

Being recognized in an algorithmic system: Cruel optimism in gay visibility on Douyin and Zhihu

Sexualities

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journals.sagepub.com/home/sex**Shuaishuai Wang** 

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Abstract

Drawing upon “algorithmic ethnography” (Christin, 2020), this article enrolls algorithms to gather qualitative data to examine how Chinese social media platforms and their algorithms intersect with gay visibility. By looking critically into the ways that gay romance and HIV-related content are generated on Douyin and Zhihu, respectively, we argue that algorithmic gay visibility serves as a form of cruel optimism, which becomes a profitable convenience for corporate social media platforms and operates in an exclusionary matrix. The content that ordinary Chinese gay men are presented with (for example, the able-bodied, romanticized normative gay relationship and overly optimistic self-help advice for gay men living with HIV) is economically viable, which produces trending and monetizable items, including music tracks, viral dance routines and challenges, personas, medicine promotions, as well as commercial healthcare training and marketing. In contrast, non-conforming bodies, non-monogamous and queer relationships, as well as the depression, stigma and discrimination experienced by gay men living with HIV are algorithmically invisible.

Keywords

Social media, algorithm, gay visibility, cruel optimism, China

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Introduction

In early 2021 on China's Quora, Zhihu, a user complains about the presence of same-sex intimacies on Douyin, the Chinese domestic version of TikTok. "Why does everyone become a gay supporter on Douyin?" they ask. "I'm straight. Those who put a rainbow flag emoji in their usernames and are busy touting homosexuality, especially some female users, really disgusted me. Isn't it horrible and sad if most men were only interested in men in a nation?" Another user answers: "Why don't you just click 'not interested'? Big data collects your preferences and recommends videos catering to your interests, don't you know that? ... I'm very grateful to Douyin, which allows Chinese gay people to publish same-sex videos and come out online." This confrontation between the questioner and the responder crystallizes a phenomenal growth in user-generated gay content on Chinese short-form video platforms in recent years, and at the same time, highlights its controversial nature.

Similarly, on non-entertainment Chinese social networking sites, such as Zhihu, a popular question-and-answer digital platform, the prevalence of gay men searching for and engaging with HIV/AIDS-related questions is becoming another type of significant gay online content in China. Part of the explanation for this is that the Chinese government has long been conflating the issues of homosexuality and AIDS prevention, and therefore, homosexuality is recognized in China "only as an object of medical and psychiatric management, and above all as a threat to public health" (Liu, 2015: 36). In this vein, HIV/AIDS-related content on Zhihu grows into a contested site where competing notions of being a "good" gay man clash with homophobic and AIDS-phobic comments. The design and affordances of Douyin and Zhihu bring together music, filter effects, dance routines, and viral challenges (predominantly seen on Douyin) as well as lived experiences, stories, and knowledges (prevalent on Zhihu), which has created two dynamic yet controversial nodes in the web of gay media cultures in China. They both contradict the Chinese government's increasingly strict regulations on the perceived growth of queer online content in China, including the 2016 ban on LGBTQ characters in online streaming services (Ellis-Petersen, 2016); the 2021 ban on "sissy men" in the Chinese entertainment industry (Wang, 2021); and a recent shutdown of LGBTQ WeChat accounts (Ni and Davidson, 2021).

Douyin is a short-form video sharing social networking service in China. With more than 600 million daily active users (Xinhuanet, 2021), Douyin allows a diverse repertoire of creative expressions, within which an important genre is "gay romance" videos. While these short videos feature sweet, intimate man-on-man actions, it is rare to see sexual identities, such as "gay," "queer," or "tongzhi," attached to them, despite some creators using the hashtag "tl," an abbreviation of "tongxinglian," the Chinese translation of homosexuality/homosexual(s). The short videos in question are often presented with hashtags of "husband & husband" (*fufu*), "rainbow boys" (*caihong nanhai*), "roommates" (*shiyou*), and "muscle" (*jirou*). This gay content has become extremely popular. Videos hashtagged with "rainbow boys" had been viewed more than three billion times on Douyin between April 13 and April 24 2021.¹ A similar scenario can be found on Zhihu, which has become a platform with a significant amount of gay content (Zhao et al., 2022). The dual

stigmas of being gay and (possibly) having HIV/AIDS propel a large number of Chinese gay men to use the platform to search for information on HIV/AIDS and make sense of the shame, anxiety and fear attached to the virus. Based on search and interaction history, Zhihu constantly feeds these users with encouraging and uplifting answers, offering a toxic optimism that promises Chinese gay men living with HIV a better life, while circumventing the real life challenges faced by them, such as discrimination in employment and the HIV/AIDS-phobia in Chinese society.

Although algorithms are usually proprietary and black-boxed, they are made visible in people's online encounters with the content that is ordered, ranked, and selected for their feeds. In this sense, algorithms are not independent from the context in which they are embedded, but they operate as a knowledge apparatus about whatever they are tasked to solve (Gillespie, 2014). By probing into the affective dimension of algorithmically recommended content on Douyin and Zhihu, this article investigates how algorithms engender a reality that is concerned with the well-being of Chinese gay men. Combining the critical insights of "the algorithmic imaginary" (Bucher, 2018) with the notion of "cruel optimism" (Berlant, 2011), this article asks the following questions: How do recommendation algorithms, which are often argued to produce filter bubbles for users (see, for example, Pariser, 2011), give rise to gay visibility that is paradoxical in a country where homosexual content is heavily censored? What data are included and excluded in the algorithmic configuration of gay visibility in China? What does this algorithmic visibility promise Chinese gay men with respect to their social, emotional, and physical well-being? The data employed for the analysis stems from 76 gay romance videos and 35 HIV-related answers collected via recommendation algorithms by using two research profiles on Douyin and Zhihu, respectively.

This article begins with a critical discussion of our theoretical framework that combines "algorithmic imaginary," which refers to users' emotional and affective encounters with algorithms (Bucher, 2018), with the concept of "cruel optimism," which "exists when something you desire is actually an obstacle to your flourishing" (Berlant, 2011: 1). It then introduces the "algorithmic ethnography" method that enrolls algorithms to gather qualitative data (Christin, 2020), which is central for this study. We then turn to the analytical sections, where we demonstrate that the recommended "gay romance" short videos on Douyin privilege the able-bodied, romanticized normative gay relationships, while Zhihu centers on overly optimistic self-help advice for Chinese gay men living with HIV. In contrast, non-conforming bodies, non-monogamous and queer relationships, as well as the depression, stigma and discrimination experienced by HIV-positive gay men are algorithmically invisible. As such, recommendation algorithms of both platforms favor gay content that can produce trending and monetizable items, including music tracks, viral dances and challenges, personas, medicine promotion, as well as commercial healthcare training and marketing. Algorithmic gay visibility therefore becomes a profitable convenience for corporate social media platforms. We conclude with a critical discussion of how algorithmic gay visibility gives rise to a cruel optimism in relation to contemporary Chinese gay culture.

Algorithmic visibility, imaginary, and cruel optimism

Often in a biased and discriminatory way, algorithms have become the central machine that distributes and structures the visibility of users and user-generated content on social media (Bishop, 2018; Cotter, 2019). As coded procedures that transform input data into output results, algorithms are coupled with datasets (Gillespie, 2014; Kitchin, 2017). The practices of including or excluding data in dataset building thus serve as the initial gatekeeper for online visibility (Gillespie, 2014). In 2019, for example, a YouTube video titled “HP Computers are Racist” raised racial concerns because a face recognition software developed by Hewlett-Packard was unable to identify the faces of Black users whereas for White users the software worked effectively. Although HP attributed the error to lighting issues, claiming that its algorithm failed to measure the difference in intensity of contrast between the eyes and the upper cheek and nose (Cheney-Lippold, 2019), it reveals that the algorithm was arguably not well-tested with diverse datasets before it was put into use. Datafication is the process of translating items and social processes into computational codes that can be readily recognized by algorithms (Kitchin, 2017). Given the intrinsic complexity of cultural phenomena and social issues, it is very unlikely that this translation process can factor all elements of a cultural issue into the data system. This inherent flaw of non-inclusive datasets impacts visibility in a negative way.

Even within a representative dataset, items of information are not weighted equally in algorithmic systems because of preferential order, rank, and filter criteria based on calculated relevancy and economic viability of content (Cotter, 2019; Gillespie, 2014). However, some data are dismissed and even banned due to lack of financial value. In analyzing beauty vloggers, for example, Cotter (2019) finds that YouTube rewards greater visibility to content that aligns with the demands and needs of advertisers, privileging vloggers who are female gender conforming and who embody middle-class tastes (in, for example, fashion, baking, and romance). In doing so, YouTube favors videos with good visual and audio quality and curbs sexual topics and profanity so as to match videos with branded content (Cotter, 2019).

In calculating relevancy, social media platforms keep the criteria cursory and vague, allowing room for maneuver and manipulation. For example, although Douyin makes its algorithmic criteria of personal data collection public, it does not specify how content is categorized and how each content category is weighted in the recommending processes. Instead, they provide a vague description of how the “For You” page factors the information of user interactions (for example, clicks, searches, likes, shares, comments, time engaged with a video) and video information (such as captions, sounds, and hashtags) (Douyin, 2022). Leaked documents published by media outlets, however, show that Douyin’s global version, TikTok, exerted algorithmic punishments for content that is deemed undesirable, including LGBTQ creators, people with disabilities, unattractive faces, or obesity, as well as videos with a shabby and unappealing background (Biddle et al., 2020; Köver and Reuter, 2019). In curating what is (in)visible to viewers, these unspoken rules work hand-in-hand with automated algorithms. In practice, these “unattractive” videos are classified as “not recommended” or “not for feed,” which means they are not removed, but are hidden from a user’s “For You” page (Köver and Reuter, 2019).

Therefore, querying the (source) code that makes up algorithms is beside the point when they come to be operationalized in a cultural context, therefore influencing and changing the very context itself. Scholars in critical algorithm studies, including Gillespie (2014), Bucher (2018) and Seaver (2019), have pointed out the limits of understanding algorithms merely in terms of their code or more broadly defined technical qualities. What is at stake is, rather, the complex arrangements of people and information in algorithms, which prioritize one post over another by assigning a score. As Beer (2017: 7) argues, algorithms are evoked “as a part of broader rationalities and ways of seeing the world” and the question of how algorithms “promote certain values and forms of calculative objectivity” needs to be put at the center of the query in the study of algorithmic systems. This is, in large part, because “algorithmic systems, with their blend of ‘technical’ and ‘cultural’ concerns, spread across institutional settings in broader social contexts” (Seaver, 2019: 420). Algorithms also construct visibility based on a set of rules that are commercially orientated, and fairness is practically irrelevant (Bishop, 2018; Cotter, 2019).

Another reason for understanding algorithms beyond their technical composition is that they are intimately entangled with user practices through which agency is exerted (Gillespie, 2014; Wang, forthcoming). Users are actively involved in making sense of their algorithmic encounters with content that is suggested in their feeds. Bucher (2018) describes this process of users contributing to the understandings of algorithms as the “algorithmic imaginary.” Combining with the notion of affect, Bucher (2018: 97) argues that what people experience is not the mathematical output, but “the moods, affects, and sensations of which algorithms are generative.” These affective encounters have been woven into the fabric of Chinese gay men’s everyday use of social media. On gay live-streaming platforms, for example, same-sex affects—sensations and intensities of intimacy in both performing and watching livestreams—are produced, circulated, and mediated by social media and algorithms (Wang, 2020b). In this sense, algorithms lay out “affective expectation of the experience” for users in their encounter with social media content (Berlant, 2011).

However, as algorithms are mostly designed to solve a market problem and therefore favor positive and economically viable content (Bishop, 2018; Chen et al., 2021; Cotter, 2019), there is often a discrepancy between users’ algorithmic encounters and the reality of their everyday experiences, in which struggles and mishaps are likely to be more prominent. In this regard, this study uses the notion of “cruel optimism” to examine this discrepancy. According to Berlant (2011), cruel optimism operates in all attachments in our everyday life. What makes your attachment to something cruel is different from what makes it merely disappointing. Optimism becomes cruel “when the object/scene that ignites a sense of possibility actually makes it impossible to attain the expansive transformation for which a person or a people risks striving” (Berlant, 2011: 2).

This concept is vital to understanding why people tend to stay with norms and fantasies of life that fail to work, and has been used to critically examine today’s media and cultural practices (e.g., Liu et al., 2021; Nakamura, 2017; Tziallas, 2020). For example, reflecting on his attachment to Grindr, a popular gay hook-up app, Tziallas (2020) addresses the cruel optimism of gay apps, which tend to make their gay users feel optimistic even if

these apps do not deliver the things they want and are considered by many gay men as an obstacle to their flourishing. Meeting people through Grinder could be a mix of easy and difficult, but gay men are still expecting to be rewarded with a satisfying encounter. Similarly, by closely looking into algorithmic gay visibility on Douyin and Zhihu, we argue that it is dependent on optimism and serves as a form of cruel optimism. On Douyin, the fantasy of gay visibility promises recognizable queer(ed) spaces and normative, happy gay lifestyles, which define Chinese gay men as “law-abiding, well-educated and both aspirational and model citizens” (Bao, 2018: 83). Meanwhile, it fails to speak to cruelty—the structural inequalities that still persist in China, which perpetuate heteronormativity (and homonormativity) and continue to marginalize gender and sexual minorities, especially those who are poor, rural, lack education and isolated. On Zhihu, similarly, the algorithmic gay visibility promises HIV-positive gay men a supportive and communal space as well as a calculated public (Gillespie, 2014), while failing to correspond to the everyday reality of individual, institutional, and structural discrimination against gay men living with HIV in China.

Methods

This study employs “algorithmic ethnography” as proposed by Seaver (2017) and Christin (2020), which is used to address how algorithms intersect with society, culture, and politics in intricate ways. Algorithms are actors that produce knowledge about human society, acting as an apparatus that orders things in a programmed way. Studying algorithms therefore must put the technical artifacts back into the context and sociopolitical structure in which they are developed and embedded. In this vein, algorithms are neither a blackbox nor merely technical devices. This study enrolls algorithms in data collection to examine how algorithms intersect with gay visibility in the Chinese context. In doing so, two research accounts were created on Douyin (13 April 2021) and Zhihu (19 September 2020), respectively. We then scrutinize how the two platforms formulate their recommendation algorithms, repurposing algorithms for data sampling (see also Wang, forthcoming).

For Douyin, its “For You” page factors user interactions, video information, as well as device and account settings, with the latter receiving a lower weighting because users do not actively express these as preferences. Taking this into consideration, we initially “liked” four short videos on Douyin that feature gay intimacies and followed their creators to start to engage with the platform’s algorithm. Then, we continued to interact with the algorithmic recommendation system by manually “liking” the gay romance videos that appeared on our “For You” page and following their creators each day between April 13 and April 24, 2021; meanwhile, we downloaded these videos and their associated metadata (e.g., captions, hashtags, sounds, view counts, and comments) and captured screenshots. In the end, we sampled 76 short videos from 14 gay male creators. All creators are pseudonymized in our analysis, but their ages (ranging from 19 to 24 years old) and numbers of followers (ranging from 10,000 to 5,049,000) are disclosed.

Zhihu profiles users in accordance with personal data on preferences, habits, and location. On account of the data-fed user interests, the platform presents users with the

most relevant content. By content, we refer specifically to user-posted answers generated under a question, instead of the question itself. This is because questions on Zhihu tend to be short and brief, often starting with “how,” “why,” and “what.” In contrast, answers are usually longer, detailed, and cover a variety of perspectives because of the divergent backgrounds of users who provide them. According to [Zhihu \(2021\)](#), it collects and analyzes users’ interactional data in three major dimensions: (1) reading and commenting; meaning users’ browsing histories and interactional activities (upvotes and downvotes); (2) posting, including referring to questions that are posted and answered by a user; (3) following; the platform traces activity flows relating to following other users, subscribing to questions, time engaged with a question, as well as questions saved or followed by a user. Structured in this way, questions or topics that have activated user engagements, such as searching, reading, clicking, or following, are automatically registered into the data system. The algorithms will then pick up on that and recommend relevant questions and answers to users’ timelines.

Accordingly, we searched keywords including “homosexuality,” “HIV/AIDS,” and “gay” in combination to allow the platform to register our research account’s preferences. The initial search returned questions, such as “Are gay men contracting HIV as a consequence of their own deeds?” “As a gay man living with HIV, how should I live the rest of my life and die in dignity?” and “Why does homosexuality lead to HIV/AIDS?” We then clicked on the posts that fall under the scope of the study. In collecting answers, we selected content by users who indicated their gay identities in the answers. In this way, we clicked on a number of posts and followed four questions related to homosexuality and HIV. After this, we left it to Zhihu to process this interactional data, and then we sampled the recommendations. In the end, 35 answers were collected by the end of March 2021.

Douyin: Encountering homonormative gay intimacies via algorithmic recommendations

On Douyin, we sampled 76 “gay romance” short videos, most of which were 10–30 s in length, repeating playback on a loop. The videos spotlight the ordinary, everyday lives of their creators (and sometimes family members, friends, fans or even strangers) performing romantic gay intimacies and relationships in a range of diverse ways, from cooking and eating together, to pillow talk; from shopping at a local supermarket to flirting on a subway train; from joking around teasingly to kissing in a cinematic way; from casually showcasing romantic moments and love stories, to elaborately homoeroticizing the popular hashtag challenges on the platform. In the mainstream media scene in China, severe restrictions have been imposed on the spread of homosexual-related content as a result of the long-standing discrimination against gay people in Chinese society ([Jia and Zhou, 2015](#)). In contrast, Douyin’s algorithm privileges and rewards these gay romance videos, seemingly creating a new queer space that “involves the construction of a parallel world, one filled with possibility and pleasure, while functioning simultaneously as an intervention in the world of dominant culture” ([Tattleman, 2000](#): 223–224).

Gay romance short videos on Douyin are normally filmed in mundane queer private spaces, such as bedrooms and living rooms. The bedroom has become a new sensation for

gay short video creators and a niche queer aesthetic on Douyin. This is especially true of Chinese young gay couples' bedrooms, with double bed, simple and cosy-looking beddings, as well as cute couple sleepwear. Both Douyin and its international version, TikTok, have been actively showcasing this traditionally private space. Their algorithms celebrate youth bedroom cultures (Kennedy, 2020), which has been further facilitated by the global lockdown due to the COVID pandemic and the consequent boredom culture. In the Chinese context, bedroom and other queer private space have long been seen as important, safe, and sometimes the only space for gay men to explore their identities, desire, and sexualities, despite the rise of commercial queer spaces in metropolitan cities. On Douyin, however, the bedroom cannot be considered as "private" anymore, since it has become the recurring background in many gay creators' short videos with millions of views and likes.

The viral spectacle of young gay couples' bedroom culture is greatly encouraged by Douyin's algorithm, which has been "embedded in the architecture and ethos of the platform, in the metrics of likes, visibility via shares, and in the critiques within the comments" (Kennedy, 2020: 1071). Gay creators tend to include recognizable popular tags, pink bubble filters, as well as Douyin's own labeled cover songs in their short videos, inviting viewers to actively participate in and comment on their "private" everyday gay intimacies in bedrooms, and simultaneously, share them as "eye candy" with more viewers. For example, gay short video creator "R" (with 251,000 followers) posted a short video, set to an upbeat music track, within which he and his boyfriend were waking up and then tidying up the bed together, shirtless, while their fluffy dog was exercising on a treadmill. This video has received 45,000 likes, 3430 comments, and 799 shares, with the most-liked comment admirably saying "how could two guys work as a team so well, whereas for a straight couple, it is the woman who always feels so exhausted [emoji-person facepalming]!" This comment attracted many sympathetic replies and kick-started further discussions. The discursive interactions between different viewers on Douyin can sometimes serve as a feedback loop to gay creators. When these creators are motivated by the algorithmic rewarding system of the platform, they need to be receptive and responsive to their audience, just like gay influencers on YouTube (Abidin, 2019). Many gay creators acknowledged their audience by creating a cool gay version of their followers' favorite viral videos on Douyin, such as straight couple goals challenges and outfit change transitions.

Douyin not only encourages gay creators to publicize their private spaces, but it also invites and rewards them to "queer" the public space through both participating in the popular challenges on the platform and initiating their own viral gay couple pranks. Hashtag challenges are an integral part of the platform and the Douyin community because they engineer user engagement and participation via repeated algorithmic recommendations. Many gay creators actively participate in the viral challenges on Douyin's official top challenges list. For example, gay short video creator "A" (22-year-old, with 840,000 followers) joined one of the most popular challenges on Douyin, namely "*kan wo shoushi xingdong*" (#followmygesture), in which two individuals (typically close friends or heterosexual partners) perform an extravagant hand or body gesture immediately prior to a vehicle or train whizzing past. This challenge had been viewed more than 1.4 billion

times by the end of April 2021. Gay short video creator “A” (and his same-sex partner) participated in this challenge in a sweet, homoerotic way. Like many other Douyin users, he carried his partner on his back to “direct” the subway train pulling in (Figure 1). The design of Douyin brings together video, popular challenges, music and dance, which enables its users to build human connection and positive feelings through imitation and

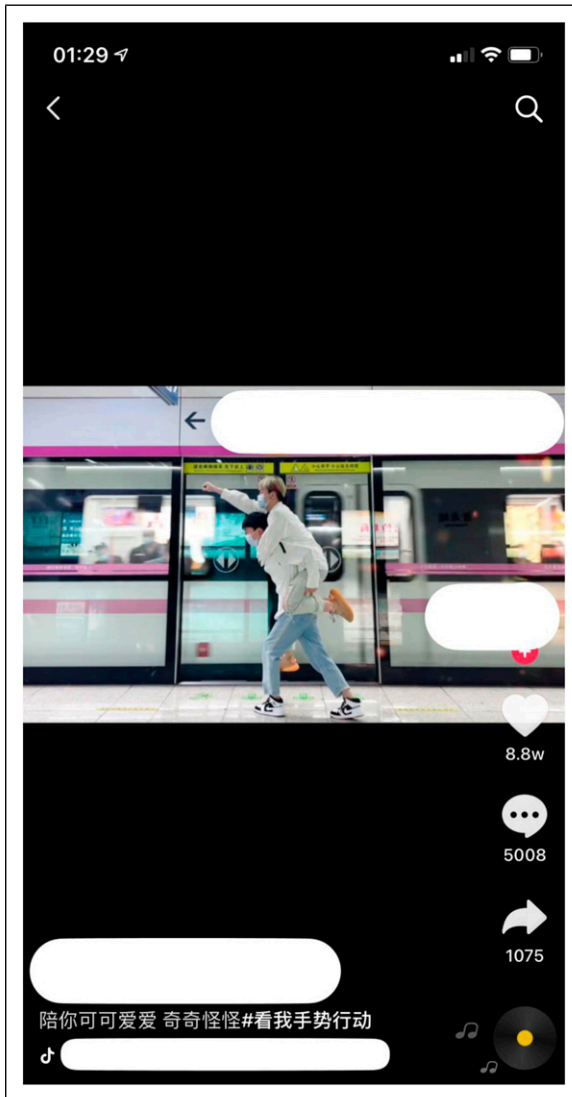


Figure 1. Gay short video creator “A” and his partner participating in #followmygesture challenge on Douyin.

synchronized movement. For gay creators, participating in these viral hashtag challenges demonstrates that homosexuality is compatible with the platform's heterosexual structures, which makes this type of gay visibility a resistance to the isolation and invisibility experienced in real life.

Moreover, viral hashtag challenges in the sampled videos also demonstrate the ways public spaces can be "queered" in China. Many gay creators filmed their challenge videos in metropolitan subway stations. By showcasing same-sex intimacy and affection in public both romantically and creatively, these videos reconstruct the heteronormative realities of the subway stations. The local supermarket is another popular public venue to be "queered" on Douyin, where gay couples, normally wearing matching outfits, hold hands and enjoy their ordinary weekly shopping trips. In some cases, public spaces are homoeroticized by gay creators in a more deliberate way to boost their visibility. Many of them "kabedoned" their boyfriends in public transport, which involves pushing them into a wall fiercely and trapping them within their arms (Figure 2), while other gay couples made their videos viral by pranking each other in public. For instance, some young gay creators surprised their boyfriends by calling them "wife" or "baby" softly on purpose at local restaurants and convenience stores. By performing gay intimacies in public spaces, these viral videos can therefore be understood as an exploration of the "queerscapes" of Chinese gay community, which aims not at domination and segregation but "the recognition of the presence (and the inherent rights for expression in public arenas) of a range of minorities' sexualities and experiences" (Ingram, 1997: 29). More importantly, they fit into two of the most profitable genres on the platform, namely, "couple content" and "comedy" (Gu and Zhang, 2020), and the most prominent of them have become the new genre template for other gay creators who strive for visibility to follow and learn how to be recognized by Douyin's algorithm.

Gay short video creators are key nodes of queer networks, identifications, and communities on Douyin. Their gay couple vlogging practices can help us understand their "reality"—the web of everyday life that comprises both internal states, including desire, love, fear, anxiety and external places, events, and culture—experienced by gay men in China. However, their experience and content are specific to Douyin and mediated by the structures of the platform. Bishop (2018: 77) argues that "tags are symptomatic of YouTube genres, and in turn, genres on YouTube are indicative of hegemonic and normative tagging patterns." On Douyin, similarly, tags determine the genre formation. In addition to the tagging practices in viral hashtag challenges, gay creators also manually included popular tags, such as "couple," "rainbow boy," "roommate," "precious boy," "everyday vlog," "emotion," "foodie," "cute pet," and "muscle" in their videos to follow the popular patterns of search on Douyin, which intertwines everyday gay intimacies with consumption, lifestyle, and popular culture. These tags constitute the "algorithmic identities" of both gay short video creators and their (gay) viewers on the platform (Cheney-Lippold, 2019), perpetuating the homonormative gay politics in post-socialist China: gay male identities can "exist only as a private, individual, consumption-oriented and apolitical identity" (Bao, 2018: 90).



Figure 2. Gay short video creator “S” (22-year-old, with 1,402,000 followers) “kabedoning” his boyfriend in public transport on Douyin.

Douyin seems to make Chinese gay men feel positive, promising them new queer(ed) spaces with visibility, possibility, and pleasure, and providing a basis for contact, communality, and community. Its algorithm shifts the dialectics of public and private arenas, allowing for a wide range of social (and erotic) contact, and sometimes, it can even

provide space for public discussions on gay rights issues, such as marriage equality and gay surrogacy, and forge new alliances between different groups of gender and sexual minorities in China who are perceived as a threat to the heteronormative status quo (e.g., the alliances between gay men and female slash fans).

However, shifting the focus from optimism to cruelty, it is important to note that queer visibility is always paradoxical, which tends to “begin from assertions accepted as true about a positive good ... [which] turns out to be at least partly negative, contrary to expectation” (Barnhurst, 2007: 2). The young, middle-class, attractive gay short video creators are not transcending heteronormative constraints. Their digital vlogging practices are very limited by the platform’s algorithm, which guides them to produce more recognizable homogeneous gay content, and at the same time, punishes diverse video genres. It offers sweet, homonormative viral spectacles that fit into Douyin’s brand image as “being young and lively,” “having fun,” and “advocating positive energy” (Chen et al., 2021), rather than authentic access to resources.

Drawing upon their rich ethnographic fieldwork, Liu et al. (2021: 14) critically look into Chinese rural migrant workers’ online dating experiences, observing that “digital dating creates a sense of possibility and continues to attract Chinese migrant workers to desire it while in fact impeding them from tackling the structural inequalities in contemporary Chinese society that are obstructing realization of their desire.” In a similar way, the compelling fantasy of algorithmic gay visibility on Douyin presents an urban, middle-class, cosmopolitan life in China which many gay men desire but have “failed” to achieve (for example, many gay viewers commented on the sampled videos, wondering why they cannot achieve such “happy” gay relationships and lifestyle), and simultaneously, fails to correspond to many Chinese gay men’s lived experience, especially those who are “poor, rural, HIV-positive, non-monogamous, selling sex, etc.” (Kong, 2016: 11). The queer(ed) spaces promised by Douyin’s algorithm are therefore not always queer, but sometimes homonormative. They hold gay men back from questioning the lack of support for Chinese gay communities on an institutional level, such as in relation to education, employment, healthcare, and social work, and cannot make up for the structural discrimination against gender and sexual minorities in China.

Zhihu: Algorithmic ordering and recurring encounters with HIV/AIDS

In China, AIDS politics and gay politics have become inextricably intertwined. Chinese news media tend to see AIDS as “a proof of the danger of homosexuality” and dramatize “the casual sex among homosexuals and the existence of homosexual AIDS patients” (Zheng, 2015: 52), which has constructed gay men as a public health threat. On Zhihu, if a user has engaged with HIV/AIDS-related questions or answers, the topic will continuously appear on their timeline automatically. This has two major manifestations. First, diverse perspectives can be found in questions regarding HIV/AIDS, such as life expectancy after HIV infection, possible cures for HIV/AIDS, love and work, as well as HIV/AIDS-phobia. These questions often use the first-person narrative (e.g., “How did you become HIV-positive?” “Should I leave my boyfriend because he has HIV?” “What it

is like to live with HIV?”). Second, if a user has interacted with a specific HIV/AIDS question on Zhihu, the platform would recommend to this user other answers under the same question. In the event that a new answer is added to the question, Zhihu will recommend this answer to the user.

Not only does algorithmic logic structure users' HIV/AIDS encounters on Zhihu, it equally maps out the fears, struggles, hardships, and self-affirmation that the concerned users have been wrestling with over the course of living with HIV. However, this is not to say that HIV/AIDS content takes over the newsfeed. Zhihu simultaneously pushes new topics to test if they activate a user engagement. Illustrated by our research account, the recommended answers and questions are often a mixture of gay, HIV/AIDS, STDs (sexually transmitted diseases), COVID, (terminal) cancer, relationships, gym, cooking, pets, music, and technology, to name only a few. Over the course of our research, topics akin to homosexuality (re)appeared on the research account's feed, such as gay men's love confessions to straight men. Among these topics, HIV/AIDS-related content keeps recurring due to the research account's following and bookmarking activities.

In the answers collected through the platform's recommendations, gay men tend to repurpose Zhihu as a “personal” journal to document their ongoing lived experiences with HIV. These gay users keep coming back to their original answers, editing, or adding a latest update of their symptoms, treatment, lab results, emotional struggles, and coming to terms with HIV. Typically, a date is added for each update, and sometimes answers are supplemented with pictures of their HIV medical report (with their private information redacted), medical bills, and pills. Users who have left comments come back regularly for the updated answer or leave a new comment to check in on the question-posting user. The majority of comment-posting users added their own stories of how they acquired HIV. Others were recommended this answer while searching HIV-related information on Zhihu, expressing distress and anxieties as they waited for HIV testing results. Significantly, some users follow up with the original questioners to enquire about symptoms of the illness after themselves engaging in risky sexual activities.

Such engaging behavior leads to recurring encounters with HIV content, bringing comment-posting users back to their original answers. This pattern of coming back sustains the viability of the answer, making it continuously surface onto timelines of involved users. As such, these interaction data, as the foundation of recommendation algorithms, engender an affective, communal space in which the concerned gay users can discuss their suspected symptoms, seek consolation and support, express remorse and regret, and rebuild self-affirmation. In a way, these recommendation algorithms bond these gay users together under the topic of HIV/AIDS, empowering them to reiterate the stories of how they acquired and live with HIV. Through this process, Chinese HIV-positive gay men are allowed to grieve, and possibly heal, through communications between users with their regular “coming back” practices. This is represented by the following answer in response to the question “How did you become HIV-positive?”

I'm 26, male, I was diagnosed with HIV. I've never thought one day, I will be infected with HIV. I use condoms with my boyfriend, so I've never thought I could be infected ...

1 February 2021

On my way to the hospital, I was hoping that they've messed up with the results ... but the doctors said they have sent my blood sample to the Center for Disease Control and Prevention (CDC) because the results are not good.

4 February 2021

I suppressed my anxieties and nerves, going home for the Chinese New Year. I blamed myself, fearing that I could pass the virus to my parents ...

5 February 2021

The second day after I returned home, the municipal CDC called. The results remain positive. They informed me that my blood sample will be sent to the provincial CDC for further lab tests ...

18 February 2021

The results confirmed that I was infected with HIV...

Epilogue

In the past, if I failed an exam, or had bad performance at work, I still got the chance to start over. But HIV infection cannot be undone ... I thank all the warm and lovely words in the comment thread ... on Zhihu, I came to know many friends whose situations are the same with me, we encourage each other, the chats with them have helped me let go and move on ... if you have questions, leave a comment, I will try my best to answer.

This journal-like answer is typical in our dataset: users start out in denial, and then express regrets for their parents. Collectively, these answers chronicle their personal HIV stories, trying to make sense of emotions like shame, guilt, and regret. The answers eventually all share the same positive attitude to life. However, while gay men living with HIV crave for well-being and support, our findings suggest that algorithms perpetuate a type of cruel optimism with respect to stigma, love, and work by prioritizing content that features a positive shift from self-denial to self-affirmation.

An algorithmic cruel optimism: Stigma, love, and work

Our collected answers can be broadly categorized into five groups: (1) emotional struggles from remorse to self-affirmation; (2) documentation of HIV treatment; (3) confrontation with the social stigma associated with HIV/AIDS and sexual identities; (4) science news and general knowledge on HIV/AIDS; and (5) branded content. Zhihu's algorithm privileges the answers that chronicle a positive shift from self-denial to self-affirmation, which generated more engagements in terms of the number of upvotes and comments, over those answers that fixated on the negative aspects of living with HIV. For example, the above-mentioned journal-type answer that we analyzed received 446 upvotes and 306

comments. In contrast, the answer below, which describes the experience of a young Chinese gay man living with HIV, only garnered 32 upvotes and 12 comments:

I sometimes feel sad, but it is the nothingness that lasts in me. I'm not saying that I don't feel sorry at all. It is that my indifference toward life has been growing ... I feel guilty when I became HIV-positive, I feel sorry for my parents, for the love and care they've given me ... I've been hoping that I can outlive my parents, it's unbearable to see one's child die earlier than oneself ... On that note, I don't like the word "experience". For me, "experiences" are used for good things, whereas HIV is not something that one can experience. It is rather something that befalls a person.

According to the algorithmic logic, answers that generated more interactions will be recommended more frequently. By this process, optimism is (re)produced and amplified by algorithms, while the thorny realities that gay men living with HIV face on a daily basis—being persuaded to leave school and work, experiencing discriminatory treatment in hospital if their status is disclosed, being refused health insurance (Wan et al., 2009)—have been dismissed. In contrast to Douyin where the cruel optimism arises from gay men's yearnings for intimacy and romance, on Zhihu the cruelty of the algorithm is embedded in the optimistic fervor that leads to a suppression of the difficult realities expressed by HIV sufferers and a promotion of the more positive posts. Accordingly, a gay visibility dependent on optimism is constantly engendered and expanded in the feeds of users, despite the HIV/AIDS-phobic institutional barriers that are still in place to impede the development of this optimism in real life.

In unloading the ever-increasing stress and frustration accrued from taking pills at the exact same time every day, some gay users started to romanticize it as "eating candies" (*chi tang*). As a popular discourse on Zhihu, "candies" are a trope for pills that treat HIV. Many users use the trope hoping for a future in which "everything will get better":

I know how miserable it can be to "eat candies". However difficult that is, you should stay strong for your parents, you are a treasure for them. I believe there must be a cure for HIV in the near future ... everything will get better.

Other questions and answers touch upon substantial obstacles that people living with HIV face in real life. An answer to the question, "What is the consequence of HIV infection?" charts the restrictions of living with HIV in China:

It means you can never become a public servant or a teacher. It means some big employers will never hire you ... It means you have to be more cautious with your life, you need to take pills consistently and regularly for the rest of your life ... it means you are vulnerable to crises, such as the COVID pandemic, during which time many HIV-positive people were at the risk of discontinuation of medication due to the full lockdown ... it means you will have more trouble when visiting doctors ... it means unjustified blame and discrimination will be commonplace ... but don't give up on yourself, HIV cannot be cured now, but who knows where the advancement of medical technologies will take us in 10 and even 20 years.

Even after presenting the discrimination that HIV-positive people are likely to face, the answer ends with a self-assurance that a HIV cure will eventually be available in the future, featuring a high engagement with 301 upvotes and 166 comments.

It has become an emergent norm that users convince themselves of emotional progress, and even redemption from their HIV infections. Typical answers include how HIV infection forces them to re-evaluate their lifestyles, and how it in turn makes them treasure their family, friendship, and loved ones more. HIV has also acted as a wake-up call for HIV-positive gay men to love themselves, leading them to live a more responsible life (e.g., no late-nights, more exercise, healthier eating habits, and a more monogamous life). In disseminating a positive-living attitude in response to being HIV-positive, however, the social stigma associated with the dual identity of having HIV/AIDS and being gay in China has been sidelined.

Answers regarding HIV/AIDS-related questions are not always positive on Zhihu. At times, some commenting users express homophobia and hate speech. For example, in response to an answer posted by a self-identified gay man, a user wrote: “key facts: having a boyfriend, yet having unprotected sex with other men, don’t you deserve it?” In another comment, a user wrote, “I don’t sympathize with people acquiring HIV because of promiscuity. If there were no victims who contracted the virus through unfortunate accidents, I would rather HIV never be cured. Otherwise, people would be more unrestrained and reckless.” Resonating with our previous analysis on Douyin, although there is an increase of gay visibility in the algorithmic systems of Chinese social media, these queer(ed) spaces are problematically reactionary. Hatred, homophobia, and discrimination exist in society more broadly and often bleed into these online spaces. To confront the social stigma on HIV/AIDS and homosexuality, some gay users decided to make their HIV status public, writing in their biographies: “an optimistic, happy HIV carrier” or simply “HIV carrier,” despite also tending to uncritically reproduce the paradox of building a positive life based on self-blame for their past sex lives in their answers.

In building-up hope for Chinese gay men living with HIV, interested business sectors fuel the trend with their branded content. Answers produced by advertising accounts and people who monetize their expertise and knowledge regularly appeared on our research account. As illustrated by the answers we have sampled, they include advertisements of at-home HIV test kits, non-professional consultations offered by gay men with first-hand HIV experience, paid knowledge, and digital health services for HIV-positive gay men (e.g., purchasing pre-exposure prophylaxis drugs, which are not widely available in China). This finding aligns with the argument that algorithms reward more visibility to content that complies with the economic interests of the platforms (Bishop, 2018; Cotter, 2019). For Zhihu, “paid consultation” (*fufei zixun*) has become a prime feature of the platform. HIV/AIDS is a monetizable consultation category as the topic contributes to sizable data traffic for the platform. By April 2021, for example, the question “What is it like to live with HIV?” had solicited 1998 answers and 49,000 followers. In the branded content, business stakeholders promise HIV-positive gay men a “normal” life—with an average life expectancy, a normal loving relationship, and even the prospect of children (linked to commercial surrogacy service providers) (Wei, 2021). These businesses tend to

tap into the vulnerability of concerned gay men when they engage in the comment thread of HIV/AIDS-related questions, searching for reassurance.

Concluding remarks

Social media platforms, together with prevalent gay dating apps (Wang, 2020a, 2020b; Zhou, 2018, 2021), play an irreplaceable role in Chinese gay men's everyday life. This article has examined the emergent gay visibility enabled by social media platforms and their algorithms to provide a small snapshot of gay male experiences and identities in an increasingly digitized China. We argue that the algorithmic gay visibility on Douyin and Zhihu manifests as cruel optimism. On Douyin, algorithms promise recognizable queer(ed) spaces and homonormative gay lifestyles while failing to correspond to the reality of many gay men's lived experience and everyday struggles in China. This is especially true for those who cannot access the urban and cosmopolitan ideal. Similarly, on Zhihu, algorithms invoke a sense of affinity for gay users who are concerned with HIV. In the question-and-answer loop, the users are gathered, connected, and mediated by algorithms under the topic of HIV/AIDS, through which a "calculated public" of HIV-positive gay men is produced (Gillespie, 2014). Not only do algorithms structure users' encounters with HIV content, they also funnel the affective bonds through these encounters, be they intimate, supportive, or contentious. This is not to say that the algorithmic recommendation systems of Chinese social media platforms are essentially negative, but that the spaces where Chinese gay men and algorithms meet can create different forms of cruel optimism. It therefore requires further empirical study to examine how gay men experience and make sense of algorithms to better understand their social power.

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Note

1. The hashtag “rainbow boys” appeared to have been removed from Douyin prior to this article being published, which indicates the transient nature of gay digital cultures in China.

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