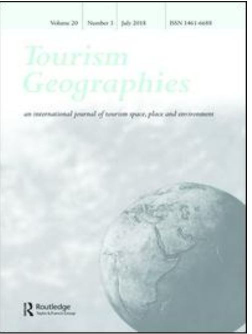

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Becoming Airbn*beings*: on datafication and the quantified Self in tourism

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ABSTRACT

Provocatively drawing inspiration from an episode of the Netflix series Black Mirror and China's Social Credit System this article critically examines the politics and practices of datafication, quantification and qualification associated to the Airbnb platform. It first explores some of the ideas and ontological claims that endorse Airbnb's digital infrastructure. Secondly, it looks at how the company's use of data management and metrics has become increasingly instrumental in maintaining control over hosts and guests and obtaining desirable and profitable outcomes. It does so by unpicking various applications and technologies used by Airbnb to monitor, record and measure the behaviour of hosts and guests. Drawing on in-depth interviews with Airbnb hosts and their participation in forum discussions the article discusses how people understand – and resist – Airbnb's 'ranking logic' and the ways in which their Selves and their homes should be rated and ranked and put into circulation as 'value' by the platform. In particular, the article argues that, through the review and rating system incorporated in the platform, both guests and hosts actively contribute to the production of a set of constantly changing hierarchies that represent the driving force of *Airbnb* as a biopolitical social regulator.

摘要

这篇文章从网飞公司（Netflix）出品的电视剧《黑镜》和中国的社会信用体系中获得灵感，批判性地审视了与爱彼迎平台相关的数据化、定量化和资格认证的政治和实践。它首先探索了一些支持爱彼迎数字公共建设的想法和本体论主张。其次，它着眼于该公司如何使用数据管理和指标越来越有助于保持对房东和住客的控制，并获得理想的和有利可图的结果。它通过拆解爱彼迎用来监控、记录和衡量房东和住客行为的各种应用程序和技术来做到这一点。通过对爱彼迎房东的深入采访和他们在论坛上的讨论，这篇文章讨论了人们如何理解和抵制爱彼迎的"排名逻辑"，以及他们自己和他们的房子应该如何被该平台评分和排名，并作为"得分"进行传播。特别是，这篇文章认为，通过整合在平台上的点评和评分系统，住客和房东都积极促成了一套不断变化的等级制度，这些制度代表了爱彼迎作为一个生物政治社会监管者的驱动力。

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Black mirror(s)

In a disturbing episode of the Netflix series *Black Mirror* entitled 'Nosedive', the protagonist is a young woman, Lacie Pound, who desperately tries to improve her social ranking. Lacie lives in a dystopian society entirely dominated by a rating system of individuals that produces an endlessly mobile social hierarchy through extremely powerful forms of self-discipline. A lens imbedded in her eyeball allows Lacie to 'see' other people's ratings as she interacts with them. By pointing a smart-phone-like device at others, she may rate them and immediately affect their overall ranking. In 'Nosedive', in fact, individuals rate each other constantly with their devices that have become a sort of corporeal extension of their Self (Figure 1). Lacie is ranked 4.2 at the beginning of the episode, which, on a scale of 1 to 5, should not be a bad ranking at all; 4.2 is not enough, however, for her to get the apartment she wishes to rent and to be included in the social circles marked by the high 4 s, where she believes to belong. In order to 'improve' her ranked Self, she thus puts significant effort into learning how to smile, how to move, how to get dressed and especially how to avoid anger outbursts and any manifestation of a difficult temperament.

The 'Nosedive' episode is a fictional representation of a world where every aspect of daily life is mediated and regulated by software-enabled calculative devices. A world in which algorithms affect the entire social realm and implement a powerful regime of self-discipline. The episode clearly takes the pervasive effects of real time rating-and-ranking to an extreme. At the same time, it may be seen as a provocative example of how today's feedback-and-assessment mechanisms underpinning countless digital (tourism) platforms may have significant effects on individuals' self-representations – as ranked 'quantified Selves' (Lupton, 2016). On the one hand, keeping track of the personal digital data that underpin people's 'scores' may be a strategic means of self-promotion. On the other, data are also algorithmically manipulated and represented in certain forms – shaping people's behavior towards specific ends and targeting their vulnerabilities (Pasquale, 2015, p. 38). Moreover, these algorithms may mask and deepen social inequality, as observed in Safiya Noble's study on

Figure 1. Production still from Nosedive; Lacie Pound (in a pink dress) and others constantly checking their scoring devices (Netflix, n.d.).

racist and sexist biases in Google search results (Noble, 2018). These considerations invite to further reflect on how data on people's routines, behaviors and practices are collected, but also on the ways in which algorithmic management increasingly penetrates our everyday spaces: from how we travel to how we drive, from how we act as 'local residents' to how we open our house to unknown-but-ranked individuals and groups via the platforms of the 'sharing tourist economy'.

Despite being a fictitious depiction of a future dystopian society, the episode has been frequently compared to China's state-driven Social Credit System (SCS) (see Palin, 2018; Griffiths, 2019). Expected to be fully operational in 2020, the SCS is used by various governmental bodies to monitor and assess the behavior and the trustworthiness of individuals and businesses in their compliance with China's laws and regulations (Hoffman, 2018, p. 3; Ohlberg, Ahmed, & Lang, 2017; Creemers, 2017, 2018). The system relies on a central repository of data including financial, criminal and government records, as well as data collected by 'Internet of Things-enabled sensors and personal information that individuals provide to websites and mobile phone applications' (Ohlberg et al., 2017, p. 4). According to the 2014 SCS blueprint, the system is 'part of an openly declared and widely propagated effort to instill civic virtue which is conjoined with propaganda campaigns to raise individuals' consciousness about their actions' (Creemers, 2018, p. 26). Although the SCS was initially centered on financial creditworthiness, its use has rapidly extended to the management of the behavior of individuals to foster trustworthiness and social and political morality (ibid.).

While the SCS does not rely on quantitative scoring, it does however identify miscreants who are inscribed in a public blacklist, in this way limiting their access to specific activities. While Lacie – in one scene of the episode – is denied boarding her plane because of her low ranking, blacklisted individuals in China may face similar measures enforced through the 'Joint Punishment System' (Creemers, 2018), including being barred from travelling on civil aircrafts, staying in luxury hotels, or even going on holiday abroad (Ohlberg et al., 2017, p. 3). Those whose actions reflect particular merit are instead reported on a 'red list' and receive certain privileges, including renting properties deposit-free (ibid.).

Inspired by these two provocative examples, in this article we interrogate how one of the most successful digital platforms in tourism, Airbnb, attempts to monitor and influence the ways in which millions of individuals engage with the practice of hosting in their own homes. We accordingly explore some of the ideas underlying the platform's infrastructure and look at how its metrics and data management have become increasingly instrumental to obtain desirable (and profitable) outcomes. In doing so, we unpick various applications and technologies used by Airbnb to monitor, record and measure the behavior of hosts and guests. We also reflect on the hosts' attempts to align with (and resist) Airbnb's 'ranking logic' by adhering to the rules and the suggestions provided by the platform in order to be highly ranked in its global 'community-of-tomorrow'.

Methodology

In this study, we have primarily relied on a digital ethnographic and autoethnographic approach. We have accordingly 'immersed ourselves' in the digital spaces of the

Airbnb economy, both as participants and as observers of the Airbnb 'community'. Following Pink, Horst, Postill, & Hjorth (2015) reflections on digital ethnography, we argue that digital technologies are increasingly interdependent with the infrastructures of everyday life, something that fundamentally unsettles any dualistic interpretation of the related online and offline environments. Like with other platforms, we consider engagements with the Airbnb platform to be 'based on the real-life dynamics, beliefs, power relationships, and political imaginations that define the everyday life of the groups studied' (Barassi, 2017, p. 410). We are therefore interested in what processes of datafication, rating, ranking and algorithmic management mean to those directly affected by them. Methodologically, this has implied a systematic analysis of our own experiences as hosts, as well as those of other Airbnb hosts. Accordingly, we have first carried out in-depth face-to-face interviews with 18 Airbnb hosts held during our empirical investigations of Airbnb in various European locations as part of a broader project whose main results are published elsewhere (see (Roelofsen, 2018a; 2018b; Roelofsen & Minca, 2018)). In these interviews, we asked our participants about the importance of reviewing and rating, and what effects this form of user-driven auditing culture had on their hosting practices. The interviews were transcribed verbatim and analysed through the qualitative data analysis software MAXQDA. The textual accounts of the interviews were searched via common themes and pseudonyms used to guarantee anonymity.

The second site of digital ethnographic fieldwork was the Airbnb Community Center (ACC) – where Airbnb hosts interact with each other and with Airbnb administrators. We consider the ACC as a form of social media – a web application available to all Airbnb hosts which processes, stores and retrieves user-generated content. In the ACC, Airbnb hosts post blogs or comment on other users' blogs, but also on their experiences with Airbnb and its workings. The ACC is publicly accessible and those who visit it do not need a registered Airbnb account to view the blogs. We paid particular attention to blog posts and comments that showed how digital subjects in the Airbnb economy experienced and made sense of their own data, as well as what tactics they employed to challenge how these data were used by the platform. The ACC therefore is also a site of resistance – a space where Airbnb members think and write politically about Airbnb's use of data and about how these should instead be used. In adopting this approach to the ACC, we have drawn inspiration from studies that challenge any deterministic understandings of the impact of technology on everyday life showing that, whilst technological structures do matter in people's everyday life, they are also (re-)appropriated by those who engage with them (e.g. Barassi, 2017; Ettlinger, 2018; Isin & Ruppert, 2015; Milan & Gutiérrez, 2015; Postill & Pink, 2012).

A third method adopted in this study was digital *auto*ethnography. The use of digital autoethnography has allowed for an intimately lived and embodied experience of the datafication processes underpinning Airbnb's digital infrastructure. In particular, our autoethnographic approach was based on 'selftracking' (Lupton, 2016). Selftracking required us to engage and respond to our behavioral data, reviews and ratings, and to the resulting metrics made available through the Airbnb 'dashboard'. Understanding the ways in which the Airbnb 'dashboard' collated, sorted, categorized,

analyzed, profiled, visualized and regulated our own data provided important insights into how Airbnb's algorithms overtly and covertly shaped our chances of becoming 'successful Airbn*beings*'.

Finally, our digital ethnography was supported by a qualitative content analysis: we have thus investigated Airbnb's promotional campaigns, the Airbnb website, affiliated blogs, promotional materials, hospitality guidebooks, together with Airbnb blog posts, discussion boards and policy documents. Studying Airbnb's digital infrastructure and community forum required spending many hours on the internet while clicking and scrolling through hundreds of blogs and comments. We have accordingly come to understand the digital platform of Airbnb as a messy 'fieldwork' site, that is at once observed and constituted through the ethnographer's interactions and narrative (Postill & Pink, 2012).

Tourist studies on Airbnb

Tourism – as a social practice and as discourse – is increasingly digitally mediated. Technologies such as cameras, smart phones, laptops, and navigation devices have by now become ordinary companions of contemporary tourists. They significantly shape how people travel and how people get to know and navigate places (Ash, Kitchin, & Leszczynski, 2016). The so-called 'turistus digitalis' is afforded a central role in 'augmenting and circulating enacted versions of destinations' through their interactions with digital technologies (Munar & Gyimóthy, 2014, p. 251). As such, the digital has the potential to change social and material worlds and (literally) generate new tourism realities. In the past decade, a vast body of scholarly work has explored the digitally enabled 'sharing' or 'collaborative' economies of tourism (Dredge & Gyimóthy, 2015). Both these terms connote a person-to-person economy facilitated by 'digital platforms' (Schor & Attwood-Charles, 2017, p. 2). Whereas the computational meaning of a 'platform' is 'a programmable infrastructure upon which other software can be built and run', in public discourse the term 'platform' is increasingly used to describe companies that offer web 2.0 services and 'afford an opportunity to communicate, interact or sell' (Gillespie, 2017). Platform economies of tourism are centered primarily on mobility, accommodation, food and travel experiences. Airbnb is part of a specific set of digital platforms that facilitate the monetary exchange of residential accommodation (private homes, rooms and beds) and tourist experiences among individuals.

This growing literature on the 'platform' economies of tourism reflects the somewhat traditional and established distinction between two fields of academic enquiry: the business- and management-oriented studies of tourism, mostly quantitative and applied in nature (see, among others, Bridges & Vásquez, 2018; Ert, Fleischer, & Magen, 2016; Teubner, Saade, Kawlitschek, & Weinhardt, 2016; Zervas, Proserpio, & Byers, 2015), and the domain normally identified as 'critical tourism studies' (see Ateljevic, Pritchard, & Morgan, 2007). The present article intends to contribute to existing debates on Airbnb in critical tourism studies. Within these debates, there has been an increased concern for the lived realities of those participating in the tourism platform economy and of those affected by it, spatially, socially, and economically. Critical tourism studies on Airbnb have, for example, shown how the platform often further

exacerbates existing processes of uneven socio-spatial development in many cities. Important empirical work has also revealed how the economic benefits produced by Airbnb tend to be unevenly distributed among residents, further adding to existing socio-economic disparities (Arias Sans & Quaglieri Domínguez, 2016; Cócola Gant, 2016; Gil & Sequera, 2018; Gutiérrez, García-Palomares, Romanillos, & Salas-Olmedo, 2017; Mermet, 2017; Roelofsen, 2018b). Other work has discussed the emergence of forms of implicit and explicit racial discrimination on the platform (Cox, 2017; Edelman, Luca, & Svirsky, 2017; Piracha, Sharples, Forrest, & Dunn, 2019), providing further evidence to the claim that Airbnb mostly benefits the already privileged, middle-class, white members of the platform (see Schor, 2017; also, Roelofsen, 2018b). Moreover, the platform has been critiqued for having become a powerful enabler of new business opportunities for big investors, tourist companies, property managers, landlords and other professional actors (Arias Sans & Quaglieri Domínguez, 2016; Gil & Sequera, 2018). Oftentimes ignoring local urban planning regulations, these operators use Airbnb to rent out residential housing to tourists rather than local residents. As such, the housing stock is moved from long-term to short-term rental markets, in this way adding to the already problematic local housing availability of certain cities (Arias Sans & Quaglieri Domínguez, 2016; Roelofsen, 2018a; Wachsmuth & Weisler, 2018). The subsequent rise of housing- and rental prices (e.g. Horn & Merante, 2017; Lee, 2016) has effectively resulted in various forms of direct and indirect displacement of residents from certain neighborhoods (Cócola Gant, 2016). Again, all these processes are seen as an exacerbation of already existing problems in cities but also confirm Airbnb's contribution to rampant manifestations of 'tourism gentrification' (Cócola Gant, 2018).

Critical accounts on the political implications of the platform's technologies are instead relatively scarce. However, a fairly small body of work has recently contributed to the understanding of the power relations entangled in the operations of Airbnb. Bialski (2016), in analyzing Airbnb's digital infrastructure, argues that unravelling the aesthetic design of the platform allows for certain power structures to become visible. For example, hosts are nudged to advertise their homes in order to promote a specific 'way of looking' by uploading photos to the platform that boast 'a certain white-washed aesthetic of homes' (ibid., p. 47). For Bialski, this competition for authenticity and 'coziness' is crucially supported by and entangled in the various digital artefacts and structures that enable the platform to work. Other studies challenge the 'logic' of reviewing and rating and analyze the politics enabled through such technologies. Rather than 'creating trust' between strangers, the market-based reputation that Airbnb users build up is, according to O'Regan & Choe (2017, p. 4), 'often about control, manipulation, and discipline rather than transparency and accountability'. A biopolitical analysis of Airbnb was recently offered by Roelofsen and Minca (2018) where they investigate some of the key technologies and calculative rationalities that drive the making of Airbnb's digital 'global communities', and how specific understandings of the 'spatialities of the home' are central to the quantification/qualification of living spaces generated by the platform. The present article thus speaks directly to this recent literature preoccupied with the political implications of Airbnb's digital technologies. In doing so, it provocatively suggests that, while Airbnb's social disciplining

cannot not be compared to the totalitarian force depicted in 'Nosedive', at the same time, *it does influence* people's behavior and contributes to implement modes of social relations that were unknown until its algorithms allowed them to emerge.

People and homes – waiting to be 'unlocked'

> 'The biggest asset in people's lives is not their home, but their time and potential — and we can unlock that […] We have these homes that are not used, and we have these talents that are not used. Instead of asking what new infrastructure we need to build, why don't we look at what passions we can unlock? We can unlock so much economic activity, and this will unlock millions of entrepreneurs.' Today's new platforms are unlocking human potential to 'be the people we wanted.'
>
> Brian Chesky, interview excerpt (Friedman, 2017)

The above excerpt of a recent interview with Airbnb's CEO and co-founder Brian Chesky reveals one of the ontological stances that drive the platform's ranking modalities and inform its ideology in dealing with people, home and hospitality. For instance, the platform deploys the concept of 'home' as a material and imaginative site through which hosting and guesting subjects may supposedly express their 'potentials'. A site which, according to Chesky, needs to be 'unlocked'. Airbnb's advertisement campaigns of recent years proclaim that the 'home' allegedly provides a deeper understanding of what it means to be human in today's world – more specifically, what it means to be a *good human*, as clearly stated in Airbnb's Man[sic]kind campaign:

> Is man kind? Are we good?
>
> Go see.
>
> Go look through their windows so you can understand their views.
>
> Sit at their tables, so you can share their tastes.
>
> Sleep in their beds, so you may know their dreams.
>
> Go see. And find out just how kind the he-s and she-s of this mankind are.
>
> 'Is Mankind?' Airbnb's commercial campaign (Airbnb, 2015)

The above vignette suggests that there is an ontological truth to be discovered by penetrating the daily life of Others in their homes. In the Airbnb economy, the disembodied 'tourist gaze' (Urry & Larsen, 2011) is no longer sufficient in providing the contemporary traveler a mirroring experience with 'hospitable' local residents and their 'culture-in-place' (see Minca, 2011). Airbnb' travelers are instead invited to see, look, sit, eat, and sleep in other people's homes, in order to quench the 'thirst for difference' in a world supposedly plagued by the anxieties of the (post)modern condition. This points at the embodied nature of the practices put in circulation by the platform through datafication; hosts and guests generate personal digital data through their engagement with each other and with the platform, data which keep the Airbnb machinery running. These practices in fact feed into the platform's review and rating system, a system that numerically captures the qualitative 'distinctions' of home and hospitality and extracts 'value' from these same distinctions. The need and desire to participate in this economy of reviewing-and-rating is elicited through a suggested

lack of – and *need for* an – exhibition of the Self in its most intimate spatialities. Chesky's portrayal of people and places in need to be 'unlocked' also suggests that one can never be public enough, that there is always something more in people's lives to be made available and to produce 'value'. Airbnb thus asserts the (natural, i.e. human) need for a constant flow of people's data to generate new value and a new community of hosts and guests, and that we are all 'lucky' that such data are everywhere around us (see also Sadowski, 2019). Individuals just need to develop their human potential to 'be the people we want[ed]' – as long as they properly produce and consume.

Through the narrative of 'belonging', the production, consumption and circulation of people's most intimate spatialities is thus further ostensibly justified:

> '*Belonging* has always been a fundamental driver of humankind. So, to represent that feeling, we've created a symbol for us as a community. It's an iconic mark for our windows, our doors, and our shared values. It's a symbol that, like us, can belong wherever it happens to be. […] It's a symbol *for going where the locals go* – the cafe that doesn't bother with a menu, the dance club hidden down a long alleyway, the art galleries that don't show up in the guidebooks. It's a symbol for people who want to welcome into their home new experiences, new cultures, and new conversations. We're proud to introduce the *Bélo*: *the universal symbol of belonging*'. (Chesky, 2014, italics added)

By stating that 'belonging has always been a fundamental driver of humankind', the *Bélo* campaign disturbingly echoes some of the conservative communitarian ideologies that have capitalized in the past two centuries on a necessary identification between a specific community of people, a specific way of life, and a specific land (see, Esposito, 2010; also, Roelofsen & Minca, 2018). However, since we are in the brave new world of what has been contentiously termed the 'sharing economy' (Ravenelle, 2017), in this community-in-the-making hosts are set up to the task of generating income by providing complete strangers with a sense of 'belonging' in their intimate spatialities. In a similar vein, guests have to prove to be well-behaved and respectful of the house rules while sitting at the hosts' tables, while lying in their beds, while looking through their windows. Overall, what is incentivized here is a powerful form of social regulation based on a (rather reactionary) belief in people's need of belonging and in a related structure of social relationships based on the platform 'guidelines'. In the next section, we thus explore which everyday embodied practices interlace with the platform's digital infrastructure, and how such practices conform to the platform's idea of home and hospitality.

Airbnb's datafied selves

In the Airbnb world of global hospitality, hosts and guests alike are continuously rendered into 'assemblages of digital data' (Lupton, 2016, p. 709). They are *datafied* through their engagement with various data-recording applications incorporated in the platform's digital infrastructure. Airbnb's messaging system, search engine, and review-, rating- and self-tracking applications are some of the key 'machineries' that hosts and guests engage with and that generate data enabling Airbnb's platform economy. These applications are continuously alimented by behavioral data intentionally or unintentionally provided by users. Since the platform is set up as a social

network, self-compiled profiles containing personal details on millions of hosts and guests worldwide also constitute a large part of Airbnb's grand datasets. Setting up a detailed profile is in fact the first step necessary to become a 'Airbnb*being*' and take part in future Airbnb exchanges. According to Airbnb (2019a), 'when your profile is robust, it helps others feel that you're reliable, authentic, and committed to the spirit of Airbnb'. Profiling oneself as an Airbnb host or guest requires the submission of plenty of personal information such as: email address, full name, date of birth, proof of identity, a clear, front-face profile photo, a verified phone number and credit card details. Optionally, users may also indicate where they went to school, the languages they speak, and their profession. What follows is a process by which hosts and guests textually and visually detail their profiles through biographies, videos and symbols. Airbnb recommends autobiographical descriptions to include: 'things you like', '5 things you can't live without', 'favorite travel destinations, books, movies, shows, music, food', 'what it's like to have you as a guest or host', 'style of traveling/hosting', and a 'life motto'. The hospitality Toolkits for hosts propose even more specific ways to represent one's 'authentic' digital Self, in order to draw in 'guests with similar tastes and interests' and prevent them from having disappointing experiences (Airbnb, 2016).

Upon completion, the publicly viewable profile page includes the member's first name, profile picture, verified ID information, date of registration, preferred language(s), and place and country of residence. Hosts additionally profile their listing(s) through photos and videos and enter a description including pricing, property/room type, number of bedrooms, beds and baths, amenities, location, check-in/out times, cancellation policy, home safety features. They may also post information on fellow inhabitants, the neighborhood, ways of getting around, and the desired level of interaction with guests. The data about the lives of hosts and guests collected through profiling alone is therefore vast and of a sensitive and intimate nature. These personal details, along with other data produced by Airbnb users, are then stored on cloud computing databases.

Other processes of datafication through the Airbnb application often silently operate in the background of the users' computers, smartphones and other digital devices. According to Airbnb's privacy policy (2019b), 'these activities are carried out based on Airbnb's legitimate interest in ensuring compliance with applicable laws and Our Terms, preventing fraud, promoting safety, and improving and ensuring the adequate performance of our services'. Users interacting with the application are in fact subjected to digital surveillance: Airbnb monitors and records their movement and behavior, often without their knowledge or awareness. Andrejevic (2007, p. 304) has referred to this as 'the work of being watched': a form of unpaid labor by which users willingly or unknowingly 'submit themselves to monitoring practices that generate economic value in the form of information commodities'. For example, unless this function is deliberately disabled where the application is installed, the platform collects Geolocation Information, tracking hosts' and guests' location through their IP address or the device's GPS (Airbnb, 2019b). Airbnb also gathers information about the users' interactions, such as pages and content viewed, searches for listings and bookings. Online communication taking place among users, and between users and Airbnb, is

also recorded, with the message content being scanned, reviewed and analyzed. Data are collected on the hosts' average response time to booking inquiries and new messages sent out to them by guests, and then factored in the ranking of listings in the search results.

> '[B]ecause making travel plans can be complicated or time-sensitive […] responses need to be dependable and quick. That's why we calculate response rates and response times and show them on [hosts'] listing pages. We want guests to know what to expect when they reach out to a host. And we ask hosts to stay focused on swift, reliable communication, because we know it will help them confirm more bookings. We want to make sure the meaning of these metrics is clear so that hosts know how to stand out'. (Airbnb, 2014)

Yet other applications incorporated in the platform, such as the review and rating system, gather loads of information on feelings, emotional needs and desires of hosts and guests. Like in the *Nosedive* episode, these expressions are predominantly the result of interactions among individuals. Over the span of more than 10 years, the review-and-rating application has congregated millions of written testimonies of Airbnb experiences all around the world. These reviews and ratings are also the primary source of the users' digital reputation, which in turn has become vastly important in how hosts and guests understand each other, as well as 'in succeeding' in Airbnb's economy. Reviews and ratings report on the supposed 'quality' of hosts' and on the guests' emotional-, caring- and affective capacities in providing each other with an Airbnb experience, as well as on the 'quality' of the related homes and neighborhoods. The insistence on the production of positive feelings is engrained in almost every step of the review process. After each stay, Airbnb asks guests to provide the next guests with an account of what they 'loved' about their host's place through a written testimony. They also encouraged them to rank their hosts' efforts on a scale of 1 to 5 stars along several parameters: Overall Experience, Cleanliness, Accuracy, Communication, Check-in, Value and Location. Additionally, guests are asked to rank the home where they stayed in a range starting from 'Budget' (limited amenities and minimal furnishing) all the way up to 'Upscale' (beautiful space with high-end amenities and decor). Hosts, in a similar vein, are asked to rank their guests' efforts along the parameters of: Communication, Cleanliness, Observance of House Rules, and Overall Experience. The majority of these parameters aim to collect information on the behavior of individual hosts and guests: 'How clearly did the guest communicate their plans, questions, and concerns? How clean was the guest? How responsive and accessible was the host before and during the stay? How observant was the guest of the house rules?'

Hosts and guests are also expected to behave according to Airbnb's 'Community Standards'. These standards 'help guide behavior and codify the values that underpin' the Airbnb community in terms of 'trust and safety' (Airbnb, 2019c). The five 'central pillars' on which the Standards rest include: 'Safety', 'Security', 'Fairness', 'Authenticity', and 'Reliability', each comprising a subset of categories explaining how hosts and guest are to behave around each other and in each other's homes. For example, as far as 'Authenticity' is concerned, Airbnb provides detailed instructions on how not to misrepresent oneself or the spaces within which the 'hosting' takes place. The

platform also invites hosts to provide experiences that are 'not merely transactions', as 'Airbnb experiences should be full of delightful moments and surprising adventures' (Airbnb, 2019c). 'Reliability' can be achieved by engaging in timely communication, asking hosts to respond to their guests' messages within 24 hours. The instructions on how to behave are at times (deliberately?) vague, leaving room for reinterpretation and, at the same time, expansion of the arena of self-disciplinary behavior.

Although reviews and ratings are voluntarily submitted to the platform, Airbnb continuously encourages its users via multiple emails and text messages to upload 'thorough reviews' in a timely manner in order to 'aid the decision-making of future guests and hosts' (Airbnb, 2019d). For a host, not being reviewed by a guest after their stay may result in not being promoted to the 'Superhost' status – a status that indicates a 4.8 or higher average overall rating in the past year. Successful Superhosts attract more guests by being 'featured to guests' in search results, in this way increasing their chances of being booked (Airbnb, 2019e). When Superhosts fail to get reviewed according to the 50% benchmark in new assessment rounds, they risk having their Superhost status revoked (Airbnb, 2019f, 2019g). This may lead to less bookings and a lower earning potential. Not to report or not to be reported on is considered adverse behavior in the Airbnb economy and it is directly and indirectly sanctioned.

The deeper politics of reviews, ratings and rankings

As a form of social regulation, the growing importance of each individual's 'digital reputation' is a powerful incentive for the platform's members to act in the 'desired' manner, possibly without Airbnb's direct intervention. Such self-discipline is further enforced through the Airbnb 'dashboard' incorporated in the host's profile page, which provides key metrics of their various expected performances. The dashboard includes an application called 'Progress', which monitors, records, organizes, measures, analyses and presents a variety of data on the hosts' behavior, who are in this way constantly reminded of their 'rated' performances of hospitality over time (Airbnb, 2019h). 'Progress' enables the practice of 'self-tracking', allowing users to reflect on certain patterns in their behavior and accordingly improve their relationships with their guests (see Lupton, 2016). Unlike Airbnb hosts, Airbnb guests are not provided with a tool to self-track their performances, although they are exposed to written reviews after their stay. The guest's metrics, however, are only shared with a specific group of hosts who allow for their listings to be 'instantly booked' without prior communication with the respective guest. If hosts 'ever rate a guest at 3 stars or below', this guest will not be able to instantly book with the same hosts again (Airbnb, 2017). Both hosts and guests, then, are offered (and incentivized to use) digital technologies that render them and others into 'quantified selves' along a set of given parameters and, accordingly, allow them to assess whether or not they wish to engage with each other.

In this process of reciprocal ranking among hosts and guests, qualitative distinctions are translated into quantitative ones, a process that 'actively works to depersonalize and de-particularize the very activities being measured' (Hearn, 2010, p. 428). This, however, does not prevent Airbnb hosts and guests from uploading reviews and

ratings not conforming to the level of 'objectivity' or 'sincerity' that the company aspires to obtain. Whilst Airbnb promises that reviews and ratings provide some 'transparency' or 'truth' about individual members and listings (Airbnb, 2019i), the reviewers' sentiments are not unaffected 'by already existing class, gender, race and other social relations' (Hearn, 2010, p. 433). Providing feedback is not 'only ever motivated by an honest desire to do good' (ibid.), since reviews and ratings are oftentimes the result of diverse or even conflicting understandings of 'quality' among hosts and guests. As noted in a recent post by an Airbnb administrator:

> 'Reviews are so important. They not only impact the success of your business, they're also really personal. We know you put a lot of thought and care into your hospitality and that it's frustrating when you receive a review that is uncharacteristically low – be it a mistake, a misunderstanding, or an unfair assessment. […] We've invested and will continue to invest a lot of thought and effort into how we can make the review system more fair' (ACC, 2018).

Airbnb is thus committed to continue improving its review system and to adopt tools capable of detecting 'outlier reviews' – that is, reviews and ratings that do not accurately represent 'truthful' feedback (ibid.). What also transpires from the above statement is that reviews and ratings are a taken-for-granted aspect in the 'self-governance' of the platform. Truthful and objective *reporting* on each other's behavior is considered of fundamental importance in keeping Airbnb's feeling-intermediary credible and 'risk-free'– behavior that the platform monitors and 'corrects' when necessary. By using predictive analytics and 'machine learning', every Airbnb reservation is 'scored' for risk before being confirmed (Hakim & Keys, 2014), 'instantly evaluating hundreds of signals that help [Airbnb] flag and investigate suspicious activity before it happens' (Airbnb, 2019j). To facilitate this, the platform requires data. In a recent interview with Bloomberg, Nick Shapiro, former CIA's Deputy Chief of Staff and White House counterterrorism and homeland security aide to President Obama and now Global Head of Trust and Risk Management at Airbnb, has explained that:

> 'People need to know that they are going to be safe, they have to feel safe. So, we do a number of things, to use technology to do that. We risk-assess each and every reservation. We run global watchlist checks against all of our users worldwide. We background check hosts and guests in the US. But just being safe isn't enough. We use these technologies to also build connections. There's detailed profiles. There's the messaging system where you can learn more about each other. And there's reviews where you can look at previous history. And on top of that, people need to know that they are not alone. Airbnb is there for them' (Bloomberg Technology, 2017).

What emerges from the quote is that a multitude of data on intimate aspects of the members' everyday life is incorporated by Airbnb into predictive analytics aiming at anticipating their potential behavior. Such behavioral data are of vast importance to enable Airbnb in nudging and coercing social behavior on a large scale. According to Zuboff's reading of surveillance capitalism (Zuboff, 2019, p. 15), in 'this reorientation from knowledge to power, it is no longer enough to automate information flows *about us*; the goal now is to *automate us*' (see also Andrejevic, 2019). What is more, reviews and ratings rely entirely on the free labor of hosts and guests, whose affective participation is voluntary and unpaid (see Terranova, 2000). Whilst often promoted as being fundamental to 'attracting new business', the value created through reviews

and ratings crucially contributes to the deeper logic of the platform. Data generated by reviews and ratings in fact feed into algorithms that sift and sort them to optimize future transactions, with the main beneficiary being Airbnb that draws on this massive data to improve its market appeal and nudge the members' social behavior toward the company targets. These algorithms also measure how often hosts cancelled a reservation, the amount of stays they hosted, and their overall ratings by guests. As such, these categories depend on the hosts' dedication and aptness, to inspire a culture of constant 'self-improvement' and invite them to be virtually on-demand every minute of the day.

The review and rating system must thus be continuously alimented by 'embodied data' concerning the behavior of individuals in order to effectively shape future interactions on the platform, while hosts and guests alike are strongly encouraged to provide such information. These 'embodied data' in fact determine how guests, hosts and their homes are ranked in the platform's search index and booking tool, thanks to the software associated with algorithms that identify, classify, structure, and prioritize certain people and certain homes over others. As such, these algorithms are far from being neutral (Kitchin, 2017), since they *do* assess homes and individuals according to specific parameters and 'values' set by Airbnb. As Safiya Noble illustrates in her recent book on Google (2018, p. 2), 'some of the very people who are developing search algorithms and architecture are willing to promote sexist and racist attitudes openly at work and beyond, while we are supposed to believe that these same employees are developing 'neutral' or 'objective' decision-making tools'.

Airbnb search revealed: or, the importance of ranking well

On October 21st, 2017, Airbnb hosts received the platform's monthly newsletter in their inboxes, which included a link to an online post written by Lizzie, Airbnb's 'Online Community Manager'. Lizzie wished to provide more information about the platform's search algorithm, because, according to the stats, one of the most popular topics on the Airbnb-Community fora was: 'how Airbnb Search works?' (ACC, 2017b). Responding to a large cohort of hosts speculating about how the search algorithm classified and ranked their homes, Lizzie's post revealed some of the underlying ideas driving Airbnb search engine. Lizzie explained that the algorithm responds to a specific set of preferences (e.g. dates, location, etc.) that guests enter into the online booking tool. Based on these preferences, the algorithm sifts through existing data on all Airbnb homes and on hosts' past performances to rank those that best 'match' the guest's criteria.

While Lizzie indeed provided some hints, these were never *too specific*:

> 'We have an algorithm that looks at over 100 signals to decide how to order listings in search results. Most of those signals have to do with things that guests care about, like positive reviews and great photos. If you think guests might care about it, it probably factors into your ranking!' (ACC, 2017b)

Similar to the *immunitary* and *control* strategies observed in van Doorn's study (2017) of on-demand platforms such as Uber, Lizzie's comment reveals the strategies employed by Airbnb. The first strategy is Lizzie's appeal to the algorithm as an 'independent' assessor of Airbnb hosts' performances. Designating the algorithm as an

objective measure 'shields' Airbnb from dealing directly with those who perform the labor of hosting on the platform. In doing so, the platform rids itself from as much liability as possible (Van Doorn, 2017). Secondly, the post suggests that what guests care about is decisive in the ranking of Airbnb listings. In other words, Airbnb outsources quality-control to the hosts' 'customers' – namely the Airbnb guests.

Lizzie then claimed that hosts do not need a perfect listing or an unbeatable location for ranking well and suggested *how* hosts could possibly improve their position in terms of search results. Lizzie insisted in particular on the importance of activating the Instant Booking feature:

> '[T]ravelers prefer to use Instant Book because they can book quickly, skip the wait time for hosts to respond, and avoid possibly being rejected. Because of the high booking success for hosts and guests, Instant Book gives your listing a boost in searches'. (ibid.)

The main incentive for hosts to use Instant Book derives from not having to franticly maintain what the administrator described as: 'welcoming correspondence and strong response metrics'. Automated messages would do the work of 'responding to the guest in real time', making for the highest possible response rate and a higher rank in search results. A second incentive is the possibility, provided only by Instant Book, to see how other hosts have rated the prospective guests – offering 'more peace of mind' (Airbnb, 2019k). What Lizzie forgot to mention was the considerable advantages for Airbnb in having hosts accept all booking requests without prior consultation. Besides instantly receiving commissions on the booking payment, Airbnb conveniently avoids any difficulty that may arise from human interactions between hosts and guests. Instant Book makes all preliminary and potentially 'unruly' social interactions redundant. An algorithm will do the job!

The responses to Lizzie's post, however, show how many hosts have learned to incorporate but also resist the overall logic of the platform, its capitalization on their home, and its power in attributing value to people and their practices. Janine, a long-time host, declared that when you live with guests in your home, it is vital to have the 'opportunity to choose' who you share your intimate everyday spaces with. Janine added that Instant Book should not be a search factor at all. In fact, Janine's status as a Superhost for over 2 years 'should make a difference!' In another response, Sally contended not to use Instant Book either, because their place 'is not a hotel; it is a home'; since the guests often don't read the House Rules on the listing page, 'a few e-mails back and forth help create a mutually positive experience.' Arguably, the concerns manifested by Janine, Sally and others were not about people being ranked but rather about *how* they were ranked. These concerns clearly emerged from our analysis of ACC posts but also from our interviews. Many hosts in fact complained about the ranking system, since they would have liked to have *more reviews* and *better rankings*, and more personal information on their potential guests.

> 'I think maybe the system could improve reviewing and rating a little bit. They could require more detailed reviews and references. Because now you have a specific set of categories, like cleanliness and tidiness, etc. And then you read a review based on 200 characters and this is it. And then you want to say something personal to your guests. I understand that often you don't have time to write a proper review and describe in detail your experience with your guests or hosts or whatever. But this is essential

> especially when you rent a room, the flat is ok but when you rent a room you co-live with this person!' (interview with host Pino, 2015).

Some members felt that the guests should be rated as well. Supported by hundreds of 'likes', one vocal host addressed the 'one-off bad reviews' and practices of black-mailing on the platform. According to Gloria, Airbnb guests 'will be very critical of a property only because they want a big discount and they will threaten their host with a bad review'. One of Gloria's guests recently complained that the taps in the house were 'old fashioned', and should be replaced with modern ones. The guest also 'photographed dust and magnified the pictures and told [the host] that she wanted a refund', a request accepted by Gloria to avoid a bad rating.

All in all, our analysis revealed the implicit power of Airbnb's algorithms in regulating a specific set of social relationships, even when the members expressed dissatisfaction and concern about their workings. We have also recorded a number of comments – both on the ACC and in person – that revealed how the availability of personal information on the platform may offer the ground for discriminatory or racist behavior of some members, despite Airbnb's attempts to sanction these practices. In an interview, Emma, reflected on the process of selecting guests:

> 'We try to make a selection [before we accept bookings]. We look through guests' profiles and read the comments of previous hosts. We never host a person without comments or references. I decline a lot of requests just because I don't like to get this feeling that these people only come here for the bed and nothing else. So, we are searching for interesting people. Interested to share and exchange something and spent time together'.

Many hosts also admitted having implemented various forms of self-disciplining in order to get a better ranking and become visible via the search tool. Proper feedback was considered by many as paramount to become a proper 'citizen' of the Airbnb global community, something clearly illustrated by host Madeleine during an interview. Madeleine insisted on reviewing all guests because 'it is really important to share what my impressions were about them […] Feedback is really important to know where you are and what are you doing well or not so well'. Another interviewee, Dave, openly declared having changed his behavior at home to comply with the platform's expected standards and get good reviews:

> 'What changes [when guests come over] is that I try to be more calm, quiet. Not to argue a lot with my mother. I would not watch TV louder. I wouldn't have parties. Or, I'll ask if the person is ok with it. And you should clean all the time after you use something. If you go to the toilet or if you use the kitchen and stuff like that'.

Mercedes, not only made a few changes in the home to accommodate potential guests, but also mobilized personal social networks:

> 'I did some renovations in my apartment and I bought many things like sheets, you know. You have to prepare a lot of stuff for Airbnb. I was wondering is it going to work or no? You never know. *You need reviews to get guests and need to have guests to have reviews*. And I asked some friends to write me, not reviews, but a recommendation. And step by step I had some guests.'

Despite the criticism expressed by many members, the review system is commonly considered reliable and truthful, a fundamental tool to build an individual capital of

trust that will be reflected in the ranking. Mercedes argued that: 'this is the way to know about some things that the host doesn't mention, like there is no hot water from time to time. So, I think the reviews are very very important'.

A third group of responses showed clear awareness of the possibility that some members may use the ranking system at their own advantage or provide 'false' or unreliable information. For host Ada,

> 'It's definitely good to have the review system. But as I confessed, I rarely write what I really think. Especially when it's negative. When it's very negative, then I write it. Because when it gets to a point of danger or something like this. I think this is already more security than somewhere else.'

Another host, Frida, argued on the ACC for a more detailed history of how guests reviewed previous hosts, suggesting that the platform should take into account the number of stars that guests have previously given to their hosts. According to Frida, some guests never give 5 stars, something that should be weighed in Airbnb's algorithms.

To return to our initial provocations, the idea that Airbnb acts as a social regulator affecting the behavior of many hosts in their most intimate spaces was clearly supported by the evidence emerging from our interviews and the materials consulted. However, how may this form of social discipline be related in any possible way to the Black Mirror episode or even the Chinese Social Credit System? Notably, in the past years, the Chinese government has exerted increasing pressure on foreign technology companies operating in that country to control their flow of digital information (see Creemers, 2017). Airbnb has swiftly complied with China's regulations and has *proactively* moved to local Chinese servers its user data processed by Airbnb *China* (a separate Airbnb business entity) (Cadell, 2016). In a similar vein, Airbnb has also complied with the government's demand to disclose personal information on individual hosts operating on Airbnb China's platform (Jing & Soo, 2018), while this might extend to data related to guests in the near future (Shen, 2018). Airbnb's Privacy Policy (Airbnb 2019a) tellingly declares: 'Where required under law and you have expressly granted permission, Airbnb China may disclose your information to Chinese government agencies without further notice to you'. Airbnb China' hosts and guests generate data that concern not just their identity, but also their private communications, their geolocations, their movements, as well as sensitive information about how they engage in with their guests. Details of the most intimate spatialities of people's homes are described on Airbnb with unprecedented depth and specificity – from photos of people's bedrooms to descriptions of hosts' housemates and family members. Airbnb's subjects actively generate data through multiple means, suggesting a 'Panspectric' rather than a 'Panoptic' mode of surveillance and monitoring (Creemers, 2017, p. 96). A key question in this rapidly evolving landscape is what may happen when such databases would become instrumental to the Chinese government in its attempts to stimulate self-disciplining in their citizenry and to impose new 'soft' forms of social regulation via the pervasive use of these digital technologies? Despite the abovementioned Social Credit System is still in its infancy, Creemers (ibid, p. 99) argues that 'it can safely be said that propaganda, public opinion and social management work will be increasingly integrated through technological processes'. The Party-state has in fact clearly shown the intention to deploy these new technologies 'in a manner that renders society legible and predictable' (ibid., p. 88). What is particularly

relevant for our argument is that such a strategy aligns particularly well with the disciplining and self-optimizing effects of Airbnb's algorithmic management – which are constructed in ways that induce its 'members' to comply and act in line with the platform's predefined notions of 'Man[sic]kindness'.

Given Airbnb's fierce resistance to sharing its data with New York City (and other cities) – claiming that it would imply a form of 'illegal surveillance' – the company's compliancy with China's controversial laws is contradictory to say the least. China, however, currently is the world's fastest growing travel market and Airbnb has been very vocal in expressing its business interests in that country. In a press release of March 2018, Airbnb Co-Founder and Airbnb China Chairman Nathan Blecharczyk stated that 'China is a critical part to Airbnb's mission of creating a world where anyone can belong anywhere. By 2020, more Airbnb guests will come from China than any other country. We will continue to deepen our commitment with the goal of bringing authentic magical travel experience to Chinese travelers' (Airbnb, 2018).

Concluding thoughts: Airbnb's biopolitics

Imagine a world where (almost) everyone behaves or tries to behave in line with the deeper logic of a series of algorithms. Imagine one day when all homes are part of the Airbnb 'sharing economy' and all residents ranked as hosts. In such a world, every single space of your home would be incorporated, in some form, by algorithms translating individual experiences of your most intimate spatialities into globally advertised hierarchies. In such a world, again, the homes next to yours would be constantly visited by strangers selected by Airbnb.

In response to this provocative scenario, and in line with the main argument of this article, we would thus like to conclude by advancing three theoretical propositions. The first is that Airbnb may be thought of as a powerful biopolitical machinery (on this, see Agamben, 1998, 2002 and related literature; e.g. Campbell & Sitze, 2013; Lemke, 2011; Minca, 2015; on tourism and biopolitics see, among others, Ek & Hultman, 2008; Minca, 2009, 2011; Simpson, 2016). A machinery fed by elements of life, home, care, coziness, local culture – all incorporated by the platform as 'values' and converted into quantitative measures producing a specific kind of hierarchy. Biopolitical machineries, as we know, not only 'contain' elements of life, but also endlessly 'qualify' life. They produce a mapping made of specific representations of life. In the Airbnb world, members are actually mapped out: as individuals, as families, as 'home', but also as travelers, as guests, as providers of care and 'hospitality'. The Airbnb ranking of people and homes via its algorithms in fact comprises the incorporation of elements of real life, real homes, real relationships, into the calculative rationality of the platform. The qualified quantifications of these real-life elements tend to shape what hospitality is for Airbnb and its global community, and how individuals should perform to be highly ranked in a world-made-of-hosts-and-guests.

However, and this is our second theoretical proposition, the Airbnb algorithms are machineries that spin around an empty core. Despite the fact that the ideas of community, home, hospitality, local culture, etc. feeding into the platform's algorithms are linked to real-world contexts – the homes offered are real as are their locations –

when they are translated into the Airbnb ranking they tend to become something else, possibly self-referential metaphors based on Airbnb's calculative rationalities. This does not mean that they do not operate as social regulators, quite the contrary. The Airbnb algorithms – as shown by this article – are in fact part of a biopolitical technology that squeezes value out of a myriad of aspects of everyday life. These aspects are often voluntarily offered by the participants, who willingly put on display a series of intimate and personal elements of their respective lives (and homes) to have them incorporated into the grand metrics of the platform. Many of these hosts actually enjoy being involved in these encounters with the guests, and often interpret their role in ways that resist and somewhat 'twist' the rationale of the platform, as emerged in interviews discussed above. However, despite these subjective (and sometimes even subversive) interpretations of the interplay between guests and hosts, by incorporating 'homes' and 'everyday life' into its metrics the platform somehow tends *to empty them out*, to convert them into elements of datafication and algorithmic management. For this reason, Airbnb, like all biopolitical machinery, needs endless injections of 'new life' (new homes, new intimate encounters, new hosts and guests), new 'stuff' to be incorporated and put into circulation by its broader regulatory system. Indeed, the embodied data offered by millions of hosts and guests to be datified by the platform's algorithms are an important form of capital, without which Airbnb would not be able to operate nor to generate value (see Sadowski, 2019).

What is more, and this our third theoretical proposition, the Airbnb calculative rationale cannot be taken to its most extreme consequences. This is confirmed by the ideal citizen of the Airbnb community, the Superhost, who represents a distilled and embodied abstraction of the deeper logic of its algorithms (see Roelofsen & Minca, 2018). While each hospitable resident of this community should aspire to obtain the condition/status of Superhost, at the same time this is an endlessly mobile condition, since the rules to maintain it are constantly changed by the platform. The Superhost in fact must remain the horizon towards which all hosts move, but that nobody can actually permanently inhabit. As we have learned from the history of all biopolitical regimes, the principle of 'endless improvement' does not produce a perfect(ed) society, because the workings of biopolitics is based on movement, on ever-changing thresholds of inclusion and exclusion (see, again, Agamben, 1998, 2002). This is fundamentally why the Airbnb platform is a biopolitical machinery spinning around an empty core: there is no point of arrival, no community to be realized, no perfect guest or host, since its only possible objective, in the end, is *to reproduce its capitalist Self*.

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