Reconfiguring Audience Measurement in Platform Ecologies of Video Streaming: iQiyi's Pivot Toward Data-Driven Fandom and Algorithmic Metrics

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This article examines shifting approaches to audience measurement in the context of platformization of cultural production and the turn to data-driven fandom in the evolving screen ecology in China. Focusing on the video streaming service iQiyi, the article considers its pivot away from view counts to an algorithmic measurement regime. It critiques the platform's legitimacy-building strategy, in which the problematization of data manipulation is not only *flawed*, but also *evasive* and *hypocritical*. It reveals how the shift in audience measurement is closely connected to iQiyi's approach to platformization. Specifically, the article delineates how *operationalization* with data through a satellite platform serves the new regime by mobilizing and commodifying data-driven fandom, thereby consolidating platform power in the broader screen ecology. It analyzes how the economic and cultural logic of the approach is underpinned by (1) the metric of celebrity impact; (2) the metric of fan value; (3) perishable data and accelerated temporality by design; and (4) metrics-informed decision-making. The article concludes by outlining the implications for research on the co-evolution of audience measurement and platformization.

Keywords: video streaming, audience measurement, metrics, platforms, iQiyi, fandom, idol production, platform ecology, algorithm, China

Metrics have long assumed a crucial role in constructing the audience in the media economy (Ang, 1991; Bolin, 2011; Napoli, 2010). The rapid rise of video streaming services in the entertainment industry has irrevocably reshaped content consumption, leading to a reconfiguration of approaches to audience measurement. Media markets are witnessing simultaneous circulation of "a basket of currencies" (Napoli, 2012, p. 92). Various metrics have entered the lexicon of the streaming industry, ranging from view counts and daily or monthly active users, to viewing duration and skip rates. In addition to extending the established logic of measuring audience exposure, the drive to harness social media data has seen the use of various audience engagement metrics (Kosterich, 2016; Kosterich & Napoli, 2016).

The evolving approaches to audience measurement in digital media industries are intimately connected to the shifting conceptualization of audience. Audiences are becoming "users," who are not only

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content consumers, but also content producers and data generators (Andrejevic, 2002; van Dijck, 2009). The notion of datafied audience is evident in the logic of quantification of audience exposure, engagement, and, increasingly, attitude and affect (Kosterich, 2016; van Dijck, 2014). The collapsing boundaries between audiences and fans (Gray, Sandvoss, & Harrington, 2007) is accelerating this development. As these data are captured, aggregated, and computed, they feed into the measurement system, which in turn shapes audience behavior. The process of metrification is, however, complicated and far from settled.

As video streaming service providers continually evolve, they have attracted growing scholarly interest from television studies, media industry studies, and, increasingly, platform studies. Researchers focusing on television's digital transformations have advanced our understanding of television in the context of digital distribution via various technologies, and the changes and continuities in industry practices and viewing cultures (Christian, 2018; Holt & Sanson, 2013; Jenner, 2018; Lotz, 2017, 2018). The growing body of literature in new media studies and platform studies has provided valuable insights into creative communities and cultures (Burgess & Green, 2018; Cunningham & Craig, 2019), the impacts of multiterritorial streaming services on national markets (Lobato, 2019), platform governance (Gillespie, 2017), and algorithmic culture (Hallinan & Striphas, 2016). Yet, the ongoing evolution in audience measurement culture remains understudied. As David Hesmondhalgh and Amanda Lotz (2020) emphasize, metrics on video screen interfaces are a locus of media circulation power, which warrants further research.

Connecting audience measurement research with platform studies provides excellent opportunities to advance this line of inquiry in terms of how audience measurement regimes coevolve with approaches to platformization in various contexts. China, a market of considerable audience size and with rapid growth of video streaming services, is a significant site for research. According to the China Internet Network Information Center (2020), around 94% of the 904 million online population are online video users as of March 2020. More importantly, video streaming service providers are key players in shaping new approaches to audience measurement in the context of platformization. This provides opportunities to examine the evolving measurement regimes and their operational logic, the politics in negotiating the value and meanings of various metrics, as well as their cultural consequences, which have yet to be fully understood. Further, situating the analysis of audience measurement in the context of platformization allows for unpacking locally specific characteristics of platformization and how they coevolve with audience measurement approaches. Indeed, platformization is not a uniform process and demands sensitivity to particular cultural practices and local contexts (de Kloet, Poell, Zeng, & Chow, 2019). This will complicate the current understanding of digital platforms, which predominantly centers on U.S.-based examples, and contribute to the project of de-Westernizing platform studies (Davis & Xiao, 2020; Steinberg & Li, 2017).

As video streaming services in China navigate evolving audience tastes, technological innovation, market complexities, and regulatory challenges, they are carving out their own growth trajectories, at times sharing similarities with their Western counterparts. Following the dawning years, when the market was characterized by pervasive piracy, the industry has gradually formalized (Gu, 2018; Li, 2019; Zhao, 2019; Zhao & Keane, 2013). Leading streaming services have not only established dominance in content distribution, but also demonstrated the capacity for original content production and talent nurturing. More recently, market leaders have penetrated the idol industry. Once largely dominated by super idols from Hong Kong, Taiwan, and, later, Japan and Korea, often with pan-Asian appeal, the entertainment market in

China has nurtured new generations of pop idols since the mid-2000s. The value of the idol industry in China has grown significantly, reportedly exceeding RMB 130 billion in 2020 (Sina, 2021). Many have gained fame and embarked on the professional path through reality TV such as talent competition shows. In recent years, digital platforms have become a prominent launching pad for idol aspirants. The increasing level of vertical integration and interindustry dynamics raise questions regarding how platform approaches to audience measurement have evolved, and what the logics and cultural implications are.

With reference to China's leading video streaming service provider, iQiyi, this article seeks to situate the analysis of its shifting approach to audience measurement within the context of its ongoing platformization and its growing role in the idol industry. The rest of the article begins with a brief overview of the rise of video streaming service providers, their turn to data-driven fandom, and their growing role in idol production in China. This is followed by an introduction of iQiyi and its evolving platform ecology in China's entertainment industry. The article then turns to iQiyi's decision to pivot away from the metric of view counts to a multimetric and algorithmic audience measurement regime. I critique the promotional discourse of the shift, which rests on the fallacies in the problematization of data manipulation, the purported objectivity of the new approach, and the imperative for regulatory compliance. I explain how the platform attempts to build an image of being a problem solver, yet the problematization of data manipulation is in itself not only *flawed*, but also *evasive* and *hypocritical*. I then unpack the operational logic of the new measurement system, which mobilizes and commodifies affective labor among fans on iQiyi's satellite platform, Paopao. The analysis shows how data become both gift and commodity, with not only symbolic appeal, but also, more important, *operational* power, which is underpinned by (1) the metric of celebrity impact; (2) the metric of fan value; (3) perishable data and accelerated temporality by design; and (4) metrics-informed decision-making. In doing so, this article reveals that the *satellite-platform-as-a-social-engine approach* essentially serves to mobilize affective labor among fan audiences to consolidate platform power in the expanding ecology.

Video Streaming Services, Data-Driven Fandom, and the Idol Industry in China

Over the last two decades, video streaming service providers in China have engaged in continual experimentation in business models and growth strategies (e.g., Fung, 2019; Keane, 2016; Voci, 2010; Zhao, 2014, 2016, 2019). Many have chosen to deploy both professionally produced content and user-generated content, at times with strategic shifts in focus amid market competition and regulatory pressure (Zhao, 2019). Advertising, sublicensing, and, increasingly, user subscriptions constitute major revenue sources. In addition to licensing content and nurturing creator communities, original productions have attracted growing investment. As streaming service providers become a prominent part of the new screen ecology, their impacts are increasingly felt across multiple industries.

Noticeably, streaming platforms have become a driving force of the idol industry in China, where content production and distribution are intertwined with idol production. Although idol production is not new in China, the production mechanism has evolved to take on new characteristics. As Jeffreys (2012) observes, the production of celebrities and idols in China has seen the growing role of media in manufacturing celebrities as idols of capitalist consumption. More recently, leading video streaming platforms have played a notable role in talent scouting, cultivation, and promotion. As streaming service

providers increasingly invest in original programming to enrich content libraries, variety shows, particularly the salient subgenre of idol survival shows, become a site where a new generation of idols rises to fame. Original programming, including variety shows and Internet dramas, further provides opportunities to raise visibility of emerging idols. The investment in talent agencies further demonstrates streaming platforms' commitment to strengthening their positions in the idol industry. iQiyi, for example, launched flagship titles including *Idol Producer* (*ouxiang lianxisheng 偶像练习生*; X. Wang, Jiang, & Lei, 2018) and *Youth With You* (*qingchun youni 青春有你*; X. Wang, Jiang, Lei, & Wang, 2019–2021). Survivors of these shows have formed idol groups, including Nine Percent, UNINE, and THE9. Likewise, Tencent Video launched *Produce 101* (*chuangzao 101 创造101*; Ma, Luo, & Li, 2018), whose survivors have debuted as the idol group Rocket Girls 101. Further, iQiyi's establishment of Gramarie Entertainment as a subsidiary in 2015, Tencent's investment in Wajijiwa Entertainment in 2018, and Youku's establishment of Cool Young Entertainment in 2017, together with Alibaba Pictures, further demonstrate the streaming platforms' growing presence in and ambitions for idol production.

Meanwhile, video streaming service providers have become a crucial site of metrics production, where data-driven fandom practices contribute to idol production. Digitally mediated fandom practices in boosting popularity metrics come in various forms. This can be traced back to fans embracing SMS voting to support their favorite contestants on the reality show *Super Girl* (*chaoji nvsheng 超级女声*; Liao, 2004–2006), which led to its phenomenal success for Hunan satellite TV (Meng, 2009). The opportunities to influence idols' popularity metrics allow fans to obtain a sense of achievement and agency (Fung, 2009; Yang, 2009). Fast-forward to the age of social media: Digital platforms have become a crucial site of metricization, where different forms of metrics are designed to drive fan engagement. Fans play a crucial role in idol production by picking their idols and supporting them in various ways, including generating creative content and engaging in datafied labor. Notably, they draw on their knowledge about metrics and actively produce data on digital platforms to raise idols' visibility and popularity (Zhang & Negus, 2020). This has given rise to a new generation of idols, including, most notably, Cai Xukun. Datafication of fandom has played such a crucial role in their ascendance that it has resulted in these idols being referred to as *data-dependent celebrities* (*liuliang mingxing 流量明星*).

Locating iQiyi and Its Evolving Platform Ecology in China's Entertainment Industries

Now a leading online entertainment service brand in China, iQiyi needs to be understood with a historical and dynamic perspective in the specific cultural, industrial, and regulatory context. Established by China's Internet giant Baidu in 2010, iQiyi entered the market after a major industry shakeup following licensing regulation and copyright enforcement. In its attempt to address unmet demand for cultural consumption, iQiyi has earned a reputation for licensed content and increasingly original productions, including variety shows and Web series. For this reason, iQiyi is often referred to as China's Netflix. Equating the two, however, can be misleading.

First, unlike Netflix, which remains advertising-free, iQiyi started as an advertising-supported service with some experiments in on-demand transactions before introducing the subscription model in 2015. Despite the growth of user subscription revenue in recent years, advertising remains an important revenue source. Moreover, although Netflix is conceptualized as a portal (Lotz, 2017) for its professionally

produced content, iQiyi shares some characteristics with both portals and platforms. It offers TV-like experience with professional content and provides user-generated content as well as interactive functions (W. Y. Wang & Lobato, 2019). In fact, the platform ecology keeps evolving.

The ascendance of iQiyi in China's idol industry attests to its continual expansion via vertical integration. As mentioned earlier, the platform has demonstrated its ambition for idol production across talent scouting, cultivation, and promotion by leveraging its leading position in original programming and content distribution. iQiyi's role in idol production is bound up with its attempt to tap into fan communities. Whereas Netflix moved into the streaming market with a huge membership database derived from its DVD rental lease service and approached its audiences as taste communities, iQiyi's approach to cultivating fan communities is a more recent attempt to build on continuing platformization closely connected to idol production in China. The establishment of the satellite platform Paopao plays a crucial role here.

Launched by iQiyi on its Web interface in 2015, Paopao evolved into a mobile application in 2018 through which users can follow and interact with their idols and other fans. The participatory mechanism on Paopao taps into digital fandom practices that have increasingly revolved around datafied affect and labor. This indicates the platform's intention to attract the youth demographic, particularly fans, as paying subscribers and affinity audiences for targeted advertising. It works in connection with iQiyi's content strategy, in which youth-friendly genres, such as youth idol drama and variety shows, account for an important part of the programming mix to attract these users. In other words, the platform attempts to construct fan communities into "institutionally effective audiences" (Ettema & Whitney, 1994, p. 5), a notion embedded in highly sought-after objectives for media organizations (Ang, 1991; Kosterich & Napoli, 2016).

Further, iQiyi is situated in a regulatory environment in which the state shows a strong will to develop the Internet industry while at the same time maintaining a tight grip on it. The Internet industry is undeniably a part of the state project of invigorating economic growth (Hong, 2017). More recently, homegrown digital platforms nurtured in China have increasingly expanded overseas, disseminating Chinese culture more effectively than official media and aiding the mission of increasing cultural power (Keane, Yu, Zhao, & Leong, 2020). The state support, however, does not override the fact that market players are subject to stringent regulatory oversight. As Curtin and Li (2018) note, iQiyi's success is "based not only on technological innovation but also on its ability to mediate among audience aspirations, commercial imperatives, and the enduring power of the Communist state" (p. 344). The capacity to navigate the regulatory terrain while enhancing market competitiveness remains a constant challenge.

iQiyi's leading position, its evolving platform ecology, and its ongoing construction of institutionally effective audiences in China's entertainment industries make it an intriguing site for examining the production of metric culture. How does iQiyi decide what to count and how to present data on platform interfaces? How has its approach to audience measurement evolved, and how has iQiyi justified the changes? In what ways is the approach to audience measurement connected to its approach to platformization? The rest of the article considers these questions by analyzing iQiyi's pivot away from view counts to an algorithmic measurement system.

The Pivot From View Counts to Algorithmic Metrics

View counts have long been a dominant popularity metric, highly visible on user interfaces of many video streaming service providers in China. In September 2018, however, iQiyi departed from the industry norm by announcing its decision to turn off view counts on its interface. Meanwhile, iQiyi launched the Content Popularity Index (hereafter, the Index), which calculates the "heat value" of videos based on algorithms informed by multiple metrics, including total time spent, complete views, and the number of comments, likes, shares, and fast-forwards. Data on iQiyi, as well as search results on Baidu and various engagement data from Paopao, feed the measurement process. According to iQiyi (2018b), the Index "allows the company to objectively assess the popularity of its video content, utilizing the company's technological advantages in areas such as AI and Big Data" (para. 2).

To build legitimacy for the shift, iQiyi spotlights the problem of data manipulation and the need to overhaul the measurement approach. As iQiyi's (2018a) corporate manifesto goes, the desire to boost the perceived content popularity has resulted in artificial inflation of data—most notably, click farming, which endangers data veracity and impacts multiple users of the platform. Not only is the utility of the metric in guiding content production weakened, but its effectiveness for advertisers in impact assessment becomes questionable. Moreover, iQiyi highlights the problem of clickbait content as a consequence of overreliance on view counts in audience measurement. Indeed, metrics play an important role in content curation. Nurturing quality content is crucial to the platform's material interest in appealing to viewers, content producers, and advertisers. As iQiyi's Chief Content Officer Wang Xiaohui explains,

> The move symbolizes iQiyi's commitment to the creation and promotion of truly original content which is only of the highest quality. Our position as China's leading online entertainment platform depends on our commitment to improving user experience, which is achieved by finding even greater amount of top quality content. (as cited in iQiyi, 2018b, para. 4)

While iQiyi hopes to position itself as a problem solver, the problematization around data manipulation is not only *flawed*, but also *evasive* and *hypocritical*. First, data manipulation is a nebulous concept. Various enterprising intermediaries operate in the data market, ranging from legitimate optimization service providers to ethically dubious click farms. The line can be blurry and shifting. In fact, contestation over legitimacy in digital economy is hardly a new phenomenon. Search engine optimization, for example, is a vibrant industry in which "white hat" and "black hat" sectors coexist, yet the boundaries often blur. The guidelines on what constitutes legitimacy, as designed by Google, serve the purpose of protecting and sustaining the search engine and its metrics (Lobato & Thomas, 2015). In China, the process of platformization is at the same time a process of negotiating legitimacy, often in the context of contested boundaries between the formal and informal economies (Zhao, 2019). Second, whereas some data practices certainly call for platform governance, the blame game evades the key question of how content visibility and, by extension, popularity is configured by the platform in the first place, which in turn impacts view counts. Third, given iQiyi's investment in original production and commissioned content, lack of transparency in the algorithmic measurement system raises questions over purported objectivity. Moreover, the new

system further casts the platform in a hypocritical light, given its attempt to mobilize data-driven fandom in its own interest, which will be discussed later.

The regulatory environment further complicates the scenario. Apart from the commercial imperative behind the move, iQiyi's condemnation of data manipulation can be seen as its attempt to align with the regulatory will of the state. In iQiyi's announcement, it explicitly quoted a notice published in June 2018 by the Publicity Department of the CPC Central Committee, together with the State Administration of Radio and Television, and the State Film Administration (Xinhua, 2018). The authorities called for a firm opposition to overreliance on metrics such as ratings and clicks, and urged all industry participants to put "social benefits" as the foremost priority (Xinhua, 2018).

While iQiyi claims that the new measurement approach based on the use of big data and algorithms is objective, such association is tenuous. Given that the data are mainly sourced from iQiyi and its platform ecology, such as search results on Baidu and engagement data on Paopao, this self-aggrandizing statement in fact betrays the platform's enamorment with the notion of big data and, more importantly, its aspiration to enhance its power in audience measurement. As boyd and Crawford (2012) poignantly argue, *big data* in many ways is a bad term, and claims of objectivity and accuracy are misleading. Moreover, the opacity of algorithms lends little weight to the claim of objectivity. With the inner workings of algorithms under proprietary control, the platform gains more power over how data are collected, sorted, aggregated, calculated, and interpreted. Indeed, data are always situated. It is crucial to understand the embedded assumptions, values, and motivations (Baym, 2013; Napoli, 2010; Rettberg, 2020). The next section will turn to how Paopao as a satellite platform operates in connection with, and in service of, iQiyi's new audience measurement system.

Satellite Platform and the Logic of Operationalization With Data

As iQiyi's social entertainment engine, Paopao can be understood as its satellite platform, signaling one step further in iQiyi's platformization. Essentially, Paopao is structured around various communities (*quanzi 圈子*) where fan members share mutual enthusiasm toward chosen idols or content titles. Fan users can simply click the "join" button on community pages to keep up to date with content feeds, express their support for their idols with posts, comments, likes, and shares, and interact with their idols and other fans in the same communities. Because quantification of connections and interactions is highly visible, they hold strong symbolic appeal for users. As iQiyi's satellite platform, Paopao serves as a space of cultural identification for fans and a site for publicity and fan engagement for their idols and content producers.

In addition to the symbolic appeal of data, their operational logic is equally and perhaps more important. As Andrejevic (2019) insightfully points out, data become operational when intervention is prioritized over the symbolic power. In their analysis of the meaning of metrics in digital media through an experiment using the Facebook interface, Bolin and Velkova (2020) build on the notion of operationalism and point out that some representational metrics can have an operational meaning, particularly those related to prompting reactivity. On Paopao, *operationalization* with data builds on strategic design of *metrics* and *interfaces*, serving the purpose of mobilizing and commodifying fan labor. In so doing, it propels the multimetric, algorithms-informed measurement system. In the following sections, I discuss how this process

is underpinned by (1) the metric of celebrity impact; (2) the metric of fan value; (3) perishable data and accelerated temporality by design; and (4) metrics-informed decision making.

The Metric of Celebrity Impact

All celebrities around whom fan communities are structured on Paopao are ranked by the metric of celebrity impact (see Figure 1). The platform explicitly states that the celebrity impact metric is informed by the level of fan engagement and fans' contribution to the impact chart race. In other words, there is a direct correlation between datafied fan labor and celebrity impact, as defined by the platform. The metric performance further influences the commercial prospects of the idols. In its user guidelines published online, the platform elaborates with details on the benefits of achieving high rankings for idols. For example, top-ranking celebrities in the impact chart can feature in a coveted photo carousel on Paopao, which reportedly attracts tens of millions of views. Such exposure not only serves as a visible demonstration of the celebrity impact among fans, but also enhances celebrities' commercial prospects—for example, in attracting lucrative endorsement or sponsorship deals with advertisers.
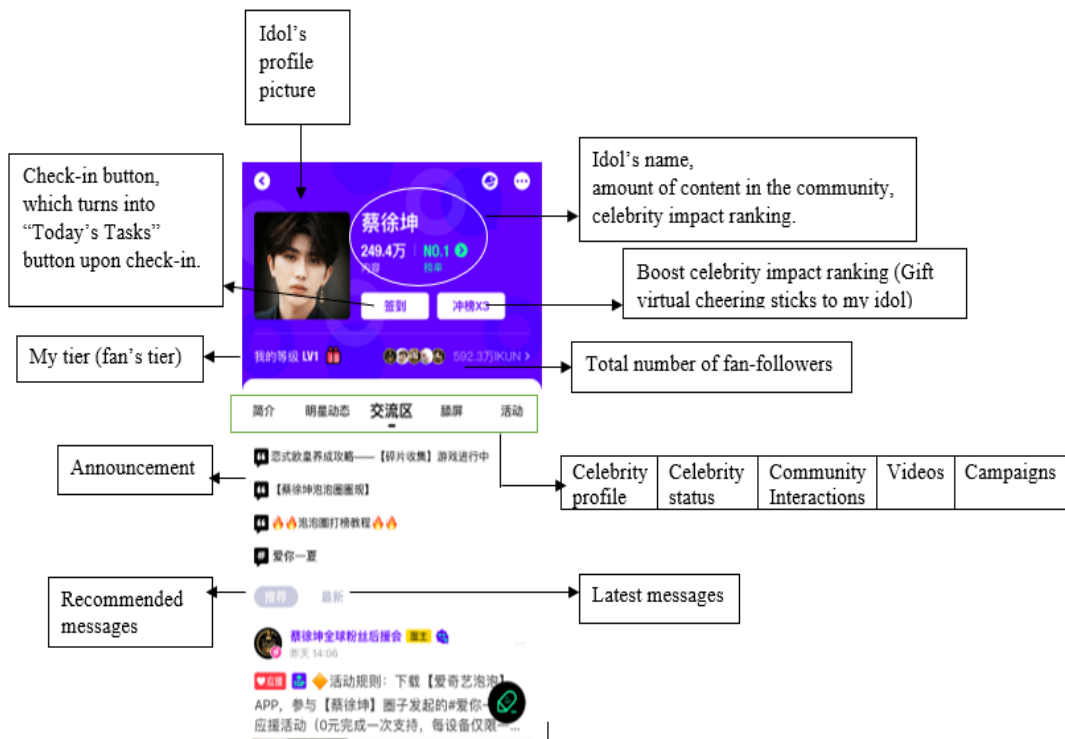

Figure 1. Landing page of an idol's community.

Specifically, celebrity impact is calculated based on the number of virtual cheering sticks gifted by fans to their idols and the weight assigned to those virtual items. To obtain virtual cheering sticks and

increase their weight, fans have to complete various tasks. They can find "Today's Tasks" button on the landing page of an idol's community on check-in (see Figure 1). Clicking the button leads fans to a page dedicated to "Today's Tasks," outlining various assignments designed to mobilize and coordinate fan labor, such as checking in to stay for at least 10 minutes, liking or commenting on posts, and sharing original content (see Figure 2). On completion of a task, users earn virtual cheering sticks, which can then be gifted to their idols to elevate their impact metric performance. Given the logic of conversion between fan engagement and celebrity impact, the metric mobilizes fans to do their part for the idols. This extends the logic of digital media industries, in which fans' free labor serves to propel entrepreneurial growth (Terranova, 2000).

Figure 2. "Today's Tasks" page.

The prominent visibility of metric performance on the platform interface further nudges fans to engage in data practices for their idols. Users constantly encounter quantified representation of their idols'

capacity to attract fan engagement. For example, on checking in to an idol's community page, fans see their idols' total number of followers, the amount of content generated by fans, and the idol's rank in the celebrity impact chart right at the top of the page (see Figure 1). Moreover, the impact chart is embedded in content communities. For users following content titles, a dedicated link to the celebrity impact chart appears at the top of the section on featured celebrities. The symbolic power of such data becomes operational as they prompt reactivity from fans (Bolin & Velkova, 2020).

Essentially, the celebrity impact metric, *the logic of conversion*, and *metric visibility and embeddedness* mobilize fans to engage in datafied labor. As fans translate affect into various forms of engagement on the platform, data are collected, quantified, aggregated, and calculated to elevate their idols' impact metric performance. This demonstrates that the power of metrics often lies not directly in what they track, but rather in how the possible outcomes of being measured make people feel, which influences people's behavior (Beer, 2016). In the context in which data have become primary transitional objects with affective meaning and power for fans in China (Yin, 2020), data production and gifting practices manifest fans' affection toward idols, their anxiety about idols' performance in the chart race, and their hope to contribute to the idols' competitiveness in the metric culture.

The Metric of Fan Value

In addition to highlighting the impact of aggregated data, rewarding each individual fan is equally important in the incentive structure for mobilizing fan labor. Underpinning the incentive mechanism is a *tiered* system of fans based on the metric of fan value, which assesses their contribution to the idols' impact metric performance. Through this common metric, fans are rendered as calculable entities on hierarchies. On checking in to an idol's community page, fans can see their positions in the tiers placed next to the idol's metrics (see Figure 1). This *proximity* between celebrity metrics and the fan metric are strategically designed to not only enhance the perceived emotional connectedness and actual correlation, but also cultivate a sense of responsibility among fans to contribute to elevating their idols' status.

Highly engaged fans are rewarded with elevated visibility and recognition among fan communities. This includes special mentions in the fan magazine *Paopao Monthly* or the opportunity for offline meetups with their idols at various events such as fan carnivals. Moreover, an exciting moment for fans comes when idols interact with them in real time within the section "Here Comes Celebrities" on Paopao. These cherished interactions further cultivate fans' perceived intimacy with their idols. As Horton and Wohl (1956) posit, audiences in the mass media age experience a parasocial relationship characterized by the illusion of connectedness and intimacy with little reciprocity in their mediated encounters with media figures. In the social media context, the parasocial may transform into the potentially social and enhance the emotional ties between celebrities and fans (Abidin, 2015; Cunningham & Craig, 2019; Marwick & boyd, 2010). For fans on Paopao, the potential one-to-one and one-to-many interactions with celebrities enhance the perceived intimacy, which in turn sustains their commitment to affectively invested datafied labor. Further, the distribution of random awards upon completion of all daily tasks (see Figure 2) reinforces fans' datafied labor practice. Despite the randomness in the value of the awards, an instant boost to fan value and virtual item giveaways instills a sense of hope and incentivizes users to develop a habit of playing to the platform logic of quantification in the metric culture.

Running in parallel to and in connection with celebrity impact rankings, the tiered system of fan value is a key part of the *metric conversion* and *value production* process. The economic logic is evident. The more fans contribute, the higher they climb up the tiers, resulting in more weight assigned to datafied labor. All other things being equal, this means potentially more contribution to the idols' impact value. In other words, the fan value metric provides a hierarchical transactional possibility between fans' datafied labor and idols' impact. The logic of conversion, strategically highlighted on the interface of the "Today's Tasks" page (see Figure 2), helps fans to develop a "feeling of numbers" (Kennedy & Hill, 2018). This is crucial to mobilizing fans to strengthen their commitment to datafied labor.

The economic logic works closely in connection with the cultural logic in metric conversion between fan value and celebrity impact. Specifically, it engages fans in the process of valuation and self-reflection. As Beer (2016) emphasizes, metrics bring possibility to the value of individuals or groups, such as their desirability or worthwhileness. It is the possibility in the metrics that renders them powerful. Similarly, Esposito and Stark (2019) note that numbers are a reference point, informing how people value themselves and others. Further, as Lupton (2016) insightfully points out, users in self-tracking cultures feel the imperative to develop optimal selves, often defined as becoming more efficient or productive. In the context of fandom culture, this involves the question of *what being a fan means* and *how a fan can become a better version of the self for the idols*. The "Task Progress" bar and the highlighting of uncompleted tasks in color on the "Today's Tasks" page (see Figure 2) serve as persistent reminders for fans in self-monitoring and self-disciplining.

On Paopao, the metric of fan value works to cultivate not only a culture of self-reflexivity, but also a culture of peer assessment, increasingly entangled with the question of *morality*. Among fans circulates a morally infused declaration: "Those who don't contribute are no real fans." Contribution mainly refers to monetary spending on cultural products or datafied labor to elevate idols' social media metric performance. This morally infused statement, although not uncontested, indicates how some fans not only have self-expectations and practice self-monitoring, but also hold other fans to what they regard as a moral responsibility of being fans. This indicates the substantiality of datafied fandom in fan identification, which drives fans to play to the platform logic of quantification of identity and datafication of labor.

Perishable Data and Accelerated Temporality by Design

Operationalization with data builds further on mediated temporality on the platform. As Weltevrede, Helmond, and Gerlitz (2014) point out, social media platforms play a prominent role in organizing a sense of time, operating as pacers of real time. On Paopao, perishable data by design are a crucial time-mediating mechanism enmeshed with the metric culture. Specifically, the virtual cheering sticks have a very short shelf life and expire by the end of the day that fans obtain them through datafied labor. This creates an urgency for fans to use up the virtual cheering sticks by gifting these to their idols. Failing to do so means that the data lose their value for transaction and render fan labor futile.

Data perishability, in connection with the weekly and monthly updated impact charts, envelopes fans in a temporal regime in which individual, lived experience of time is *linked* to a shared sense of time. In the context of accelerated temporality by design, fans are nudged to act now to secure the future for

their idols in terms of metric performance. Essentially, this serves the purpose of accelerating data production and thereby maximizing value production for the platform. It reflects a general tendency in which social media platforms structure time in various ways for the purpose of capital accumulation (Fuchs, 2014).

Perishable data by design further enhance *everyday embeddedness* of datafied affective labor, cultivating among fans a sense of *perceived companionship* with idols. Such perceived everyday companionship constitutes a crucial difference from the ritual fandom practice organized around an event, as in the case of fans voting for their favorite candidates on the reality show *Super Girl* (Yin, 2020). Fans often describe the relationship with their idols as *growing up together* or *watching them grow up*, imagining them as friends or families. On the user interface, the check-in and checkout process on an idol's fan community page is strategically termed as *guarding* (*shouhu* 守护) the idol, connoting a sense of responsibility to care for the idol. The checkout button, labelled as signing off from work (*xiaban qiandao* 下班签到), further evokes this sense of duty. The *work* metaphor constructs not only a sense of everydayness, but, more importantly, a sense of moral responsibility to support their idols with datafied labor on a daily basis. Interestingly, the check-in button is not termed as explicitly as signing in for work (*shangban qiandao* 上班签到), which strikes a balance in utilizing the metaphor—generating a sense of responsibility, which becomes fulfilled and leads to a sense of achievement on the completion of tasks, while disassociating the process from connotations of tediousness prior to task completion. This everyday ritual is not complete without staying in the idol's community for at least 10 minutes (see Figure 2). In other words, a shorter duration between checking in and checking out renders the datafied labor meaningless in terms of the contribution to idols. Continuing to contribute to securing their idols' prospects makes users "worthwhile" fans.

Further, perishable data by design lead to rhythmic negotiation in datafied affective labor. This is particularly evident when fans aim for time-bound goals in the chart race. Consider as an example the elimination mechanisms in idol survival shows. Fans often strategically work with the designed perishability of data in an attempt to attune their pace to push their idols through the line in a given time frame. As Beer (2016) insightfully notes, the power of metrics lies in the production of uncertainties. The ongoing encounters with data perishability and relevant algorithmic measurement thus constitute a constant negotiation with uncertainties, accompanied by hopes, frustrations, excitement, and anxieties.

By configuring the *time-bound value* of data, the platform attempts to *accelerate* and *intensify* the production and circulation of affect as "a binding technique" (Dean, 2010). This in turn envelops fans in a continuing process of producing data for metrics-in-the-making in the affective economy. In the context of everyday embeddedness of datafication and commodification, perishable data entrench the platform power to harness fan affection toward idols. Essentially, accelerated temporality works to translate fan affection toward idols into user loyalty to the platform.

Data-Driven Algorithmic Decision-Making

Considering Paopao's positioning as iQiyi's social engine, operationalization with data needs to be understood within the broader platform ecology. The data feed into iQiyi's new audience measurement system, which assesses content popularity, measures artist appeal, and profiles users at once. These data

further inform iQiyi's operation strategies underlying its business model, from content acquisition to original production and targeted advertising. As iQiyi's CEO Gong Yu's remarked on the significance of data and algorithms in strategic decision making, "Leveraging our cutting-edge AI technology, we are continually fine-tuning our content offerings, optimizing our monetization efficiencies, and exploring potential new runways for future growth" (as cited in Frater, 2019, para. 8). Corporate pitches like this not only lend perceived empowerment to data-generating users, thereby encouraging more datafied labor, but also, equally importantly, indicate how the platform could gain more sway over the broader screen ecology.

Popularity forecasting is a noteworthy example of how data is operationalized to inform cultural decision-making. For a streaming platform, the capacity to anticipate viewer preferences is highly desirable. According to Gong Yu (as cited in iQiyi, 2017), iQiyi has achieved an accuracy rate close to 90% in forecasting the popularity of drama series. Predictive analytics have been deployed to optimize cost efficiency in rights acquisition, to refine scripts and casting in original productions, and to facilitate financial investment for promising content partners (iQiyi, 2018c). This has evident impacts on multiple actors' practices, which shows how metric power operates to "bring the future into the present" (Beer, 2016, p. 170). It underscores the prowess of the technology firm as a gatekeeping platform, an arbiter of culture.

As the metrics inform cultural decision making through the feedback loop, the intervention of data operationalism occurs at an *environmental* level in the *platform ecology*. Given the centrality of fan engagement metrics, not only are fans mobilized to produce data, but content producers, artists, and their management agencies are beholden to the power of the platform and its metrics in terms of what to produce, how to circulate and promote content, and how to nurture fan communities. This will not only accelerate, but also amplify what Fung (2019) calls the fandomization of online video or television in China, where fans and their participation have a growing impact on online video content or production. A concerning risk here, as Hallinan and Striphas (2016) caution, lies in "a closed commercial loop in which culture conforms to, more than it confronts, its users" (p. 122). As the metrics impact the broader platform ecology, the perils also lie in the tendency to naturalize hierarchies and inequalities in participation, financial compensation, visibility, and popularity (van Es, 2019).

Complicating the seemingly market-driven decision-making process in content production, though, is the metric of value orientation, which informs the Index in the new measurement system (iQiyi, 2018a). iQiyi (2019) has, on many occasions, stressed its pledge to promote content that fosters *positive energy* (*zheng nengliang* 正能量), which has seen an ascending place in China's political discourse over the past decade. In a noteworthy speech delivered by President Xi Jinping at the Beijing Forum on Literature and Art in 2014, Xi echoed Mao Zedong's 1942 lecture in Yan'an and reiterated the demand for art to serve politics. He called on art and cultural organizations to adhere to "core socialist values" and project positive energy like "sunshine" and "spring breezes" (Xinhua, 2014, para. 13). This sends a strong signal about the imperative for industry participants to align with the value orientation of the party-state. Clearly, the political imperative complicates the platform's attempt to become a cultural arbiter with code.

Conclusions

This article has situated the discussion of audience measurement in the context of ongoing platformization of cultural production in China. With reference to iQiyi and its pivot from view counts to a multimetric and algorithmic measurement regime, I have critiqued iQiyi's legitimacy-building strategy, unpacked the cultural and economic logic of the new approach, and analyzed the connection between audience measurement reconfiguration and the approach to platformization in its capitalist pursuits. In doing so, this article has sought to contribute to both platform studies scholarship and the audience measurement literature. It illustrates how these two streams of studies can be productively brought together to understand the co-evolution of audience measurement and platformization, and to critique platform power in this dual process.

While iQiyi's shift in audience measurement is billed as an attempt to solve problems for multiple platform users and align with the regulatory will of the state, the problematization around data inflation is not only *flawed*, but also *evasive* and *hypocritical*. It is flawed because it ignores the diversity in the spectrum of data inflation practices in which the boundaries can blur and shift. It is evasive because the platform downplays its mediating role in configuring visibility in the first place. It is hypocritical because the platform strategically configures legitimacy of the nebulous notion of data manipulation while being evasive about its multiple roles, especially considering the platform's launch of the new algorithmic system to mobilize data-driven fandom in its own interest. The purported objectivity and veracity are further compromised by the romanticized "big data" approach and multiple roles of the platform in content production and distribution, leading to potential unfair competitive advantage.

The shift in the audience measurement approach is closely connected with how the audience is conceptualized and, more importantly, mobilized in the context of the evolving vertical integration and platformization for capitalist pursuits. By approaching audiences as fans, the platform strategically nurtures their affective investment in the form of datafied labor. By establishing Paopao as a satellite platform and its social engine, iQiyi creates a space for fan engagement, which in turn feeds granular data into the measurement system. The analysis has revealed how mobilizing and commodifying datafied fan labor is underpinned by (1) the metric of celebrity impact; (2) the metric of fan value; (3) perishable data and accelerated temporality by design; and (4) data-driven algorithmic decision-making.

By tapping into the idol fandom culture, the satellite platform has turned data into *both gift and commodity, representational and operational at once*. The strategic design of the metrics, the logic of metric conversion, and the interfaces engage fans as calculable entities and capitalize on datafied labor. The metrics and the data production process not only serve to enhance the perceived intimacy between fans and idols, but also cultivate a culture of self-reflexivity and peer assessment increasingly entangled with the question of value and morality. Further, data perishability by design works as a crucial time-mediating mechanism to enhance everyday embeddedness of datafied affective labor. As it accelerates and intensifies production and circulation of affect and data, fan engagement translates into platform stickiness, thereby maximizing value production for the platform.

Operationalization with data has a broader impact on the platform ecology through data-driven algorithmic decision-making. The satellite-platform-as-a-social-engine approach essentially serves to consolidate platform power in audience measurement and, by extension, in decision-making from content and casting strategies to targeted advertising. As a consequence, it fosters an obsession with the platform-defined metrics among multiple actors in the platform ecology, which may ultimately naturalize hierarchies of power and jeopardize cultural diversity. Having said that, the decision-making power informed by seemingly market-driven metrics is complicated by the political imperative of aligning with the value orientation of the party-state.

While this article focuses on iQiyi as a case study, it illustrates a broader tendency in which platforms shift the audience measurement approach to enhance media power in metricization and, by extension, to gain sway over the broader ecology in content distribution, production, and talent cultivation. This is closely tied to platforms' shifting conceptualization of the audience as fans and growing vertical integration of popular cultural production. It remains to be seen how sustainable the approach of datafication and metricization will be in driving the growth of platforms and the idol industry underwritten by data-driven fandom. A broader implication here is that the discussion of audience measurement in the platformization process requires us to pay close attention to *platform evolution* and *interindustry dynamics* in the specific cultural, industrial, and regulatory contexts.

Future research may investigate further how the logic of platformization and approaches to audience measurement coevolve on different platforms; how algorithmic measurement develops in the context of vertical integration in multilayered markets; and how the emerging market information regimes are adopted or contested among various actors. Answering such questions would provide insights into how audience commodities are being reconfigured and what cultural consequences they bring in the ongoing process of platformization.

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