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Discrimination at the Interface: The Equality Act 2010 and Platform Interface Design

Jed Meers*

Given their dominance in a range of sectors – from private renting to job search – the design of online platforms can impede access to markets and facilitate discrimination. Most legal scholarship on the equality implications of platform design focuses on algorithms. This paper instead interrogates the comparatively neglected issue of interface design. It argues that two areas of interface design – 'structuring' and 'sorting' functions – fall within the scope of the Equality Act 2010 as a 'provision, criterion or practice' that is not protected by a safe harbour. Drawing on web-scraping methods, it then provides an applied example of these arguments using 'No DSS' (Department for Social Security) discrimination on a leading rental platform in the UK. Using a sample of 3,336 listings collected years apart, the paper demonstrates how design choices in 'structuring' and 'sorting' interfaces can either facilitate or minimise discrimination on online platforms.

INTRODUCTION

The private rented sector used to rely on the lettings agent's window and the pages of a local newspaper. The so-called 'search behaviour' of renters was a physical affair, rooted in printed advertisements or a trip to the high street.[1] Now, almost all prospective tenants start their search for a home online. For as many as 96 per cent of renters, finding a place to live is a process dominated by a small number of websites; in the UK, mainly RightMove, Zoopla, SpareRoom and GumTree.[2] In common with many other areas of life – from finding a job to finding a date – property search is now 'primarily an online activity'.[3]

Given their dominance, the design of these online platforms is a significant regulatory problem. Poor (or reckless) design choices by platform developers

*Senior Lecturer in Law, York Law School, University of York. I am very grateful to Dr Jess Gracie, Professor Joe Tomlinson and Dr Sean Thomas for their insightful feedback and suggestions on earlier versions of this manuscript, and the two anonymous reviewers, whose constructive comments and critique greatly strengthened the paper.

1 Alasdair Rae, 'Online Housing Search and the Geography of Submarkets' (2015) 30 *Housing Studies* 453. For examples of analysis of 'search behaviour', which is rooted mainly in economics and geography, see Bruce Dunson, *A model of search behavior in rental housing markets: An empirical study* (Harvard University, Department of Economics, PhD Thesis, 1979).

2 Centre for Digital Built Britain, 'Reinventing Renting: The Application of Digital Technology in Housing for "Generation Rent"' (2018/19 ECR Project, Final Report, 10 July 2019) at https://www.repository.cam.ac.uk/bitstream/handle/1810/296277/ecr_final_report_reinventing_renting_110719_gb_1_-_kathryn_muir.pdf [https://perma.cc/D4PR-8P5C].

3 Rae, n 1 above, 453.

can impede access to markets and facilitate discrimination.[4] Most legal scholarship on the equality implications of these platforms interrogates the use and design of algorithms.[5] To borrow a metaphor from the scholarship on internet architecture, these arguments focus on the 'code layer' of these platforms: the behind-the-scenes processing of data. Ulbricht and Yeung's analogy of the 'algorithmic "factory floor"' is indicative of much of the focus of current scholarship: the importance of data-inputs, the design of the algorithms themselves, and the infrastructures they draw upon.[6] This is an essential area of research.[7] But a focus only on algorithms provides a partial view of how these platforms are constructed. The user interface – the text boxes, drop-down menus, search functions and so on – can be just as fundamental to a platform's design and operation.

Scholarship on human-computer interaction – particularly in the field of e-commerce – has long recognised that the design of these interfaces influences the behaviour of users.[8] Levy and Barocas' analysis of discrimination in online markets implicates a range of interface design choices: from built-in text 'prompting and priming' users to change their behaviour, through to the design of reputation and rating systems, such as Uber's user evaluations of its drivers.[9] However, notwithstanding the central role of interfaces and their clear potential for discriminatory effects, their role and the liability of platform operators remains underexplored in English equality and discrimination law.

This paper undertakes this dedicated analysis of interface design and the Equality Act 2010 (EA 2010). The argument is in two sections. The first

4 For examples see Benjamin Edelman and Michael Luca, 'Digital Discrimination: The Case of Airbnb.com' (Harvard Business School Working Paper 14-054, 10 January 2014) at https://www.hbs.edu/ris/Publication%20Files/Airbnb_92dd6086-6e46-4eaf-9cea-60fe5ba3c596.pdf [https://perma.cc/CF7L-VG95]; and Naomi Cahnm, June Carbone and Nancy Levit, 'Discrimination by Design?' (2019) 51 Ariz St LJ 1.

5 See Jeremias Adams-Prassl, Reuben Binns and Aislinn Kelly-Lyth, 'Directly Discriminatory Algorithms' (2023) 86 MLR 144; Lena Ulbricht and Karen Yeung, 'Algorithmic Regulation: A Maturing Concept for Investigating Regulation Of and Through Algorithms' (2022) 16 *Regulation & Governance* 3; Natalia Criado and Jose Such, 'Digital Discrimination' in Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford: OUP, 2019) 82; and Alexander Tischbirek, 'Artificial Intelligence and Discrimination: Discriminating Against Discriminatory Systems' in Thomas Wischmeyer and Timo Rademacher (eds), *Regulating Artificial Intelligence* (Cham: Springer 2020) 103. These arguments are becoming particularly well-developed in the context of administrative decision-making by public sector bodies, see Jack Maxwell and Joe Tomlinson, *Experiments in Automating Immigration Systems* (Bristol: Bristol University Press, 2022) and Joe Tomlinson, *Justice in the Digital State: Assessing the Next Revolution in Administrative Justice* (Bristol: Policy Press, 2019).

6 Ulbricht and Yeung, *ibid*,16-18.

7 This is especially urgent in the context of government decision-making. Maxwell and Tomlinson warn, echoing the UN Special Rapporteur on Extreme Poverty and Human Rights, that the use of algorithms to automate decision-making are at risk of becoming a 'law free zone': Maxwell and Tomlinson, n 5 above, 77.

8 Brian Fogg, *Persuasive Technology: Using Computers to Change What We Think and Do* (San Francisco, CA: Elsevier, 2003).

9 See Karen Levy and Solon Barocas, 'Designing Against Discrimination in Online Markets' (2017) 32 *Berkeley Technology Law Journal* 1118, 1203-1218. For a dedicated analysis of the potential for discrimination in the design of rating systems (particularly in respect of Uber), see Alex Rosenblat, Karen Levy, Solon Barocas and others, 'Discriminating Tastes: Uber's Customer Ratings as Vehicles for Workplace Discrimination' (2017) 9 *Policy & Internet* 256.

argues that particular interface design choices by platform developers fall squarely under the prohibitions on direct and indirect discrimination imposed on 'service providers' in the EA 2010. I argue that most companies in the 'platform economy' fulfil the role of 'service providers' under the EA 2010. I then argue that two types of design elements in these platform's interfaces – which I characterise as 'structuring' and 'sorting' interfaces – are a 'provision, criterion or practice' and do not enjoy the safe harbours outlined in Schedule 25 to the EA 2010. The platforms themselves are therefore liable for any unlawful direct or indirect discrimination that arises from the 'structuring' and 'sorting' functions in their user interfaces.

Having set out these arguments in the abstract, the second section of the article turns to an applied case study of so-called 'No DSS' discrimination (a defunct reference to the 'Department of Social Security' used to exclude housing benefit recipients) on one leading rental platform, SpareRoom.co.uk. In response to litigation against high street lettings agents, SpareRoom.co.uk changed the 'structuring' and 'sorting' functions in its platform's interface design. Using web-scraping methods, I compare two samples of 1,683 listings from before and after this change. These data demonstrate how changes to interface design can facilitate or reduce discrimination against groups with protected characteristics.

The arguments in these two sections speak to this paper's broader aim to be a call to arms for greater interrogation of the role of interface design in equality and discrimination law. As existing and new markets become increasingly dominated by online platforms, it is important that legal scholarship tackles all elements of their construction and how they are experienced by the end user. By setting out two core elements of interface design that engage legal duties under the EA 2010 and an applied example of the potential for unlawful discrimination arising from interfaces alone, this paper aims to provide a starting point for doing so.

ONLINE INTERFACES AND THE EQUALITY ACT 2010

As Harpur has argued in his comparative analysis of duties on online service providers, the UK is 'the jurisdiction with the clearest legislative position on the coverage of anti-discrimination laws over digital spaces'.[10] The Equality Act 2010 bites on all service providers, whether they are 'bricks and mortar' or online-only. Existing scholarship has dealt with the prohibition of direct and indirect discrimination in respect of online providers in two key ways. First, there is a burgeoning literature interrogating how the EA 2010 and discrimination law more generally bite on the design and use of algorithms.[11] This is part of a far broader literature examining the effect of anti-discrimination duties on the development and deployment of algorithms.[12] Second, others have set out how

10 Paul Harpur, *Discrimination, Copyright and Equality* (Cambridge: CUP, 2017) 188.
11 See Adams-Prassl, Binns and Kelly-Lyth, n 5 above.
12 See for instance the influential work of Xenidis in this area: Raphaële Xenidis, 'Tuning EU Equality Law to Algorithmic Discrimination: Three Pathways to Resilience' (2020) 27 *Maastricht*

the accessibility requirements under the EA 2010 require operators to ensure their platforms are accessible to people with disabilities (such as users reliant on screen readers to access and navigate content).[13] There is a burgeoning literature examining web accessibility in this context, much of which argues that current legal standards – both in the UK and elsewhere – are not sufficient to ensure that online platforms are universally accessible.[14]

This section argues that prohibitions on direct and indirect discrimination in the EA 2010 have a series of broad-ranging applications for another key component of these platforms: their interface design. I argue that two elements of interface design in particular – what I term 'structuring' and 'sorting' functions – fall within the ambit of the protections in the EA 2010.

A number of issues need addressing to reach that point. The first is to set out how the definition of a 'service provider' bites on online platforms. I argue that the wide application of the EA 2010 means most companies characterised as part of the 'platform economy' are service providers under the meaning of the Act, provided they are established in the United Kingdom. The second is to argue that certain elements of interface design – 'structuring' and 'sorting' functions – are not protected by the safe harbours outlined in Schedule 25 to the EA 2010. Finally, I argue that these same two types of interface design are each a 'provision, criterion or practice' under the EA 2010, and therefore platforms are liable for unjustified indirect discrimination that results from their design. I address each of these issues in turn.

Are online platforms 'service providers'?

The definition of a 'service provider' is a wide-ranging one, covering anyone providing goods or services to the public, or a section of the public, and all relevant activities carried out to provide such goods and services.[15] Indeed, the 'comprehensive drafting' of section 29 of the Equality Act 2010 ensures that the duties bite at all stages of a service provider's 'relationship with a user,'[16] from the terms on which a service is provided, to the termination of such a

Journal of European andComparative Law 736 and Raphaële Xenidis and Linda Senden, 'EU Non-Discrimination Law in the Era of Artificial Intelligence: Mapping the Challenges of Algorithmic Discrimination' in Ulif Bernitz and others (eds), *General Principles of EU law and the EU Digital Order* (Alphen aan den Rijn: Kluwer Law International, 2020) 151-182.

13 See for instance Paul Harpur, 'From Universal Exclusion to Universal Equality: Regulating Ableism in a Digital Age' (2013) 40 N Ky L Rev 529.

14 For examples see Catherine Easton, 'Revisiting the Law on Website Accessibility in the Light of the UK's Equality Act 2010 and the United Nations Convention on the Rights of Persons with Disabilities' (2011) 20 *International Journal of Law and Information Technology* 19 and Robert Huffaker, 'Enforcing eAccessibility: is the Current Legal Framework Adequate?' (2015) 29 *International Review of Law, Computers & Technology* 207.

15 EA 2010, s 29. See the statutory code of practice, Equality and Human Rights Commission, 'Services, Public Functions and Associations: Statutory Code of Practice' (2011) at https://www.equalityhumanrights.com/sites/default/files/servicescode_0.pdf [https://perma.cc/5KDR-EJCV].

16 Chris Fry, 'Services, Public Functions, and Transport' in Anthony Robinson, David Ruebain and Susie Uppal (eds), *Blackstone's Guide to the Equality Act 2010* (Oxford: OUP, 4th ed, 2021) 81.

service. The provision of services can fall into any sector (be it private, public or voluntary), be provided free of charge or in return for payment, and incudes the provision of facilities as well as goods.[17] For our purposes, there are three questions to tackle on the application of section 29: (i) does the meaning of 'service provider' include online platforms, (ii) what is meant by a service offered to the public or section of the public, and (iii) what is the section's territorial application, especially when online platforms may be operated overseas but accessed from the UK?

On the first question, a wide-range of online platforms fall into the definition of a 'service provider' and the EA 2010 echoes the concept of an 'information society service provider' from EU law (on which far more below).[18] Discrimination law in the UK – and the EA 2010 specifically – does not draw meaningful distinctions between 'physical' and 'online' service providers in terms of duties owed. Indeed, to draw such a distinction would be nonsensical, not least because 'online' platforms retain significant materiality of their own in any event; from servers hosting their data to the extensive physical infrastructure of the internet itself.[19] The 'illustrative' list in the Equality and Human Rights Commission's Statutory Code of Practice covers a range of sectors – from pubs to post offices and theatres to telesales – and online services are expressly included.[20] The guidance refers to examples of an 'internet holiday company' taking bookings online or an 'internet retailer' selling goods as service providers falling within the scope of the duty.[21] As in the guidance issued by the Equality and Human Rights Commission, a full range of service providers are included, from 'a one-page website which you maintain yourself' through to 'a very sophisticated website maintained by a professional web design company' and 'anything in-between'.[22]

Most companies generally characterised as 'platforms' are likely to fall within this broad definition of service providers under section 29 of the Equality Act 2010 (subject to the further two conditions explored below). The duty cuts across a diverse array of online services that are characterised as part of the 'platform economy', such as social-networking applications (such as Twitter/X or Facebook), e-commerce websites (such as Amazon or eBay), on-demand service companies (such as Uber or Deliveroo), or user-generated content sharing (such as YouTube or DailyMotion).[23] As an example, this paper goes on to examine interface changes at SpareRoom.co.uk, a platform that lists whole properties and individual rooms for rent. Here, the platform is providing a ser-

17 Equality and Human Rights Commission, n 15 above, 41.
18 See EA 2010, Sched 25, para 1.
19 For an extended exploration of this point see Paul Dourish, *The Stuff of Bits: An Essay on the Materialities of Information* (Cambridge, MA: MIT Press, 2017).
20 Equality and Human Rights Commission, n 15 above, para 11.3.
21 *ibid* para 11.8 to 11.12.
22 Equality and Human Rights Commission, 'What equality law means for your association, club or society' (2014) at https://www.equalityhumanrights.com/sites/default/files/what-equality-law-means-for-your-association-club-or-society.docx (last visited 7 March 2023).
23 For analysis of these 'buzzwords' used to describe differing business models in the platform economy, see Thomas Derave and others, 'Comparing Digital Platform Types in the Platform Economy'; in Marcello La Rosa, Shazia Sadiq and Ernest Teniente (eds), *Advanced Information Systems Engineering* (Cham: Springer, 2021).

vice for its users to post, access and interact in respect of these listings. In doing so, it offers some services that are broadly analogous to those offered by a physical lettings agent. Although it is not responsible for the content generated by those posting on its platform (on which more below), the platform operator is responsible for the services that it provides: access and use of the posting, filtering and matching of users, and messaging functions that allow advert viewers to contact advert posters (and vice versa).[24]

Service providers do, however, have to provide services to 'the public or a section of the public'.[25] For the platforms above, some kind of registration process is ordinarily required to access the full services on offer. Any member of the public can browse a lettings agent window or enter a shop to make a purchase, but may need to register and login to access equivalent services from online providers. However, the thrust of this requirement – drawing on predecessor legislation under the Race Relations Act 1968 – was explained by Lord Diplock in *Docker's Labour Club* as being encapsulated in the following test: 'the test could be put in a way which everyone could understand by putting the question: "Would a notice 'Public Not Admitted', exhibited on the premises on which the goods, facilities or services were provided, be true?" '[26]

Most cases in this area deal with services provided by members' clubs or voluntary organisations, where detailed application processes are required for admission, and access to the service is contingent on a number of factors (such as the prior experience of the candidate or the votes of a committee).[27] In the context of online platforms available to users, mere registration processes do not prevent a service being offered 'to the public or a section of the public'; in practice, almost all online platform providers will be providing services to the 'public', even if users are required to register to access them.[28]

Finally, the provisions on services in the EA 2010 form part of the law of England, Wales and Scotland – they do no not apply in Northern Ireland.[29] Generally speaking, it does not matter if the contravening act occurs elsewhere for claims relating to the provision of services, providing there is still sufficient connection with Great Britain.[30] However, for online service providers, special rules apply. To be liable under the Act, the online service provider must be established in the United Kingdom.[31]

Taking these elements of section 29 of the EA 2010 together, it is clear that most companies characterised as being part of the 'platform economy' –

24 This principle is reflected in the EHRC guidance. Liability under the Act may 'be shared among a number of service providers', where, for instance, a lettings agent themselves posts on a platform like SpareRoom.co.uk. See Equality and Human Rights Commission, n 15 above, para 11.17.
25 EA 2010, s 29.
26 *Dockers' Labour Club and Institute Ltd* v *Race Relations Board Respondents* [1976] AC 285, 297.
27 For instance see *Charter* v *Race Relations Board* [1973] AC 868. For a detailed examination of this issue, see Tom Royston, 'Treating Volunteers as "Members of an Association" and the Implications for English Discrimination Law' (2012) 12 IJDL 5.
28 See the detailed examination of the extent of application processes required in *Charter* v *Race Relations Board*, where registration processes involved three stages, including election by a committee. *Charter* v *Race Relations Board ibid*, 886-889.
29 EA 2010, s 217.
30 EA 2010, s 114.
31 EA 2010, Sched 25, para 2.

from e-commerce websites and user-generated content sharing platforms to social media companies[32] – are likely to fall within the ambit of a 'service provider', providing they are established in the United Kingdom. The next issue to consider is the knottier question of whether these platforms, notwithstanding that they are service providers, enjoy a shield to liability under the safe harbours in Schedule 25 to the EA 2010.

Do online platforms enjoy a 'safe harbour'?

Schedule 25 to the Equality Act 2010 clarifies its application to 'information society service providers'.[33] The protections in this Schedule aim to ensure – as the government's explanatory notes to the Bill make clear – that the EA 2010 does not conflict with the requirements of Directive 2000/31/EC (the E-Commerce Directive).[34] This Schedule therefore echoes the same 'safe harbour' protections for information society services laid out within the Directive.[35] This is effectively a 'negative' approach to defining liability: the legislation creates circumstances in which online service providers are 'immunised' from liability, providing their operations meet certain criteria.[36] If the online service meets the criteria in Schedule 25, then the duties under the EA 2010 do not bite. Indeed, the Schedule goes further than the EU 'safe harbour' regime: even injunctive liability is prohibited, providing the Schedule's conditions are met.[37]

These exemptions are threefold: services that are 'mere conduits' (such as an email service provider processing, but not modifying in any way, communications),[38] 'caching' services (where information is stored temporarily to facilitate the provision of a service),[39] and 'hosting' services (the storage of information provided by a service recipient).[40]

The 'mere conduit' and 'caching' safe harbours do not bite on platforms that form the focus of this paper; they deal with a narrower sub-set of technical services. The former captures, as Allgrove and Groom put it, services that act merely as 'the pipe'[41] – either providing 'provision of access to a communication network' or 'transmission in a communication network of information

32 For analysis of the 'buzzwords' used to describe differing business models in the platform economy, see Derave, and others, n 23 above.
33 EA 2010, Sched 25.
34 Directive 2015/1535, cross-referenced in Directive 2000/31/EC, Art 2(a).
35 EA 2010, Sched 25, para 7. For a more detailed overview of the history and focus of the 'safe harbour' in EU law, see Jaani Riordan, *The Liability of Internet Intermediaries* (Oxford: OUP, 2016) 377-409.
36 Graeme Dinwoodie, 'A Comparative Analysis of the Secondary Liability of Online Service Providers' in Graeme Dinwoodie (ed), *Secondary Liability of Internet Service Providers* (Cham: Springer, 2017) 1.
37 See Riordan, n 35 above, 367.
38 EA 2010, Sched 25, para 3. Reflected in Directive 2000/31/EC, Art 12.
39 EA 2010, Sched 25, para 4. Reflected in Directive 2000/31/EC, Art 13.
40 EA 2010, Sched 25, para 5.
41 Ben Allgrove and John Groom, 'Enforcement in a Digital Context: Intermediary Liability' in Tanya Aplin (ed), *Research Handbook on Intellectual Property and Digital Technologies* (Cheltenham: Edward Elgar 2020) 506.

provided by the recipient of the service'.[42] Such service providers will not be liable for the information transmitted, providing that they do not initiate the transmission, select the receiver, and/or select or modify the information.[43] As argued by Riordan, this effectively restricts this safe harbour to 'temporary transmissions by network-layer intermediaries', such as mobile data gateways, operators of domain name services, virtual private networks, and so on.[44] Likewise, the 'caching' safe harbour is narrowly drawn. It protects the 'automatic, intermediate and temporary storage of information' for the 'purpose of making more efficient the onward transmission of the information'.[45] This ensures that caching services – where a version of online content is stored in a cache to facilitate quicker access by users in certain circumstances – do not attract liability for that content, providing they meet the conditions in the Schedule.[46]

Of far more importance for our purposes is the 'hosting' exemption.[47] This is by some margin the most litigated of the three safe harbours and has possible application to the wide range of platforms that rely on hosting user-generated content in the platform economy, from social networks, online marketplaces, cloud storage providers, and so on.[48] The relevant paragraph of the Schedule, mirrored in Article 14 of Directive 2000/31/EC, states:

(1) An information society service provider does not contravene this Act only by doing anything in providing so much of an information society service as consists in *the storage of information provided by a recipient of the service*, if—
   (a) the service provider had *no actual knowledge when the information was provided* that its provision amounted to a contravention of this Act, or
   (b) on obtaining actual knowledge that the provision of the information amounted to a contravention of that section, the service provider expeditiously removed the information or disabled access to it [*emphasis added*].

There are two key limbs to explore in this context: the meaning of 'storage activity' and 'actual knowledge'. On the former, as argued by Riordan, 'only limited forms of network-layer assistance are immunised' – more 'interventionist' activities, such as the curation of content are not.[49] The distinction between the two turns on whether the role of the hosting service in respect of the user-posted content is 'technical, automatic and passive'.[50]

Domestic authority has followed CJEU jurisprudence closely on this issue and, in particular, the two leading cases in this area of *Google France SARL and*

42 EA 2010, Sched 25, para 3. Reflected in Directive 2000/31/EC, Art 12.
43 *ibid*.
44 Riordan, n 35 above, 395-397.
45 EA 2010, Sched 25, para 4. Reflected in Directive 2000/31/EC, Art 13.
46 For a detailed analysis of these in the context of Article 13 Directive 2000/31/EC, see Riordan, n 35 above, 398-401.
47 EA 2010, Sched 25, para 5. Reflected in Directive 2000/31/EC, Art 14.
48 Allgrove and Groom, n 41 above.
49 Riordan, n 35 above, 401.
50 This is set out in Recital 42 of Directive 2000/31/EC.

Google Inc v *Louis Vuitton Malletier*[51] (*Google France*) and *L'Oréal SA and Others* v *eBay International AG and Others*[52] (*L'Oréal* v *eBay*) – both of which form part of retained EU law.[53] *Google France* concerned the 'Adwords' service, whereby users post advertisements on Google using particular keywords which are then delivered to search engine users searching for relevant terms. The automatic processing of data by Google to match a search term with an advertisement was not sufficient for Google to have 'an active role of such a kind as to give it knowledge of, or control over, the data stored'.[54] The advertisements were stored on Google's server, but were entered into the system by advertisers and were only processed automatically.[55] *L'Oréal* v *eBay* – which dealt with users posting listings for counterfeit products on the popular auction platform – underscores that the hosting safe harbour will not bite where the service provider provides 'assistance which entails, in particular, optimising the presentation of the offers for sale in question or promoting those offers'.[56] To do so would give the service provider 'an active role'.[57]

Taken together, these cases have interpreted the 'storage of information' under Article 14 in what domestic authority has described as 'a relatively restrictive manner'.[58] Both underscore the importance of a 'neutral' (rather than 'active') role for the service provider.[59] If the service provider's conduct is limited to 'technical, automatic and passive' conduct then they are likely to fall within the ambit of the hosting defence. If the role goes further, such as 'optimising the presentation of offers for sale' or 'promoting these offers', it would not have a neutral position and the service provider cannot avail themselves of the protections under Article 14.[60]

In practice (albeit, as Allgrove and Groom argue, inaccurately), the CJEU often links the determination of the 'storage of information' – namely, whether the service provider has an active or neutral role – with the second issue of knowledge of this information.[61] A neutral provider does not have such 'actual knowledge' whereas an active provider does. However, it is properly a two-limbed test: the service must be passive *and* the service provider should have 'no actual knowledge' of the unlawfulness of the content. As has been clarified in *L'Oréal* v *eBay*, such knowledge can be imputed on a service provider where a 'diligent economic operator should have realised' the content is unlawful.[62]

51 C-236/08 *Google France SARL and Google Inc* v *Louis Vuitton Malletier* ECLI:EU:C:2010:159.
52 C-324/09 *L'Oréal SA and Others* v *eBay International AG and Others* ECLI:EU:C:2011:474.
53 See *Montres Breguet SA* v *Samsung Electronics Co Ltd* [2022] EWHC 1127 (Ch) (*Montres Breguet*) at [216].
54 *Google France* n 51 above at [120].
55 *L'Oréal* v *eBay* n 52 above at [117].
56 *ibid at* [116].
57 *ibid*.
58 See *Montres Breguet* n 53 above at [216].
59 *Google France* n 51 above at [114].
60 See the summary of the current position in retained law at *Montres Breguet* n 53 above at [216].
61 Allgrove and Groom, n 41 above, 514.
62 *L'Oreal* v *eBay* n 52 above at [124].

Does the 'hosting' defence apply to interface design?

Having set out the importance of the hosting defence and the key legal tests at play, this section argues that interface design choices considered in this article do not enjoy the protections under the 'hosting' safe harbour. For the 'structuring' and 'sorting' interface elements set out below, service providers cannot avail themselves of the shield to liability under paragraph 5 of Schedule 25 to the EA 2010 and these service providers therefore remain liable.

Before turning to interface design in more detail, there are two important preliminary points to make. First, the liability of online service providers for third party content can vary across different elements of the same platform. For instance, in *England and Wales Cricket Board Limited* v *Tixdaq Limited*,[63] a platform hosting user generated videos from cricket matches may enjoy a shield to liability for clips on the majority of the platform, but not for those appearing in feeds that have been editorially reviewed by their staff, even if the content is the same.[64] It is not 'impossible to divorce the two'.[65] It is wrong to characterise the hosting defence as a binary question: does the platform fit the description or not? Instead, as Allgrove and Groom argue, the hosting defence is 'tied to claims in respect of specific content'.[66] Different parts of an interface may attract different liability. The question is whether the defence is available for the specific content at issue; the answer to which may vary across different sections of the same platform.

Second, the hosting exemption only provides a shield to liability that arises from information provided by *users* of the service. It does not, as has been made clear in CJEU authority, 'cover any other aspect of that provider's activity'.[67] As Riordan puts it, Article 14 focuses on the storage of third-party content only and does not 'supply a wider shield' for a platform's 'own obligations, its own content, or its operation of other aspects of the service'.[68] If the content is generated by the platform, and not by its users, then it cannot avail itself of the shield under Article 14. Everything created by the platform itself falls within this remit, including the user interface.

Having made these preliminary points, the analysis that follows outlines the 'structuring' and 'sorting' elements of interface design. Drawing on examples from the SpareRoom.co.uk interface throughout, I argue that these interface decisions do not fall under the liability shield provided under Schedule 25 to the EA 2010.

63 [2016] EWHC 575 (Ch); [2016] Bus LR 641.
64 As discussed, obiter, by Arnold J in *England and Wales Cricket Board Limited* v *Tixdaq Limited* [2016] EWHC 575 (Ch) at [170]. For further analysis on this point, see Allgrove and Groom, n 41 above, 513-514.
65 *ibid*.
66 Allgrove and Groom, n 41 above, 519.
67 C-682/18 *Frank Peterson* v *Google LLC and Others* ECLI:EU:C:2021:503 (*Peterson*) at [134]; and *L'Oreal* v *eBay* n 52 above at [153].
68 Riordan, n 35 above, 401.

Liability for 'structuring' and 'sorting' elements of interface design

Interface design is central for structuring the input of user-generated content. This is core to the business model for most operators in the 'platform economy'. Extracting data from users is, as Cohen argues, the 'raw material' for these businesses.[69] AirBnB needs an interface for prospective hosts to enter their property details in the same way that Match.com needs an interface for prospective partners to enter details about themselves. The design of these interfaces is not a passive process. There are a number of complex design choices for platforms when structuring the input of user-generated content.[70] Indeed, outside of legal scholarship, there is an active debate about ensuring 'fairness by design' through developing optimisation frameworks that capture these elements of interface design.[71] At one end of the spectrum is unconstrained rich text entry and uploading of multimedia content (pictures, videos and so on) with little in the way of data validation or control by the platform. At the other are tightly constrained responses, often limiting users to selecting from pre-determined categories in drop-down menus or constrained, validated text inputs.

For example, in order for a live-in landlord to post an advert on SpareRoom.co.uk, a user is asked 48 discrete questions in an online form – only two of which (the advert title and description) are open text entry, albeit with data validation controls (such as limiting the number of characters). The 46 others are heavily constrained choices between different pre-determined categories on the platform in drop-down menus: are you 'straight', 'gay', or 'undisclosed'; do you accept pets, 'yes' or 'no'? By way of illustration, Figure 1 provides an excerpt of steps four and five of this six-stage process.

Where platforms play an active role in structuring the input of content, I argue they will be unable to avail themselves of the safe harbour under Schedule 25 to the Equality Act 2010. Unconstrained text entry and the uploading of images by users are very unlikely to attract liability for the content, whereas tightly controlled data input – such as presenting users with a finite number of pre-determined categories in a drop-down menu – will. Both of these types of content can exist side-by-side on the same platform. To illustrate this distinction, Figure 2 is an illustration of the fields that display in a property listing on SpareRoom.co.uk.

In Figure 2, points a and d are both populated by users via free text entry. The interface for posting advertisements only constrains formatting and character length. Likewise, point c is populated by users uploading image files, constrained only by file type and size. All three are 'technical, automatic and passive'[72] processes envisaged under the hosting safe harbour and enjoy the protections under Schedule 25 to the EA 2010. The shield for liability for content

69 Julie Cohen, 'Law for the Platform Economy' (2017) 51 UC Davis L Rev 133, 157.

70 For an influential overview of these elements, see Wilbert Galitz, *The Essential Guide to User Interface Design: An Introduction to GUI Design* (New York, NY: Wiley, 2007). For a more legally-orientated overview, see Levy and Barocas, n 9 above, 1203-1218.

71 See for instance Bogdan Kulynych and others, 'POTs: Protective Optimization Technologies' in *FAT* '20': Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency* (New York, NY: Association for Computing Machinery, 2020).

72 See *Montres Breguet* n 53 above at [218].

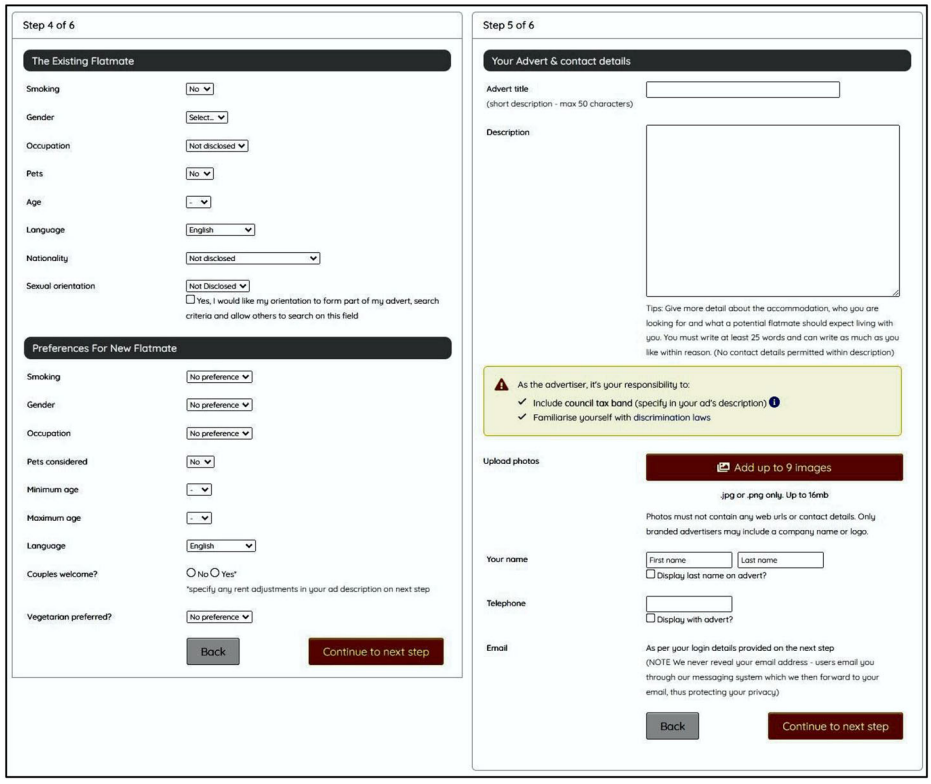

Figure 1: Excerpt of the content input process for a new advert on SpareRoom.co.uk [Colour figure can be viewed at wileyonlinelibrary.com]

on these sections of the advertisement would only fall away should the platform have knowledge of unlawful content.

However, point b is different. Here, the interface has shaped the content displaying on the advertisement. Users select housemate preferences (preferred occupation, gender, relationship status, pets, and so on) and other information required by the designers of the SpareRoom.co.uk advert posting interface – often using a set of finite choices in drop-down menus, which are then displayed in the advert text itself. I argue that this content is capable of attracting liability under Schedule 25. This is for two reasons.

First, this is not in any meaningful sense the storage of user-generated content and therefore cannot avail itself of the shield in Schedule 25. The choices on a drop-down menu on a web-form are content designed by the platform developers themselves, not the user selecting from the pre-determined list. Even on a platform where the majority of content is user-generated, such as eBay, the user interface forms a significant proportion of the material appearing on a user's screen. Proust characterises this 'general architecture of the site' and 'categorisation' of its listings as akin to editorial content.[73] They are not generated

73 See Sebastian Proust, 'Propos Critiques a L'encontre de L'orientation Actuelle de la Jurisprudence Face au Developpment du Web 2.0' (2007) 30 *Revue Lamy Droit de l'Immateriel* 29, cited in

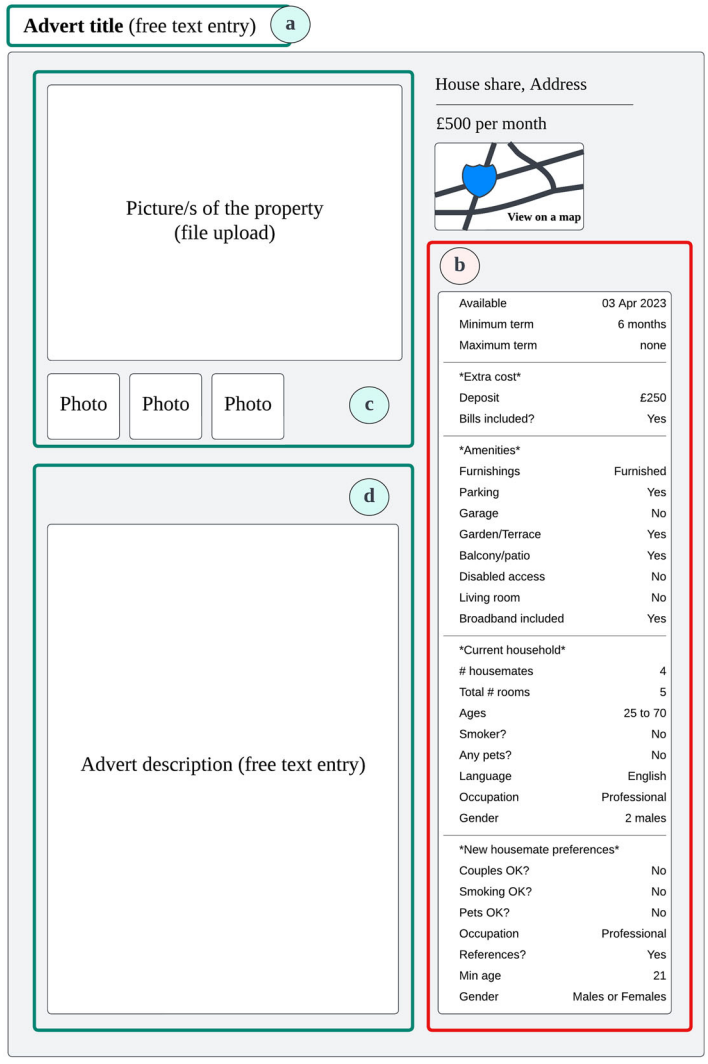

Figure 2: A representation of the fields on a SpareRoom.co.uk property listing [Colour figure can be viewed at wileyonlinelibrary.com]

by users of the service but are instead straightforwardly content created by the platform.

Second, even if this first argument fails, the platform has at least assumed an active role in the creation of this content and therefore no longer occupies the 'neutral' position necessary to avail itself of the shield to liability.[74] There is a fundamental distinction between unconstrained text entry or the uploading of multi-media content and directing users to select from categories pre-determined by the platform operators. As argued above and Riordan sets

Christine Riefa, *Consumer Protection and Online Auction Platforms: Towards a Safer Legal Framework* (London and New York, NY: Routledge, 2017) 182.

74 *Google France* n 51 above at [114] and *Montres Breguet* n 53 above at [116].

out, the liability shield applies to 'limited forms of network-layer assistance', not the role of 'more interventionist application-layer activities'.[75] For instance, in *Google France*, the CJEU drew a clear divide between the passive functions in the interface for the 'Adwords' service – such as allowing users to enter their own advert text and target keywords onto the platform – and any role played by Google 'in the establishment or selection of keywords' which would not enjoy a safe harbour.[76]

The analogy to be drawn here is with what Allgrove and Groom characterise as 'content co-design' between the platform and its user.[77] In the SpareRoom.co.uk example, the platform takes a more 'hands on' role by predetermining a choice of fixed content to appear on listings which users then select from when posting an advertisement. Some of the categories that appear in point b (such as occupation, which this article tackles in more detail below) may not have appeared on the advertisement if the user was able to simply enter free text of their own accord.

'Sorting' interfaces

Having structured the input of user-generated data, platforms need to design processes through which other users can filter, find, match and engage with it. As argued by Cohen, the value of many companies in the platform economy is in their ability to provide would-be counterparties with 'access to one another' and 'techniques for rendering users legible to those seeking to market goods and services to them'.[78] This can take the form of a number of interface design choices: search boxes, the use of filters, the categorisation of content, 'suggested' content feeds, user-profiling, and so on. These tools help users navigate existing user-generated content and therefore facilitate a transaction or match-making between users of the platform.

Returning to the example of SpareRoom.co.uk, visitors to the website are able to filter content using free-text searches (where the user can search for any text string they wish, constrained only by character length) and via a series of pre-determined categories built into the design of the platform. Figure 3 details the 'advanced search' function for users looking for a 'room or flatmate'. This includes the opportunity to filter by occupation, gender, age range, and a number of other factors captured at the user-generated content input stage.

In common with the 'structuring' interface design choices above, I argue that content in these 'sorting' functions are also capable of attracting liability under Schedule 25. The presentation of user-generated content on platforms had express consideration in *L'Oréal* v *eBay*. Here, the CJEU held that where a platform has assumed a role that includes 'optimising the presentation of the offers for sale in question or promoting those offers' then 'it must be considered

75 Riordan, n 35 above, 401.
76 *Google France* n 51 above at [118].
77 Allgrove and Groom, n 41 above, 519.
78 Julie Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (Oxford: OUP, 2019) 38.

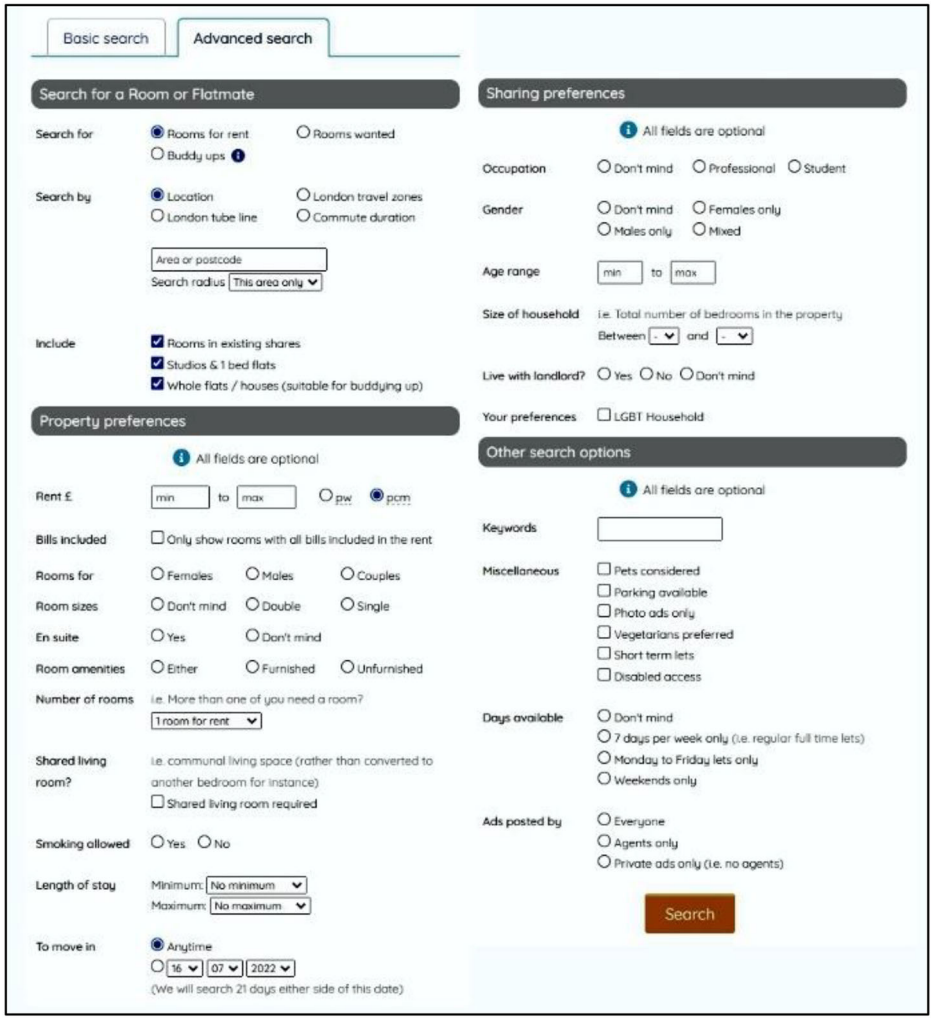

Figure 3: Excerpt of the 'advanced search' tool on SpareRoom.co.uk [Colour figure can be viewed at wileyonlinelibrary.com]

not to have taken a neutral position' under the meaning of Article 14.[79] However, the facts in the case go far beyond search functions and filtering tools. eBay actively took out advertisements on platforms external to its own marketplace (in particular, in Google search) to promote content posted by users on the platform. The principle has been underscored by the CJEU in the recent case of *Peterson*, where the court was clear that sorting content alone is not enough to confer liability:

> The fact that a provider controls the conditions for the presentation of the information which it stores at the request of the users of its service cannot demonstrate

79 *L'Oreal* v *eBay* n 52 above at [116].

> that it controls the content of that information. To my mind, only individual assistance relating to specific information is relevant in that regard … The fact that the provider developed tools and, in particular, an algorithm to enable that processing and, because of this, it controls, inter alia, the *conditions for displaying* the search results, does not show that it has control over the *content* of the information searched.[80]

It is clear, therefore, that a platform does not assume liability for user-generated content simply by providing a sorting interface to allow users to navigate it. Nor does the processing of user-generated content via sorting interfaces necessarily demonstrate knowledge of unlawful material posted on the platform. However, platform providers remain liable for the design of sorting interfaces themselves, even if not the content they filter. As the CJEU has underscored repeatedly – and took the opportunity to do again in *Peterson* – the Article 14 shield 'concerns only liability that may result from the information provided by users of its service', it cannot 'cover any other aspect of that provider's activity'.[81]

To give an example, dating websites regularly use search filters and predetermined categories to help users of the platform navigate user-posted profiles and to provide matching services.[82] For instance, Hutson et al's analysis of US dating websites demonstrates that users are often able to filter profiles using protected characteristics, such as by excluding/including specific races.[83] They argue that the use of the filter and search tools can normalise problematic behaviours: 'The inclusion of filters that, for example, exclude users of certain races implicitly presents such preferences as normal and acceptable. It need not be so. Rather, platforms could seize an opportunity to challenge users' pre-existing notions through thoughtful design.'[84]

A platform design that creates a search interface that allows users to sort dating profiles by the race, religion or country of birth of their users remains liable for the impact of that design choice (should it be determined unlawful), even if they are not liable for the user generated content that users eventually navigate to.

Indeed, as this paper argues in more detail below, the impact of design choices in sorting interfaces can have considerable effects on rental platforms. Power's influential work on renting with pets demonstrates the impact these pre-determined filters can have on the accessibility of listings in rental markets.[85] Focusing on what she describes as the 'pet friendly filter' – echoed in Figure 3 under 'other search options' as a tick-box for 'pets considered' – she describes how her participants saw available properties 'disappear into the void'

80 *Peterson* n 67 above at [159]-[160].
81 *ibid* at [134].
82 Celeste Vaughan Curington, Ken-Hou Lin, and Jennifer Hickes Lundquist, 'Positioning Multiraciality in Cyberspace: Treatment of Multiracial Daters in an Online Dating Website' (2015) 80 *American Sociological Review* 764.
83 Jevan Hutson and others, 'Debiasing Desire: Addressing Bias and Discrimination on Intimate Platforms' (2018) 2 *Proceedings of the ACM on Human-Computer Interaction* 1, 8.
84 *ibid*.
85 Emma Power, 'Renting with Pets: a Pathway to Housing Insecurity?' (2017) 32 *Housing Studies* 336.

when they filtered for posts which had been tagged as allowing tenants with pets.[86]

Are 'structuring' and 'sorting' interfaces capable of unlawful discrimination?

Having argued that 'structuring' and 'sorting' functions on platform interfaces fall under the ambit of the Equality Act 2010, what are platform operators liable for? Online service providers are bound by the duties placed on any other service provider under Part 3 of the EA 2010. Section 29 prohibits anyone providing services to the public from discriminating against those with protected characteristics.[87] This covers the terms on which services are provided, terminating provision of a service, or 'any other detriment'.[88] This can take the form of 'direct discrimination' – detailed in section 13 of the EA 2010 – where a service provider treats a person 'less favourably' than they would treat others because of a protected characteristic.[89] This generally requires an exercise in comparison with how they have or would treat other service users in similar circumstances.[90] As argued by Adams-Prassl, Binns and Kelly-Lyth, direct discrimination focuses on a discrete moment of decision-making which falls into one of two sub-types: the use of an inherently discriminatory criterion in a decision (using a protected characteristic, or a proxy for one, as a basis for a decision) or decisions made through a subjectively discriminatory mental process (treating someone differently on the basis of a protected characteristic).[91]

However, design choices in structuring and sorting interfaces provide a framework for repeated user interactions rather than such a discrete moment of decision-making. Here, 'indirect discrimination' is more likely to be at play. Under the EA 2010, indirect discrimination occurs when a service provider, without an objective justification, applies an apparently neutral 'provision, criterion or practice' (PCP) that puts those with a protected characteristic at a disadvantage.[92] Section 19 of the EA 2010 outlines the four-stage test at play:

> (2) For the purposes of subsection (1), a provision, criterion or practice is discriminatory in relation to a relevant protected characteristic of B's if –
>
> (a) A applies, or would apply, it to persons with whom B does not share the characteristic,

86 *ibid*, 348.
87 These are detailed in EA 2010, s 4: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation.
88 EA 2010, s 19(2)(a)-(c).
89 For a detailed analysis of EA 2010, s 13, see Mark Butler, *Equality and Anti-Discrimination Law* (London: Spiramus Press, 2015) 36-46.
90 Under EA 2010, s 17, direct discrimination because of pregnancy and maternity requires 'unfavourable' treatment instead – there is no need therefore to compare treatment with other service users when arguing direct discrimination because of this characteristic.
91 Adams-Prassl, Binns and Kelly-Lyth, n 5 above, 14, 31.
92 See EA 2010, s 19, and Equality and Human Rights Commission, n 15 above, 69-82. The protected characteristics in scope for this duty exclude 'pregnancy and maternity'.

(b) it puts, or would put, persons with whom B shares the characteristic at a particular disadvantage when compared with persons with whom B does not share it,
(c) it puts, or would put, B at that disadvantage, and
(d) A cannot show it to be a proportionate means of achieving a legitimate aim.

There are a range of guiding principles that have emerged from the key cases in this area. First, the scope of conduct covered by a PCP is very broad. The term is not defined in the Act itself, but the EHRC Statutory Code of Practice notes that it: 'should be construed widely so as to include, for example, any formal or informal policies, rules, practices, arrangements, or qualifications including one-off decisions and actions'.[93]

As the Court of Appeal put it in *Ishola* v *Transport for London* (*Ishola*), 'all three words carry the connotation of a state of affairs' on how 'similar cases are generally treated or how a similar case would be treated if it occurred again'.[94] It is difficult to conceive of a broader interpretation of 'practice' than that offered in *Ishola*, in which the court considered it to be a wide-ranging 'continuum' covering the way 'things generally are or will be done'.[95] There is no need for a PCP to be formalised in documentation or policy (though any such documentation would serve as evidence of its existence): it is enough that it is done or will be done.

For any such PCP to be indirectly discriminatory, a comparative exercise is required. Section(19)(2)(b) requires that persons with a protected characteristic be put at a 'particular disadvantage *when compared*' with those without that characteristic. Creating this so-called 'pool for comparison' is often the source of dispute in indirect discrimination claims (and, as in Foran's work, in academic debate on indirect discrimination more generally).[96] Lady Hale's unanimous judgment in *Essop and others* v *Home Office* (*Essop*) details a series of 'salient features' in equality legislation that offers some clarity in how this comparative exercise should be undertaken when considering indirect discrimination under the EA 2010.[97]

There is no requirement that the PCP put *every* person with that protected characteristic at a disadvantage: it is enough that *some* are put at a disadvantage.[98] As Lady Hale puts it, a height requirement may be indirectly discriminatory, but

93 *ibid*, 70.
94 *Ishola* v *Transport for London* [2020] EWCA Civ 112; [2020] ICR 1204 at [38].
95 *ibid*.
96 For a recent detailed analysis of this issue in the context of EA 2010, s 19, see *Allen* v *Primark Stores Ltd* [2022] EAT 57. For Foran's analysis, see Michael Foran, 'Discrimination as an Individual Wrong' (2019) 39 OJLS 901, 910-911.
97 *Essop and others* v *Home Office* [2017] UKSC 27; [2017] 1 WLR 1343. For an analysis of the judgment in the context of Lady Hale's approach to discrimination and equality, see Karon Monaghan, 'Brenda Hale: Understanding Discrimination and Championing Equality' in Rosemary Hunter and Erika Rackley (eds), *Justice for Everyone: The Jurisprudence and Legal Lives of Brenda Hale* (Cambridge: CUP, 2022) 338, 343-344.
98 *Essop ibid* at [27].

some 'women are taller or stronger than some men and can meet a height or strength requirement that many women could not'.[99]

There is no need to provide reasons as to why a PCP places one group at a disadvantage relative to another: 'it is enough that it does'.[100] It is 'commonplace' for statistical evidence to be used to demonstrate such disadvantage, given the difficulty in identifying the 'many and various' reasons that may cause a PCP to disadvantage one group over another.[101] There is also no need to establish a link between the unfavourable treatment and the protected characteristic; PCPs are by definition neutral in application. The only causal link that needs to be drawn is between the PCP and the particular disadvantage. This is because, as Lady Hale puts it, indirect discrimination 'is dealing with hidden barriers which are not easy to anticipate or spot'.[102]

Importantly, service providers can argue that their PCP is justified as 'a proportionate means of achieving a legitimate aim'.[103] The assessment is a familiar one to courts in other indirect discrimination contexts: to be legitimate any such aim must be non-discriminatory, *and* the means of achieving it appropriate and necessary.[104] This justification exercise raises, as Collins and Khaitan argue, 'very difficult questions' that get to the root of the function of legal prohibitions against indirect discrimination.[105] There are two core principles here relevant to online platforms.

First, although the needs of a business may be a legitimate aim in certain circumstances, a service provider cannot use economic cost alone to justify the indirectly discriminatory effects of their PCP. As the EHRC puts it, 'the service provider cannot simply argue that to discriminate is cheaper than not to discriminate'.[106] This is known 'in employment lawyers' jargon' as the 'costs plus' principle: the financial burden of acting in a non-discriminatory way is a relevant factor in the justification exercise, but cannot be relied upon alone.[107] The position, summarised in *Nigel Woodcock* v *Cumbria Primary Care Trust*, is that 'the saving or avoidance of costs will not, without more, amount to the achieving of a legitimate aim',[108] where such an aim is 'solely' to avoid costs.[109]

Second – and importantly for the example of 'No DSS' discrimination that follows – the burden is on the *respondent* to prove that their PCP is a proportionate means of achieving a legitimate aim. It is for the service provider to justify their PCP and provide evidence for their justification.[110] Lady Hale was keen

99 *ibid*.
100 *ibid* at [24].
101 *ibid* at [26]-[28].
102 *ibid* at [25].
103 EA 2010, s 19(2)(d).
104 The importance of assessing these two stages separately is discussed in *Homer* v *Chief Constable of West Yorkshire Police* [2012] UKSC 15; [2012] 3 All ER 1287 at [22]-[24].
105 Hugh Collins and Tarunabh Khaitan, 'Indirect Discrimination Law: Controversies and Critical Questions' in Hugh Collins and Tarunabh Khaitan (eds), *Foundations of Indirect Discrimination Law* (Oxford; Hart 2018) 16-17.
106 Equality and Human Rights Commission, n 15 above, 78.
107 *Craig Heskett* v *Secretary of State for Justice* [2020] EWCA Civ 1487; [2021] 3 All ER 36 at [45].
108 *Nigel Woodcock* v *Cumbria Primary Care Trust* [2012] EWCA Civ 330; [2012] ICR 1126 at [66].
109 The longstanding endorsement of this principle is covered at length in a review of the authorities in *Heskett* n 107 above at [78]-[90].
110 Equality and Human Rights Commission, n 15 above, 78.

to underscore in *Essop* that there is 'no shame' in arguing for such justifications and nor does it cast a 'sort of shadow or stigma upon them'.[111]

A whole range of interface design choices meet the definition of a PCP. The architecture of a platform is a PCP in action: the inputs and tools on a user-interface reflect decisions about how to create and organise content on the platform, which in turn shape this content and its accessibility to users. The structuring and sorting interfaces outlined above sit squarely under the broad-ranging definition of PCPs in *Ishola* – they determine how 'things generally are or will be done' on the platform.[112]

Taking all of these points together, this section has argued that 'structuring' and 'sorting' elements of interface design fall squarely under the prohibitions on direct and indirect discrimination under the EA 2010. Operators in the 'platform economy' will almost always qualify as 'service providers' under the meaning of the EA 2010, 'structuring' and 'sorting' interfaces do not enjoy the safe harbour set out in Schedule 25, and these design choices qualify as PCPs in discrimination law. The next section turns to an applied example, focusing on SpareRoom.co.uk, to illustrate the potential for indirect discrimination to arise from these elements of interface design.

A CASE STUDY: NO DSS DISCRIMINATION ON A RENTAL PLATFORM INTERFACE

Having set out the arguments in principle above, this section turns to an illustrative example of so-called 'No DSS' discrimination on one leading rental platform: SpareRoom.co.uk. I aim to achieve two things in this case study. First, to demonstrate how seemingly minor design choices in 'structuring' and 'sorting' interfaces can lead to indirect discrimination contrary to the EA 2010. Second, to explore what happens when a platform changes their design with a view to reducing its discriminatory effects. In response to litigation under the EA 2010 directed at 'bricks and mortar' lettings agents, SpareRoom.co.uk (alongside many other similar platforms) re-designed its structuring and sorting interfaces. Does this impact on the accessibility of listings, or do users simply adopt other tools on the platform – such as free text entry – to achieve similar discriminatory ends? This section seeks to explore these issues.

Discrimination against housing benefit recipients in the UK private rented sector

Before turning to the data, it is important for first provide context on 'No DSS' discrimination. The term 'DSS' refers to the 'Department for Social Security': a now defunct government department that paid housing benefit until 2001. 'No DSS' on a property listing effectively means 'no tenants recieving housing

111 *Essop* n 97 above at [29].
112 *Ishola* n 94 above at [38].

benefit'. A high demand for rental properties and deficient housing benefit support has led to the private rented sector becoming a hostile environment for low-income households.[113] Indeed, the UK government's recent white paper, *A Fairer Private Rented Sector*, identifies 'No DSS' discrimination as a key target for regulatory intervention, drawing on evidence showing that 44 per cent of landlords were unwilling to let to tenants on housing benefit.[114] This is not always rooted in direct experience. O'Leary and Simcock found that twice as many landlords were unwilling to let to housing benefit recipients because of their *perception* of potential problems that could arise (such as the tenant being more likely to fall into arrears), than those who had actually *experienced* problems first-hand.[115]

As a result, 'No DSS' has been a longstanding feature in property advertisements from 'bricks and mortar' lettings agents and, as property search has almost exclusively moved online, platforms such as SpareRoom.co.uk. Participants in McKee et al's study were 'dispirited at adverts' which would frequently specify 'no DSS'; a frustration mirrored in Watt's work, where participants lamented 'most of them' landlords 'saying "no DSS"'.[116] Shelter's submission to the Work and Pensions Committee inquiry in 2019, 'No DSS: discrimination against benefit claimants in the housing sector', states that '"no DSS" policies and practices are both the most reported problem our clients face, and the most difficult problem for our support services to tackle'.[117]

Any PCP that excludes housing benefit recipients is likely to be indirectly discriminatory under section 19 of the EA 2010. Indefatigable campaigning work and strategic litigation by Shelter has demonstrated the unlawfulness of a blanket 'No DSS' policy by face-to-face, 'bricks and mortar' lettings agents. Successful challenges in the County Court have engaged the protected characteristics of sex and disability.[118] The most high profile of these was brought in the York County Court in July 2020. Here, the claimant – a 44 year-old disabled single mother of two children, who was in receipt of housing benefit – challenged a lettings agent's 'ad-hoc' policy of not accepting tenants receiving social security support. The court was clear that such a policy was a PCP under section 19 of the EA 2010 and both parties agreed that there was no justification for the discrimination at issue.[119]

113 Jed Meers, '"Professionals Only Please": Discrimination Against Housing Benefit Recipients on Online Rental Platforms' *Housing Studies* (forthcoming).

114 Department for Levelling Up, Housing & Communities, 'A Fairer Private Rented Sector' (CP 693, June 2022) at https://www.gov.uk/government/publications/a-fairer-private-rented-sector/a-fairer-private-rented-sector (last visited 29 February 2023).

115 Chris O'Leary and Tom Simcock, 'Policy Failure or F***up: Homelessness and Welfare Reform in England' (2022) 8 *Housing Studies* 1379.

116 Paul Watt, '"Press-ganged" Generation Rent: Youth Homelessness, Precarity and Poverty in East London' (2020) 14 *People, Place and Policy* 128.

117 Work and Pensions Committee, 'Written Evidence from Shelter (NDS0001)' (2019) at http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/work-and-pensions-committee/no-dss-discrimination-against-benefit-claimants-in-the-housing-sector/written/97946.pdf [https://perma.cc/ZG6T-LS6N].

118 York County Court, 'Statement of Reasons: F00YO154' (2020) at http://nearlylegal.co.uk/wp-content/uploads/2020/07/20.07.02-Redacted-Court-Order.pdf [https://perma.cc/7SJL-3D69].

119 *ibid* at [35]-[36].

Evidence submitted to the court from Shelter demonstrated clear evidence of sex discrimination that arises from such a PCP. A greater proportion of women who rent privately receive housing benefit than men – 18.8 per cent and 12.4 per cent respectively.[120] This is even more acute for female single-adult households, where 53.1 per cent renting privately claim housing benefit, versus 34 per cent of male single-adult households.[121] Similarly stark differentials exist for disabled people: 44.6 per cent of those in receipt of disability living allowance (or equivalent) claim housing benefit, compared to 15.1 per cent of those not in receipt.[122] Put simply, women are therefore more affected by a PCP which excludes housing benefit recipients than men, and disabled people are more affected than those without disabilities. It is the online equivalent of this litigation that is explored in the next section.

Exclusion of housing benefit recipients in structuring and sorting functions on SpareRoom.co.uk

In common with similar platforms, SpareRoom.co.uk's structuring and sorting interfaces draw on predetermined tenant 'preferences'. These are generally either qualities about the prospective tenant (such as whether they smoke), details of the application process (such as whether references are required), and/or preferences for occupation of the property (such as whether pets are accepted). Figures 2 and 3 above provide examples of these at the user content input and the searching/filtering stages, respectively. This is a widespread practice on online rental platforms. Drawing on the example of the popular American rental platform 'RentBerry', Fields and Rogers underscore the importance of 'standardization and classification' processes, where users self-classify themselves to facilitate the ordering of content (such as search results or suggested listings) in this way.[123]

Two 'preferences' on the SpareRoom.co.uk platform bite on housing benefit status. First (and most obviously), the direct 'DSS' category (on other platforms, sometimes referred as 'housing benefit considered?' or similar), which prompted users posting adverts to state whether they will accept tenants on 'DSS'. However, this is not the only category that excludes housing benefit recipients. Although less direct in its language, the use of the term 'professionals' in the interface design can also exclude those on low incomes or in receipt of housing benefit. As Lynne Mapp – a housing benefit recipient who had been struggling to find a property to rent for two years – put it to the Work and Pensions Committee:

> On letting agents saying 'No DSS', they are dressing it up now by saying, 'Working professionals only' or 'People who are working only'. My daughter is a carer for

120 *ibid* at [20].
121 *ibid* at [21].
122 *ibid* at [30].
123 Desiree Fields and Dallas Rogers, 'Towards a Critical Housing Studies Research Agenda on Platform Real Estate' (2021) 38 *Housing, Theory and Society* 72.

> my Mum. In my opinion, she does a really good job. My Mum is 92 and she has to care for her and she also helps me. I'm finding it very frustrating because, when I ring them up, I just get, 'No DSS. No, we're not interested. We are not going to let out to DSS'.[124]

This 'professionals' categorisation has been criticised for its echoes of housing benefit recipient exclusion. As Cowan has argued, limiting an advert to 'professionals only' is intended by landlords to secure a 'good tenant'; someone who 'appears to be a person in work, who dresses well and is polite and responsible', with landlords drawing a 'distinction between housing benefit recipients and others in this regard'.[125] On SpareRoom.co.uk, 'professionals' are distinguished from other prospective tenants by both the structuring and sorting interfaces providing a finite number of 'occupations' when inputting or sorting listings. As far as the SpareRoom.co.uk interface is concerned, there are only three occupations: 'student', 'professional' or 'no preference'.

In its original interface design, the SpareRoom.co.uk platform incorporated these 'DSS' and 'professionals' preferences into both their 'structuring' and 'sorting' interfaces. However, following the increasingly high-profile campaign and associated legal action to end 'No DSS' discrimination, in late 2020 SpareRoom.co.uk re-designed these in-built classifications by removing the 'No DSS' category from its platform. In a message to its users, SpareRoom.co.uk clarified the change, stating that:

> In the summer of 2020, two court rulings concluded that housing benefit discrimination is unlawful and in breach of the Equalities Act. As a result, a blanket ban on landlords and agents advertising rooms as unavailable to benefit claimants was introduced. That's great news for anyone looking for a room who uses housing benefit to pay for any (or all) of their rent.
>
> …
>
> Landlords and agents can't list their rooms as unavailable to housing benefit claimants on property sites any more. Changing the way rooms are advertised is the first step, but changing perceptions and behaviour will take longer. That's something we'll be working on over the coming months but it does mean, for now, you may still find landlords who will decide not to rent to you if you receive housing benefit, but they won't be able to say so in their ads.[126]

This led to a resulting change to structuring and sorting interfaces. Figures 4 and 5 demonstrate these interface design changes for the 'housemate

124 Work and Pensions Committee, 'Oral Evidence: No DSS: Discrimination Against Benefit Claimants in the Housing Sector' (HC 995, 24 April 2019) at http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/work-and-pensions-committee/no-dss-discrimination-against-benefit-claimants-in-the-housing-sector/oral/100549.pdf [https://perma.cc/J6BT-TNM5].

125 David Cowan, *Housing Law and Policy* (Basingstoke: Macmillan, 1999) 320.

126 SpareRoom, 'DSS/Housing Benefit Rooms' (2020) at https://www.spareroom.co.uk/dss-rooms-to-rent [https://perma.cc/6K2P-6RGU].

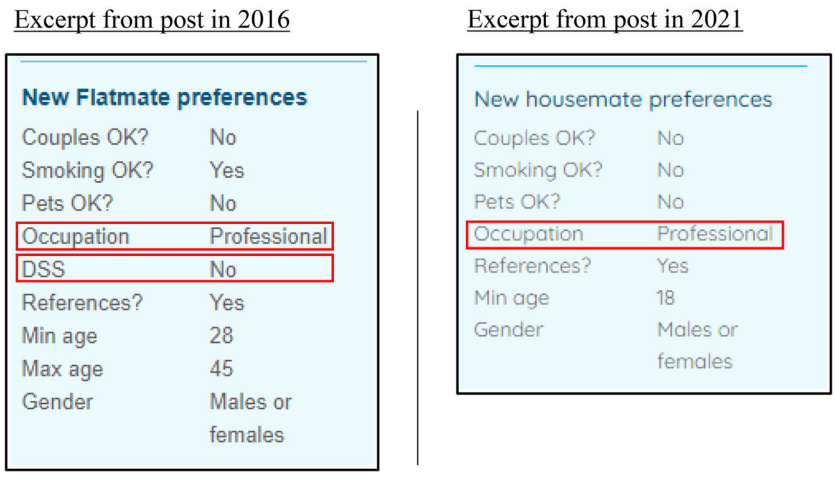

Figure 4: A comparison of the housemate/flatmate preferences function on SpareRoom.co.uk between 2016 and 2021, with the 'DSS' and 'occupation' preferences highlighted [Colour figure can be viewed at wileyonlinelibrary.com]

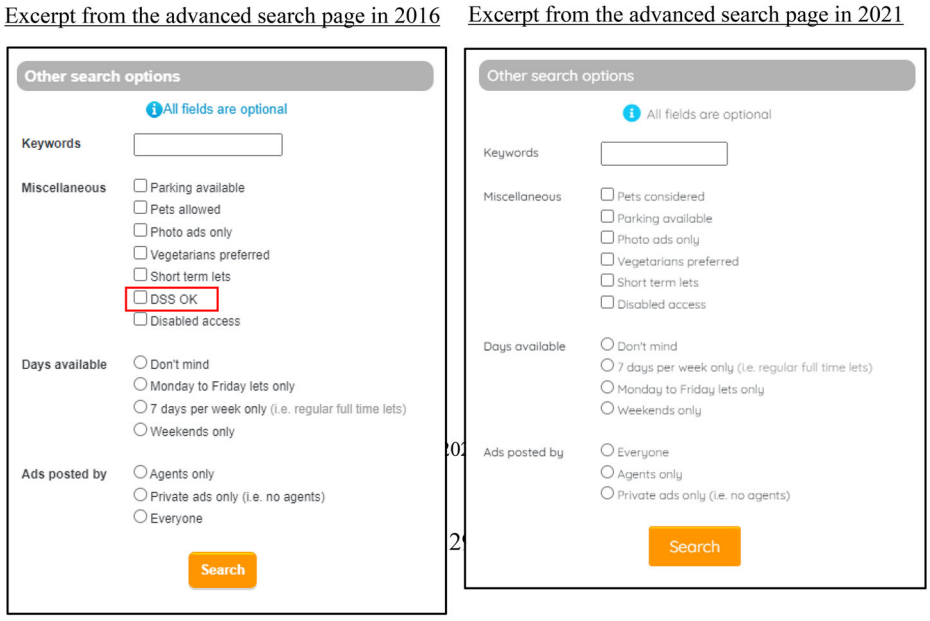

Figure 5: A comparison of the advanced search function on SpareRoom.co.uk between 2016 and 2021, with the 'DSS OK' filter highlighted [Colour figure can be viewed at wileyonlinelibrary.com]

preferences' function and for the 'advanced search' feature on the SpareRoom.co.uk platform, using pages from 2016 and 2021 as comparisons.

As these excerpts demonstrate, SpareRoom.co.uk's change removed the 'No DSS' tags from both the structuring interface when users input a property listing, and the sorting interface when users search existing content. However, the prompt to express a preference for 'professionals' remains on the platform. This change to the SpareRoom.co.uk interface presents an opportunity to examine

what happens when an online platform changes its interface design in response to EA 2010 litigation. Does removing this classification from the platform improve the accessibility of listings? Do platform users simply use other classifications (such as 'professionals only') or other unconstrained options when posting an advertisement (such as free text in the advert) to exclude those on housing benefit? If it does make a difference, what is the extent of the effect? This next section explores these questions.

The role of the preferences function on SpareRoom.co.uk

In order to examine the effect of this change to the SpareRoom.co.uk design, two datasets of property listings were collected using web-scraping software: a set of 1,683 advertisements from 2016 and a comparator set of the same number from 2021. For both samples, a web scraper captured a total of thirteen fields from each of the individual listing pages, including all advert text, the advert poster (ie whether they were a lettings agent, live-in landlord, tenant etc), date of the post, and answers to the categories detailed at point B in Figure 2 above.

The listings from 2016 were sourced from the Internet Archive.[127] As its name implies, the Internet Archive is a partial record of historic web pages on the internet, populated automatically by a series of web crawlers that download and archive high profile websites on a periodic basis.[128] 2016 was chosen as the comparator year as a large number of SpareRoom URLs had been archived in that year in comparison to other years: a total of 2,319 pages. The web-scraper for this study visited the archive link and collected data from the page (a process outlined in Figure 6). After removing duplicates, corrupted pages, or URLs which were not listings, this left a final sample of 1,683 pages.

The comparator sample from 2021 is based on a larger web-crawl of 31,909 advertisements on SpareRoom.co.uk undertaken on 28 May 2021. Here, the web crawler visited all 98 listing pages on the SpareRoom.co.uk website, each tied to a particular English city or region. Once on the page, the crawler loaded the listing page, opened each advertisement, scraped the data, and then did the same for all remaining pages until it could go no further. Figure 6 outlines this process alongside that for the 2016 listings.

In order to provide two samples for comparison in the same locations, the listings in the 2016 sample were matched with another in the 2021 sample using outward postcodes. The outward postcode from each 2016 listing (such as 'YO10') was in turn matched with a listing with the same outward postcode in the 2021 sample. This created two samples of 1,683 listings with a very similar geographical footprint. It is these two samples that are compared for the analysis that follows.

127 The Internet Archive, 'About the Internet Archive' (2022) at https://archive.org/about/ [https://perma.cc/3WPP-SNZQ].
128 *ibid*.

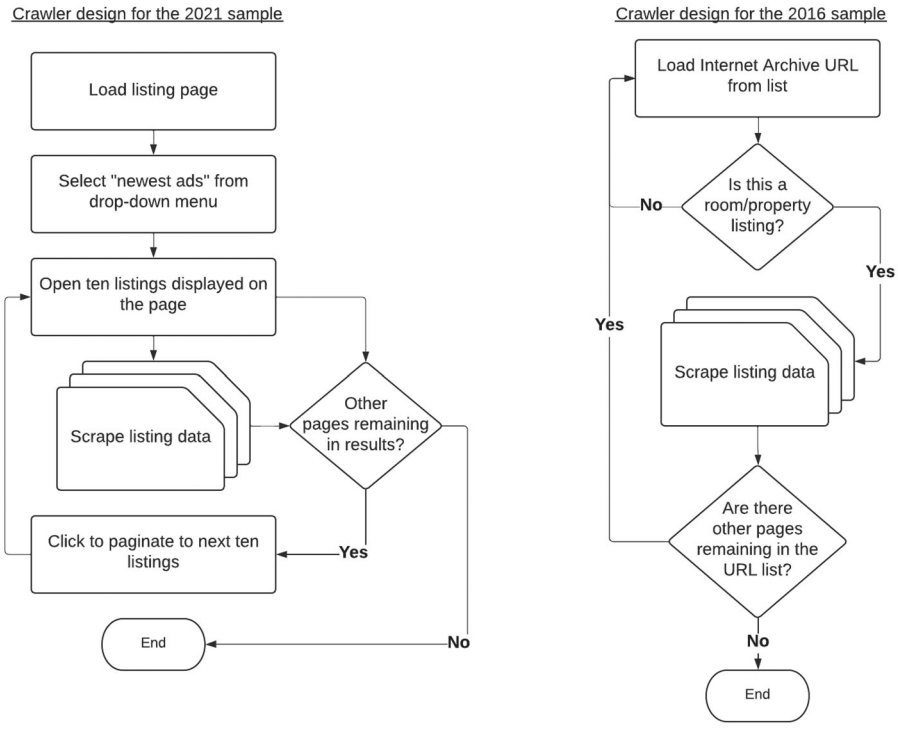

Figure 6: An overview of the two web-crawlers used to collect the 2016 and 2021 samples

Table 1. Cross-tabulation of the use of the 'DSS' preferences tool and excluding 'DSS' in the advert text in the 2016 sample

		Accepts 'DSS' in the preferences tool?			Total
		Yes	*No*	*Unspecified*	
Excludes 'DSS' in the advert text?	*Yes*	0	68	11	79
	No	30	1327	247	1604
Total		30	1395	258	1683

The use of 'DSS' and 'Professionals' preferences in the 2016 sample

The sample indicates clearly that the removal of the 'No DSS' category in the 'structuring' and 'sorting' interfaces of SpareRoom.co.uk has dramatically changed the accessibility of listings. In the 2016 sample, the use of the 'DSS' preferences function was very widespread. Strikingly, in a sample of 1,683 listings, only 30 selected 'Yes' to accepting 'DSS' (two per cent); this compares with 1,395 selecting 'No' (83 per cent) and 258 not using the tool at all (15 per cent). A small number of listings – 79 in total (five per cent) – excluded benefit recipients in the free advert text independently of the 'DSS' preferences function (for example, by writing 'No DSS' or 'no housing benefit' in the free text of the listing). Table 1 provides a cross-tabulation of the use of the 'DSS' preferences tool and the exclusion of benefit recipients in the advert text.

Table 2. Cross-tabulation and Pearson Chi-Square Test of poster type with the use of the 'DSS' preferences tool[130]

			Accepts DSS?		
			No	*Unspecified*	Total
Poster type	Live in landlord	*Count*	342	63	405
		Expected Count	341.5	64	405
	Live out landlord	*Count*	354	71	425
		Expected Count	358.3	66.7	425.0
	Current flatmate	*Count*	400	74	474
		Expected Count	399.7	74.3	474.0
	Lettings Agent	*Count*	201	31	232
		Expected Count	195.6	36.4	232.0
	Former flatmate	*Count*	90	19	109
		Expected Count	91.9	17.1	109.0
Total		*Count*	1387	342	1645
		Expected Count	1387	341.5	1645.0
		Pearson Chi-Square	Value	Significance	DF
			1.540	0.820	4

These data show two things. First, the use of the 'DSS' preferences function was incredibly widespread in the sample to the detriment of housing benefit recipients. Only two per cent selected 'Yes', with 83 per cent selecting 'No'. Second, this exclusion was almost exclusively a feature of the preferences function built into the structuring interface – only 11 posts excluded DSS in the advert text but not in the preferences function, whereas 1,327 were silent in the advert text, but excluded DSS in the preferences tool. This suggests that being presented with the preferences tool in the structuring interface plays a role in leading posters to exclude housing benefit recipients in their listings. Put another way, its existence may have prompted users posting listings to discriminate where they may not have done otherwise.

The use of the tool did not differ by poster-type. Lettings agents, live in landlords, current flatmates, and agents all used the tool equally across the sample. Table 2 details the results of a Pearson Chi-Square Test between poster status and the use of the 'DSS' tool.[129] This analysis reveals that there is no significant association between poster-type and use of the tool in the 2016 sample data.

These data show that those renting rooms in their own properties or current flatmates seeking to fill gaps in a joint tenancy also make use of the preferences function, in addition to lettings agents. The fact that the use of the preferences function does not differ significantly between poster types is consistent with the argument that the preferences drop-down in the structuring interface prompts

129 A Pearson Chi-Square Test is a statistical test that determines whether two categorical variables are significantly associated with one another.

130 The table details 'expected counts' from the Pearson Chi-Square Test in addition to the actual counts. 'Expected counts' show the numbers under each advert poster that would be expected if the two variables were not significantly correlated with one another. Seven listings – 'current tenants' posting adverts – were removed from this analysis, as there were insufficient data points to run the Pearson Chi-Square Test analysis.

Table 3. Cross-tabulation of the use of the 'DSS' preferences tool against the use of the 'professionals' preferences tool in the 2016 sample

		Professionals specified in preferences?		
		No	Yes	Total
Accepts DSS?	*Yes*	27	3	30
	No	721	674	1395
	Unspecified	151	107	258
Total		899	784	1683

all users of the platform to discriminate in their listing against housing benefit recipients.

The use of the 'DSS' preferences tool needs to be read alongside the other softer form of housing benefit recipient exclusion on the platform: the 'professionals' preferences tool. Table 3 details a cross-tabulation between the use of the 'DSS' tool and a preference for 'professionals'.

Taking the 'DSS' and 'professionals' categories together, this shows that in a sample of 1,683, a total of just 178 listings do not exclude those in receipt of housing benefit. This figure is reached on the use of the preferences functions on the SpareRoom.co.uk platform alone, without accounting for further exclusions in-text. Once advertisements that include 'professionals only' or similar phrases in the free text entry are added, just 155 listings remain out of 1,683: just nine per cent of listings.

Does changing the interface make a difference? A comparison between the 2016 and 2021 samples

The data above illustrate that the 'DSS' function drove discrimination against housing benefit recipients on SpareRoom.co.uk. However, as outlined above, the SpareRoom.co.uk operators re-designed its structuring and sorting interfaces to remove the 'DSS' preferences tool between the two samples. This change allows for a comparison in the extent of exclusionary advertisements between these two interface designs. Figure 7 details a Sankey diagram showing the differences between these two samples.

There is a dramatic change in the extent of exclusion between the two samples. Compared to just 155 listings (nine per cent) being available for benefit recipients in the 2016 sample, 802 listings (48 per cent) were available in the 2021 sample. This demonstrates two things. First, that the removal of the 'DSS' preferences function has not led to a resulting increase in the use of other tools on the SpareRoom.co.uk platform to discriminate against users in receipt of housing benefit. For instance, there has not been an increase in the use of the 'professionals' preferences function or the use of exclusionary language in the advert text (indeed, no listings did so in the 2021 batch). Changing the design of structuring and sorting interfaces has not led to 'No DSS' discrimination

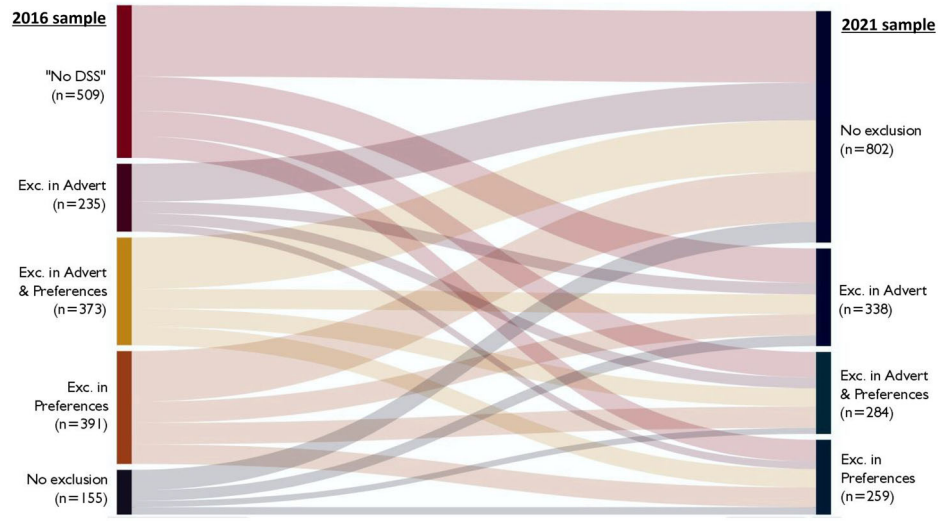

Figure 7: A Sankey diagram illustrating the changes between the two samples of listings on SpareRoom.co.uk [Colour figure can be viewed at wileyonlinelibrary.com]

being re-routed to other forms of exclusion, such as users simply excluding recipients on housing benefit in the free-text boxes. Second, given the extent of the use of the DSS preferences function, changing the interface design has led to a dramatic increase in the availability of listings to those in receipt of housing benefit. Changing the structuring and sorting interfaces has had a large impact on the extent of exclusion facilitated by the platform.

CONCLUSION

The design choices that developers make when constructing and operating their platform interfaces, if they get it wrong, can lead to unlawful discrimination against groups with protected characteristics. Bringing together the arguments from the first section and the findings from the SpareRoom.co.uk data, this paper draws two conclusions. First, how platform operators design their interfaces (the drop-down menus, text boxes, filtering and search tools, and so on) can drive discriminatory practices against groups with protected characteristics under the Equality Act 2010. As demonstrated in the SpareRoom.co.uk data, even seemingly small changes in the design of interfaces can impact discriminatory practices on a platform dramatically. Removing the 'DSS' preferences element of the 'structuring' and 'sorting' interfaces led to a fall in listings excluding housing benefit recipients from 91 per cent to 52 per cent.

Second, the duties placed on 'service providers' under the EA 2010 bite on these online platforms. Although platforms can avail themselves of the safe harbour under Schedule 25 for liability for user-generated content, this does not shield them from the platform operator's own role in designing 'structuring' and 'sorting' interfaces. PCPs – rooted in the law of indirect

discrimination – provide a framework for interrogating design choices in these elements of interface design. The interfaces for capturing user-inputted data and filtering and searching existing content have the potential to discriminate indirectly against users with protected characteristics and can fall foul of section 19 of the EA 2010. The change in the SpareRoom.co.uk platform explored above followed legal action taken against 'bricks and mortar' providers using the framework under Part I of the EA 2010. Legal action against online platforms on these grounds holds the same promise for changing interface design.

In making these arguments, this paper is the first detailed interrogation of the implications of English equality law for the design of interfaces. The broader elements of interface design interrogated in this paper – 'sorting' and 'structuring' functions – set out a new fault-line for work on the application of the EA 2010 to online platforms, complementing existing work on the design and use of algorithms and accessibility requirements under the EA 2010.[131] An existing literature, rooted principally in science and technology studies, has interrogated processes of classification and sorting in the design of online systems.[132] The application of equality law to these issues could help to both expose the potentially discriminatory effects of these design choices and – as in the changes to rental platform interfaces discussed above – provide a mechanism to change them.

More broadly, this paper is a call to arms for legal scholarship to dedicate greater attention to interface design. Most legal scholarship in this area, particularly in equality and discrimination law, focuses on the use and construction of algorithms. This is an essential and important area of study. But a focus on the 'code' layer should not come at the expense of neglecting how user-interfaces can often generate discriminatory effects and drive exclusion in their own right. This is true for private service providers – as explored in this paper – but also for the increasing role of online interfaces in the work of governments and in public administration more generally.[133] This paper reveals the power that interface design holds – for better or worse – over shaping discriminatory practices online, and calls for greater scholarly and legal attention to interrogating and improving the interfaces we interact with daily. In putting forward a framework and providing an applied example, this paper has sought to provide a starting point for doing so.

131 See, for instance, Harpur, n 13 above, and Adams-Prassl, Binns and Kelly-Lyth, n 5 above.

132 For example, see Geoffry Bowker and Susan Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA: MIT Press, 2000).

133 See, for instance, Jen Raso, 'Smooth Operators, Predictable Glitches: The Interface Governance of Benefits and Borders' (2023) 38 *Canadian Journal of Law and Society* 158.