THE SHARING ECONOMY AND ITS DISCONTENTS: LABOUR, FAIRNESS, AND LEGITIMACY

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This panel brings together a series of related critiques over labor and fairness in the sharing economy. The last decade has brought a startling growth in the deployment of networked communications technologies to organize work. Mobile apps in particular are helping to restructure contractual relationships in ways that disrupt old and create new intermediaries. The logics and affordances of these digitally mediated platforms for negotiating labor agreements differ widely in the extent to which they empower their users. On the one hand, the sharing economy present the possibility of greatly reducing transaction costs and radically increasing access to shared resources and opportunities for participation in the workforce. But at the same time, the precarious labor of the 'gig economy' can drive down effective wages, the material protections, and real choices for the workers upon which it depends. The rapid growth of these new markets present new challenges for understanding how work is regulated, and new opportunities for imagining how it might be organized in the future.

This panel begins with a mapping of the Chinese sharing economy. The first paper provides a provocative critique of the common assumption that sharing platforms necessarily weaken the formal legal protections granted to workers. It provides a new typology to systematically characterize the range of sharing economy platforms in China according to the real resources and opportunities of the participants who share their goods and labor. The next two papers zoom in to more closely study labor on sharing economy platforms, through two different methodological approaches. The second

paper provides a rich ethnographic study of women task workers in South India and the US, making visible the complex relationships around the sharing economy that are otherwise obscured behind the APIs that mediate transactions. The third paper takes on this theme and makes the sharing economy platform its central object of study. This paper examines how a task working platform structures the conflicts between neoliberal ideals of frictionless markets and the precariousness that this freedom so often brings for the laborers who depend upon it. It considers how the platform shapes the presentation of work and, by encouraging the quantified self, promotes ideal workers to maximize the platform's value. Finally, the fourth paper turns to consider the regulation and legitimization of sharing economy platforms as they disrupt established labor markets. It focuses particularly on the disconnect between political deliberative debates over fairness and consumer protection, on the one hand, and the ongoing legitimization of sharing economy markets as reflected through the everyday experiences of consumers and workers. In this context, it provokes a series of core questions around the regulation of industry and the public interest, seeking to understand in greater detail how different approaches to organizing labor become accepted and justified.

All papers ultimately ask the important question about who benefits from these new markets. We highlighting both the opportunities for reconfiguring labor relations that these markets provide, and the threats to working conditions that they pose. In doing so, we seek to move beyond the dichotomy of sharing as liberation and as exploitation to consider how platforms and networks might be designed and deployed to enhance real capabilities and opportunities for human flourishing.

BRINGING THE INFORMAL ECONOMY BACK IN: A MAPPING OF CHINESE SHARING ECONOMY

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Christian Fuchs ends his 2016 article in *Asian Journal of Communication* with a bold hypothesis: "Without any historically formed obsession with patents and copyrights, China can also be a relatively easy place to promote open source, open access, and free information as a public good (p. 37)." Yes, conceptually speaking, there are notable similarities between the digital sharing economy and the collectivist traditions of China, be they socialist or Confucian.

Yet, the assumed pattern does not reflect reality if we scrutinize the short history of open source movement in China since the early 2000s. Chinese Linux was quickly commercialised (e.g., Red Flag Linux); Wikipedia was blocked and its competitors such as Hudong Baike and Baidu Baike were owned by private companies;

Creative Commons didn't really take off, in both mainland China and Hong Kong. Even though Isaac Mao, leader among China's first-generation bloggers, has proposed his philosophy of "sharism" since 2008, the material developments have so far been quite limited and the spirit of sharism draws more from a belief in technology than from Chinese socialism or other legacies from the past.

Meanwhile, a full range of sharing economy practices have indeed emerged in China, which we will systematically introduce in the following. They have given rise to a wide variety of user and creator communities that span online and off. Why do models of digital sharing economy transplanted from the West generally have mediocre success or completely fail in China? How should we make sense of the great many grassroots sharing economies that have mushroomed in recent years? Calling them precarious labor seems to have only scratched the surface. To understand it better, we propose to reconsider the perspective of informal economy (Castells & Portes, 1989) and informatization (Sassen, 1999) in the context of contemporary China, which shall shed more light on our subject matter than traditionalist or technologist explanations.

As the model of sharing economy is claimed to disrupt existing industries in post-industrial societies, represented in particular by Uber and Airbnb, the most salient concern over participants in sharing economy is their precarious or flexible status: flexible hours, lack of protection and benefits, exploitations hidden behind screens and intensified by algorithms, and flexible but also low wages (e.g. the case of wage reimbursement in California). This type of criticism of sharing economy assumes that the sharing model disrupts traditionally unionized labor, a more privileged, albeit shrinking, workforce, who still enjoy benefits and job security under post-industrial conditions. Against this backdrop, what sharing economy makes obsolete is stable paychecks, labor protections, and prospects of comfortable retirement. Scholars warn against "the end of work" or "taskification" of jobs (Grey 2016). Sharing economy, conceived this way, strengthens the ongoing trend of informaliztion initiated by globalization, enhanced by the neoliberal ideology, and carried out through austerity practices in the aftermath of the 2009 financial meltdown.

However, in contrast to the post-industrial transformation where formal and unionized employment is forced to become more informal, rare, and precarious, a great majority of the Chinese labor force was already in the informal sector (Huang 2013) when the digital sharing economy emerges in China. As Huang points out, 85% of Chinese work force was not protected by the Labor Law in 2005. In 2010, 63.2% of urban workers were employed in informal economy, and only the remaining 36.8% of urban employees qualify for the status of urban middle class who have properties, assets, and share most of the consumption habits with urbanites in other cosmopolitan areas. According to Huang, the informal sector includes urban migrant workers and rural non-agricultural workers. It also draws from laid-off workers and other groups suffering from underemployment.

In other words, informal work is the norm not the aberration in Chinese economy. Absorbing informal labor, rather than the nostalgia that the good old days of union protection and collective bargain are gone, reflects the deeper contentious force behind the full range of Chinese sharing economy. Thus, a urgent question concerning the

sharing economy in the Chinese context is the relationship between the sharing model and the vast existing informal work force, which constitute the bulk of the information have-less (Qiu 2009).

Along this line, with informal workers at the center, we will survey not only startup sharing / gig companies, but also the sharing practices popular among the have-less which spur the development of new informal businesses. Specifically, we categorize Chinese sharing economy by considering the role played by the have-less. We ask: are they the main initiators, beneficiaries, participants, or simply laborers in the particular sharing economy?

In so doing, we dismiss the conventional means of categorization by terminal parties like B2C, P2P, or C2C. Our categorization also rises above the industrial barriers, such as taxi-hailing, rental space sharing, and crowdsourced service provision. Meanwhile, our categorization attempts to reflect complexity and heterogeneity of Chinese sharing economy, even more so when it comes to its impact upon the information have-less. Based on our analysis, we propose to understand Chinese sharing economy into the four categories that are not mutually exclusive. We will elaborate on each category by drawing examples from representative companies.

1）Have-more sharing economy. Disproportionate participants in this type of sharing economy are urban workers who have spare assets or cognitive surplus to share. Their sharing act is motivated less by monetary needs than social needs. Examples include：
  - Ride-sharing (e.g. Didi, Kuaidi, Tiantian; Zhuanche)
  - Space-sharing/rentals (e.g. SoHo 3Q, Little Pig rentals)
  - One-to-one knowledge sharing and consulting (e.g. Zaihang).

2）Delivered by Have-less. This category covers most of the crowdsourced service-provision companies whose last-mile delivery person is typically a migrant worker. The way in which the have-less participate in this type of sharing economy is more often as laborer than as customer, although they can be both. Examples include:
  - the crowdsourced logistic industry, e.g. Jingdu Crowdsource and Dada delivery; Interestingly enough, China's e-commerce miracle in the past few years has caught global attentions, migrant workers who form the mainstay of the workforce that sustain the miracle stay in the informal economy as they did a decade ago in manufacturing industries.
  - Housekeeping (e.g. E-jiajie, A'yi bang, Yunjiazheng)
  - Personal care/service (e.g. Helijia, Gongfuxiong, Woyoufan, Witmart.com, etc.)
  - Grocery delivery (e.g. beequick)

3）Have-less sharing, the sharing practice and economy mainly originated from the have-less. This is the most neglected reality at the bottom of Chinese sharing economy.
  - Mobile phone sharing among Hmong children (Zhang, 2012);
  - Video-copying and sharing via smartphones from the Internet cafes and cell phone shops, because migrant workers are prudent about purchasing data plans.

4）Mass sharing. Sharing of resources and contents without distinct targeted participants. This category, in essence, is the closest to the sharing spirit promoted in the peer sharing and open source movement.
  - Resources sharing (e.g: Mingyi Zhudao, Genshuixue.com)
  - UGC-sharing (e.g. Bilibili, Bullet curtain)
  - E-book sharing (e.g. v-disk, baidu yun)

The above categorization begins to show a complex picture of the Chinese sharing economy, which cannot be exhausted by some simplistic imported models. The heterogeneity of the sharing economy in China is associated with the components and the particular organization of Chinese work force, namely, a great majority of migrant workers in informal economy. Given this context, we need put the have-less at the center and examine to what extent they would change or shape new rules for China's current economic transformation and the Internet economy.

References

Castells, M., & Portes, A. (1989). World underneath: The origins, dynamics, and effects of the informal economy. *The informal economy: Studies in advanced and less developed countries*, *12*.

Huang, Z. (2013). "Reconsidering Chinese Workers" *Open Time* 2013: Issue 5.
Grey, M. (2016). "Your job is about to get 'taskified,'" *Los Angeles Times.* January 8, 2016.

Sassen, S. (1999). *Globalization and its discontents: Essays on the new mobility of people and money* (Vol. 9). New York: New Press.

Zhang, Q (2012). *Grassroots Media: The Construction of Resistance Identities in the Process Social Transformation.* (Unpublished doctoral dissertation). Chinese Academy of Social Sciences, Beijing.

LEGIT(IMIZING) WORK: MAKING SENSE OF PRECARITY IN THE LIVES OF U.S. AND SOUTH INDIAN WOMEN LABORING IN ON-DEMAND ECONOMIES

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This paper uses Philip et al's lens of "postcolonial computing" to interrogate how women's affective relationships with contingent labor practices refract and complicate universalizing critiques of precarity. We draw on a larger, mixed-methods study of crowdsourcing or "crowdwork"—an open call for paid work distributed through an Application Programming Interface (API)—carried out in both India and the United States. We compare a sample of twelve women from the larger study, between the ages of 19-43 years of age, living in smaller towns and cities throughout South Indian states of Goa, Karnataka, Maharashtra, Tamil Nadu and Telangana with fifteen women, between the ages of 18-57 years of age, living in the United States. We focus on how crowdwork, as an expanding form of post-Fordist, digital production (Irani 2013), impacts the lives of women in India and the United States to understand how women's participation in crowdwork both conforms and challenges normative assumptions about the role of gender in the home and workplace as well as the relationship between contingent labor and precarity. The data were collected over the span of 19 months, through open-ended, semi-structured ethnographic interviews, surveys and participant observation.

Philips et al define the lens of "postcolonial computing" as "a bag of tools…for continual, careful, collective, and always partial reinscriptions of a cultural–technical situation in which we all find ourselves." (Philip et al, 2011). Specifically, they look at the cultural and spatial specificities of digital production to understand not just the centers and margins of these sociotechnical systems, but also how information and communication technologies (ICTs) are remade and transformed as they circulate and land in people's lives. We focus the postcolonial computing lens on our longitudinal, multi-modal study of crowdwork to ask: how do women, in particular, rework the value of ICTs, opening up new models for reimagining their use and possibilities?

Without question, crowdwork, the focus of our paper, maps onto earlier practices of outsourcing business processes, from customer service and coding to transcription and database clean up. Outsourcing, from the early 1970s onward, literally built the "call center" infrastructure of internet connectivity, multinational support offices, and training centers that drives paid crowdwork today, both in the United States and India, our two fieldsites.

Much of the internet's automation and upkeep, still require a great deal of human participation. Work that was once the purview of temporary agencies or outsourced to local independent contractors can now be or has been shifted to an on-demand workforce, largely invisible to the very firms that rely on their labor.

Drawing on a postcolonial computing approach, our analysis begins with the ways in which the application programming interfaces (APIs) of the most popular crowdwork platforms do two things: 1) render workers' contributions to computation invisible to the technological interface, or what Lilly Irani has called the "invisible labor" of microwork (2013) and 2) presume that the price earned per task is the most important variable in

incenting participants to contribute their labor. We argue that, by design, crowdwork APIs limit our capacity to imagine how people might derive or produce other forms of value through their crowdwork or see what sociologist Gina Neff calls the "venture labor"(2012) that individuals invest in the work that they do. With this mode of analysis in mind, we turn to the experiences of women doing crowdwork to understand how gender, social expectations, and cultural imperatives interplay to shape women's participation in crowdwork and the ways that they extract and redefine the value of crowdwork in their lives.

We argue that women use crowdwork platforms to negotiate both traditional expectations of their gender roles, such as unpaid demands for caregiving and managing the household, as well as more contemporary expectations to be a "career woman." Women in both the U.S. and India used crowdwork to deal with challenges that keep many women out of the workplace, such as time-consuming work commutes, safety at work and in commute, and limited social acceptance of women taking on careers that compete with family and social obligations. As Hochschild (1989) and, more recently Melissa Gregg (2011) have argued, achieving as a "career woman" becomes difficult when women are faced with the time constraints and expectations of a fulltime career while also carrying out the fulltime "second shift" of managing a household. While crowdwork mitigates some of the pressures of the second shift, giving women a way to work from home and work around their unpaid caregiving schedules, it also leaves them less able to draw on that work experience to build a resume or advance in formal employment.

Though they come from different religious, socio-economic backgrounds, educational levels and social roles, women doing crowdwork in the U.S. and India share similar challenges in positioning their paid work in formal economies as legitimate and, paradoxically, as valuable as their unpaid "second shift" work as caregivers in their households. U.S. and Indian women use their participation in on-demand economies to navigate traditional and modern expectations of them, from being a key member of the household to a career woman. We argue that crowdwork offers women digital literacy, a sense of identity, respect among family, financial independence, and opportunities to feel a sense of autonomy and control over their schedules. At the same time, female crowdworkers are still expected to prioritize family and social obligations over their commitments to crowdwork and may not be able to reap the benefits of a professional IT career, such as stable pay, family leave, insurance, and validation as a "career woman." We return to a postcolonial computing critique as a tactic that might better acknowledge the importance of place and social context to employment's social contract. As Philip et al argued "postcolonial computing advocates a focus not simply on the negative critique of constructions of cultural difference, but on the productive possibilities of ''difference'' itself (Philip et al: 5).

We end with a call to take a "capabilities approach" (Sen 1999; Kleine 2013) to crowdwork. Specifically, legitimizing the importance of reckoning with the gendered dynamics of crowdwork and more fully measuring the growth and development of productivity, beyond GDP, must include looking at the values that people bring to their labor and how they use that labor to expand their capacity to enjoy a choice-full life.

Literature Cited

Gregg, M. (2011). Work's intimacy. Cambridge, UK: Polity.

Hochschild, A. R., & Machung, A. (1989). The second shift: Working parents and the revolution at home. New York, N.Y: Viking.

Irani Lilly. (2013). "The cultural work of microwork." *New Media & Society* May 2015 17: 720-739, first published on November 21, 2013.

Kavita Philip, Lilly Irani, and Paul Dourish. "Postcolonial Computing: A Tactical Survey" *Science, Technology & Human Values* January 2012 37: 3-29, first published on November 21, 2010.

Kleine, D. (2013). Technologies of choice?: ICTs, development, and the capabilities approach. Cambridge, Mass: MIT Press.

Neff, G. (2012). Venture labor: Work and the burden of risk in innovative industries. Cambridge, Mass: MIT Press.

Sen, A. (1999). Development as freedom. New York: Knopf.

SHARING THE WORK? AIRTASKER AND THE QUANTIFIED SELF

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This paper considers the implications of the quantified self at work in what has become recognised as the sharing economy. We draw upon the case of Airtasker, which was launched in Australia in February 2012. Airtasker (2015) describes itself as "a trusted community marketplace for people and businesses to outsource tasks, find local services or hire flexible staff in minutes - online or via mobile." Paid tasks include generating Likes on Facebook, household cleaning, assembling furniture, software development and dog walking. Task Runners and Job Posters (potentially one and the same) use the site to advertise and negotiate the terms of work on a task-by-task basis.

Airtasker provides the digital infrastructure for this negotiation work and charges a fee to Runners – 15% of their earnings. Airtasker is rooted in ideas of collaborative consumption, contemporary notions of the sharing economy and enrols quantified self elements.

Since the 1990s, changes in employment have included the growth of flexible work arrangements, homeworking and the capacity of the internet and mobile technologies to facilitate these practices (McDonald and Thompson 2015) albeit on terms dictated by the employer (Light 2014). A strand of changing work practices is connected with idea of collaborative consumption, and in recent years, sharing economies. Collaborative consumption involves systems of organized sharing, bartering, lending, trading, renting, gifting, and swapping that are said to afford the benefits of ownership but with reduced personal burden (Botsman and Rogers 2010). Sharing economies enrol digital networks, which facilitate collaborative consumption by providing platforms for consumers rather than delivering services directly (Sundararajan 2013). However, it has also been argued that the sharing economy is actually an access economy (Sundararajan 2013): rather than sharing, consumers are paying to access someone else's goods or services for a period of time, leading to a desire for utilitarian rather than social value.

Within this context, we find the work of Callon et al. (2002) helpful with respect to an economy of qualities and calculating consumers. They suggest that a good (or service) is defined by the qualities attributed to it during qualification trials. This process of qualification involves singularisation, attachment and detachment. Singularisation involves the alignment of consumer expectations with what is on offer, in terms of how differences affecting choice are both articulated and understood. Attachment and detachment involve the capturing of consumers (attaching them) through detaching them from rivals by engaging them in processes of requalification.

Our focus in this paper is how the digital attempts to mediate calculating consumers' attempts at qualification and how providers of services are configured to perceive and provide this data of the self. This involves elements of the qualified self (Humphreys Forthcoming) where, as we create media traces of ourselves, we create representations of ourselves to be consumed. Shifting from qualitative traces to numerical data, the datafication of the self has accrued importance via the rise of the quantified self - a set of practices and technologies that facilitate self-tracking (Nafus and Sherman 2014). The vision of the quantified self is one of systemic monitoring where an individual's personal information provides real-time performance optimisation suggestions and where the individual (body) becomes a more calculable and administrable object (Swan 2013). In a work context, the rise of the quantified self has been linked with an increase the precariat who experience unstable working conditions characteristic of contemporary capitalism (Standing 2011). Self-quantification has also been argued to intensify workloads, rationalize staff, and displace managerial accountability (Moore and Robinson 2015).

We use a walkthrough method (Burgess et. al. 2015) to identify a set of associations relating to Airtasker, the quantified self and the sharing economy. This method offers a way of generating data about and analysing the expected and unexpected appropriation

of apps. We searched for details about Airtasker on the web, including news articles and the site's pages to develop a narrative of how the service presents to the public. We were interested in Airtasker's imagined users and expectations of use. We then registered via a desktop browser and documented the process with attention to points of mediation constituting qualification and quantification of users. We explored the site as both a Runner and Poster, attending to points of mediation that shape these roles.

We demonstrate how narratives regarding the quantified self are presented by actors in the sharing economy of Airtasker. We note how Airtasker is engaged as an actor that prepares the workforce for this set of arrangements before people join and as they use the service. Elements of the quantified self at work are present before a user signs up – as they search for the site and especially on the welcome page. Quantification defines the role of imagined users as ideal workers, who are depicted in Airtasker's materials. Quantified self at work elements further appear during the registration process and are in full momentum as Runners and Posters negotiate tasks.

We shed light on the quantified self in the contradictory sociotechnical conditions of Airtasker. The platform is at once a gateway to the neoliberal capitalist ideal of the free market, individual meritocracy, and the positive positioning of precarious work lives as allowing for freedom, flexibility and greater quality of life. At the same time, it mediates self-regulation through quantification of the self in a way comparable to constraints placed upon workers contracted to an organisation. The site is structured to operate in favour of Posters although they may be one and the same with Runners. Sharing in this economy is one sided in that the effects of quantified self arrangements reflect more heavily on Runners: the sharing economy is also a reputation economy for precarious workers whose quantification supposedly proves their value. The ultimate beneficiary within these arrangements is Airtasker. The quantification of the self at work is alive in the sharing economy and the role of the digital must be taken seriously as an actor across a range of occupations we might not have considered in the past.

References

Airtasker. (2015). Company Information. Retrieved 31 August 2015, from http://press.airtasker.com/company.

Botsman, R. and Rogers, R. (2010) What's Mine Is Yours: The Rise of Collaborative Consumption. New York: HarperBusiness.

Callon, M., Méadel, C. and Rabeharisoa, V. (2002). The Economy of Qualities. Economy and Society 31(2): 194-217.

Burgess, J., Light, B., and Duguay, S. (2015). Studying HookUp Apps: A Comparative Platform Analysis of Tinder, Mixxxer, Squirt and Dattch. ICA 65th Annual Conference, San Juan, Puerto Rico.

Humphreys, L. (Forthcoming). The Qualified Self: Social Media and the Accounting of Everyday life, Cambridge, MIT Press.

Light, B. (2014). Disconnecting with Social Networking Sites. Basingstoke, Palgrave Macmillan.

McDonald, P. and Thompson, P. (2015). Social Media(tion) and the Reshaping of Public/Private Boundaries in Employment Relations. International Journal of Management Reviews (Online First - Accessed 15 September 2015).

Moore, P. and Robinson, A. (2015) The Quantified Self: What Counts in the Neoliberal Workplace. New Media and Society (Online First - Accessed 15 September 2015).

Nafus, D. and Sherman, J. (2014) Big Data, Big Questions - This One Does Not Go Up To 11: The Quantified Self Movement as an Alternative Big Data Practice. International Journal of Communication, 8, 1784-1794.

Sundararajan, A. (2013). From Zipcar to the Sharing Economy. Harvard Business Review. HBR Blog Network. https://hbr.org/2013/01/from-zipcar-to-the-sharing-eco/ Date accessed: 28 October 2015.

Ride-sharing and the struggle for legitimacy in digital media

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Background

The rapid growth of the peer economy is creating significant challenges for governments around the world. The entrance of new and powerful industry players like Uber and AirBnB into heavily regulated markets has literally disrupted the regulatory status quo, provoking both concerns about societal risk and enthusiasm about market innovation. For policy, the resulting uncertainty is complex: it entails balancing questions of efficiency with questions about levels of service, controls over pricing, and assurances of safety, fair labour relations, and social equality (Witt, Suzor, & Wikström, 2015).

In this paper, we take the entrance of Uber in Australia as a case study of this contestation. Uber and the taxi industry incumbents are locked in a battle for *legitimacy*:

both sides involve private companies that regulate networks of passenger vehicles, drivers, and customers, and each group is competing for social acceptance of their right to govern. Legitimacy, here, means social credibility and acceptability – "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574). The achievement of legitimacy, seen in this way, is a communicative act. Different actors provide or withhold legitimacy to regulators for different reasons, on contested and sometimes conflicting criteria. We seek to understand the contest for legitimacy not only in the public sphere debates over policy, but as socially constructed through the everyday participation and ordinary experiences of individuals.

Methods

Our research examines how the competition for legitimacy between Uber and the Australian taxi industry is playing out in social media. We conducted a preliminary thematic analysis of a sample of 400 mainstream news articles covering the period between October 2012 (Uber's Australian launch) to July 2015. This background analysis enabled us to identify the key frames used to report on the struggle between Uber and the taxi industry incumbents. In terms of the substantive policy arguments that were present in the mainstream media, we identified a series of tensions over fairness (to drivers and customers); illegality and tax avoidance; safety; service quality and customer experiences; and social, economic, or industrial benefits of innovation. Overall, we noted that mainstream media outlets tended to focus on the compelling narrative of the controversy itself, as the conflict between the taxi industry and Uber over Uber's legality developed across Australian States and Territories.

The second phase applies social media-based issue mapping methods (see Burgess & Matamoros Fernandez, 2016; Marres & Moats, 2015) informed by controversy analysis (Callon, Lascoumes, & Barthe, 2001). The dataset for this study comprises 219,040 tweets from user accounts identified as Australian containing the keyword 'uber' (which includes but is not limited to the #uber hashtag) posted between November 2011 and November 2015.

Uber's legitimacy on Twitter

Our findings suggest that Uber has been more successful in its publicity campaigns than the Australian taxi industry, at least on Twitter. Stunts like #ubericeream (launched every July since 2013 – during Australia's winter) and #uberkittens marked substantial peaks in activity in our dataset. The taxi industry's campaigns, on the other hand, were typically engaged with and retweeted by a smaller audience, and external links to taxi industry official websites did not have a strong presence in our data.

Discussions of the political conflict between Uber and the taxi industry were certainly present in our dataset, and are particularly visible around a set of political hashtags. The hashtag used for Australian politics, #auspol, is the most tweeted hashtag after #uber

and #taxi in all our data set. The first apparent 'ad hoc' hashtag (Bruns & Burgess, 2015) that surfaced from the data is #sydneysiege, reflecting a controversy over Uber's surge pricing in December 2014 during the terrorist attack in Sydney. The regulatory debate was reflected in other thematic uses of hashtags, particularly including increasingly visible discussions over innovation and taxation, but the debate over Uber's safety was surprisingly relatively less prevalent than it was in our mainstream media analysis. Tweets expressly engaging with regulatory issues peaked primarily in the context of regional debates over the legalisation of Uber in particular Australian cities.

Material participation in the struggle for legitimacy

Legitimacy is not only constructed from the competing normative assessments visible in the political debates reflected in mainstream media; legitimacy is also derived from the ordinary values, pragmatic interests, and cognitive frames of individual members of the public (Black, 2008). Alongside explicitly evaluative statements, our dataset contains a significant number of tweets by ordinary users that make visible their quite mundane material engagements with Uber rides, drivers and cars. For example, in August 2014 a user posted: "We were hungry so we're catching an @Uber to McDonald's @[redacted] #artRAVE #rkobh" - embedding a selfie of two young people in the back of the car. Another example which implicitly references the battle for legitimacy but reads it through mundane experience, is the tweet, "my taxi driver farted an uber driver would never do that". These tropes of everyday experience also feature heavily among teen celebrity Uber users, whose tweets are heavily retweeted by Australian accounts—and these celebrities were not identified in our mainstream media analysis as being part of the debates (or PR machinery) around Uber. The media practices of these teen celebrities articulate another—and, whether authentic or not, highly sociable and humanistic—mode of legitimisation. For instance, on 24 August 2014, the South African-born Australian singer and YouTuber Troye Sivan tweeted a Vine video of his Uber driver relating his own story.

The controversies and policy debates that dominate mainstream media coverage of Uber—while sometimes present in social media activity especially in the form of news media links and so on—play only a relatively small part in these everyday expressions, representations and interactions. Particularly significant is that links to Instagram were remarkably prevalent in our dataset, which suggests that a great deal of the work of legitimising (or contesting) Uber may be occurring in the context of the personal experiences of ordinary users. We argue that studying the traces of these ordinary experiences opens up powerful opportunities to empirically explore the 'material participation' (Marres, 2012) of users, consumers and workers in the 'peer economy'. This form of analysis provides a key opportunity to reveal a rich set of experiences of ordinary individuals that likely play a large role in the legitimisation of Uber but are not visible in public debates.

Acknowledgements

References

Black, J. (2008). Constructing and contesting legitimacy and accountability in polycentric regulatory regimes. *Regulation & Governance*, 2(2), 137–164.

Bruns, A., & Burgess, J. (2015). Twitter hashtags from ad hoc to calculated publics. In N. Rambukkana (Ed.), *Hashtag Publics: The Power and Politics of Discursive Networks*. New York: Peter Lang.

Burgess, J., and Matamoros Fernandez, A. (2016) Mapping sociocultural controversies across digital media platforms: One week of #gamergate on Twitter, YouTube and Tumblr. *Communication, Research & Practice* [forthcoming]

Callon, M., Lascoumes, P., & Barth, Y. (2001). *Acting in an Uncertain World: An Essay on Technical Democracy.* Cambridge, MA.: MIT Press.

Marres, N. (2012) *Material Participation: Technology, the Environment and Everyday Publics*. London: Palgrave Macmillan.

Marres, N. & Moats, D. (2015). Mapping controversies with social media: The case for symmetry. *Social Media + Society* 1(2): 2056305115604176

Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *The Academy of Management Review*, 20(3), 571–610. http://doi.org/10.2307/258788

Witt, A., Suzor, N., & Wikström, P. (2015). Regulating ride-sharing in the peer economy. *Communication Research and Practice,* 1(2), 174-190.