

## "The harder I work, the luckier I get": how rural streamers perceive and cope with the algorithmic gaze on Taobao Live

Han Fu <sup>1</sup> and Anthony Fung <sup>1,\*</sup>

<sup>1</sup>School of Journalism and Communication, The Chinese University of Hong Kong, Hong Kong SAR \*Corresponding author: Anthony Fung. Email: anthonyfung@cuhk.edu.hk

#### Abstract

This study examines rural live streamers' perceptions and strategies toward the algorithmic surveillance of Taobao Live, China's preeminent consumer live broadcast platform. Through semi-structured interviews with 34 full-time rural streamers and two rounds of fieldwork spanning approximately a year in a southwestern Chinese county, this research elucidates three categories of visibility-based uncertainties that prompt streamers' cognizance of algorithmic surveillance and inform their strategic responses. Participants interpret algorithmic surveillance through the lens of three predominant observers: curation algorithms, human moderators, and the audience. These perceived observers work on coordinating three forms of visibility—algorithmic visibility, moderator visibility, and audience visibility—aimed at regulating the independent streamers' activities. Contrary to the common belief, we found that heightened online visibility in agricultural product live streams on Taobao Live does not always yield advantageous outcomes.

Keywords: China, live streaming e-commerce, rural communication, algorithmic gaze, visibility

## Introduction

"Hi, welcome to my channel, friends who just came in; please click the 'follow' button at the upper left corner." Rong yawned and repeated. No new viewers came in. The view number stopped at 14 for a while. This visibility dilemma had been persisting for over a month. For his next move, he sighed, "Hang in there; work every day. I believe the platform will distribute more traffic to me. Not to say thousands or tens of thousands, but hundreds at least." In the following days, he kept streaming for more than six hours daily. As he expected, after two months, the viewership increased to more than 400 per live stream. This experience further reinforced his belief that "the harder he works, the luckier he gets."<sup>1</sup> The luck here refers to algorithmically distributed visibility and resultant sales.

Rong's experience epitomizes Chinese rural streamers on Taobao Live, the top national-level consumer live broadcast platform. As of September 7, 2021, over 110,000 rural live streamers were working on Taobao Live and have delivered over 230 million streams, selling agricultural products for over 5 billion RMB (He, 2021). China has long grappled with a huge socioeconomic disparity between urban dwellers and those who live in rural areas. In 2023, rural households in China had an average annual per capita disposable income of about 21,691 yuan, roughly 40% of urban household income.<sup>2</sup> Live stream selling then gives these rural people a glimpse of hope for prosperity.

While full-time rural streamers' livelihoods depend primarily on algorithm skills (Hargittai et al., 2020) for visibility acquisition and monetization, most of them are illiterate to algorithms, even if they are aware that their platform work is consistently under algorithmic surveillance (Newlands, 2021). Despite growing scholarly attention on both algorithm power (see Sun, 2019) and underclass cultures (see Hou & Zhang, 2022; Zhang, 2023) in China's platform economy, how platform-mediated workers in rural China experience and cope with algorithms remains an underexplored topic. If black-boxed algorithms constitute the central force in the production of live streaming (Wang, 2020b) and in platform surveillance (Newlands, 2021), then it is important to understand how rural streamers imagine and navigate the gaze of algorithmic mechanisms. Such understanding yields important insights into algorithms and culture in technoeconomically disadvantaged communities.

This study takes a user perspective to understand Chinese rural streamers' perceptions of rural e-commerce on Taobao (AliResearch, 2022). It begins by explicating the notions of visibility on algorithmic platforms and algorithmic gaze. The methods and analysis of rural streamers' perception and responsive tactics to the algorithmic gaze of Taobao Live follow.

## **Key concepts**

## Visibility on algorithmic platforms

Brighenti (2007) advocates considering visibility as a significant social category characterized by relational, strategic, and processual aspects, emphasizing the underlying power dynamics. Consequently, he introduces three visibility schemes: social visibility which represents a form of recognition fundamental to human existence; media visibility which signifies the mediated logic behind the datafication of user behaviors and the (in)visibility of media audiences (Girginova, 2016); and control-related visibility that transforms visibility into a strategic resource for surveillance, regulation, and/or stratification. In the context of the platform society, a novel regime of visibility emerges, amalgamating these three dimensionssocial-oriented, platform-mediated, and power-infused in line with algorithmic logic (van Dijck et al., 2018). Correspondingly, recent studies about visibility moderation on digital platforms mainly included three strands.

The first strand, algorithmic visibility, is about the sociotechnical logic behind algorithmic architecture in determining how users can be seen and what users can see in their feeds, search results, and/or recommendations. Social media platforms function as algorithmic platforms, heavily utilizing algorithms to manage users' techno-cultural practices by coordinating platformized visibility (Fu et al., 2023). This type of visibility is akin to Brighenti's (2007) concept of social visibility as a form of social recognition and gift (Thompson, 2005). Consequently, content creators on social media increasingly depend on algorithmically driven systems to boost their visibility, thereby being seen, gaining followers, and attaining influence (Cotter, 2019; Petre et al., 2019).

The second strand, human moderator visibility, examines the role of human moderators in platform governance amid mechanisms of social inequality (Duffy & Meisner, 2023). Platforms integrate algorithms and human curation as modern gatekeepers in cultural production. This "algo-torial curation" is prevalent in cultural industries like music, where human intermediaries play significant roles in content curation (Bonini & Gandini, 2019; Freeman et al., 2024). Human curators, through algorithms and/or regulatory means, oversee the dissemination of user-generated content and educate users on community norms (Bhandari et al., 2021). These behind-thescenes moderators selectively manage content to align with the expectations of platform capitalists (Gillespie, 2018).

The third strand, audience visibility, focuses on how content is seen, recognized, and consumed by audiences, embodying user engagement metrics like views, shares, and likes (Rieder et al., 2018; Sued et al., 2022). While closely tied to algorithmic visibility, this strand focuses more on audience participation and feedback, which can influence content moderation (Singer, 2014). However, scholars like Prey (2018) argue that on algorithmic platforms, individual agency is eclipsed since users are not algorithmically seen as individuals but as lifeless data patterns, leading to the "disappearance" of the audience and irreflexive visibility (Girginova, 2016).

While these three visibility types are well-discussed in platform studies, they are often treated as a singular concept rather than explored in their distinct dimensions. This study views visibility on algorithmic platforms as a collaborative effort among recommendation algorithms, human moderators, and audiences to shape the platform's surveillance regime. This approach provides insights into how rural streamers engage with the "visibility game" (Cotter, 2019) on platforms like Taobao Live.

Notably, visibility is not always a case of "more is better" (Brighenti, 2007), since its value depends on the contextual needs of users. In agricultural live e-commerce, the success hinges on a balance between product supply and algorithmic visibility, where too much of either can diminish the expected value.

#### Algorithmic gaze

Whereas algorithmic visibility focuses on being identified and recommended by algorithms, the algorithmic gaze concerns the underlying power relations. Social scientists have revisited Foucault's (1977) argument regarding the interplay between visibility and power on social media platforms, arguing that the normalizing power of the gaze has supplanted the overt display of sovereign power. In the "disciplinary society," many observe the few, akin to surveillance in a prison. On the internet, only a select few are visible to the many because "visibility [on social platforms] is not something ubiquitous, but rather something scarce" (Bucher, 2012, p. 1172). Unlike the unavoidable exposure of panoptic surveillance, visibility in algorithm-driven communities is selective as algorithms prioritize certain content.

Algorithms are designed to "see" the Other, shaping our online encounters through "algorithmic profiles" which influence content access, self-expression, and our perceptions of the world (Karakayali et al., 2018; Kotliar, 2020a). Our media use and daily lives are increasingly affected by the algorithmic gaze, an algorithm-based structured way of seeing, assessing, and managing the user activities on digital platforms. This gaze is crucial for platform workers since it algorithmically determines their task allocation, performance evaluations, and remuneration rate (Newlands, 2021). In the post-Ford era, characterized by platform-mediated production and high labor responsibility in small batches and cells, disconnecting from the algorithmic gaze may lead to work suspension and job instability (Duffy, 2020).

However, the algorithm's structure is often indescribable and incomprehensible (Kotliar, 2020b). Platform work heavily relies on metricized influence-building and evaluative systems (Chan & Kwok, 2022) that remain opaque and are frequently updated to manage transgressions and facilitate transactions. Essentially, the algorithmic gaze eludes complete understanding but can be perceived by those who feel subtly and persistently monitored by algorithms. These perceptions are not mere illusions; they are "real" and have the power to shape cultural productions and underlying power relations (Beer, 2013; Kitchin & Dodge, 2011). They represent how people perceive and experience algorithmic surveillance. Such "algorithmic imaginary" (Bucher, 2017) opens new windows for understanding algorithmic practices, yet it remains underexplored, particularly among platform workers in rural areas, despite the significant growth of agricultural e-commerce since 2019<sup>3</sup> in China.

Existing rural communication studies center on rural people's narrative and practical strategies in video production and circulation, often highlighting their continued marginalization (e.g., Li, 2020; Li, 2020; Li et al., 2018). More recent studies have explored the spatial dynamics and transformation of live-streaming commerce in China (e.g., Zhu et al., 2023; Lai, 2023). As algorithms represent the sociomaterial intertwining of humans and technology in everyday work (Curchod et al., 2020), there remains a need to understand how rural videographers engage with and respond to these algorithm-mediated curation systems. This article aims to bridge this gap by examining how rural live streamers navigate the surveillance gaze within the algorithmic visibility framework, involving three key observers—the curation algorithm, human moderators, and the audience.

## Context

#### Rural live commerce in CN county<sup>4</sup>

China's live stream industry has experienced remarkable growth in recent years, with a market size reaching around 3.4 trillion RMB in 2022. Among the key players, the e-commerce giant Alibaba's Taobao Live holds the dominant market share, followed by Douyin (the Chinese version of TikTok) and Kuaishou (a version of short video social media site targeting the lower class in China). Triggered by the nationwide lockdown during the COVID-19 pandemic, Chinese consumers turned to online purchasing, shifting from choosing arrays of goods from an online store to a more interactive way of buying goods from a live streamer in real-time.

In live streaming e-commerce, also known as live commerce or live shopping, sellers interact with potential buyers in real-time, showcasing products, answering questions, and encouraging viewers to make immediate purchases. Under the context of rural revitalization, the Chinese government articulates live streaming sales as a new landscape for rural residents to overcome poverty by selling agricultural products without leaving their hometowns. In March 2019, Taobao initiated the "Village Broadcasting Plan" with the promise to empower Chinese farmers into a new breed of content creators and achieve wealth on their personal abilities.

While the rural live-streaming program is designed to reduce poverty in rural China, it paradoxically has the potential to deepen existing socio-economic disparities across rural areas nationwide. A "Taobao village" is an "administrative village with annual sales of 10 million RMB on Taobao Live, and the number of active online stores reaches (...) 10% of local households" (AliResearch, 2021). Not surprisingly, Taobao villages are predominantly clustered in developed zones like the national capital, the Yangtze River Delta, and the Pearl River Delta. Taobao Live tends to showcase those already well-developed rural regions as success stories, further augmenting their impact and influence. In contrast, regions with less economic progress are often reduced to data points that indicate the platform's poverty alleviation efforts.

This region-prejudiced structure is also evident in communication studies, which concentrate on traditional business strongholds in east coastal China, particularly in Zhejiang and Shandong (e.g., Lai, 2023; Zhang, 2023). Live commerce in Southwest China, where agriculture is the bedrock of the local economy, receives little attention from Taobao, investors, or scholars due to its relatively smaller market size. A case in point is CN County in southwest Yunnan Province, known as one of China's major commercial production bases for vegetables and fruits.

In the CN County, rural live streaming is a self-sustaining career due to the absence of institutional support and the limitation of natural resources. Distinct from mechanized and assembly line production prevalent in "Taobao villages," CN's economy depends on agriculture with seasonal production patterns. Despite local authorities' assertions of allocating 2 million RMB annually from the state funds since 2016 and having launched a project with Alibaba Group to facilitate local e-commerce, streamers interviewed have criticized these projects as "empty shells." The so-called "Internet + agriculture" in fact provides a grand pretext for local authorities to secure state financial support and divert the funds for personal gain. Additionally, other third-party agencies like "live-streaming guilds" (Liu et al., 2023) that train ordinary users to become professional streamers (Wang, 2020a) are also absent in CN. However, this does not mean that local streamers lack collective wisdom. Instead, they often acquire livestreaming skills through platform-mediated interactions, such as watching peer live streams.

Despite these challenges and empty promises, CN County has seen a significant increase in the number of self-employed streamers on Taobao Live for selling local produce. As of April 2023, around 100 local streamers have done or were doing live streams in CN, up from about 30 ten months earlier. Currently, CN County is said to have the highest number of rural streamers on Taobao Live in Southwest China.

#### Methods

From May 2022 to April 2023, semi-structured interviews, online ethnography on Taobao Live, and two rounds of offline fieldwork in CN County were conducted to explore how rural streamers perceive and respond to the algorithmic gaze. The data were analyzed by coding recurring phrases and ideas about the algorithmic gaze in field notes and interview transcripts.

Upon entering Taobao Live, a column titled "rural live streaming" or "*cun-bo*" in the local dialect is noticeable, where streamers are categorized by regions such as "Yun-Gui-Chuan-Dian" (three representative southwest provinces in China: Yunnan, Guizhou, Sichuan). This categorization helped us identify our research subjects—rural streamers in the southwestern countryside selling local agricultural products and plants.

From January to April 2022, the first author regularly watched live streams from Southwest China and interacted with streamers via the chat box on Taobao Live. Once the streamer could distinguish the author from other audiences, direct private messages were sent to their personal Taobao Live accounts to introduce our project and ask about their willingness to participate in our interview. Over two months, we sent out 21 invitations in total, and only four ended up talking to us. These respondents were from four representative Southwestern regions: Chongqing, Sichuan, Guizhou, and Yunnan. Interestingly, unlike the decentralized livestreaming practices in the first three regions, the interviewee from Yunnan reported a significant concentration of rural streamers in CN County. This piqued the authors' curiosity to investigate further.

From May 2022 to April 2023, the first author conducted two rounds of participatory observations in CN County. In the first 22-day round, the first author visited nearby bazaars and farmlands and conducted face-to-face interviews with 21 streamers. Casual conversations were also held with other farmers, vendors, and streamers who were not formally interviewed. Additionally, connections were established with 20 streamers on WeChat, China's largest social network, allowing us to access and analyze regularly archived social media content related to their non-Taobao activities.

Ten months later, the leading author returned to CN for a second 25-day round of fieldwork, surprisingly knowing that around 100 local residents had done or were doing live streams in CN. In this round, the author interviewed 13 neophyte streamers and revisited 14 interviewees from the first fieldwork. This approach allowed us to be informed about the evolving landscape of the local e-commerce industry and how streamers adapted their strategies to navigate the algorithmic gaze and manage visibility in increasingly competitive markets.

Across both fieldwork sessions, we interviewed 34 rural streamers who depended on live streaming for their livelihoods. These interviewees included 16 females and 18 males (see Table 1), recruited through snowball sampling. One significant contact was MM, who had worked on a government-sponsored project to boost village e-commerce before joining the streaming team of the leading streamer in CN. He introduced us to other local streamers engaged in Taobao Live, and subsequently, we interviewed some of them. All interviews were conducted in Chinese and focused on: (a) under which conditions streamers felt and "saw" the algorithmic gaze; and (b) how they behaved around this perception of being algorithmically monitored, for what purposes, and with what consequences. These interviews lasted from 10 minutes to four hours, conducted either face to face or via WeChat voice calls and text interactions. Each interview began with an introduction to the project, proceeding only with verbal consent. When the interviews are quoted, the interviewee will be assigned a pseudonym to remain anonymous.

#### Three visibility frictions and algorithmic gaze

Frictions have been extensively examined as interactions featuring awkwardness, inequality, instability, and creativity among subjects with different interests and cultural backgrounds (Tsing, 2005). Frictions can serve as starting points, breaks, pauses, and endpoints in the platformized engagement (Lehuedé, 2022). Social platforms, often seen as spaces of frictions (Tironi & Albornoz, 2022), are characterized by human-algorithm interactions that may hinder users' access and engagement but also facilitate knowledge exchange and reproduction (Ash et al., 2018). However, this article does not delve deeply into the concept of friction. Instead, we define it as the challenges and uncertainties that hinder consistent visibility on Taobao Live, which require streamers to develop strategies to overcome.

Rural streamers often face three types of visibility frictions on Taobao Live: inactivation, interruption, and suspension.

 $\textbf{Table 1.} \ \text{List of interviewed rural streamers in CN county}.$ 

No.	Codenames	Gender (M: male; F: female)	Age	The number of followers on Taobao Live (as of 21 September 2023)	Taobao Live ID <sup>1</sup>
1	HY	F	25	13,000	12369246
2	Yun	F	33	2,485	30387118
3	DJS	F	32	3,425	24673204
4	QQ	F	28	14,000	19290310
5	LL	F	34	12,000	8031071
6	ZJ	F	32	3,604	
7	ZHH	F	26	2,009	
8	XJ	F	35	9,158	
9	FJ	F	43	32,000	
10	ŤĴ	F	50	1,294	
11	DW	F	28	They are a live-stream team with two	10256253
12	XW	F	28	accounts. One has 1,368 fans, and the	
13	CZ	F	28	other has 1,462.	
14	Juan	F	34	14,000 (Her account has been suspended and she has stopped live streaming since the middle of 2022.)	
15	Chao	F	30	205 (Her account has been permanently suspended for breaking the rules.)	
16	SJ	F	32	She has suspended her account and forgot her account name, so her fan numbers cannot be tracked.	
17	YNQY	М	33	4,059	
18	LC	М	36	9,618	
19	XL	М	30	2,741	
20	AZ	М	30	3,243	22715055
21	DIG	М	42	1,665	30742096
22	AN	М	30	9.507	
23	WM (DJNB's husband)	М	32	77,000	1140829
24	DXD	М	26	496	
25	ZG	М	30	1,038	24112291
26	GG	М	27	4,761	
27	AB	М	31	1,161	
28	XL	М	28	13,000	
29	XG	М	40	They have closed their accounts on	
30	НО	М	32	Taobao Live and now are working on	
31	JG	M	32	other platforms.	ajing1117 (Douyin ID) <sup>2</sup>
32	Mu	М	29		
33	XB	М	25		
34	CC	М	33	2,658 (His account has been permanently suspended for selling protected plants)	

 $^{1}$  As requested by some interviewees to enhance their visibility, we have received their approval to include their Taobao Live IDs here. You can search the ID on Taobao Live to access their accounts.

<sup>2</sup> This streamer has suspended his Taobao account and is now working on Douyin.

These frictional conditions lead streamers to perceive different dominant gazers within varied "imagined surveillance scenarios" (Duffy & Chan, 2019), prompting them to develop folk knowledge in response. Such interactions between streamers and gazers provide insights into how streamers interpret the algorithm-based surveillance gaze and exploit its regulatory flaws to ensure job continuity.

#### Sensing and adapting to the surveillance gaze

Visibility inactivation conceptualizes a condition where traffic appears inactive or inoperative, often experienced by streamers during the early stages of their livestreaming venture as a form of "qualification tests." This condition subtly instills in streamers a work ethic valuing hard work.

In 2019, Taobao's village live streaming program initiated with lenient registration criteria for rural streamers, yet only a few achieved lasting successes. Back then, novice streamers were subjected to a "lonely internship period" (JG, 30 May 2022) of seven days to a month, requiring daily broadcasts even without an audience. Non-compliance risked permanent account deactivation. JG, a 36-year-old leading local streamer, referred to this phase as being "locked in a dark room alone."

During that period, I walked around the bazaar with my phone and talked to the air [with no audience]. My parents could not understand what I was doing; bazaar vendors labeled me as crazy; and bystanders regarded me as an oddity (...) however, if you could withstand the loneliness and get through that phase, the platform would recognize your efforts and allocate traffic to you. (JG, 30 May 2022)

Visibility blockage reminds the streamers of the looming surveillance gaze, evoking their skepticism regarding the authenticity of being seen. Often, the live room had no audience. Occasionally, a few silent and unidentified viewers—termed "zombie visitors" by streamers—would enter. These viewers are perceived by streamers as proxy overseers from Taobao Live to spot-check attendance and performance. My respondents described these less-active viewers as human embodiments of the algorithmic gaze, assessing streamers' "job loyalty" (XB, 15 May 2022). If the streamer passes this "loyalty test" under the moderator's surveillance, s/he is likely to be rewarded with algorithmic visibility.

In 2020, as rural live commerce reached its climax in China, Taobao Live turned to "friendly surveillance" (Tironi & Albornoz, 2022) to keep streamers engaged through incentives and promotions to identify promising talents for live commerce. Under the name of "supporting newcomer" (fu-chi-xin-ren), Taobao Live pre-allocated some traffic to beginner streamers. To them, their capacity to garner and monetize data traffic was the pivotal metrics for "internship assessment." Some experienced streamers acutely recognized this approach not as a welcoming gift but as a litmus test to identify streamers with high sales potential. Streamers showing the capabilities to convert pre-allocated algorithmic visibility into audience visibility-characterized by audience access, participation, interaction, and consumption in live streams-will be rewarded with increased algorithmic visibility. One respondent noted, "If you can 'catch' *(jie-zhu)* the traffic, the platform labels you as a promising streamer and rewards you with a surge of traffic in following

days." Failure to do so resulted in being algorithmically ignored "for commercial consideration" (DJG, 24 May 2022). The word "*catch*" here refers to streamers' capability to promptly react to pushed traffic from the platform, yielding increased followers and sales.

To "*catch*" traffic hinges on an undisputed principle: "*lashi-chang*" (i.e., extending live-streaming duration as much as possible). The unwritten rule is that "arriving at the bazaar after 8:00 a.m. is late for work" (XW, 17 March 2023). The local sales champion DJNB, a mother of two elementary school children, exemplifies this ethos by consistently streaming for over 10 hours daily. Her success has solidified the belief among local peers that algorithmic visibility positively correlates with working hours. Additionally, some respondents indicated that suspending broadcasts for consecutive days would prompt Taobao Live to algo-torially tag that streamer as "lazy," subsequently limiting his/her traffic in the following days or weeks. "Even during illness, streaming at least three hours a day is non-negotiable" remarked WM, the husband of streamer DJNB (19 March 2023).

Meanwhile, audience concerns play a role in sustaining the heavy workload of streamers. During a huge COVID-19 case surge in mainland China from November 2022 to February 2023, infected local streamers continued broadcasting without breaks. "None of us took a break," WM (19 March 2023) noted and explained:

We had no choice. A single day without broadcasting could permanently shift the audience to other live streams. Furthermore, if viewers knew about our infection, they might avoid purchasing products over unfounded fears of virus transmission. (WM, 19 March 2023)

Regarding worker discipline, a symbiotic relationship unfolds between algorithmic recommender systems and audiences. Insights from our respondents suggest that the distribution of algorithmic visibility largely depends on how well a streamer meets audience needs. In other words, increased audience access and engagement—termed "audience visibility" directly enhances algorithmic visibility for a stream. Within this dynamic, the audience acts as "voluntary" editorial assistants, contributing to algorithmic curation through their active participation and engagement with the content.

Having experienced visibility inactivation, streamers conceive the algorithmic gaze as a form of "living labor" (Marx, 1887), imbuing "dead" visibility with disciplinary significance. This process seems to be driven by platform capitalists who algorithmically enforce time-consuming tasks to maintain streamers' alignment with an effort-based work ethic. The gaze activates a form of biopower (Foucault, 1977), intertwined with the unstable allocation of visibility to produce diligent and docile workers. Despite having disposable time, streamers opt to use it to increase work intensities, ultimately amplifying the exploitative impact of the digital platform.

# Tactics for resistance to the "unfriendly" algorithmic gaze

If we argue that visibility inactivation imbues streamers with a strong work ethic, then visibility disruptions, embodied as visibility interruption and suspension, serve as catalysts prompting streamers to resist the "unfriendly" surveillance gaze that induces uncertainty, intervention, and halt at work.

Visibility interruption refers to a significant visibility reduction due to the abrupt and temporary cessation of a live stream, often caused by various techno-cultural factors such as algorithmic warnings, technical issues, or content violations. For example, interruption-based warnings triggered by audio-visual speech recognition technology can link precoded narratives to pop-up warnings. All respondents claimed to have triggered warnings for mentioning or photographing sensitive elements, often outside their control. For instance, the platform might issue an immediate on-screen warning for detecting profanity or smoking nearby, despite such incidents being common in rural markets. Similarly, video-recording a QR code, phone number, or police and military uniforms could also trigger a warning, although it is typical for local farmers to wear camouflage and display QR codes for payment at bazaars.

Despite these interruptions, streamers tend to dismiss these warnings without much hesitation to continue their streams. As one streamer remarked, "Being warned really just means the platform is keeping an eye on you, rather than directly punishing you" (XW, 12 March 2023). In essence, pop-up warnings signal the platform's vigilance rather than immediate punishment, although repeated warnings can reduce traffic and even lead to suspensions. The gaze here accounts for fault occurrences and adjusts interfaces accordingly. If infractions remain within acceptable limits-presumably no more than three every two weeks-warnings are essentially just recorded. As machine-readable semantics evolve, the underlying gaze often contains exploitable loopholes, allowing streamers to use system failures and gaps to evade 'unfriendly' platform surveillance and avoid punitive suspensions.

Visibility suspension occurs when a live stream is halted for platform rule violations or after repeated warnings, often as a punitive measure. Severe breaches can lead to permanent stream lockdowns or administrative penalties. To mitigate prolonged suspension risks, streamers often build crossplatform fan bases and/or maintain backup accounts. If their primary account is suspended, they may activate a "doppelganger" account with a similar name to ensure job continuity. For instance, after the account Erge Mai Lanhua was blocked for selling protected orchids, the streamer immediately launched Erge Mai Lanhua No.2 and notified previous buyers via WeChat. Additionally, many streamers have at least two mobile phones to deliver multiple live streams simultaneously, a practice known as "yang-hao" (nurturing an account) to boost work efficiency, increase visibility, and hedge against the risk of suspensions.

Another oft-mentioned tactic against 'unfriendly' surveillance involves exploiting platform affordances. A case in point is the use of product links for selling processed foods. On Taobao Live, streamers must possess a Food Production License and pay additional deposits to sell such items. To bypass these requirements, streamers resort to temporary links labeled as "*yi/wu/shi-yuan lian-jie*" (one/five/ten-RMB merchandise), designed for handling price fluctuations and additional costs such as shipping fees. This method allows them to covertly sell processed foods under the guise of adjusting for price differences, without the necessary license and deposits. Streamers consider these regulatory failures as "supports in disguise from the platform," (Mu, 27 March 2022) which they believe benefit their career development. As such, the more "expectancy violations" (Hargittai et al., 2020; Swart, 2021) and/or the higher "algorithmic insensitivity" (Taylor & Choi, 2022), the more sensible the algorithmic gaze becomes to live streamers.

It is worth noting that in rural live streaming, while visibility is crucial, more is not always better. As LC pointed out, "If I sell 10,000 RMB today, 1,000 tomorrow, and only 500 the day after tomorrow, my streamer level [on Taobao Live] will definitely be downgraded." Such a decline in sales is algorithmically marked as an "abnormal glitch" (LC, 1 June 2022), leading to a significant drop in algorithmic visibility. Despite a preference for audience visibility over algorithmic/ moderator visibility for greater autonomy in "playing the visibility game" (Cotter, 2019), excessive audience visibility is not always desirable. Streamers may face demotion and pressure due to insufficient product availability to meet consumer demand and the challenges of maintaining high transaction levels daily. Consequently, experienced streamers often shift bulk transactions to off-platform channels, despite knowing that online transaction volumes positively correlate with the likelihood of being algorithmically recommended.

#### Conclusion: No gaze, no gain

This manuscript, one of the first to explore live streaming in rural China, examines the negotiation between rural streamers and the surveillance system through the lens of the algorithmic gaze. While numerous studies have identified the algorithm as a subtle and effective surveillance technique on digital platforms, little is known about how users "see" and behave around the algorithmic gaze. This gaze, a structured algorithmic way of seeing, assessing, and managing user activities, is crucial for rural live streamers' sales as it governs task allocation, performance evaluation, and visibility distribution in their platform-mediated work.

As a form of "persuasive technology" (Chan et al., 2010), the algorithmic gaze normalizes and manages user beliefs and behaviors in accordance with platform regulations and state discourses. In live-streaming commerce, its power is evident in three types of visibility frictions—challenges and uncertainties that tech-illiterate rural streamers face in securing visibility within algorithmic surveillance systems—visibility inactivation, interruption, and suspension. Embedded in different friction conditions, streamers experience different surveillance scenarios dominated by different gazers and thereby develop diverse responsive tactics.

First, visibility inactivation, often occurring at the outset of a live stream business, instills a work ethic in newcomers within the Chinese context, valuing diligence as a sign of professionalism and obligation. During their "internship assessment period," live streamers perceive two types of gazes: the human moderator gaze and the audience gaze. In the early days of Taobao Live's village broadcasting project, newcomers faced a strict 'probation' where they had to stream for at least three hours daily, regardless of audience presence. At this stage, streamers viewed human moderators as behindthe-scenes overseers, or the "shadow employers" (Gandini, 2021), gauging their resilience and commitment. Only if the streamer got approval from the moderator would s/he be rewarded with further algorithmic visibility. By 2020, Taobao Live implemented "friendly surveillance," allocating visibility to new streamers to gauge their ability to transform algorithmic visibility into audience visibility, characterized by audience participation and consumption in streams.

Table 2. Three types of gazers in the algorithm-based surveillance system

(Perceived) Gazers	Visibility frictions	Forms of surveillance	Imaginary gazers	Streamer's responsive tactics
Human moderator	Inactivation (Invisible algorithmically)	<ul> <li>Loyalty test ("lonely internship period" before 2020)</li> <li>Digital panopticon and self-discipline</li> </ul>	The gazer is a "zombie visitor" testing the streamer's "job loyalty" and resilience.	Work longer: Stream during the "lonely internship period" for at least three hours daily.
Audience	Inactivation (Some pre-allocated amount of algorithmic visibility)	<ul> <li>Supporting newcomer project (after 2020)</li> <li>Assessing the commerce and entertainment value of the stream</li> </ul>	The gazer is the online viewers in pursuit of fun and a sense of freshness.	Move farther, for example, to some remote mountains to give the audience a sense of freshness.
Algorithm	Interruptions (Reduced algorithmic visibility)	- Pop-up warnings - Panopticon effect	The gazer is a trained machine with pre-coded rules that define violations.	Keep the level of warning within a tolerable range to the algorithmic scheme.
	Suspension (Block algorithmic visibility)	<ul> <li>Permanent live-stream bans or even legal penalties</li> <li>Platform rules and policies</li> <li>Punitive measure</li> </ul>	The gazer is a punish- ment enforcer.	Affordance uses: "one/five/ ten-RMB link," cross-platform fan bases, and backup accounts

Consequently, success in growing their audience and sales figures results in greater algorithmic exposure. Throughout Taobao Live's development, streamers have experienced the power of both human and audience gazes in their visibility acquisition and sustainability within the algorithmic system. The streamers' understanding of the algorithmic gaze thus became a multifaceted surveillance assemblage incorporating human moderation, visibility algorithms, and audience engagement (see Table 2).

Second, visibility interruption, a sudden disruption that reduces visibility due to algorithmic warnings or content violations, is often met with indifference by streamers, who see these warnings as just pre-coded notifications before permanent suspension. Respondents believed that staying within an acceptable range of warnings would prevent harsher penalties.

Third, visibility suspension, typically a punitive response to law violations or repeated warnings, prompts streamers to exploit regulatory gaps to secure job continuity. While the algorithmic gaze is seen as a flawed smart system governed by algorithmic data coding, streamers perceive these loopholes as designed "support from the platform" (Mu, 27 March 2022). As instances of "expectancy violations" and/or "algorithmic insensitivity" grow, they paradoxically reinforce streamers' awareness of and affective engagement with the surveillance gaze.

Visibility strains in human-algorithm interactions render the algorithmic gaze apparent to streamers and subtly extract surplus value from their efforts. For participants, this gaze is flawed but vital for achieving algorithmically distributed visibility. Diligence and tactical resistance are essential for acquiring and increasing visibility. The fervent pursuit of "getting viral" has fueled the growth of "unpaid internships, freelance work, and user-generated content" (Duffy, 2016, p. 454). However, in agricultural live streams, visibility can be a gift only if it is daily stable and continuously backed by the supply of the goods. Otherwise comes the "threat of visibility." Rural streamers, acting as micro-entrepreneurs, often view monetizable visibility as a marker of personal success. Disparities in visibility distribution are seen as resulting from local competition, individual indolence, or lack of skills, rather than from structural inequalities and the platform's "tiered governance" (Caplan & Gillespie, 2020). This

perspective rationalizes and reinforces neoliberal governance regimes to transfer risks from central administrative bodies onto individuals (Duffy, 2016), diverting public attention away from deeply ingrained social inequalities to individual responsibility and effort.

Theoretically, our study introduces an analytical framework that delineates three prominent visibility-based frictional conditions within the domain of live streaming, enhancing our understanding of rural streamers' "folk theories" (Ytre-Arne & Moe, 2021) to interpret and respond to the algorithmic gaze. Looking ahead, future research endeavors might delve into additional consequential frictional conditions in various platform-based work settings. Viewing algorithmic visibility as a strategic mechanism aimed at mitigating frictions, we elucidate its intricate nature as a multifaceted assemblage of automated systems, human moderators, and audience participation. Furthermore, by treating the rural area as an academic cell and focusing on full-time rural live streamers-whose earnings are tied to their "algorithm skills" (Hargittai et al., 2020) despite limited algorithmic knowledge-this study contributes to a comprehensive understanding of power dynamics and user agency in humanalgorithm interactions.

#### Data availability

The data sets for this study are not publicly available due to ethical considerations. Researchers interested in the data can contact the first author at fuhan@link.cuhk.edu.hk.

## Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

## **Conflicts of interest**

There are no conflicts of interest to disclose.

#### Notes

1. This famous quote is commonly used in China to suggest that success often results from persistent effort, trial and error, and resilience.

- 2. Please refer to: https://www.statista.com/statistics/259451/annual-percapita-disposable-income-of-rural-and-urban-households-in-china/
- 3. In 2021, the market size of rural e-commerce in China reached 3.7 trillion RMB, with an annual growth rate of 18% (Jiang, 2022).
- 4. The name of the county is not spelled out to protect the privacy of our respondents.

## References

- Ash, J., Anderson, B., Gordon, R., & Langley, P. (2018). Digital interface design and power: Friction, threshold, transition. *Environment* and Planning D: Society and Space, 36(6), 1136–1153. https://doi. org/10.1177/0263775818767426.
- AliResearch (2022). Alibaba released a report on the e-commerce of agricultural products: Four trends in the digitalization of agricultural products. Retrieved from: http://www.aliresearch.com/ch/informa tion/informationdetails?articleCode=337103565887770624&ctype= 新闻. Date accessed 10 August 2022.
- AliResearch (2021). 2021 nian taobaocun mingdan chulu quanguo taobaocun shuliang yi tupo 7000 [The list of Taobao villages in 2021 has been released the number of Taobao villages in China has exceeded 7,000]. Retrieved from: http://www.aliresearch.com/ch/in formation/informationdetails?articleCode=256317657652006912& type=%E6%96%B0%E9%97%BB&adcode=&villageCode=&village Year=&citem=%E6%B7%98%E5%AE%9D%E6%9D%91. Date accessed 21 September 2023.
- Bhandari, A., Ozanne, M., Bazarova, N. N., & Difranzo, D. (2021). Do you care who flagged this post? Effects of moderator visibility on bystander behavior. *Journal of Computer-Mediated Communication*, 26(5), 284–300. https://doi.org/10.1093/jcmc/zmab007.
- Bucher, T. (2012). Want to be on the top? Algorithmic power and the threat of invisibility on Facebook. New Media & Society, 14(7), 1164–1180. https://doi.org/10.1177/1461444812440159.
- Bucher, T. (2017). The algorithmic imaginary: Exploring the ordinary affects of Facebook algorithms. *Information, Communication & Society, 20* (1), 30–44. https://doi.org/10.1080/1369118X.2016.1154086.
- Beer, D. (2013). Popular culture and new media: The politics of circulation. Palgrave Macmillan London.
- Bonini, T., & Gandini, A. (2019). "First week is editorial, second week is algorithmic": Platform Gatekeepers and the platformization of music curation. Social Media + Society, 5(4), 205630511988000. https://doi.org/10.1177/2056305119880006.
- Brighenti, A. (2007). Visibility: A category for the social sciences. *Current Sociology*, 55(3), 323–342. https://doi.org/10.1177/ 0011392107076079.
- Caplan, R., & Gillespie, T. (2020). Tiered governance and demonetization: The shifting terms of labor and compensation in the platform economy. *Social Media* + *Society*, 6(2), 205630512093663. https:// doi.org/10.1177/2056305120936636.
- Chan, N. K., & Kwok, C. (2022). The politics of platform power in surveillance capitalism: A comparative case study of ride-hailing platforms in China and the United States. *Global Media and China*, 7 (2), 131–150. https://doi.org/10.1177/20594364211046769.
- Chan, J. C. F., Jiang, Z., & Bernard, C. Y. T. (2010). Understanding online interruption-based advertising: Impacts of exposure timing, advertising intent, and brand image. *IEEE Transactions on Engineering Management*, 57(3), 365–379. https://doi.org/10.1109/TEM.2009. 2034255.
- Curchod, C., Patriotta, G., Cohen, L., & Neysen, N. (2020). Working for an algorithm: Power asymmetries and agency in online work settings. *Administrative Science Quarterly*, 65(3), 644–676. https:// doi.org/10.1177/0001839219867024.
- Cotter, K. (2019). Playing the visibility game: How digital influencers and algorithms negotiate influence on Instagram. New Media & Society, 21(4), 895–913. https://doi.org/10.1177/1461444818815684.
- Duffy, B. E. (2020). Algorithmic precarity in cultural work. Communication and the Public, 5(3–4), 103–107. https://doi.org/ 10.1177/205704732095985.
- Duffy, B. E., & Chan, N. K. (2019). "You never really know who's looking": Imagined surveillance across social media platforms. New

Media & Society, 21(1), 119–138. https://doi.org/10.1177/ 1461444818791318.

- Duffy, B. E. (2016). The romance of work: Gender and aspirational labour in the digital culture industries. *International Journal of Cultural Studies*, 19(4), 441–457. https://doi.org/10.1177/1367877915572186.
- Duffy, B. E., & Meisner, C. (2023). Platform governance at the margins: Social media creators' experiences with algorithmic (in)visibility. *Media*, *Culture & Society*, 45(2), 285–304. https://doi.org/10. 1177/01634437221111923.
- Foucault, M. (1977). Discipline & punishment: the birth of the prison. Vintage books.
- Freeman, S., Gibbs, M., & Nansen, B. (2024). Stories and data: Australian musicians navigating the *Spotify for Artists* platform. *Popular Music and Society*, 47(1), 22–44. https://doi.org/10.1080/ 03007766.2023.2286569.
- Fu, H., Li, Y., & Lee, F. L. (2023). Techno-cultural domestication of online Tarot reading in contemporary China. *Media, Culture & Society*, 45(1), 74–91. https://doi.org/10.1177/0163443722110 4700.
- Gandini, A. (2021). Digital labour: An empty signifier? *Media, Culture* & Society, 43(2), 369–380. https://doi.org/10.1177/01634437209 48018.
- Gillespie, T. (2018). Custodians of the Internet. Yale University Press.
- Girginova, K. (2016). The disappearing audience and reflexive visibility. *Social Media* + *Society*, 2(3), 205630511666217. https://doi. org/10.1177/2056305116662172.
- Hargittai, E., Gruber, J., Djukaric, T., Fuchs, J., & Brombach, L. (2020). Black box measures? How to study people's algorithm skills. *Information, Communication & Society*, 23(5), 764–775. https://doi.org/10.1080/1369118X.2020.1713846.
- Hou, J., & Zhang, Y. (2022). "Selling Poverty" on Kuaishou: How entrepreneurialism disciplines Chinese underclass online participation. *Global Media and China*, 7(3), 263–282. https://doi.org/10.1177/ 20594364221095895.
- He, J. (2021). Taobao zhibo cunbojihua shangxian sannian daidong nongchanpin xiaoshou chao 50-yi yuan [Taobao Live "Village Broadcast Plan" has been issued for three years, driving the sales of agricultural products to more than 5 billion yuan]. Tencent News. Retrieved from: https://new.qq.com/rain/a/20210908A047NP00.
- Jiang, B. (2022). China Big Tech keen to tap rural e-commerce market as Alibaba, JD.com join farmers' festival. Retrieved from: https:// www.scmp.com/tech/tech-trends/article/3193870/china-big-techkeen-tap-rural-e-commerce-market-alibaba-jdcom-join. Date accessed 21 September 2023.
- Kitchin, R., & Dodge, M. (2011). Code/Space: software and everyday life. The MIT Press.
- Kotliar, D. M. (2020a). The return of the social: Algorithmic identity in an age of symbolic demise. New Media & Society, 22(7), 1152–1167. https://doi.org/10.1177/1461444820912535.
- Kotliar, D. M. (2020b). Data orientalism: on the algorithmic construction of the non-Western other. *Theory and Society*, 49(5–6), 919–939. https://doi.org/10.1007/s11186-020-09404-2.
- Karakayali, N., Kostem, B., & Galip, I. (2018). Recommendation systems as Technologies of the self: algorithmic control and the formation of music taste. *Theory, Culture and Society*, 35(2), 3–24. https://doi.org/10.1177/0263276417722391.
- Lai, C. (2023). The making of a livestreaming village: Algorithmic practices and place-making in North Xiazhu. *Chinese Journal of Communication*, 15(4), 489–511. https://doi.org/10.1080/17544750. 2022.2085126.
- Lehuedé, S. (2022). When friction becomes the norm: Antagonism, discourse and planetary data turbulence. New Media & Society, 26(7), 146144482211084. https://doi.org/10.1177/14614448221108449.
- Li, H. (2020). From disenchantment to reenchantment: rural microcelebrities, short video, and the spectacle-ization of the rural lifescape on Chinese social media. *International Journal of Communication*, 14, 3769–3787.

- Li, W. (2020). Tuwei cyber culture in China: the rural as resistance? Retrieved from: http://politicsslashletters.org/media/tuwei-cyber-cul ture-in-china-the-rural-as-resistance/. Date assessed 20 December 2022.
- Li, M., Tan, C. K. K., & Yang, Y. (2018). Shehui Ren: cultural production and rural youths' use of the Kuaishou video-sharing app in Eastern China. *Information, Communication, Society*, 23(10), 1499–1514. https://doi.org/10.1080/1369118X.2019.1585469.
- Liu, T., Tan, C. K., Yang, X., & Li, M. (2023). Zhibo gonghui: China's 'live-streaming guilds' of manipulation experts. *Information*, *Communication & Society*, 26(6), 1210–1225. https://doi.org/10. 1080/1369118X.2021.1994630.
- Marx, K. ([1887] 1976). *Capital: A critique of political economy*, Vol. 1. Penguin Books.
- Newlands, G. (2021). Algorithmic surveillance in the gig economy: The organization of work through lefebvrian conceived space. Organization Studies, 42(5), 719–737. https://doi.org/10.1177/01708406209379.
- Petre, C., Duffy, B. E., & Hund, E. (2019). "Gaming the system": Platform paternalism and the politics of algorithmic visibility. *Social Media* + *Society*, 5(4), 205630511987999. https://doi.org/10.1177/2056305119879995.
- Prey, R. (2018). Nothing personal: Algorithmic individuation on music streaming platforms. *Media*, *Culture & Society*, 40(7), 1086–1100. https://doi.org/10.1177/0163443717745147.
- Rieder, B., Matamoros-Fernández, A., & Coromina, O. (2018). From ranking algorithms to 'ranking cultures': Investigating the modulation of visibility in YouTube search results. *Convergence: The International Journal of Research into New Media Technologies*, 24 (1), 50–68. https://doi.org/10.1177/1354856517736982.
- Singer, J. B. (2014). User-generated visibility: Secondary gatekeeping in a shared media space. New Media & Society, 16(1), 55–73. https:// doi.org/10.1177/1461444813477833.
- Sun, P. (2019). Your order, their labor: An exploration of algorithms and laboring on food delivery platforms in China. *Chinese Journal* of Communication, 12(3), 308–323. https://doi.org/10.1080/ 17544750.2019.1583676.
- Swart, J. (2021). Experiencing algorithms: How young people understand, feel about, and engage with algorithmic news selection on

social media. *Social Media* + *Society*, 7(2), 205630512110088. https://doi.org/10.1177/20563051211008828.

- Sued, G. E., Castillo-González, M. C., Pedraza, C., Flores-Márquez, D., Álamo, S., Ortiz, M., Lugo, N., & Arroyo, R. E. (2022). Vernacular visibility and algorithmic resistance in the public expression of Latin American feminism. *Media International Australia*, 183(1), 60–76. https://doi.org/10.1177/1329878X211067571.
- Taylor, S. H., & Choi, M. (2022). An initial conceptualization of algorithm responsiveness: Comparing perceptions of algorithms across social media platforms. *Social Media* + *Society*, 8(4), 205630512211443. https://doi.org/10.1177/20563051221144322.
- Tsing, A. L. (2005). *Friction: An Ethnography of Global Connection*. Princeton University Press.
- Tironi, M., & Albornoz, C. (2022). Surveillance and ecology of frictions in platform urbanism: The case of delivery workers in Santiago de Chile. *Tapuya: Latin American Science, Technology and Society*, 5(1). https://doi.org/10.1080/25729861.2022.2123633.
- Thompson, J. B. (2005). The new visibility. *Theory, Culture & Society*, 22(6), 31–51. https://doi.org/10.1177/0263276405059413.
- van Dijck, J., Poell, T., & de Waal, M. (2018). *The Platform Society*. Oxford Academic.
- Wang, S. (2020a). Chinese affective platform economies: dating, live streaming, and performative labor on Blued. *Media*, *Culture & Society*, 42(4), 502–520. https://doi.org/10.1177/01634437198 67283.
- Wang, S. (2020b). Calculating dating goals: data gaming and algorithmic sociality on Blued, a Chinese gay dating app. *Information*, *Communication & Society*, 23(2), 181–197. https://doi.org/10. 1080/1369118X.2018.1490796.
- Ytre-Arne, B., & Moe, H. (2021). Folk theories of algorithms: Understanding digital irritation. *Media, Culture & Society*, 43(5), 807–824. https://doi.org/10.1177/0163443720972314.
- Zhang, L. (2023). *The labor of reinvention: Entrepreneurship in the New Chinese Digital Economy*. Columbia University Press.
- Zhu, Y., Zhang, X., Yan, S., & Zou, L. (2023). Research on spatial patterns and mechanisms of live streaming commerce in china based on geolocation data. *ISPRS International Journal of Geo-Information*, 12(6), 229. https://doi.org/10.3390/ijgi12060229.

© The Author(s) 2024. Published by Oxford University Press on behalf of International Communication Association. All rights reserved. For permissions, please email: journals.permissions@oup.com Communication, Culture and Critique, 2024, 00, 1–9 https://doi.org/10.1093/ccc/tcae021

Original Article