48, http://curia.europa.eu/juris/document/document.jsf?text=&docid=72660&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=7496417 (last visited Aug 13, 2019); however, this ruling is disputed and seen as controversial see ELLIS AND WATSON, *supra* note 19 at 393; a different ruling stated that a maximum age for pilots is a legitimate aim. However, in this case lowering of the retirement age was seen as not necessary because public airlines had higher retirement ages and have to deal with the same safety issues see Case C‑447/09, Reinhard Prigge, Michael Fromm, Volker Lambach v Deutsche Lufthansa AG, 2011 E.C.R. I–573, at para 68, 69 and 84 (2011), http://curia.europa.eu/juris/document/document.jsf?text=&docid=109381&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=7496797 (last visited Aug 13, 2019), NB that both these cases relate to direct discrimination based on age, but lawful direct discrimination also has to have a legitimate aim.

[192] In relation to better pension schemes (early retirement) for people that took career breaks see CASE C-173/13, *supra* note 187 at para 104.

ensuring sound management of public expenditure on specialised medical care; encouragement of employment and recruitment by the Member States; guaranteeing a minimum replacement income; need to respond to the demand for minor employment and to fight unlawful employment.'[193] The promotion of full-time work has also been acknowledged as a legitimate interest of an employer[194] who used this interest to exclude part-time workers from the pensions scheme. [195]

Therefore, in these and similar cases indirect discrimination can be justified, if seen as both necessary and proportionate.

Even though social and employment policy are seen as a legitimate aim for which the Court ascribes a higher margin of appreciation for Member States[196], this ascription is not limitless as the measures still need to be necessary and proportionate :

> '[m]ere generalisations concerning the capacity of a specific measure to encourage recruitment are not enough to show that the aim of the disputed rule is unrelated to any discrimination based on sex nor to provide evidence on the basis of which it could reasonably be considered that the means chosen were suitable for achieving that aim.'[197]

More detail on the proportionality test was given in Bilka Kaufhaus[198] where the Court explained that, in relation to sex discrimination, the test has three steps. In order to justify indirect discrimination the measures must 'correspond to a real need on the part of the undertaking, are appropriate with

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[193] Maliszewska-Nienartowicz, *supra* note 181 at 44.

[194] The argument was that part time workers often refuse to work in the afternoon and on weekends.

[195] CASE C-170/84, *supra* note 180 at para 37 but unfortunately the Court did not discuss whether this measure was necessary or proportionate .

[196] Case C-317/93, Inge Nolte v Landesversicherungsanstalt Hannover, 995 E.C.R. I–438 13, at para 33.

[197] CASE C-167/97, *supra* note 167 at para 76; see also LIMITS AND POTENTIAL OF THE CONCEPT OF INDIRECT DISCRIMINATION, *supra* note 176 at 6 and 35.

[198] CASE C-170/84, *supra* note 180.

a view to achieving the objectives pursued and are necessary to that end'.[199]

How does lawful justification apply to advertisements? The decision to show ads to people could be based on a 'neutral provision, criterion, or practice', such as geolocation. Companies may not, for example, have an explicit intention to use ethnicity as an excluding factor. Rather, discriminatory advertisements could be based on the assumed interests of a certain demographic, meaning the provision was a business and optimisation decision. However, differential results can still occur (e.g. certain ads (not) being shown) which is only lawful with an objective justification and ideally not based on economic and business concerns (e.g. customer satisfaction, profit maximisation) alone. Rather, as was stated in Bilka Kaufhaus[200] the discriminatory measure must correspond to a 'real need' in order to be deemed a legitimate aim.

Even if a legitimate aim is pursued the measure taken must still be deemed necessary and proportionate. As was demonstrated in Chez in relation to the offensive nature of the meter installation in an unreachable height, if advertisement practices closely overlap with for example stereotypical grouping, they could be seen as 'offensive and stigmatising'[201]. In such a case, certain ads could potentially be unlawful even if a legitimate aim is pursued and no less infringing measures exist.[202] The stigmatising nature of the practice (i.e. showing certain ads to certain groups) could make this practice disproportionate and therefore potentially illegal. And of course as mentioned above, if these ads are seen as illegal, they would not only violate directly or indirectly the interests of people that share the protected attribute; rather, they would also violate the interests of people that were associated with this group on the basis of discrimination by association.

Of course, a claim will only be successful if the advertisements in question fall under one of the protected areas (e.g. employment) and affects legally protected groups (e.g. religion or beliefs) and a particular disadvantage

[199] *Id.* at para 36.

[200] CASE C-170/84, *supra* note 180.

[201] CASE C-83/14, *supra* note 16 at para 84, 87, 108 and 128.

[202] *Id.* at para 128.; Grozev, *supra* note 146 at 183.

occurred. Moreover, as mentioned above, finding a comparable group that is significantly treated better can be difficult due to opaque algorithmic behaviour and business models, and the dispersed nature of advertisement provisioning which can increase the difficulty of locating other relevant individuals who were (not) shown a particular advertisement.

IX. PROTECTION OF NON-TRADITIONAL GROUPS

Even if these hurdles are overcome, and even with the most generous interpretations of non-discrimination and data protection law, these frameworks could fail to guard against the novel risks of inferential analytics. Discriminatory advertising practices can equally affect new types of groups created through inferential analytics that do not map onto historically protected attributes. Both types of law might fall short in providing adequate protection to groups that fall outside the scope of 'legally protected groups'.

Automated decision-making and profiling expand the range of potential victims of discrimination and other potential harms (e.g. privacy, financial, reputational) to include ephemeral groups of potentially similar individuals.[203] This can happen in two ways: either through privacy invasive inferences drawn from the dataset which is a problem of privacy and data protection, or through unacceptable actions based on these inferences which is a problem of discrimination (see sections IV and V). European data protection and non-discrimination law may not sufficiently guard against these risks.

Concerning the former, data protection law only applies if personal data is processed and the data relates to an identifiable individual.[204] First, group profiling can be done by

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[203] Brent Mittelstadt, *From Individual to Group Privacy in Big Data Analytics*, 30 PHILOS. TECHNOL. 475–494, at 478 (2017).

[204] See Art 4 (2) GDPR "personal data' means any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific

evaluating data about other people or data that does not fall under data protection law (e.g. non-personal data, anonymised data).[205] While individuals have no control or protections against insights drawn from these types of data, they can nonetheless reveal intimate details of the individual's life.

Second, profiling can be performed without singling out data subjects. [206] But identifying and singling out individuals is a precondition for data protection law to apply. According to the Article 29 Working Party a person is singled-out or 'considered as "identified" when, within a group of persons, he or she is "distinguished" from all other members of the group.'[207] Successful affinity profiling does not require to identify or single out data subjects in this sense, but nonetheless allows for sensitive information to be inferred which can drive discriminatory actions. This observation suggests that, in order to sufficiently protect against the novel risks and new types of groups created by profiling and inferential analytics, it would be sensible to abandon artificial data categories, no longer focus solely on identifiability, and instead create new protections based on holistic notions of 'data about people' and group conceptions of privacy.[208]

Concerning the latter, similar problems arise with European non-discrimination law which is based on historical lessons. Non-discrimination laws protect for example against religious and gender-based direct and indirect discrimination

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to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.'

[205] Wachter, *supra* note 20 at 7.

[206] Mittelstadt, *supra* note 204 at 478.

[207] Even though knowing the name is not necessary to be singled out other identifiers (e.g. "socio-economic, psychological, philosophical or other criteria and attributes") might suffice see Article 29 Data Protection Working Party, *Opinion 4/2007 on the concept of personal data; 01248/07/EN WP 136* at 12-13 (2007), http://ec.europa.eu/justice/article-29/documentation/opinion-recommendation/files/2007/wp136_en.pdf (last visited Apr 1, 2018).

[208] Wachter, *supra* note 20 at 7; Tal Zarsky, *Incompatible: The GDPR in the Age of Big Data*, 47 SETON HALL LAW REV., at 1013 (2017), https://papers.ssrn.com/abstract=3022646 (last visited Feb 26, 2018).

because such discrimination has occurred in the past.[209] However, inferential analytics can identify new patterns and similarities between individuals,[210] who can then be grouped for purposes of ad provisioning. The difficulty is that these new type of 'ad hoc groups'[211] are not guaranteed to align or correlate with the traditional social constructs or attributes (e.g. religion, gender, ethnicity) protected in non-discrimination law, and yet will experience discrimination with comparable harmful effects and via the same mechanisms as protected groups.[212]

Inferential analytics widens the range of victims of discriminatory actions. These new types of victims do not map to or might not correlate with our concepts in the law. New types of discrimination are possible, for example less favourable treatment for people that own dogs[213], are born on a Tuesday, are identified as "sad teens"[214], 'Young Single Parents'[215] or 'video gamers',[216] or belong to groups that occupy

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[209] Mantelero, *supra* note 21 at 765; in general on this topic see Alessandro Mantelero, *Personal data for decisional purposes in the age of analytics: From an individual to a collective dimension of data protection*, 32 COMPUT. LAW SECUR. REV. 238–255 (2016); for an analysis of discrimination under US law see Solon Barocas & Andrew D. Selbst, *Big data's disparate impact*, 104 CALIF. LAW REV. (2016).

[210] Samuel Yeom et al., *Privacy Risk in Machine Learning: Analyzing the Connection to Overfitting*, *in* IEEE COMPUTER SECURITY FOUNDATIONS SYMPOSIUM , at 1-2 (2018).

[211] Mittelstadt, *supra* note 204 at 485.

[212] Mantelero, *supra* note 210 at 240.

[213] For an overview of commonly used interest categories (including "Winter Activity Enthusiast", "dog owner" and "Heavy Facebook User") see FEDERAL TRADE COMMISSION, *Data brokers: A call for transparency and accountability* at B-2-B-6 (2014), https://www.ftc.gov/system/files/documents/reports/data-brokers-call-transparency-accountability-report-federal-trade-commission-may-2014/140527databrokerreport.pdf.

[214] Michael Reilly, *Is Facebook targeting advertising at depressed teens?*, MIT TECHNOLOGY REVIEW , https://www.technologyreview.com/s/604307/is-facebook-targeting-ads-at-sad-teens/ (last visited Apr 19, 2019).

[215] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 157 at 10 and 22.

[216] Being labelled as a "video gamer" can cause the Chinese Social Credit Score to drop see Nicole Kobie, *The complicated truth about China's social*

legal or ethical grey areas such as gamblers[217], or drug addicts. Even more opaque are groups that are created by neural nets where we have no concept in our language to describe the characteristics of the group, or the inferences drawn about it.[218] In other words, groups of individuals perceived to be similar to one another can be unfairly treated (e.g. offered high-cost loans and financially risky products),[219] without being singled out on the basis of sensitive attributes.[220]

Put differently, groups such as 'dog owners' are not protected under non-discrimination law. As a result, no protection under direct discrimination is possible. Of course claims can be made under indirect discrimination if dog ownership correlates with a protected attribute and all the other conditions mentioned in section VII are met. Apart from the technical difficulties[221] to detect the proxy power of dog ownership, it might be the case that this category does not sufficiently correlate with a protected group (i.e. disproportionately affected means around 80-90%). The ECJ has ruled that it is not within its power to create new protected groups (e.g. 'dog owners') as the list in the Directives is exclusive[222]. Similarly, in relation to the proportionality threshold the Court explained that a measure must 'taken in isolation'[223] produce the disproportionate effect for one of the

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credit system, WIRED UK, 2019, https://www.wired.co.uk/article/china-social-credit-system-explained (last visited Mar 26, 2019).

[217] The Working Party warns about the possible exploitation of gamers via nudging and online ads see ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 157 at 29.

[218] Jason Yosinski et al., *Understanding neural networks through deep visualization*, ARXIV PREPR. ARXIV150606579, at 2 (2015).

[219] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 157 at 10.

[220] Mittelstadt, *supra* note 204 at 478; for more detail on this topic see Luciano Floridi, *Open Data, Data Protection, and Group Privacy*, 27 PHILOS. TECHNOL. 1–3 (2014).

[221] On the challenge to detect proxy data see Kusner et al., *supra* note 57.

[222] CASE C-303/06, *supra* note 15 at para 46.

[223] The case was centred around a case of intersectionality were the claimant sued on the basis of the combined factors "age" and "sexual orientation" where the measure in isolation did not produce a discriminatory effect. This shows that one protected group needs to meet the threshold of disproportionality. Case C-443/15, David L. Parris v

protected grounds. It might be the case that the profile of 'dog owners' is not homogenous enough to meet this requirement. Nonetheless, it can still seem "unreasonable," counterintuitive, or unjust to use dog ownership as a deciding factor for loan applications, despite it being lawful to use the characteristic as a basis for decision-making.

These new types of groups also face new challenges in terms of organisation and collective action. Members of 'ad hoc groups' often do not know that they are in fact part of the group. They are thus less able than historically protected groups to take action to protect themselves against new forms of discrimination and other harms made possible by inferential analytics.[224] A clear collective interest for new forms of group protection is nonetheless evident, even if specific ad hoc groups cannot themselves advocate for it.[225] Reflecting this, scholars across law and ethics are beginning to call for greater protection of group interests.[226]

Hildebrandt, for example, explains that 'we have no access to the group profiles that have been inferred from the mass of data that is being aggregated and have not the faintest idea

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Trinity College Dublin, Higher Education Authority, Department of Public Expenditure and Reform, Department of Education and Skills, 2016 E.C.R. I–897, at para 80, http://curia.europa.eu/juris/document/document.jsf?text=&docid=185565&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=7600685 (last visited Aug 14, 2019); for a strong critique see Howard, *supra* note 141 at 69; for an in-depth discussion of this case and on problems with intersectionality in general see Dagmar Schiek, *On Uses, Mis-Uses and Non-Uses of Intersectionality Before the European Court of Justice (ECJ): The ECJ Rulings Parris (C-433/15), Achbita (C-157/15) and Bougnaoui (C-188/15) as a Bermuda Triangle?* (2018).

[224] Mittelstadt, *supra* note 204 at 485-485.

[225] Mantelero, *supra* note 210 at 245.

[226] See Mittelstadt, *supra* note 204; GROUP PRIVACY: NEW CHALLENGES OF DATA TECHNOLOGIES, (Linnet Taylor, Luciano Floridi, & Bart van der Sloot eds., 1 ed. 2017); Mantelero, *supra* note 210; LEE A. BYGRAVE, DATA PROTECTION LAW: APPROACHING ITS RATIONALE, LOGIC AND LIMITS (2002); on why Big Data is challenging for privacy protection see also Solon Barocas & Helen Nissenbaum, *Big data's end run around procedural privacy protections*, 57 COMMUN. ACM 31–33 (2014).

how these profiles impact our chances in life.'[227] In part this is due to group profiles often being protected as trade secrets.[228]

Bygrave[229], Taylor et al[230], and Mantelero[231] have made similar calls. Mantelero for example calls for collective privacy rights for affected parties. To enforce this, he suggests that a third party could represent the interests of the group, and for impact assessments to be conducted by an independent party prior to processing in order to prevent large scale discrimination and harms.[232]

The risks of automated decision-making and profiling for groups have also been acknowledged by the Article 29 Working Party.[233] Their guidelines on automated decision-making state that '[p]rocessing that might have little impact on individuals generally may in fact have a significant effect on certain groups of society, such as minority groups or vulnerable adults.'[234] It remains open whether 'groups' in this context refers only to traditional vulnerable groups (e.g. children), or also to groups assembled in a non-traditional sense. The broader interpretation seems likely, as the guidelines also state that '[i]ndividuals may wish to challenge

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[227] Mireille Hildebrandt, *Profiling and the Rule of Law*, 1 IDENTITY INF. SOC. IDIS, at 64 (2009), https://papers.ssrn.com/abstract=1332076 (last visited Jul 31, 2018).

[228] MIREILLE HILDEBRANDT, SMART TECHNOLOGIES AND THE END (S) OF LAW: NOVEL ENTANGLEMENTS OF LAW AND TECHNOLOGY at 93, 103, 222, and 139 (2015); see also Hildebrandt, *supra* note 228 at 63-65.

[229] BYGRAVE, *supra* note 227; Lee A. Bygrave, *Privacy protection in a global context-a comparative overview*, 47 SCAND. STUD L 319 (2004).

[230] GROUP PRIVACY: NEW CHALLENGES OF DATA TECHNOLOGIES, *supra* note 227.

[231] Mantelero, *supra* note 210; Alessandro Mantelero, *From Group Privacy to Collective Privacy: Towards a New Dimension of Privacy and Data Protection in the Big Data Era*, *in* GROUP PRIVACY 139–158 (2017); Alessandro Mantelero & Giuseppe Vaciago, *Data protection in a big data society. Ideas for a future regulation*, 15 DIGIT. INVESTIG. 104–109 (2015).

[232] Mantelero, *supra* note 210 at 250.

[233] ARTICLE 29 DATA PROTECTION WORKING PARTY, *Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679, 17/EN WP 251* (2017), http://www.hldataprotection.com/files/2017/10/20171013_wp251_enpdf.pdf (last visited Oct 22, 2017).

[234] *Id.* at 11.

the accuracy of the data used and any grouping or category that has been applied to them,'[235] which is not explicitly limited to traditionally protected groups or attributes.

It is not unrealistic to assume that 'ad hoc' group privacy interests will be enshrined in law in the future considering the Article 29 Working Party's stance. The Working Party takes issue with the fact that profiling 'could mean that someone is deprived of opportunities based on the actions of others'[236] by using 'non-traditional credit criteria, such as an analysis of other customers living in the same area who shop at the same stores'[237] without having remedies against it. Following this, the guidelines recommend that the data subject is 'given information about their profile, for example in which 'segments' or 'categories' they are placed.'[238] Further, the Working Party suggested in their guidelines on sensitive data that the 'conclusive list of data being regarded as sensitive per se – could be amended so as to react more flexibly to possible new forms of sensitive data or new forms of data and data processing which could lead to severe infringements of privacy'[239].

X. A RIGHT TO REASONABLE INFERENCES IN OBA

The current problems with inferential analytics are accountability gaps in law and jurisprudence in relation to privacy protection and non-discrimination law. Data protection law does not offer sufficient protection against sensitive inferences, inferences based on non-personal or anonymised data, or profiling that does not single out individuals. Similarly, non-discrimination law only offers protection for traditional groups in specific sectors, only if the

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[235] *Id.* at 24.

[236] *Id.* at 11. See also Kaveh Waddell, *How Algorithms Can Bring Down Minorities' Credit Scores*, THE ATLANTIC (2016), https://www.theatlantic.com/technology/archive/2016/12/how-algorithms-can-bring-down-minorities-credit-scores/509333/ (last visited Jul 31, 2018).

[237] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 157 at 22.

[238] *Id.* at 16.

[239] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 60 at 3.

group is disproportionately affected, and not for new types of groups (e.g. 'dog owners', groups defined by incomprehensible characteristics).

Recognising these novel risks of Big Data, AI, and inferential analytics, I have argued elsewhere that a 'right to reasonable inferences'[240] could close the current gaps in data protection and non-discrimination law. Rather than playing catch-up and adding new types of sensitive data or protected groups to existing laws, I believe a holistic and sectoral approach is more promising.

A 'right to reasonable inferences would address "(1) why certain data form a normatively acceptable basis from which to draw inferences; (2) why these inferences are relevant and normatively acceptable for the chosen processing purpose or type of automated decision; and (3) whether the data and methods used to draw the inferences are accurate and statistically reliable. The ex-ante justification is bolstered by an additional ex-post mechanism enabling unreasonable inferences to be challenged.'[241]

If such a right was granted, the new protections offered would extend further than mere protection against discrimination, privacy invasion, and opaque algorithmic measures. The right demands justification of new high-risk forms of inferential analytics. It would, for example, protect individuals against being grouped according to inferred "unethical" attributes (e.g. gambling addiction, mental vulnerability) and guarantee that inferences drawn are accurate (e.g. that individuals have at a minimum been grouped accurately or with reliable statistical measures). The right aims to protect against unreasonable inferences and important or high-impact decisions based on them, which could include discriminatory OBA and affinity profiling. This right could potentially provide a remedy if designed to detect both individual and group level harms, or to notify individuals as groups are formed and used in profiling or decision-making, which could facilitate contestation of group membership.

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[240] Wachter and Mittelstadt, *supra* note 38.

[241] *Id.* at 495.

XI. CURRENT GOVERNANCE STRATEGIES

With the shortfalls in data protection and non-discrimination law now clear, the question remains as to whether current governance strategies of policymakers and companies are fit for purpose to protect against discriminatory OBA and affinity profiling. Progress has been made in the recent years both by the public sector and the private sector.

The Article 29 Working Party has previously commented on the potential privacy implication of tracking cookies and geolocation data for advertising.[242] Their guidelines explain that 'given the sensitivity of such information and the possible awkward situations which may arise if individuals receive advertising that reveals, for example, sexual preferences or political activity, offering/using interest categories that would reveal sensitive data should be discouraged.'[243]

Similarly regard for greater transparency has also been shown by the Article 29 Working Party, which has suggested informed and explicit consent as remedies to provide data subjects and consumers with immediate information about data processing in relation to OBA.[244] While this is a good idea in theory, it neglects the fact that it has been long recognised that consent is not a suitable governance mechanism for data protection.[245] In the context of OBA, the ubiquity of advertisements and the underlying data analytics used to create audiences and target advertisements suggests well-informed consent is particularly difficult. Consent also fails to address the justification of data uses[246] (e.g. is proposed processing ethically acceptable, regardless of the fact that

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[242] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 8.

[243] *Id.* at 19.

[244] *Id.* at 24-26.

[245] Strong critics of the functionality of informed consent include Daniel J. Solove, *Privacy Self-Management and the Consent Dilemma'(2013)*, 126 HARV. LAW REV. 1880; Paul M. Schwartz, *Internet privacy and the state*, 32 CONN REV 815 (1999); Zuiderveen Borgesius, *supra* note 34 at 251-255; N. Van Eijk et al., *Online tracking: Questioning the power of informed consent*, 14 INFO 57–73 (2012); Bert-Jaap Koops, *The trouble with European data protection law*, 4 INT. DATA PRIV. LAW 250–261 (2014); Smit, Van Noort, and Voorveld, *supra* note 4 at 15.

[246] Wachter and Mittelstadt, *supra* note 38 at 581-588.

consent has been given), and how data controllers handle a data subject's refusal to give consent or object to processing.[247]

To address these difficulties, the Article 29 Working Party suggested to use icons and explanations to help users understand why they have been served with certain ads.[248] Companies such as Google and Facebook are currently offering explanations as to why certain ads have been shown to their users.

These explanations generally reveal the interest groups in which users have been placed. Google[249] informs with "Why you're seeing an ad" and "why this ad" explanations. In their Ad Settings, Google also provides information about the inferences on which ads are served, including for example age, education, interest in fitness, or interest in video games.[250] Facebook provides generic explanations in their "Why Am I Seeing This" feature, which generally address the influence of age, geolocation, profile information and previously visited sites on displayed advertisements.[251]

Reflecting these shortcomings, NGO's and activist groups routinely criticise current industry standards and practices. Numerous complaints have recently been submitted pushing for greater clarity on the legal and ethical acceptability of inferential analytics in OBA.[252]

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[247] However, the situation might improve in the future as "forced consent" is no longer possible under Art 7 GDPR; complaints against Google and Facebook in this vein have already been launched see Max Schrems, *GDPR: noyb.eu filed four complaints over "forced consent" against Google, Instagram, WhatsApp and Facebookpa_forcedconsent_en.pdf* (2018), https://noyb.eu/wp-content/uploads/2018/05/pa_forcedconsent_en.pdf (last visited Mar 4, 2019).

[248] ARTICLE 29 DATA PROTECTION WORKING PARTY, *supra* note 8 at 18.

[249] Why you're seeing an ad - Ads Help, , https://support.google.com/ads/answer/1634057?visit_id=636895464297661409-3994925395&hl=en&rd=1 (last visited Mar 30, 2019).

[250] Users can opt-out of personalised advertisements, but generic ads are still shown.

[251] On why this transparency tool is not sufficient see Athanasios Andreou et al., *Investigating ad transparency mechanisms in social media: A case study of Facebook's explanations* (2018).

[252] For example see Privacy International files complaints against seven companies for wide-scale and systematic infringements of data protection law, , PRIVACY INTERNATIONAL , http://privacyinternational.org/press-

While current industry standards are an encouraging first step, they remain insufficient for at least two reasons. First, users often do not see or do not understand the explanations provided. Boerman et al. assessed user's attitudes and perception towards OBA and transparency and found that users rarely notice disclosures such as icons, logos or other transparency banners, such as the "Why did I get this ad?" or "AdChoices" features. Even when noticed, users often do not understand the icons or the labels provided.[253]

Second, the explanations provided are often too generic and vague, and provide little detail specific to the individual. If explanations are intended to increase transparency and accountability in OBA, they must provide information necessary for users to assess whether their privacy has been respected, and whether discrimination has occurred for instance due to sensitive information being illegally used or inferred.

The path forward to prevent harmful and illegal OBA must centre on algorithmic accountability. A transparent business approach can also be beneficial for the business interests of

release/2424/privacy-international-files-complaints-against-seven-companies-wide-scale-and (last visited Mar 4, 2019); Our complaints against Acxiom, Criteo, Equifax, Experian, Oracle, Quantcast, Tapad, , PRIVACY INTERNATIONAL , http://privacyinternational.org/advocacy-briefing/2426/our-complaints-against-acxiom-criteo-equifax-experian-oracle-quantcast-tapad (last visited Mar 4, 2019); Johnny Ryan, *Regulatory complaint concerning massive, web-wide data breach by Google and other "ad tech" companies under Europe's GDPR*, BRAVE BROWSER (2018), https://www.brave.com/blog/adtech-data-breach-complaint/ (last visited Mar 4, 2019); PI joins open letter to Facebook regarding ads transparency, , PRIVACY INTERNATIONAL , http://privacyinternational.org/advocacy-briefing/2734/pi-joins-open-letter-facebook-regarding-ads-transparency (last visited May 11, 2019); Why Am I seeing this on Facebook? It's still unclear., , PRIVACY INTERNATIONAL , http://privacyinternational.org/news/2772/why-am-i-seeing-facebook-its-still-unclear (last visited May 11, 2019).

[253] Boerman, Kruikemeier, and Zuiderveen Borgesius, *supra* note 4 at 367; Pedro Giovanni Leon et al., *What do online behavioral advertising privacy disclosures communicate to users?*, *in* PROCEEDINGS OF THE 2012 ACM WORKSHOP ON PRIVACY IN THE ELECTRONIC SOCIETY 19–30, at 1 (2012).

companies. Users value transparency[254] and feel vulnerable[255] if they see ads that are based on previous online activities. Following this, Van Noort et al. suggest to inform users immediately that an ad has been shown because of their surfing behaviour.[256] Research shows that users do not want to be tracked and find OBA privacy invasive.[257] In fact, some research even states that 'highly personalised ads' decreased clickthrough rates[258] and that greater transparency in data usage leads to higher clickthrough rates, whereas opaque practices and targeting can have a detrimental effect.[259] More transparent business models in OBA can therefore benefit users, platform providers, and advertisers simultaneously.

XII. OPEN PROBLEMS AND FUTURE POLICY RECOMMENDATIONS

As I have shown in this article, OBA raises at least three areas of concern where the law might be insufficient: privacy, non-discrimination, and group privacy protection. I first showed in section IV how the concept of "affinity profiling" - grouping people according to their assumed interests rather than solely on their personal traits - (e.g. ethnicity, sexual orientation) as well as the Court's and scholarly views of the need to meet the threshold of intentionality and reliability to

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[254] Chris Jay Hoofnagle, Jennifer M. Urban & Su Li, *Privacy and modern advertising: Most us Internet users want'do not track'to stop collection of data about their online activities*, *in* AMSTERDAM PRIVACY CONFERENCE (2012); Boerman, Kruikemeier, and Zuiderveen Borgesius, *supra* note 4 at 367.

[255] Elizabeth Aguirre et al., *Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness*, 91 J. RETAIL. 34–49, at 1 (2015).

[256] Guda Van Noort, Edith G. Smit & Hilde AM Voorveld, *The online behavioural advertising icon: two user studies*, *in* ADVANCES IN ADVERTISING RESEARCH (VOL. IV) 365–378, at 366 (2013).

[257] Smit, Van Noort, and Voorveld, *supra* note 4 at 16; Boerman, Kruikemeier, and Zuiderveen Borgesius, *supra* note 4 at 372.

[258] Aguirre et al., *supra* note 256 at 1-4; for more examples see Boerman, Kruikemeier, and Zuiderveen Borgesius, *supra* note 4 at 365.

[259] Boerman, Kruikemeier, and Zuiderveen Borgesius, *supra* note 4 at 369.

turn personal data into sensitive data might render the higher protection afforded by Art 9 GDPR inapplicable.

In section V I then examined the scope of EU non-discrimination law and discussed its problematic limitations in terms of the areas it applies to (i.e. only employment, welfare, and goods and services including housing) and the people it protects (i.e. lawful discrimination based on gender in media and advertisements, and protection against discrimination based on religion, disability, age and sexual orientation only in relation to employment).

I proposed the concept of 'discrimination by association' in section VII to challenge the idea that assumed interests and personal traits are strictly unrelated which potentially could render regulation inapplicable. This concept establishes a basis for more effective protection against discriminatory OBA by providing a possible path to close some of the current accountability gaps in affinity profiling, regardless of whether this practice is considered to explicitly use protected traits or accepted proxies.

The first question to address is whether affinity profiling (e.g. interest groups) should be seen as the direct use of protected traits because of their close connection or strong correlation. If this question is answered in the affirmative, affinity profiling may constitute direct discrimination. However, arguing that only an affinity with the protected category (e.g. ethnicity) is assumed and no actual ethnicity is inferred could render regulation inapplicable. This gap can be closed by using the concept of "discrimination by association".

Discrimination by association as illustrated in Coleman allows individuals to bring a claim if they suffer discriminatory negative effects from a measure taken against a protected group, even if they are not a member of it. Discrimination by association grants protection if someone is treated significantly worse based on their relationship or association (e.g. affinity) with a group that possesses a protected attribute. As a result, it does not matter whether the person is part of the protected group and/or if the taken measure is based on a protected attribute they actually possess.

Discrimination by association – not needing to be a member of the protected group - is a potentially powerful tool to close some of the current accountability gaps in OBA. People who do not possess protected traits (e.g. misclassified users) can bring a claim which can help to combat discrimination on a larger scale. Following this logic, I have argued that members of the group also do not need to prove that they are a member of this group, which can help combat potential public stigmatisation based on protected attributes (e.g. religion, sexual orientation). Intent does not need to be proven on the side of the alleged offender, and no concrete victim needs to be identified, meaning the discriminatory practice does not need to be effective to be considered discriminatory (e.g. preventing women from applying for jobs). Of course, claims of discrimination will only be successful if they can show that there was no justification for differential treatment. However, only a very limited number of cases will be justified because direct discrimination is only lawful if a legitimate basis exists in a non-discrimination directive.

If affinity profiling is ultimately seen as not involving direct usage of protected traits, because the interest groups are seen as sufficiently distinct from protected categories such as "race" and "ethnicity" as described in the Directives, claims based on direct discrimination could not be made. However, under these conditions affinity profiling could still constitute indirect discrimination or indirect discrimination by association if this practice disproportionately negatively affects a protected group in comparison to others in a similar situation. In Chez, the decision to install electricity meters in Roma populated areas 6 meters above the ground was seen as indirect discrimination against a Bulgarian shop-owner with no Roma heritage. Parallels can be found in advertisements: the decision to show an ad based on assumed interest can be seen as a 'seemingly neutral provision, criterion or practice' that applies to all users equally. However, if this practice adversely affects a protected group disproportionately, this could potentially be seen as illegal (for example differential pricing or the complete exclusion from certain ads), unless there is a justification for the adverse action. Here again the concept of discrimination by association would also allow

people who are not part of this group to bring a claim, while people who are part of the group would not need to out themselves. And again, intent on the side of the accused offender does not need to be established by the claimant. The law might therefore already have a solution to advertising based on correlations of user interests that leads to discriminatory differential results.

In Chez, the Court also left open the question of whether or not the meter installations in an unreachable height constitutes direct or indirect discrimination by association.[260] This means that the boundaries between actions and practices that constitute direct or indirect discrimination are fluid. The decision to show certain ads based on assumed affinities could fall under either category with almost no legal justification for the former.

Nonetheless claimants may face difficulties proving that discrimination occurred. To prove indirect discrimination the claimant would need to find a comparison group that is treated favourably and show that in comparison with others a sufficiently large proportion of a protected group was subject to a 'particular disadvantage'. Unfortunately, as shown in section VII.B.1 standards of what constitutes a 'particular disadvantage' are not coherent in EU case law. However, the ECJ has clarified that the threshold should not be set too high because the explicit goal of the directives is to combat illegal discrimination. This means an indication of less favourable treatment in advertising could be seen in differential pricing or exclusion from goods and services for certain groups. Finally, the claimant would need to show that the 'particular disadvantage' affected the protected group in a disproportionate negative way when compared with others in a similar situation. Unfortunately, the jurisprudence as shown in section VII.B.2 is also somewhat inconsistent and does not provide a clear threshold of legally acceptable disparity, usually ranging between 80 and 90%. It remains open whether this threshold is socially acceptable.

Other practical and procedural challenges remain. More algorithmic transparency is urgently needed. As mentioned

[260] CASE C-83/14, *supra* note 16 at para 129(4).

above, to be successful the claimant will need to show that the 'seemingly neutral provision, criterion or practice' caused a particular disadvantage and affected a protected group disproportionately negatively when compared with others. The lack of transparency in algorithmic decision-making and business practices in OBA will make this a difficult task. Proving in an online world that one was discriminated against (e.g. shown a higher price, not shown a job ad) is difficult if claimants cannot access or understand the internal logic of the algorithm and the optimisation process (e.g. why a certain ad was shown, either via affinity profiling or predetermined rules). In the same vein lies the difficulty of identifying other members of a targeted audience, which is crucial because the claimant will also need to prove that the differential results affected the protected group disproportionately and need to identify a comparator that received more favourable treatment. Not knowing the rules, assumed interests or attributes on which one is profiled and whether these assumed interests correlate with protected attributes (i.e. not knowing if the interest group correlates with protected traits and to what extent)[261] adds further complexity to this task.

Thankfully, there is a vivid field of research dedicated to bias and fairness in machine learning that helps to shed light on proxy data and the extent to which it affects certain groups.[262] The importance of this research field cannot be overstated: it can help establish prima facie discrimination (e.g. post codes and the subsequent regulation/ban of redlining),[263] which is sufficient to shift the burden of proof from claimants to the accused.

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[261] On the challenge to detect proxy data see Kusner et al., *supra* note 57; on legal and technical challenges see Indrė Žliobaitė, *Measuring discrimination in algorithmic decision making*, 31 DATA MIN. KNOWL. DISCOV. 1060–1089 (2017); on the need to collect sensitive data to avoid discrimination see Ignacio Cofone, *Algorithmic Discrimination Is an Information Problem*, HASTINGS LAW J. (2019).

[262] To name a few see Kusner et al., *supra* note 57; Russell et al., *supra* note 57; Dwork et al., *supra* note 57; Friedler, Scheidegger, and Venkatasubramanian, *supra* note 57; Grgic-Hlaca et al., *supra* note 57; Celis, Mehrotra, and Vishnoi, *supra* note 44; Speicher et al., *supra* note 54.

[263] For examples in Germany see Wachter and Mittelstadt, *supra* note 38 at 587.

As shown in section VIII alleged offenders can of course still show that indirect discrimination was justified by establishing a legitimate aim, necessity and proportionality. However, here it is important to note that purely economic reasons alone are unlikely to qualify as a legitimate aim to justify a discriminatory (business) practice. Moreover, even if a legitimate aim was pursued and the means were necessary, the proportionality test could still fail if a practice is seen as 'stigmatising and offensive' and therefore deemed disproportionate.[264]

Moreover, section IX showed that a clear need exists to afford greater protection to the privacy interests of the groups formed by modern inferential analytics and targeted by OBA. The challenge is that the analytics behind much automated decision-making and profiling is not concerned with singling out or identifying a unique individual, but rather with drawing inferences from large datasets, calculating probabilities, and learning about types or groups of people.[265] Third-party, anonymised or non-personal data can be used for these purposes. Unfortunately, data protection law only applies to the personal data of identifiable individuals. Therefore, new legal mechanisms based on group or collective privacy interests[266] may be necessary to close the accountability gap created by data-driven OBA at scale. Profiling and inferential analytics expand the circle of victims to include groups that may not qualify for protection under non-discrimination because they do not map on to traditional social concepts of protected traits (e.g. "sad teens"[267] or video gamers[268]).

Finally, current public and private sector governance tools discussed in section XI are welcome and encouraged, but leave much to be desired. Platform providers currently offer rather

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[264] CASE C-83/14, *supra* note 16 at para 128.

[265] Mittelstadt, *supra* note 204; Floridi, *supra* note 221.

[266] Leading thinkers on collective privacy interests include BYGRAVE, *supra* note 227; Mittelstadt, *supra* note 204; Mantelero, *supra* note 232; GROUP PRIVACY: NEW CHALLENGES OF DATA TECHNOLOGIES, *supra* note 227.

[267] Reilly, *supra* note 215.

[268] Being labelled as a "video gamer" can cause the Chinese Social Credit Score to drop see Kobie, *supra* note 217.

generic and vague explanations of why certain advertisements have been served. These types of explanations are not yet fit for purpose to alleviate the aforementioned concerns. Without greater algorithmic and business transparency in OBA, it will remain very difficult for individuals, regulators or NGOs to prove that either privacy violations, differential treatment or differential results have occurred.

However, explanations of how advertisements are served based upon assumed interests and sensitive characteristics can, if well formulated, provide an effective tool to contest discriminatory advertisements, and thus increase accountability in algorithmic profiling and decision-making.

I recommend the following types of information and explanations be provided to individuals when behavioural advertisements are served:

1. Information that demonstrates that sensitive data and protected attributes have not been unlawfully used. Giving data subjects direct access (e.g. via Art 15 GDPR) to examine the data currently processed about them, as well as easy mechanisms to opt-out or withdraw consent for OBA are similarly encouraged.

2. Information that provides individuals with a better understanding of what assumptions, predictions, or inferences are currently drawn about them. The current transparency efforts of tech companies, while an encouraging first step, are not yet sufficient in this regard. To better align explanations with the right to privacy and identity, users require better information about how they are 'seen' by platforms and advertisers.[269]

In addition to these proposals to improve transparency and explanations in OBA, several other public policy and business strategy recommendations can be made that describe essential changes to the broader regulatory environment:

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[269] On the need for governance of inferential analytics see Wachter and Mittelstadt, *supra* note 38.

3. Affinity profiling, and the underlying argument that sensitive or protected attributes are not used, collected, or inferred, should not be used to potentially avoid GDPR and non-discrimination law. However, even if affinity profiling is legally classified as involving sensitive information, companies should not solely rely on consent to justify such processing. Companies should acknowledge that consent as proposed in GDPR is not always a reliable method to gauge user interests and preferences because most users do not read, and often do not understand the terms and conditions of digital services. Companies should consider how to adopt ethical data analytics (e.g. a right to reasonable inferences for users, section X)[270], sharing practices, and business relationships[271] (e.g. fiduciary duties[272] or duty of care)[273] and make information regarding these practices publicly available.

4. Close relevant loopholes in current EU non-discrimination law. As shown in this paper non-discrimination law is not comprehensive. However, it is clear that differential treatment and results for example based on religion or belief, disability, age, sexual orientation, ethnicity, and gender should be avoided. Further, guidelines for ethical business relations with partner companies to avoid unethical, stigmatising and offensive advertisements should be created. A public

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[270] *Id.*

[271] Sandra Wachter, *The GDPR and the Internet of Things: a three-step transparency model*, 10 LAW INNOV. TECHNOL. 266–294, at 278, 283 and 292 (2018).

[272] Technology | Academics | Policy - Jonathan Zittrain and Jack Balkin Propose Information Fiduciaries to Protect Individual Privacy Rights, , http://www.techpolicy.com/Blog/September-2018/Jonathan-Zittrain-and-Jack-Balkin-Propose-Informat.aspx (last visited Feb 2, 2019); Jack M. Balkin, *Information Fiduciaries and the First Amendment Lecture*, 49 UC DAVIS LAW REV. 1183–1234 (2015).

[273] Woods Lorna & Perrin William, *An updated proposal by Professor Lorna Woods and William Perrin*, https://d1ssu070pg2v9i.cloudfront.net/pex/carnegie_uk_trust/2019/01/29121025/Internet-Harm-Reduction-final.pdf (last visited May 11, 2019).

commitment to protect diversity (e.g. refraining from the use of certain sensitive data groups) in a holistic way is encouraged.

5. Systematic and periodical bias testing by companies to avoid unintentional discrimination. Bias testing is necessary to ensure that ad targeting systems are fair. As affinity profiling is based on the interests of user groups, it may be difficult to see that certain interests correlate with protected attributes. For example, postcodes can be strong proxies for religious belief or ethnicity. Therefore, internal structures that audit and test for bias need to be implemented. Collecting a list of known proxies and approaches to either avoid the usage or to mitigate the risks associated with them could be made public.[274] Postcodes and redlining regulation are a good example.[275]

6. Provide support for independent research or 'white hat hacking' to determine when, how, and to what extent certain groups are affected by affinity profiling. Due to the lack of algorithmic transparency, prima facie discrimination might be hard to prove. The claimant needs to show that they suffered a particular disadvantage and must demonstrate that a protected group is treated significantly worse (in comparison to others in a similar situation) for the burden of proof to shift. Therefore, more statistical evidence via independent research could help businesses to demonstrate that they are not discriminatory. Future policy discourse also needs to address whether the 80-90% threshold for legally acceptable disparity is normatively acceptable.

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[274] Similarly Dalenberg, *supra* note 167 at 625 who proposes blacklists.

[275] Wachter and Mittelstadt, *supra* note 38; on the history of redlining see Willy E. Rice, *Race, Gender, Redlining, and the Discriminatory Access to Loans, Credit, and Insurance: An Historical and Empirical Analysis of Consumers Who Sued Lenders and Insurers in Federal and State Courts, 1950-1995*, 33 SAN DIEGO REV 583 (1996).

7. Acknowledge group level privacy rights. Current profiling and inferential analytics are not sufficiently addressed in data protection and non-discrimination law. The former lacks teeth because profiling can also occur without identifying an individual and sometimes even without using personal data,[276] while the latter fails because the created groups do not map on to the protected groups in discrimination law.[277] Therefore, a holistic privacy protection approach as well as safeguards for people outside of these narrowly defined groups in non-discrimination law (e.g. a right to reasonable inferences)[278] should be pursued.

OBA and affinity profiling pose novel risks for individuals and groups in terms of privacy, discrimination, and group privacy interests. Thankfully, it appears EU non-discrimination law provides a powerful tool in 'discrimination by association' to mitigate some of these risks. If combined with robust transparency standards to explain how advertisements are served based on assumed interests and sensitive characteristics, a clear path exists to achieve greater protection against pervasive online advertising practices.

[276] Wachter, *supra* note 20 at 7.

[277] Mantelero, *supra* note 232.

[278] Wachter and Mittelstadt, *supra* note 38.