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Fashion, filter bubbles and echo chambers: questions of privacy, identity, and governance

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ABSTRACT
The discourse on filter bubbles and echo chambers applies to the use of social media analytics and consumer profiling for behavioural advertising in the fashion industry, this being relevant to an individual's autonomy and control of personal information. However, we need to expand on the concept of filter bubbles and echo chambers to define the contours of self-exposure within the algorithmic context applied to the social and personal aspects of fashion. This paper claims that filter bubbles and echo chambers in fashion have an impact on the parameters and conditions of the right to privacy, influencing an individual's perception and self-relationality. An analysis of the ECtHR's interpretation of Article 8 of the ECHR Convention reveals that we need to shape notions of personal development and autonomy to include an individual's plurality of needs, desires, and beliefs, as well as unconscious associations with fashion identity.

1. Introduction

Social media analytics and consumer profiling using social media data change the face of 'fashion.'[1] To illustrate, when I open my social media page, I am immediately confronted with the newest fashion trends, my favourite fashion influencers, and advertising that suits my sense of style. My interactions entailing my browsing behaviour, feedback on my friends' visual appearance, engagement with fashion brands – are valuable data

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This article has been corrected with minor changes. These changes do not impact the academic content of the article.

[1]Jorge Ale Chilet, Cuicui Chen and Yusan Lin, 'Analyzing Social Media Marketing in the High-End Fashion Industry Using Named Entity Recognition' (2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 18- 21 August 2016, San Francisco, CA, USA) <https://ieeexplore.ieee.org/abstract/document/7752300> accessed 12 November 2020; Yu-I Ha, Sejeong Kwon, Meeyoung Cha and Jungseock Joo, 'Fashion Conversation Data on Instagram' (ArXiv, 13 April 2017) <https://arxiv.org/pdf/1704.04137.pdf> accessed 12 November 2020.

trails, which are captured by algorithms to interpret my behaviour and predict future preferences.[2] While social media analytics use computational models to identify general fashion trends, consumer profiling uses AI techniques to identify an individual's future preferences. For fashion brands, social media analytics and consumer profiling are valuable tools for adapting marketing and recommendation strategies, as they analyse users' sentiments on social media platforms and build profiles of individual consumers.[3] Algorithms investigate human behaviour on social media platforms, using fashion as a source of identity represented by an individual's appearance and perception of appearance.[4] In other words, when I interact on my social media platforms, I know what I want to wear based on my data.

Suppose now that my behaviour on social media regarding fashion brands creates experiences that only entail content reflecting my own preferences, which are shared by like-minded individuals. Several authors have investigated how algorithms in news and media personalisation impact the way individuals consume personalised content.[5] The abundance of information in the online sphere solidifies the creation of 'echo chambers' in which individuals only engage with content aligned to their beliefs.[6] An echo chamber can be defined as an informational structure resembling the thoughts of like-minded individuals.[7] Further, personalisation algorithms escalate information segregation including the user's over-exposure to content recommending products they are likely to engage with, and causing so-called 'filter bubbles,'[8] which solidify narrow assumptions, 'creating the impression that our narrow self-interest is all that exists.'[9] Whilst the concepts of echo

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[2]See Christopher Wylie who claims that 'music and fashion are the most informative [tools] for predicting someone's personality', taken from Leah Harper, 'Whistleblower Christopher Wylie joins fashion retailer H&M' (*The Guardian*, 31 January 2019) <www.theguardian.com/fashion/2019/jan/31/whistleblower-christopher-wylie-joins-fashion-retailer-h-m> accessed 12 December 2020.

[3]See for example, Chilet, Chen and Lin (n 1); Yusan Lin, Heng Xu, Yilu Zhou and Wang-Chien Lee, 'Styles in the Fashion Social Network: An Analysis on Lookbook.nu' (SBP 2015: Social Computing, Behavioral-Cultural Modeling, and Prediction, Washington, United States, March 31-April 3 2015); see also Jaehyuk Park, Giovanni Luca Ciampaglia and Emilio Ferrara, 'Style in the Age of Instagram: Predicting Success within the Fashion Industry using Social Media' (Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing, New York, United States, February 2016).

[4]Rachel Ramirez, 'Artificial Intelligence and the Apparel Industry: From garment design to trend spotting to copyright protection, artificial intelligence is poised to revolutionize the apparel industry' (*Wearables*, 28 September 2018) <www.asicentral.com/news/web-exclusive/september-2018/artificial-intelligence-and-the-apparel-industry> accessed 22 July 2019.

[5]Eli Pariser, *The Filter Bubble: What the Internet is Hiding From You* (Penguin Books 2011); Mariella Bastian, Mykola Makhortykh, Jaron Harambam, Max van Drunen, 'Explanations of News Personalisation Across Countries and Media Types' (2020) 9(4) *Internet Policy Review* 1, 2.

[6]Seth Flaxman, Sharad Goel and Justin M Rao, 'Filter Bubbles, Echo Chambers, and Online News Consumption' (2016) 80(S1) *Public Opinion Quarterly* 298, 299.

[7]C Thi Nguyen, 'Echo Chambers and Epistemic Bubbles' (2020) 17(2) *Episteme* 141.

[8]Ibid; see also, Axel Bruns, 'Filter bubble' (2019) 8(4) *Internet Policy Review* 1.

[9]Adam Piore, 'Technologists are Trying to Fix the "Filter Bubble" Problem that Tech Helped Create' (*MIT Technology Review*, 22 August 2018) <www.technologyreview.com/2018/08/22/2167/technologists-are-trying-to-fix-the-filter-bubble-problem-that-tech-helped-create/> accessed 1 March 2020.

chambers and filter bubbles are not uncontested in academic scholarship,[10] their theoretical and empirical underpinnings provide useful insights into the impact of algorithmic personalisation on content diversity and media pluralism. There is no research that studies the effects of personalisation and algorithmic filtering in the fashion domain on individual agency and choice. Thus, this paper provides a theoretical outlook that focuses on the implications of social media analytics and consumer profiling for fashion recommendations and advertising, as well as a starting point regarding the implications for individual privacy and autonomy.

The research presented here is interdisciplinary. It focuses on literature about echo chambers and filter bubbles from media and communication studies, as well as knowledge gained from fashion studies to evaluate the meaning of identity and autonomy in the digital age. This approach allows us to consider a wider legal context regarding the role of algorithmic personalisation in shaping individual privacy. The methodological framework of this discussion therefore sheds light on the problems associated with echo chambers and filter bubbles regarding algorithmic personalisation in the fashion domain and how the law ought to interact with an understanding of individual expression and development of identity in the digital age.

By analysing the impact of algorithms on the fragmentation of communication structures and an individual identification process, this paper addresses the need to assess individuals' perception and self-relationality when investigating the concepts of filter bubbles and echo chambers in the fashion domain. Individual perception can be defined as the appreciation of the social aspects of fashion and the variables of style with reference to the self; self-relationality refers to the nuances and depth of an individual's process of association with their fashion identity. Filter bubbles and echo chambers in fashion undermine the individual's dialectic tendencies to develop and maintain their own assumptions on conformity and differentiation in fashion identity.

This argument is tested against the European Court of Human Rights' (ECtHR's) interpretation of Article 8 of the European Convention on Human Rights (ECHR).[11] Article 8, whilst not making explicit reference to the protection of individual identity, secures aspects of personal development including identity.[12] This conception of the right to privacy that is linked to the development of autonomy and identity is relevant when discussing how algorithmic filtering affects individual perception and self-relationality. This paper thus seeks to establish whether the right to privacy as

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[10]See for example, Frederik J Zuiderveen Borgesius, Damian Trilling, Judith Möller, Balazs Bodo, Claes H de Vreese, Natali Helberger, 'Should We Worry about Filter Bubbles' (2016) 5(1) *Internet Policy Review* 1.

[11]Convention for the Protection of Human Rights and Fundamental Freedoms (European Convention on Human Rights, as amended), art 8.

[12]Paul de Hert, 'A right to identity to face the Internet of Things?' (UNESCO 2008) page 7 <https://pure.uvt.nl/ws/portalfiles/portal/1069135/de_Hert-Paul.pdf> accessed 17 April 2021.

interpreted by the ECtHR provides protection against the harm caused by filtering algorithms in the fashion domain. It makes two suggestions concerning the meaning of identity and autonomy with regard to Article 8's guarantees: first, perception needs to play a more important role in defining notions of personal development, such as cultural identity; second, we need to configure the right to privacy provided by Article 8 to include an understanding of the social constraints on the exercise of identity and recognise the conditions of identity-building.

2. The impact of filtering algorithms on individual autonomy

It is argued that algorithmic filtering directs and shapes an individual's exposure to information and content.[13] Filter bubbles and echo chambers lead individuals to connect and communicate with like-minded persons and, when picked up by algorithms, this can lead to over-exposure to specific content.[14] The discourse on echo chambers and filter bubbles requires a nuanced analysis of specific case studies investigating the relationship between implicit recommendations and content diversity, as well as user autonomy.[15] A theoretical outlook on filter bubbles in the fashion domain needs to consider the unique aspects of consumer profiling and social media analytics, given that there are no empirical studies on the impact of fashion recommender engines on user perception.[16] We therefore need to understand the social and personal characteristics of fashion that form the basis of algorithmic decision-making. It is important to underline how algorithmic personalisation can shape the user's discovery of new content, informing a nuanced approach of filter bubbles and echo chambers applied to the fashion domain.

2.1. The relevance of the fashion domain in social media to individual identity

Individuals do not simply consume a specific type of content but use digital platforms in the fashion domain as a source of knowledge discovery. For instance, I might not search for a specific product from brand 'X', but I intend to shop for a

[13]Paul Bernal, 'Fakebook: Why Facebook makes the Fake News Problem Inevitable' (2018) 69(4) *Northern Ireland Legal Quarterly* 513.

[14]Vikram Alexei Kansara, 'Cambridge Analytica Weaponised Fashion Brands to Elect Trump, Says Christopher Wylie' (Business of Fashion, 29 November 2018) <ps://www.businessoffashion.com/articles/video/cambridge-analytica-weaponised-fashion-brands-to-elect-trump-says-christopher-wylie> accessed 8 October 2020.

[15]Camille Roth, Antoine Mazieres, Telmo Menezes, 'Tubes and Bubbles Topological Confinement of YouTube Recommendations' (2020) 15(4) PLoS ONE 1, 15.

[16]Some authors claim that other areas of predictive analytics likewise do not extensively provide an empirical analysis on filter bubbles and echo chambers, see Zuiderveen Borgesius, Trilling, Möller, Bodo, de Vreese, Helberger (n 10) 10. In addition, for a critical approach regarding the existence of filter bubbles and echo chambers see, Mario Haim, Andreas Graefe and & Hans-Bernd Borsius, 'Burst of the Filter Bubble' (2018) 6(3) *Digital Journalism* 330; Roth, Mazieres, Menezes (n 15) 15.

causal outfit. My decision to shop for a particular outfit and choose a specific style is influenced by social and psychological factors. Susan B Kaiser suggests that the process of 'dress' involves a dynamic relationship between the management of appearance for a social context and feedback on appearance, informing the perception of self-presentation.[17] In other words, an individual's self-presentation involves the dialectic tendencies to adapt to social demands (i.e. a social environment, a dress code, or cultural notions) and develop our own authenticity, fulfilling our personal desires, attitudes, and beliefs.[18] Several advances in AI and machine learning seek to interpret the individual's negotiation of appearance management and perception, such as by using algorithms to understand user sentiment in text, interpret visual data to discern emotional aspects of clothing, or even infer mood from browsing behaviour.[19] These specific advances in computational models, which analyse and interpret data, both explicit and implicit, pre-emptively address and shape user interactions with fashion brands including the discovery of new content.[20]

In addition, 'fashion' is not limited to a single garment but illustrates an indefinite number of attributes relating to individual preferences. For example, an individual's fashion sense might be incorporated into a lifestyle (i.e. appearance, as well as habits) or refer to another individual (i.e. a fashion icon/influencer or celebrity).[21] The proliferation of social media platforms and user engagement in the digital sphere are powerful indicators of online engagement with fashion which is not limited to the piece of garment.[22] That being said, fashion brands that use data mining and algorithms to investigate brand perception and individual preferences not only interpret a user's specific engagement with products but

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[17]Susan B Kaiser, *The Social Psychology of Clothing: Symbolic Appearances in Context* (2nd edn, Macmillan Publishing Company 1990) 7.

[18]ibid.

[19]See S Jain, J Bruniaux, X Zeng and P Bruniaux, 'Big Data in Fashion Industry' (2017) 254(15) IOP Conference Series: Materials Science and Engineering 1; see also, Luca Bugon, Giovanni Cassani, Ciro Greco, Lucas Lacasa, Mattia Pavoni, Andrea Polonioli, Jacopo Tagliabue, 'Prediction is very hard, especially about conversion. Predicting user purchases from clickstream data in fashion e-commerce' (ArXiv, 30 June 2019) <https://arxiv.org/abs/1907.00400> accessed 12 November 2020.

[20]See for example, Rachel Arthur, 'This Company Is Helping Fashion Brands Make Smarter Product Decisions Via Predictive Analytics' (*Forbes*, 31 March 2017) <www.forbes.com/sites/rachelarthur/2017/03/31/this-company-is-helping-fashion-brands-make-smarter-product-decisions-via-predictive-analytics/?sh = 7a6f1e9f4a65> accessed 14 November 2020; Taylor Cunningham, 'Big Data Is Changing The Fashion Industry' (*Medium*, 5 November 2017) <https://medium.com/@twcunnin/big-data-is-changing-the-fashion-industry-4765190241e4> accessed 6 December 2020.

[21]See for example, Mackinney-Valentin Maria, *Fashioning Identity Status Ambivalence in Contemporary Fashion* (Bloomsbury Academic 2017) 1–18; Agnès Rocamora, 'High Fashion and Pop Fashion: The Symbolic Production of Fashion in Le Monde and The Guardian' (2001) 5(2) *Fashion Theory* 123, 124–125.

[22]Rebecca K Britt, Jameson L Hayes, Brian C Britt and Haseon Park, 'Too Big to Sell? A Computational Analysis of Network and Content Characteristics among Mega and Micro Beauty and Fashion Social Media Influencers' (2020) 20(2) *Journal of Interactive Advertising* 111, 112; see also, Sungeun Suh, 'Fashion Everydayness as a Cultural Revolution in Social Media Platforms—Focus on Fashion Instagrammers' (2020) 12(5) *Sustainability* 1979; Ate Poorthuis, Dominic Power and Matthew Zook, 'Attentional Social Media: Mapping the Spaces and Networks of the Fashion Industry' (2019) 110(4) *Annals of the American Association of Geographers* 941, 945.

may infer their everyday experience of clothing, such as consumer behaviour, habits, occupation, or preferences regarding size and fit.[23]

These characteristics of fashion shape the individual's context to define the contours of self-exposure within the algorithmic context. Accordingly, algorithms are not shaped around individual preferences as such but rather the inter-relationship between the individual's attributes and the products' attributes.[24] Our perception of fashion not only speaks to our clothing selection but will be reflected in the content stipulating our psychological needs, social environment, and inter-personal activities.[25] Thus, an analysis of echo chambers and filter bubbles requires a nuanced approach that takes into account the various computational tools employed by fashion brands when using algorithms for targeted advertising.

Finally, fashion is defined by virtue of its presence and functionality in daily life. For example, a dress may illustrate the effort to cover and decorate the body in a way that enhances the human form for the eyes of the perceiver.[26] Thus, it is important to note the power of fashion to reveal, disguise or hide aspects of identity within a social environment.[27] The expressive force and symbolic inter-actionism of the practice of dress are the defining features when analysing the nature of predictive and social analytics in the fashion domain.

These considerations inform how we should contextually examine filter bubbles and echo chambers, and how this perspective sheds light on the meaning of autonomy and privacy in the digital age. To plan my interdisciplinary outlook on the socio-legal issues of filter bubbles and echo chambers we need to clarify some key considerations regarding the consequences of algorithmic filtering which, acting on shared narratives on appearance and style in the fashion domain, shape an individual's self-representation.

2.2. Filter bubbles and echo chambers: working definitions and issues

Imagine a straightforward scenario where you browse social media, check out your friends' pictures, read some of your favourite fashion blogs, and ultimately end up wearing the same jacket as your classmate at your

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[23]Matt Burgess, 'The AI that fashion is using to reinvent itself: Retailers have turned to AI to replace photoshoots and predict what people will want to buy and wear in the future' (*WIRED*, 5 July 2021) <www.wired.co.uk/article/ai-personalised-shopping> accessed 18 October 2021.

[24]Kuan-Ting Chen and Jiebo Luo, 'When Fashion Meets Big Data: Discriminative Mining of Best Selling Clothing Features' (ArXiv, 22 February 2017) <https://arxiv.org/pdf/1611.03915.pdf> accessed 12 November 2020.

[25]Dhruv Verma, Kshitij Gulati and Rajiv Ratn Shah, 'Addressing the Cold-Start Problem in Outfit Recommendation Using Visual Preference Modelling' (ArXiv, 4 August 2020) <https://arxiv.org/pdf/2008.01437.pdf> accessed 12 November 2020.

[26]For the meaning of 'dress' to adorn the body see Ted Polhemus and Lynn Proctor, *Fashion & Anti-Fashion* (Cox & Wyman Ltd 1978) 11.

[27]Joanne Entwistle, *The Fashioned Body: Fashion, Dress and Modern Social Theory* (Blackwell Publishers Inc 2000) 112.

weekly university lecture. According to Cass R Sunstein, this is not an uncommon situation, highlighting that our individual choices lead us to be trapped in so-called echo chambers that reflect our own opinions.[28] An echo chamber is defined as a space where individuals only connect with like-minded people.[29] This concept has been studied extensively in terms of user engagement with news articles including political content.[30] We see the potential for an individual's selective representation in echo chambers in the fashion domain in consumption habits, as well as the visualisation of 'fashion' in consumer cultures (for example, sustainable fashion impact, eco-fashion consumption or Generation Z consumers affecting existing fashion trends).[31] This allows us to imagine the creation of digital chambers on a theoretical level based on user engagement on these platforms and knowledge of the social role of fashion, highlighting the individual's potential to reiterate and re-define their appearance based on shared narratives.[32] Individual engagement with social media platforms enables the systematic circulation of images of self-representation within one's digital sphere or echo chamber.

Suppose now that your decision to buy the jacket, which is identical to your classmate's clothing, is connected to your social media feed, in which a popular fashion brand advertises a new winter collection targeted at young students. Consumer profiling and social media analytics – encompassing recommender engines, tracking cookies, predictive analytics for consumer profiling including analytics regarding brand perception – are often analysed in relation to the concept of filter bubbles.[33] Filter bubbles illustrate the common idea that personalisation systems cause the individual's over-

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[28]Cass R Sunstein, *Infotopia: How Many Minds Produce Knowledge* (Oxford University Press 2006) 9.

[29]For example, R Kelly Garrett who identifies that individuals engage with news information that reflects their preferred political figures, R Kelly Garrett, 'Echo chambers online?: Politically motivated selective exposure among Internet news users' [2009] 14 *Journal of Computer-Mediated Communication* 265, 266; see also, Emanuele Brugnoli, Matteo Cinelli, Walter Quattrociocchi and Antonio Scala, 'Recursive patterns in online echo chambers' (2019) 9(1) *Scientific reports* 20118; Larry Diamond, 'The Road to Digital Unfreedom: The Threat of Postmodern Totalitarianism' (2019) 30(1) *Journal of Democracy* 20, 22.

[30]Flaxman, Goel and Rao (n 6) 298; Ana S Cardenal, Carlos Aguilar-Paredes, Camilo Cristancho, Silvia Majo-Vazquez, 'Echo-chambers in online news consumption: evidence from survey and navigation data in Spain' (2019) 34(4) *European Journal of Communication* 360; Lisa Harris and Paul Harrigan, 'Social Media in Politics: The Ultimate Voter Engagement Tool or Simply an Echo Chamber?' (2015) 14(3) *Journal of Political Marketing* 251.

[31]Kirsi Niinimäki, 'Eco-Clothing, Consumer Identity and Ideology' (2010) 18(3) *Sustainable Development* 150; Imran Amed, Anita Balchandani, Marco Beltrami, Achim Berg, Saskia Hedrich and Felix Rölkers, 'The Influence of 'woke' consumers on fashion' (*McKinsey*, 12 February 2019) <www.mckinsey.com/industries/retail/our-insights/the-influence-of-woke-consumers-on-fashion#> accessed 12 November 2020.

[32]There is no empirical verification on the existence of 'echo chambers' in the fashion domain; only a few website articles which mention the concept in light of the consumption culture in 'fast fashion'; see for example, Tim Blanks, 'The End of the (Fashion) World as We Know It' (*The Business of Fashion*, 24 March 2020) <www.businessoffashion.com/opinions/luxury/the-end-of-the-fashion-world-as-we-know-it> accessed 12 November 2020.

[33]Flaxman, Goel, Rao (n 6)f 299; Robert Hunt and Fenwick McKelvey, 'Algorithmic Regulation in Media and Cultural Policy: A Framework to Evaluate Barriers to Accountability' [2019] 9 *Journal of Information Policy* 307, 308.

exposure to information, which suits personal preferences and hides diverse engagement on a given subject.[34] According to Eli Pariser, filter bubbles demonstrate the 'unique universe' of tailored information, which changes 'the way we encounter ideas.'[35] Accordingly, an important aspect of the concept of filter bubbles is that personalisation is 'media-driven'[36] and occurs without the user's self-determined engagement with content.[37]

Indeed, algorithmic personalisation is argued to be a prerequisite for a positive web experience.[38] Take the situation where an individual receives advertising for a jacket they liked on a friend's social media post. A recommender system will support the user to find this garment and others of a similar style from a large content catalogue.[39] In this light, several authors suggest that algorithmic personalisation has a 'positive effect on the individual's information exposure.'[40] For example, Natali Helberger argues that 'search and recommendation systems may help or even stimulate (nudge) the audience to choose more diverse content.'[41]Accordingly, content diversity in algorithmic personalisation systems is closely linked to user involvement with the recommendation process.[42]

Nevertheless, users are often 'not aware of the different options.'[43] The individual, having liked the jacket of his or her Facebook friend, might be

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[34]Dominic Spohr, 'Fake News and Ideological Polarization: Filter Bubbles and Selective Exposure on Social Media' (2017) 34(3) *Business Information Review* 150; Ana S Cardenal, Carlos Aguillar- Paredes, Carol Galais and Maria Perez-Montoro, 'Digital Technologies and Selective Exposure: How Choice and Filter Bubbles Shape News Media Exposure' (2019) 24(4) *The International Journal of Press/Politics* 465; Silvia Knoblock-Westerwick and Steven B Kleinman, 'Preelection Selective Exposure: Confirmation Bias Versus Informational Utility' (2012) 39(2) *Communications Research* 170.

[35]Pariser (n 5) 9.

[36]Natali Helberger, 'Freedom of expression and the Dutch Cookie-Wall' (2013) Amsterdam Law School Research Paper No 2013–66, 6 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id = 2351204> accessed 12 November 2020; FJ Zuiderveen Borgesius, 'Improving privacy protection in the area of behavioural targeting' (PhD thesis, University of Amsterdam 2014) 122.

[37]Committee of Ministers, 'Recommendation CM/Rec (2007) 3 of the Committee of Ministers to member states on the remit of public service media in the information society' (adopted 31 January 2007) <https://search.coe.int/cm/Pages/result_details.aspx?ObjectId = 09000016805d6bc5> accessed 17 November 2020.

[38]Christian Pieter Hoffman, Christoph Lutz, Miriam Meckel, Giulia Ranzini, 'Diversity by Choice: Applying a Social Cognitive Perspective to the Role of Public Service Media in the Digital Age' [2015] 9 *International Journal of Communication* 1360,1366; Natali Helberger, Kari Karppinen and Lucia D'Acunto, 'Exposure diversity as a design principle for recommender systems' (2018) 21(2) *Information, Communication & Society* 191, 192.

[39]Bart P Knijnenburg, Martijn C Willemsen, Zeno Gartner, Hakan Soncu and Chris Newell, 'Explaining the user experience of recommender systems' (2012) 22(4–5) *User Modeling and User-Adapted Interaction* 441, 442.

[40]Helberger, Karppinen and D'Acunto (n 38) 192; Michael D Ekstrand, Daniel Kluver, F Maxwell Harper and Joseph A Konstan, 'Letting Users Choose Recommender Algorithms: An Experimental Study' (Proceedings of the Ninth ACM Conference on Recommender Systems, 16–20 September 2015, Vienna, Austria) <https://dl.acm.org/doi/pdf/10.1145/2792838.2800195> accessed 12 November 2020.

[41]Natali Helberger, 'Merely Facilitating or Actively Stimulating Diverse Media Choices? Public Service Media at the Crossroads' (2015) 9 *International Journal of Communication* 1324, 1329.

[42]ibid.

[43]Engin Bozdag and Jeroen van den Hoven, 'Breaking the Filter Bubble: Democracy and Design' (2015) 17 (4) *Ethics and Information Technology* 259, 251; Hoffman, Lutz, Meckel, Ranzini (n 38) 1366.

confronted with diverse items – for example, a blazer or cardigan – that resemble certain characteristics such as the style or occasion on which it was worn. Therefore, the user might not be aware of the extent of the filtering process, which influences their agency and choice.[44] Having taken an interest in the jacket, they might receive outfit recommendations from that fashion brand such as corresponding accessories or items from a specific collection, which resonate with their implicit feedback and preferences. This highlights how an individual, engaging with increasingly available information, navigates a constrained spectrum of possibilities based on the filtering process of algorithms.[45]

Against this background, the first concern regarding algorithmic filtering in ads and content is that it can cause the fragmentation of communication structures. Several commentators argue that algorithmic personalisation systems foster the development of polarised communications and fragmentation of diverse negotiations.[46] For example, consider user interactions on Twitter where individuals with a conservative political inclination retweet posts of other users with a similar outlook.[47] As highlighted by Pablo Barbera, John T Jost, Jonathan Nagler et al, 'discussions on Twitter regarding the US election in 2012 illustrated an echo chamber of ideas, including people's exchange of content with similar ideological preferences.'[48] Whilst technological developments facilitate the exchange of information and distribution of content, they also lead to the isolation of existing perceptions and patterns of thinking within the personal sphere.[49] The convergence of algorithmic filtering in content, ads, and individual perceptions effectively solidifies existing differences, rather than providing a pluralist outlook on an

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[44]ibid.

[45]Roth, Mazieres, Menezes (n 15) 11.

[46]Spohr (n 34) 150; Cardenal, Aguillar- Paredes, Galais and Perez-Montoro (n 34) 465; Knoblock-Westerwick and Kleinman (n 34) 170; see also Cass R Sunstein who warns that a democratic society must be exposed to diverse views; Sunstein (n 28) 5; see also Calude Castelluccia and Arvind Narayanan, 'Privacy considerations of online behavioural tracking' (European Network and Information Security Agency (ENISA) 19 October 2012) <www.enisa.europa.eu/publications/privacy-considerations-of-online-behavioural-tracking#:~:text = Privacy%20considerations%20of%20online%20behavioural%20tracking.%20Internet%20users,to%20support%20and%20respect%20the%20right%20for%20privacy.> accessed 12 November 2020 at 13–14.

[47]Pablo Barbera, John T Jost, Jonathan Nagler, Joshua A Tucker and Richard Bonneau, 'Tweeting From Left to Right: Is Online Political Communication More Than an Echo Chamber?' (2015) 26(10) *Psychological Science* 1531, 1537.

[48]ibid 1539.

[49]For example, a recent paper looking at social media comments of users who follow conspiracy theories revealed that 'social media can play a role in spreading conspiracy theories, but it mostly entrenches beliefs among those who already have them', taken from Colin Klein, Adam Dunn, Peter Clutton, 'Don't (just) blame echo chambers: conspiracy theorists actively seek out their online communities' (*The Conversation*, 19 November 2019) <https://theconversation.com/dont-just-blame-echo-chambers-conspiracy-theorists-actively-seek-out-their-online-communities-127119> accessed 28 November 2020; Colin Klein, Adam Dunn and Peter Clutton, 'Pathways to conspiracy: The social and linguistic precursors of involvement in Reddit's conspiracy theory forum' (2019) 14(11) PLOS One 1; see also, Bernal (n 13) 81.

issue. The main difficulty with the fragmentation of public discourse in echo chambers is that there is no 'robust middle' that mediates between the various views in the networks.[50] In this respect, it is argued that echo chambers foster the development of 'alternative facts' including misinformation and, in some instances, the development of ideological segregation and extremism expressed in the political online sphere.[51] Whilst it is correct to assume that the technological landscape is by no means the sole contributor to the increasing fragmentation of public discourse, it is certainly a significant factor amplifying existing differences, contributing to the formation of biases, and destabilising meaningful democratic exchange of information.[52]

The second concern regarding algorithmic personalisation is its impact on the individual's identification process. Take the Cambridge Analytica scandal, which showed the potential of behavioural profiling as a tool to psychologically shape political viewpoints.[53] This well-known case, highlighting the importance of commercial algorithms to tap into political discourse, has important socio-cultural implications.[54] In particular, algorithmic filtering leads to a paradoxical outcome in that the more I interact with fashion to engage with personalised content, the more will I become vulnerable to the dynamics shaping my own preferences. In other words, filter bubbles affect the way individual participation shapes and defines people's engagement with the nuances of fashion.

An important consideration I want to emphasise here is that filter bubbles and echo chambers raise significant concerns not only with regard to the user's utility of choice but the individual's contours of sense-making.[55] To illustrate this, let us assume that a recommender system could support an

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[50]See research by John Kelly and Camille François, 'This is what filter bubbles actually look like Maps of Twitter activity show how political polarization manifests online and why divides are so hard to bridge' (*MIT Technology Review*, 22 August 2018) <www.technologyreview.com/2018/08/22/140661/this-is-what-filter-bubbles-actually-look-like/> accessed 12 November 2020.

[51]Petter Törnberg, 'Echo chambers and viral misinformation: Modeling fake news as complex contagion' (2018) 13(9) PLOS One 1, 17.

[52]For an extensive discussion on this subject Yochai Benkler, Robert Faris and Hal Roberts, *Network Propaganda: manipulation, disinformation, and radicalization in American Politics* (Oxford University Press 2018) 5–21, 23.

[53]ibid 275.

[54]Ramus Helles and Mikkel Flyverbom, 'Meshes of Surveillance, Prediction, and Infrastructure: On the Cultural and Commercial Consequences of Digital Platforms' (2019) 17(1/2) *Surveillance & Society* 34; Ellen P Goodman and Julia Powles, 'Facebook and Google: most powerful and secretive empires we've ever known' (*The Guardian*, 28 September 2016) <www.theguardian.com/technology/2016/sep/28/google-facebook-powerful-secretive-empire-transparency> accessed 18 November 2020; Jose van Dijck, 'Datafication, Dataism and Dataveillance: Big Data between scientific paradigm and ideology' (2014) 12(2) *Surveillance & Society* 197, 198.

[55]As pointed out by Eli Pariser, filter bubbles are not only about targeted advertising but how algorithms shape the individual's 'own filter to make sense of the world.' Pariser (n 5) 8–10; see also, Alessandro Acquisti and Jens Grossklags, 'Privacy and Rationality: A Survey' in Katherine Strandburg and Daniela Stan Raicu (eds) *Privacy and Technologies of Identity: A Cross- Disciplinary Conversation* (Springer 2006) 18.

individual's (subjective) experience of exposure diversity, affording the user more opportunities to exercise and express his or her preferences.[56] Whilst principles on exposure diversity seem to provide an initial response addressing user isolation in echo chambers and filter bubbles, it does not provide a sufficient account of the normativity of algorithms to reproduce patterns of individual behaviour. A recommender engine will still be constrained by the individual's attributes and common characteristics to read individual perception.[57] Therefore, we need to establish first how the normativity of an individual's own attributes within an algorithmic landscape (as derived from explicit and implicit data) constrain an individual's autonomy within echo chambers and filter bubbles. I intend to suggest in the next section that filter bubbles and echo chambers in fashion shape not only our information choices, but affect the way individuals communicate and conceal aspects of identity.

2.3. The impact of filtering algorithms on individual autonomy and identity

Predictive and social media analytics, acting on shared narratives on appearance and style in the fashion domain, negotiate the communicative function of fashion as a means of appearance management and perception. Digital platforms, allowing for the expression of individual preferences and perceptions, go beyond the personal sphere within inter-subjective relationships, shaping an individual's self-presentation as a form of fashion consumption.[58] Take the example of an individual who posts curated pictures and videos of themselves on social media, receiving a considerable number of followers

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[56]It is possible to implement several criteria in the design of recommender engines to increase the user's exposure to diversity. Examples are approaches aiming at 'diversity in design' as well as principles of serendipity in personalisation systems. I am not intending to discuss these approaches in greater detail as it would direct my investigation focusing only on the utility of choice, leaving other aspects of individual autonomy relevant to the conceptual outlook on filter bubbles and echo chambers in fashion; see also, Natali Helberger, 'Diversity by Design' [2011] 1 *Journal of Information Policy* 441, 448; Chifumi Nishioka, Hauke Jorn and Ansgar Scherp, 'Influence of tweets and diversification on serendipitous research paper recommender systems' [2020] 6 *Peer J Computer Science* 1, 2; Urbano Reviglio, 'Serendipity as an Emerging Design Principle in the Infosphere: Challenges and Opportunities' (2019) 21(2) *Ethics and Information Technology* 151, 156; Natali Helberger (n 41) 1325.

[57]For example, Alexis Anzieu understands serendipity as an 'accidental discovery', such as 'at home when looking for a specific item only to come face to face with a previously lost object instead. Or in the evening when we look for a friend, but end up finding another one with whom the discussion turns out to be boring.' In both examples, serendipity is to create novelty based on my own outlook of the world. However, algorithms create this 'novelty' based on the reading of my own perception, thus only strengthening an individual's autonomy in an artificial sense. Alexis Anzieu, 'Introducing Serendipity into Recommendation Algorithms' (*Medium*, 6 June 2019) <https://medium.com/ssense-tech/introducing-serendipity-into-recommendation-algorithms-fb92af88ee0b> accessed 2 November 2020.

[58]A good example is the increasing awareness regarding the issues of sustainability with the fashion consumer, Laura Bovone, 'The Issue of Identity: From Urban Tribes to Political Consumerism to Sharing Fashion' (2016) 3(2) *International Journal of Fashion Studies* 267, 273–74.

and 'likes.' The individual receives many endorsements such as 'followers' based on his or her personality, the 'aesthetics' in the visual content, or fashion style. Suppose now that the same individual is an influencer who wears clothing, make-up, and accessories from a luxury fashion brand targeted at young professionals. Social media analytics and consumer profiling will take advantage of this echo chamber to investigate individual perceptions including meanings attached to a young professional fashion consumer – i.e. what is the general sentiment about that luxury fashion brand? What is the personality of its ideal consumer and what kind of 'aesthetics' and 'style' represent them?[59] Filter bubbles and algorithms solidifying echo chambers in online space undermine the individual's autonomy to shape and control the negotiation between the management of appearance (self-presentation on social media) and perception (the use of feedback on someone's self-presentation) within the algorithmic filtering process.

In addition to the impact of algorithmic personalisation and behavioural advertising in fashion on the contours of perception, we need to elaborate on the impact of social media analytics and consumer profiling on the conditions for the individual's exercise of reflective choice. Christopher Wiley, who investigated the extent to which Cambridge Analytica used fashion as a tool to shape individual opinions, reveals that 'fans of American denim brands such as Wrangler, Hollister and Lee Jeans were found to be more likely to engage with pro-Trump messaging, whereas fashion labels such as Kenzo or Alexander McQueen were more likely to attract Democratic voters.'[60] He suggests that Cambridge Analytica used user preferences concerning fashion brands for the analysis of algorithms, which targeted individuals with pro-Trump news during the 2016 US presidential election.[61] This is a form of political micro-targeting to influence voter opinions based on the 'direct transmission of a specific stimuli.'[62]

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[59]For instance, it is argued that the collaboration between the commercial retailer 'H&M' and the designer 'Alexander Wang' for the fall collection back in 2014 was so successful due to their utilisation of social media analytics to address overall brand sentiment, which did lead to a 66% of an overall positive sentiment of consumers about the collaboration that dominated 60% of H&M social media conversation before the premiere of the collaboration. Similarly, H&M's and Balmain's collaboration in 2015 including their marketing campaign received more than 93,000 Twitter mentions using the #HMBalmaination hashtag; taken from Hilary Milnes, 'H&M-Balmain collaboration is heating up on social' (*Digiday*, 20 October 2020) <https://digiday.com/marketing/hm-balmains-upcoming-collaboration-heating-social/> accessed 10 October 2020; see also, Marcus Beard, 'Paris Fashion Week: Chanel, Luxury Fashion, and a Social Tour de Force' (*Brandwatch*, 13 October 2015) <https://www.brandwatch.com/blog/paris-fashion-week-chanel-luxury-fashion-and-a-social-tour-de-force/> accessed 10 October 2020.

[60]Harper (n 2).

[61]Vikram Alexei Kansara, 'Cambridge Analytica Weaponised Fashion Brands to Elect Trump, Says Christopher Wylie', (*Business of Fashion*, 29 November 2018) <ps://www.businessoffashion.com/articles/video/cambridge-analytica-weaponised-fashion-brands-to-elect-trump-says-christopher-wylie> accessed 8 October 2020.

[62]Orestis Papkyriakopoulos, Simon Heglich, Morteza Shahrezaye and Juan Carlos Medina Serrano, 'Social media and microtargeting: Political data processing and the consequences for Germany' (2018) 5(2) *Big Data & Society* 1, 2.

Whilst an extensive debate on micro-targeting is beyond the scope of the present discussion,[63] the importance of fashion as a predictor of individual characteristics, attitudes and personality traits can be seen, both at the level of political micro-targeting as well as for filter bubbles more generally. Algorithmic filtering, mediating exposure to content, shapes the individual's process to reflect upon and filter between own beliefs and values and the social media comparator, such as an influencer and/or a new trend. A fashion brand engaged in behavioural advertising and targeting bases this on the individual's affinity with a brand or product before that individual can make a validated choice regarding their preferences. This pre-emptive nature of algorithms concerning virtually every aspect of an individual's daily life and decisions – occupation, style, current mood – does not simply suggest that one cannot 'muddle the waters' within diverse or novel content,[64] but that our characteristics and their correlations between profiles are the defining feature of (artificial) choice, rather than our ability to reiterate and re-define the contours of appearance and perception. Therefore, we can argue that the impact of social media analytics and consumer profiling on reflective choice defines the individual's ability to establish self-relationality regarding the expression of their own assumptions on fashion and identity.

The discussion on echo chambers and filter bubbles in the fashion domain is indeed fundamental for understanding that an individual's expression of fashion identity is a mere reflection of pre-existing configurations relating to fashion. We need to examine the impact of echo chambers and filter bubbles on an individual's autonomy including the user's identification and de-identification with fashion in the algorithmic landscape. The right to privacy is central to solving the tension between the performative and reflective function of fashion identity in filter bubbles and echo chambers.

3. Assessing the filter bubble and echo chamber in the fashion domain under article 8 of the ECHR

This section places in a legal landscape the discourse regarding the influence of filtering algorithms in fashion on individual autonomy. The nuances of privacy in the big-data context can include 'the control of information about oneself'[65], which can include an interest 'in controlling access to,

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[63]ibid, see also, Frederick J Zuiderveen Borgesius, Judith Möller, Sanne Kruikemeier, Ronan O Fathaigh, Kristina Irion, Tom Dobber, Balazs Bodo, Claes de Vreese, 'Online Political Microtargeting: Promises and Threat for Democracy' (2018) 14(1) *Utrecht Law Review* 82.

[64]Sylvie Delacroix, 'From Agency-Enhancement Intentions to Profile-Based Optimisation Tools: What is Lost in Translation' in Emre Bayamilioglu, Irina Baraliuc, Lisa Janssens and Mireille Hildebrandt (eds) *Cogitas Ergo Sum: 10 Years of Profiling the European Citizen* (Amsterdam University Press 2018) 17.

[65]See Daniel J Solove who argues that 'privacy is a sweeping concept, encompassing (among other things) freedom of thought, control over one's body, solitude in one's home, control over information about oneself.' Taken from Daniel J Solove, 'Conceptualizing Privacy' (2002) 90(4) *California Law Review* 1088.

and sharing, information about ourselves.'[66] However, algorithmic filtering undermines the individual's participation to shape self-representation with regard to the invisible classification of filtering algorithms. Accordingly, privacy needs to consider the constraints and enablers of the performative function of fashion identity in echo chambers and filter bubbles.[67] That said, individuals have a collective interest in the right to privacy based on the algorithms' 'creation of information about a group.'[68]

The intention here is to identify whether the right to privacy as interpreted under Article 8 of the ECHR gives protection against the harm caused by filtering algorithms in the fashion domain. Article 8, extending beyond the idea of separation and seclusion from unwarranted interferences, includes the state's positive obligation to facilitate an individual's personal development and expression of personality.[69] The individual's communication and identification of fashion, being the relational process of identity-building, is implicitly recognised in the case law pertaining to Article 8 of the ECHR encompassing the notion of personal development and expression of personal identities.[70] However, *what does an individual's autonomy signify as an embodied entity within a filter bubble and echo chamber?* I intend to highlight that the ECtHR's account of privacy is one-dimensional, requiring a normative account of the role of performativity in fashion regarding algorithmic filtering.

3.1. A conceptual outlook on the challenges of predictive and social media analytics in fashion to privacy and identity

Echo chambers illustrate the objective constraint on an individual's privacy in terms of fashion identity, based on the collection and processing of preferences and enacted by fashion narratives that define the user's exposure to content. Take the example of an algorithmic personalisation system, whereby the consumer has given 'consent' to the processing of cookies.[71] Informational privacy serves to protect acts of self-representation, which

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[66]Roger Brownsword, *Law, Technology and Society: Reimagining the Regulatory Environment* (Routledge 2019) 304; see also, Stephen B Zhao, 'Exposure and concealment in digitalized public spaces' in Tjerk Timan, Bryce C Newell, and Bert-Jaap Koops (eds) *Privacy in Public Space : Conceptual and Regulatory Challenges* (Edward Elgar Publishing Limited 2017) 155.

[67]This conception of privacy is encompassed in Philip E Agre, 'Introduction' in Philip E Agre and Marc Rotenberg, *Technology and Privacy: The New Landscape* (The MIT Press 1997) 7.

[68]Brent Mittelstadt, 'From Individual to Group Privacy in Big Data Analytics' (2017) 30(4) *Philosophy & Technology* 475.

[69]Bart van der Sloot, 'Privacy as Human Flourishing: Could a Shift Towards Virtue Ethics Strengthen Privacy Protection in the Age of Big Data?' (2014) 5 *Journal of Intellectual Property, Information Technology and Electronic Commerce Law* 230.

[70]For example, *Barbulescu v Romania* [2017] 9 WLUK 42, para 70.

[71]see also, Eleni Kosta, 'Peeking into the cookie jar: The European approach towards the regulation of cookies' (2013) 21(4) *International Journal of Law and Information Technology* 380, 381.

includes the control of personal data.[72] In this respect, the meaning of privacy has evolved into the exposure of or restricted access to information pertaining to the self.[73] Informational privacy sets the boundaries of communication structures, such as the extent of cookie tracking in the fashion domain, by requiring the user's informed choice regarding data processing activity. However, sometimes the objective boundaries of the control of personal information can be detached from the experience of fashion identity within the filter bubble and echo chamber. For example, consider the algorithmic personalisation system in fashion that requires user consent for the collection of personal data to detect clothing style. Here, an algorithm describes the individual's clothing style as a practical entity summarised in terms of individual preferences, such as a 'style' based on the inferences of the user's browsing and/or click behaviour. This highlights that informational privacy as a tool to control the data points of self-representation (i.e. personal data) does not offer an effective means to secure the individual's effective participation in communication structures, including controlling the parameters of the echo chamber.[74] Whilst the collection of personal data can illustrate an objective constraint on an individual's privacy in terms of fashion identity, we need to go further to secure the individual's control of the abstract entities, such as aspects of the self to infer clothing style. Control in the form of consenting to data processing does not equal control over one's fashion identity.

In other words, an account of the constructed relationships within the algorithmic landscape is not based on a traceable structure and, indeed, the user is intertwined with the algorithmic reflection of the self.[75] Algorithmic filtering shapes both my own ability to re-evaluate my own account of identity, as well as the affordances through which we encounter

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[72]For a recent description on the meaning of informational privacy as control of personal information about oneself see, Jens-Erik Mai, 'Three Models of Privacy: New Perspectives on Informational Privacy' (2020) 37(1) *Nordicom Review* 171, 171–72.

[73]David W Shoemaker, 'Self-exposure and Exposure of the Self: Informational Privacy and the Presentation of Identity' (2010) 12(1) *Ethics and Information Technology* 3, 4.

[74]Of course, there are various issues with the enforcement of a notice consent model in a big data context. For an extensive and general discussion on this subject see, Fred H Cate and Viktor Mayer-Schönberger, 'Notice and consent in a world of Big Data' (2013) 3(2) *International Data Privacy Law* 67, 68–69; Bart W Schermer, Bart Custers and Simone van der Hof, 'The Crisis of Consent: How Stronger Legal Protection may Lead to Weaker Consent in Data Protection' (2014) 16(2) *Ethics and Information Technology* 171; see also, Frederik J Zuiderveen Borgesius, Sanne Kruikemeier, Sophie C Boerman and Natali Helberger, 'Tracking Walls, Take-It-Or-Leave-It Choices, the GDPR, and the ePrivacy Regulation' (2017) 3(3) *European Data Protection Law Review* 353, 374.

[75]Maria Brincker, 'Privacy in Public and the Contextual Conditions of Agency' in Tjerk Timan, Bryce C Newell, and Bert-Jaap Koops (eds), *Privacy in Public Space : Conceptual and Regulatory Challenges* (Edward Elgar Publishing Limited 2017) 72–73, 79; Nora A Draper and Joseph Turow, 'Audience Constructions, Reputations, and Emerging Media Technologies: New Issues of Legal and Social Policy' in Roger Brownsword, Eloise Scotford, and Karen Yeung (eds), *The Oxford Handbook of Law, Regulation and Technology* (Oxford University Press 2017) 1153.

reproductions of the social aspect of fashion identity in the Infosphere.[76] Privacy and autonomy require protection 'beyond the persona of self-representation' and include the construct formalising my interactions in the online sphere.[77]

Therefore, the parameters of the right to privacy need to address the aspects of personality within fashion identity, rather than the notion of identifiable information. Recognising that predictive analytics including the formation of echo chambers entail the plurality of attributes and grouping of preferences, we need to move away from a concept of privacy as an individual interest.[78] Luciano Floridi is arguably one of the first to discuss collective interests in relation to the right to privacy and consumer profiling.[79] He envisages that privacy needs to assume the level of harm deriving from algorithmic practices, which seek to resemble common representations of the self.[80] The degree to which I can assess the contours of my self-representation is embodied in the social patterns shaping my reference to the self.[81] Accordingly, our focus is not on the individual's expressive notion of identity (such as the communication of preferences) but the informational structure shaping the performative function of fashion identity.

Privacy is thus a collective interest in preserving the contingency of fashion, as read by algorithms. This account of privacy allows us to elaborate on the issues of echo chambers and filter bubbles focusing on the enablers of autonomy for an individual's privacy.[82] First, privacy can entail the individual control of communication structures that include a contextual account to

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[76]The Infosphere can be defined as the relation of the individual and identity to the networked environment; see Luciano Floridi, 'Information ethics: a reappraisal' (2008) 10(2–3) *Ethics and Information Technology*189, 190; indeed, it is difficult to speak about one Infosphere and that there are a series of Information structures constantly adapting to user interactions, see Mireille Hildebrandt, 'Who Needs Stories if You Can Get the Data? ISPs in the Era of Big Number Crunching' (2011) 24(4) *Philosophy & Technology* 371, 374; Luciano Floridi, 'The Philosophy of Information as a Conceptual Framework' (2010) 2–3 *Knowledge, Technology & Policy* 253, 279.

[77]Here I am referring to Erving Goffman's theory; Erving Goffman, *The Presentation of Self in Everyday Life* (4th edn, Penguin Books 1990) 166, 203; see also, Luciano Floridi, 'The Ontological Interpretation of Information Privacy' (2005) 7(4) *Ethics and Information Technology* 185, 187.

[78]Michele Loi and Markus Christen, 'Two Concepts of Group Privacy' (2020) 33(2) *Philosophy & Technology* 207, 220–21.

[79]ibid 208; see also, Luciano Floridi, 'Open Data, Data Protection, and Group Privacy' [2014] 27 *Philosophy & Technology* 1.

[80]Luciano Floridi, 'Group Privacy: A Defence and an Interpretation' in Linnet Taylor, Luciano Floridi and Bart van der Sloot (eds) *Group Privacy: New Challenges of Data Technologies* (Springer 2017) 87, 93–94; see also Luciano Florid who argues that 'our current ethical approach is too anthropocentric (only natural persons count) and atomistic (only the single individual count). We need to be more inclusive because we are underestimating the risks involved in opening anonymised personal data to public use, in cases in which groups of people may still be easily identified and targeted.' Taken from Luciano Floridi, 'Open Data, Data Protection, and Group Privacy' [2014] 27 *Philosophy & Technology* 1, 2; see also, Urbano Reviglio and Rogers Alunge, '"I Am Datafied Because We Are Datafied": An Ubuntu Perspective on (Relational) Privacy' [2020] 33 *Philosophy & Technology* 595, 600.

[81]Bert- Jaap Koops, 'Privacy Spaces' (2008) 121(2) *West Virginia Law Review* 611.

[82]See also, Paul Helm and Sandra Seubert, 'Normative Paradoxes of Privacy: Literacy and Choice in Platform Societies' (2020)18(2) *Surveillance & Society* 185, 193.

one's 'profiled identity' in the online sphere.[83] Second we may consider the role of privacy entailing the individual's capacity to manage one's self-representation in the algorithmic landscape.[84] In this respect, privacy establishes a notion of coherence (i.e. how does the algorithmic construct of my preferences define the filtered content) and consistency (i.e. how does algorithmic filtering create and reproduce behavioural patterns relating to my fashion identity) to protect an individual's autonomy within filter bubbles and echo chambers.

Moreover, echo chambers and filter bubbles affect not only the contexts through which I derive my own choices, as well as those relations that are irreducible to social interactions. Whilst predictive and social media analytics in the fashion domain characterise online interactions in the echo chamber, it is the individual who fulfils the role of managing self-representation within the communication structure.

Just take the example of an individual's perception of body image in fashion, whereby they construct the variables of 'style' and 'figure' based on the associations with their personal look and celebrities or influencers.[85] With their need to establish a balance between conformity and differentiation, individuals express dialectic tendencies with reference to the self, such as choosing a dress that flatters the figure or hiding uncomfortable parts of the body. The abstract entities of style and body with reference to the self retain their independence within the constraints of the echo chamber. Therefore, it is the way the independence of abstract entities affects the plurality of one's own needs, desires, and beliefs, and how the fractions of individual data points relate to an individual's autonomy that are important here.[86] After all, the influence of echo chambers on communication structures in the fashion domain is a question of plurality among the social aspects of fashion as well as within the personal aspects of

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[83]Mittelstadt (n 68) 475, 478; see also, Peter H Klopfer and Daniel I Rubenstein, 'The Concept of Privacy and its Biological Basis' (1977) 33(3) *Journal of Social Issues* 52.

[84]Koops (n 81) 659–660; see also, Roger Brownsword, 'Friends, Romans, Countrymen: Is there a Universal Right to Identity?' (2009) 1(2) *Law, Innovation and Technology* 223, 224.

[85]Jasmine Fardouly, Brydie K Willburger and Lenny R Vartanian who wrote on the formation of women's perception of 'body image' using the social media platform 'Instagram' noted that 'greater overall Instagram use was associated with greater self-objectification, and that relationship was mediated both by internalization and by appearance comparisons to celebrities.' Taken from Jasmine Fardouly, Brydie K Willburger and Lenny R Vartanian 'Instagram Use and Young Women's Body Image Concerns and Self-objectification: Testing Mediational Pathways' (2018) 20(4) *New Media & Society* 1380; see also, Andra Sibak, 'Constructing Masculinity on a Social Networking Site The Case-Study of Visual Self-presentations of Young Men on the Profile Images of SNS Rate' (2010) 18(4) *Nordic Journal of Youth Research* 403.

[86]Luciano Floridi, in contrast, suggests that the self is constituted by the information, whereby the Infosphere creates a 'new' conception of self, see cf Lucaino Floridi, 'The Informational Nature of Personal Identity' (2011) 21(4) *Minds and Machines* 549, 556; see also, Matteo Turlilli and Luciano Floridi, 'The Ethics of Information Transparency' (2009) 11(2) *Ethics and Information Technology* 105, 108; Andreas Pfitzmann, Katrin Borcea-Pfitzmann, and Jan Camenisch, 'Primal Life' in Jan Camenish, Simone Fischer- Hübner and Kai Rannenberg (eds) *Privacy and Identity Management for Life* (Springer 2011) 10.

fashion identity. How do social patterns including my digital presence in the Infosphere affect the inter-relationship of my own perception of fashion is an important question positioning privacy discourse.

Recognising that privacy can pertain to the dialectic tendencies of fashion identity is an important contribution in how informational structures can inform the behavioural patterns of collective thought and consist of both an individual's contextual and causal relationality.[87] This conception goes further than mainly asserting that algorithms impact an individual's manifestation of their own judgements of identity within an informational structure, and signifies the process of introspection establishing the meaning attached to the social aspects of fashion. How do my self-relationality and inference of self develop within my unique world of filtered content? Once our own patterns of thought – the associations with fashion identity in the filter bubbles – are constantly assessed by algorithms, the gaze through which we can identify with aspects of fashion identity become limited: 'We become, neurologically, what we think.'[88]

To summarise, privacy pertains to the undeveloped thoughts necessary to form one's individual perception and self-relationality. It is an affordance that is relational to an individual's autonomy and contextually situated in the Infosphere.[89] In addition, privacy is not only about controlling aspects of the self, including personal data, but also illustrates the circularity of one's identity shaping the content that dynamically adapts to changes in user preferences.[90] That being said, we are not only concerned with the reproduction of knowledge in an echo chamber and filter bubble, but how the informational structure shapes my own choices on how my preferences are shaped. Further, an individual is pre-determined by the echo chamber and filter bubble he or she is engaging with, which shapes the contours of the process of inner introspection.

The following section will apply these contextual findings to a legal framework, focusing on the ECtHR's interpretation of the right to respect of an individual's private and family life in Article 8 of the ECHR.[91] Article 8, whilst not directly regulating the acts of private entities, does have an indirect horizontal effect.[92] The legal analysis highlights the limitations of the

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[87]See also, Brownsword (n 66) 306–307.

[88]This quote is taken from Nicholas Carr, *The Shallows: How the Internet is Changing the Way We Think, Read and Remember* (Atlantic Books 2010) 46.

[89]Mireille Hildebrandt, *Smart Technologies and the End(s) of Law: Novel Entanglements of Law and Technology* (Edward Elgar Publishing Limited 2015) 80–81; Jonathon W Penney, 'Privacy and the New Virtualism' [2008] 10 *Yale Journal of Law and Technology* 194, 216; Mireille Hildebrandt and Bert-Jaap Koops, 'The Challenges of Ambient Law and Legal Protection in the Profiling Era' (2010) 73(3) MLR 428, 435.

[90]Carsten Ochs and Tobias Matzner, 'Privacy' (2019) 8(4) *Internet Policy Review: Journal on Internet Regulation* 1, 7.

[91]European Convention on Human Rights, as amended (n 11), art 8.

[92]Clare Ovey and Robin CA White, *The European Convention on Human Rights* (4th edn, Oxford University Press 2006) 49–50

ECtHR's interpretation of Article 8 in order to incorporate individual perception and self-relationality within the notions of personal development and autonomy.

3.2. Privacy and communication structures in filter bubbles and echo chambers in fashion

There are developments in ECHR case law which increasingly concern a violation of the right to privacy based on the substantiation of objective constraints on an individual's personal development. In this respect, the court considers the collective character of individual rights. The decision in *Chapman v the United Kingdom* highlights the right to personal development based on cultural identity, including autonomy to freely choose one's cultural life regarding Roma Travellers.[93] The court stated that the caravans of the Roma community illustrate 'an integral part of [the applicant's] ethnic identity as a Gypsy, reflecting the long tradition of that minority of following a travelling lifestyle.'[94] Therefore, measures that impact the use of a caravan, whilst directly correlating with the applicant's right to a home, affect her 'ability to maintain her identity as a Gypsy and to lead her private and family life in accordance with that tradition.'[95] This reasoning is significant, highlighting that a state's obligation under Article 8 of the ECHR is to protect an individual's cultural identity and lifestyle, as well as maintaining 'cultural diversity of value to the whole community.'[96]

The collective dimension of (cultural) identity is an important factor in maintaining the individual's reference to self in fashion identity. The ECtHR's decision in *Chapman v the United Kingdom*, whilst specifically relating to the lifestyle of Roma Travellers, highlights the continuity of identity-formation as a right to express identity in a collective environment and maintain identity in relation to a social context. Based on these considerations, the right to privacy intends to secure the individual's communication of fashion to maintain the collective identity and the individual's effort to use fashion for self-identification including personal development. The applicability of Article 8 to echo chambers' communicative structures thus secures the individual's 'right to free self-identification' free from unwarranted scrutiny including stereotyping.[97]

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[93]*Chapman v the United Kingdom* (2001) 33 E.H.R.R. 18, paras 68–70.
[94]ibid, para 73; see also, *Winterstein and Others v France* App no 27013/07 (ECHR, 28 July 2016), para 146.
[95]*Chapman v the United Kingdom* (n 93), para 73.
[96]ibid, para 93.
[97]*Tasev v North Macedonia* App no 9825/13 (ECHR, 16 August 2008), para 33; see also, *Aksu v Turkey* (2013) 56 E.H.R.R. 4, para 58; In *Lewit v Austria* (2020) 71 E.H.R.R. 5, para 46, the court held that concerning negative stereotyping 'similar considerations apply with regard to heterogeneous social groups.'

We can measure the applicability of Article 8 of the ECHR including the right to privacy with regard to the relationship between the individual's communication of information and the algorithms' filtering of the social aspect of fashion identity within filter bubbles and echo chambers. To do this, we need a comparator that measures the algorithms' disruption or forging of an individual's fashion identity within Article 8 guarantees.[98] ECtHR case law suggests that shared values that illustrate the aspects of identity relating to one's culture are an integral part of an individual's personal development.[99] Accordingly, the echo chamber's shaping of communication structures could be evidenced based on a change of collective belief, such as the information on individual attributes and clothing style, and the lack of pluralism or cultural diversity in appearance management (such as advertising specific clothing trends pertaining to a specific region or cultural environment). Nevertheless, these shared values require objective identification through a shared comparator, such as ethnicity and culture.[100] In other words, the individual needs to establish an objectively verifiable link between aspects of the self and the social aspect of fashion identity that is integral to self-development within the meaning of Article 8.[101] The ECtHR provides for a structural account of group identity based on shared characteristics in cultural and ethnic identity, but leaves out other aspects of social identity that fall within the development of aspects of the self, such as the inference of knowledge of self for appearance management.[102]

Therefore, a specific limitation regarding the applicability of Article 8 guarantees to communicative structures based on echo chambers in the fashion domain is the court's rigorous reliance on the identification of shared characteristics for the communication of collective interests.[103] In *Ciubotaru v Moldova* the ECtHR had to examine the Moldavian authority's refusal to allow the applicant to register their ethnic identity as

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[98]This would not apply to data protection cases, whereby the mere storing of personal information by a public authority interferes with article 8 of the ECHR Convention, see *Amann v Switzerland* (2000) 30 E.H.R.R. 843, para 70.

[99]*Munoz Diaz v Spain* (2010) 50 E.H.R.R. 49, paras 57- 59; *Winterstein and Others v France* (n 94), para 142.

[100]*Ciubotaru v Moldova* [2010] 4 WLUK 411, paras 57; *Tasev v North Macedonia* (n 97), paras 37–41.

[101]For example, in *Sejdić and Finci v Bosnia and Herzegovina* the court described that 'ethnicity has its origin in the idea of societal groups marked in particular by common nationality, religious faith, shared language, or cultural and traditional origins and backgrounds.' Taken from, *Sejdić and Finci v Bosnia and Herzegovina* App nos 27996/06 and 34836/06 (ECHR, 22 December 2009), para 43.

[102]There needs to be a tangible impact on an individual's exercise of self-representation as evidenced in the exercise of collective identities. Again, see the reasoning in *Ciubotaru* which stipulates that 'Mr Ciubotaru's claim is based on more than his subjective perception of his own ethnicity. It is clear that he is able to provide objectively verifiable links with the Romanian ethnic group such as language, name, empathy and others. However, no such objective evidence can be relied on under the Moldovan law in force,' *Ciubotaru v Moldova* (n 100), para 58.

[103]See also, *Ciubotaru v Moldova* [2010] 4 WLUK 411, Concurring Opinion Judge Mijovic; 'while the majority concentrated on the requirements of Moldovan law that made it impossible for the applicant to adduce any evidence in support of his claim, in my personal opinion a violation should have been based on the authorities' refusal to uphold the applicant's request to change the records in such a way as to reflect his own perception of his ethnic identity.'

'Romanian.'[104] The court did 'not dispute the right of a Government to require the existence of objective evidence of claimed ethnicity.'[105] Requiring an objectively verifiable connection is, however, problematic in the context of algorithmic filtering in fashion, whereby the plurality of needs, desires, and beliefs are summarised in individual data points without reference to an individual's perception of identity. The individual needs to establish a reference to how shared narratives of fashion in the algorithmic filtering process are forging their individual self-representation. However, they are not able to recognise those shared and formal differences in an echo chamber.

A dialectic tendency of fashion identity is not an attribute resembling a social pattern but a condition to make verifiable choices. Filter bubbles and echo chambers create conditions 'reaffirming and narrowing individuals' worldviews' regardless[106] of whether the individual's subjective choice is in fact the individual's identification with shared values including the comparators establishing the reference to the self (i.e. a shared culture and tradition within a group). My concern is that the way algorithms optimise my choices to re-establish my shared values is not considered by Article 8 guarantees. We need to move away from a notion of collective identity that is manifested in the context (such as, an individual's expression of desires and goals) to a notion of privacy that protects collective action as an assemblage of different units on the personal and social aspects of fashion. In other words, the ECtHR's reasoning establishes a notion of collective identity incompatible with the nature of algorithmic filtering, which undermines the autonomous expression of collective identities.

Therefore, I suggest that perception needs to play a more important role in defining notions regarding personal development, such as cultural identity. The individual will not be able to show a verifiable objective interest regarding a collective interest under Article 8 of the ECHR based on the impact of algorithmic filtering on the process of inference of knowledge of self. A state's positive obligation would be limited to those instances where the harm constitutes an impact on an individual's exercise of self-representation as evidenced in the exercise of collective identities.[107] Filter bubbles and echo chambers in the fashion domain, in contrast, require the consideration to balance the dialectic tendencies between appearance management

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[104]*Ciubotaru v Moldova* (n 103), paras 5–13.
[105]ibid, para 57.
[106]Cynthia Dwork and Deirdre K Mulligan, 'It's Not Privacy, and It's Not Fair' [2013] 66 *Stanford Law Review* 25, 37.
[107]Again, see the reasoning in *Ciubotaru* which stipulates that 'Mr Ciubotaru's claim is based on more than his subjective perception of his own ethnicity. It is clear that he is able to provide objectively verifiable links with the Romanian ethnic group such as language, name, empathy and others. However, no such objective evidence can be relied on under the Moldovan law in force,' *Ciubotaru v Moldova* (n 100), para 58.

and perception, including the exercise of identity within the inherent social constraints in the algorithmic filtering process. The court should shift to a risk-based approach, assessing the impact of algorithmic filtering on identity, enabling the individual to raise discrepancies between the algorithm's identification of shared narratives and the filtered content, which includes the 'feedback loop' illustrating the untransparent intervention in personal development.[108]

3.3. Privacy and relational identity with regard to self-identification in filter bubbles in fashion

Relational identity illustrates the dynamic interplay between the negative and positive dimensions of the right to privacy.[109] The right to privacy constitutes a space of solitude, intimacy, and anonymity as well as the dynamic process of inter-personal boundary control including the relationship between the self and the environment.[110] This understanding of privacy as a means to ward off unreasonable constraints and an enabler of social interaction, whilst not reflected explicitly in Article 8 of the ECHR, has developed progressively in the case law.[111] For instance, the ECtHR held that privacy cannot be viewed in isolation or restricted to an 'inner circle', but extends to the right to enter relationships with others.[112] This form of privacy extending to notions of personal identity is relational as it encompasses 'how people perceive themselves, and how they think others perceive them.'[113]

A relational understanding of identity is helpful for capturing a contextualised outlook on the notion of personal autonomy and privacy. In this respect, the court held that, among others, Article 8 protects the applicant's right to access their name and origins, as well as establish their gender

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[108]Some developments in this direction are the admissibility of *in abstracto* claims in mass surveillance cases, which allow the applicant's demonstration of interest based on a law or policy; *Roman Zakharov v Russia* App no 47143/06 (ECHR, 4 December 2015), paras 163, 171; *Szabó and Vissy v Hungary* (2016) 63 E.H.R.R. 3, para 33. My focus is how an individual could raise a claim based on the algorithms' terms to filter content undermining individual perception of fashion identity.

[109]Agre (n 67) 7; see also, Hildebrandt (n 89) 82.

[110]Valerie Steeves, 'Reclaiming the Social Value of Privacy' in Ian Kerr, Valerie Steeves and Carole Lucock (eds) *Lessons From The Identity Trail: Anonymity, Privacy and Identity in a Networked Society* (Oxford University Press 2009) 191, Irwin Altman, *The Environment and Social Behaviour: Privacy Personal Space Territory* (Brooks/Cole 1975) 18, Hildebrandt (n 89) 82; cf Samuel D Warren and Louis D Brandeis, 'The Right to Privacy' (1890) 4(5) *Harvard Law Review* 193.

[111]Jill Marshall, *Personal Freedom through Human Rights Law? Autonomy, Identity and Integrity under the European Convention on Human Rights* (Martinus Nijhoff Publishers 2000) 70.

[112]*Niemietz v Germany* (1993) 16 E.H.R.R. 97, para 29; see also, Antoinette Rouvroy, 'Privacy, Data Protection, and the Unprecedented Challenges of Ambient Intelligence' (2008) 2(1) *Studies in Ethics, Law and Technology* 1, 25.

[113]Bert-Jaap Koops, Bryce Clayton Newell, Tjerk Timan, Ivan Skorvanek, Tomislav Chokrevski and Masa Galic, 'A Typology of Privacy' (2017) 38(2) *University of Pennsylvania Journal of International Law* 483, 535.

identity and sexual orientation.[114] In *Mikulic v Croatia* the ECtHR held that the applicant's right to identify her natural father illustrates a matter of personal identity including the promotion of personal development.[115] Accordingly, the right to privacy requires, as a general principle, the space to express and form aspects of personality according to the contours of self-representation I have established with reference to the self.[116]

A relational understanding of personal autonomy regarding the right to privacy indeed provides the means to test the relationship between the subjective sense of self and filter bubbles in fashion. Article 8 establishes both an expressive and performative notion of individual autonomy pertaining to choice about one's own personal development, such as physical and mental integrity.[117] Accordingly, an individual would need an account of the significance of filter bubbles and echo chambers to shape the informational structure.[118] In this respect, privacy intends to provide the space for deliberation, which can illustrate a cocoon free from tangible friction. These tangible frictions can illustrate the way information is shared (or not distributed) and how the information structure relates to my sense-making within a filter bubble and echo chamber.[119]

However, a relational understanding of identity regarding the right to privacy would require us to move from an individualistic notion of personal autonomy to a framework that encompasses the plurality of selves in the filter bubble. Article 8 of the ECHR primarily concerns the protection of individual interests.[120] Its guarantees are restricted to the harm of the applicant's private life, family life, correspondence, and home.[121] For example, the applicant in *Pretty v United Kingdom* suffered from 'psychological distress' due to the final stages of her disease and lack of control in being 'spared

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[114]NA Moreham, 'The right to respect for private life in the European Convention on Human Rights: a re-examination' [2008] 1 *European Human Rights* 44, 68.

[115]*Mikulic v Croatia* App no 53176/99 (ECHR, 7 February 2002), paras 54, 64.

[116]This point is made clear with regard to the desired appearance cases; see *Aurel Popa v Romania* App no 4233/09 (ECHR, 18 June 2013), paras 30–32; *SAS v France* App no 43835/11 (ECHR, 1 July 2014) paras 103–107.

[117]*Denisov v Ukraine* App no 76639/11 (ECHR, 25 September 2018), paras 95–96; see also, Koops, Clayton Newell, Timan, Skorvanek, Chokrevski and Galic (n 113) 532–533.

[118]Brownsword (n 66) 317.

[119]See also Brincker (n 75) 70.

[120]As argued by Bart van der Sloot 'First, the current privacy paradigm is focused on individual rights. Second, it is focused on individual interests', taken from, van der Sloot, 'Privacy as human flourishing: Could a shift towards virtue ethics strengthen privacy protection in the age of Big Data?' (n 69) 240; see also, Bart van der Sloot, 'Privacy as Personality Right: Why the ECtHR's Focus on Ulterior Interests Might Prove Indispensable in the Age of "Big Data"' (2015) 31 (80) *Utrecht Journal of International and European Law* 25, 46.

[121]For example, the ECtHR highlighted that aspects of an individual's sexual orientation and/or life and gender identification fall within article 8 of the ECHR, see *Beizaras v Lithuania* (2020) 71 E.H.R.R. 28, para 109; *P.G v the United Kingdom* (2008) 46 E.H.R.R. 51, para 56; *Dudgeon v the United Kingdom* (1981) 3 E.H.R.R. 40, paras 40–41; cf *Laskey and Others v the United Kingdom* App nos 21627/93; 21628/93; 21974/93 (ECHR, 19 February 1997), para 36.

from further suffering.'[122] Hence, it seems that notion of personal autonomy acts as a norm of inherent restraint on the exercise of identity, rather than a progressive constraint that could be evidenced in the impact of filter bubbles and echo chambers on the process of self-identification. A progressive restraint on an individual's autonomy would include the means of inner deliberation, such as the emergence of a cocoon in a different form of appearance. Article 8 does not cover this form of transcendence, concerning the informational structures overtaking our own reflective thought and guiding into a different form of performativity. It is important to note these intangible frictions of data traces on my inference of knowledge to the self.

We therefore need to configure the right to privacy to not only include the social constraints on the exercise of identity but to recognise the manifestation of constraints for an individual's identity-building. The ECtHR's conception of the right to privacy and personal development seems to be stuck in a rhetoric of self-fulfilment. Filter bubbles in the fashion domain signify that individuals become more self-centred in an information structure wherein personal attributes form a sense of fashion through the filtering algorithms' decision-making process. It is not only a question of deciding the contours of self-representation, but rather, algorithmic filtering in fashion necessitates the viewing of self-relationality within the social constraints that define fashion identity.

Let me elaborate on this argument using an example. This morning I opened my social media and I received an ad about a fashion brand and style I am interested in. I might ask myself how the algorithm got my preferences right, what was instrumental in filtering out content. First, I need to understand what defines me in order to explore what aspect of fashion identity is relevant in my own filter bubble. In this regard, *I v United Kingdom* vividly outlines the perspective of personal autonomy to establish my claim of identity, which is 'the personal sphere of each individual, including their right to establish details of their identity as individual human beings.'[123]

However, my engagement with fashion in the filter bubble will induce me to think about claims beyond self-knowledge to establish my identity (i.e. I know that the ad suits my personal preferences), and arbitrate the differences within the filter bubble. For instance, how does the ad's choice of style entailing bright colours and a feminine shape define *my* properties correlating with style, such as my personal aspects of fashion and association with my body shape? Therefore, the second consideration is that I am *involved in* the inter-relationship of fashion narratives with reference to my own

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[122]*Pretty v the United Kingdom* (2002) 35 E.H.R.R. 1, para 8.
[123]*I v United Kingdom* (2003) 36 E.H.R.R 53, para 70; see also, David Feldman, *Civil Liberties and Human Rights in England and Wales* (2nd edn, OUP 2002) 699.

identity. This kind of self-relationality, as a form of introspection rather than self-fulfilment, is not found in ECHR case law, which deals with the expression of personal autonomy rather than the foundation of beliefs and attitudes.[124] Take the cases that deal with the individual's freedom to access information on their origin, where the individual requesting details about their personal identity is part of 'the right to personal development and to self-fulfilment.'[125] The case law focuses on elements that facilitate personal development, expressing aspects of the self that are already known to us, such as the conscious associations we need to establish links to our origin. However, we need a higher level of understanding of the values securing personal development to enable genuine self-knowledge within the algorithmic landscape. I argue that the state's positive obligation needs to focus on the individual's *capacity* for self-development. That is, we need to identify the aspects enabling the individual to retain the own personal development of fashion identity within Article 8 guarantees based on the configuration of the risk-based approach highlighted in the previous section.

4. Conclusion

This paper has highlighted the need to define questions of autonomy, filter bubbles, and echo chambers in the fashion domain with regard to individual perception and self-relationality. In doing so, the discussion has addressed some gaps in the law in relation to questions of individual control in the age of big data, with a focus on Article 8 of the ECHR.[126] The ECtHR's interpretation of Article 8 effectively limits the notion of self-development and personal autonomy to the recognition of objectively verified interferences with Article 8 guarantees. Accordingly, this paper intends to promote further research on the legal implications of filter bubbles and echo chambers in the fashion domain and expand on the implications of individual perception and self-relationality in relation to social media analytics and consumer profiling.

Declaration on the use of editorial help

I confirm that this manuscript has been edited for conventions on grammar, spelling, and language by Munizha Ahmad-Cooke.

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[124]For instance, the ECtHR in the *Aurel Popa v Romania* Case stated that the cutting of the applicant's hair on prison premises undermines the individual's expression of his personality, illustrating an interference with the right to respect private and family life; *Aurel Popa v Romania* (n 116), paras 32–33.

[125]*Odievre v France* (2004) 38 E.H.R.R. 43, paras 40–43; the ECtHR underlined that article 8 ECHR includes the control of information about the self, such as access to personal records, discovering one's origin, *Gaskin v the United Kingdom* (1990) 12 E.H.R.R. 36, para 49.

[126]European Convention on Human Rights, as amended (n 11) art 8.

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