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# *From Television Panic to TikTok Panic: Social Anxiety and Algorithmic Media Technologies*

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***Abstract.*** New modes of communication tend to elicit both positive and negative reactions at the same time. They are typically seen as a positive development, but they are also a cause of public concern. Television, video games, the Internet and social media, for example, have all been blamed for: (a) shortening attention spans, (b) changing social interactions and social behavior, and (c) adversely affecting, especially, younger audiences. TikTok and its recommendation system represent a more recent example of this phenomenon. Taking TikTok as an example, this paper looks at panic about personalized recommendations, attention, user autonomy and algorithmic transparency. The focus will be on the ways in which TikTok panic represents a "break" and "continuity" from traditional media panics. The "break" aspect of TikTok panic is due to the concern that it represents a newer, more individualized and less visible mode of selection of media that requires consideration. Algorithmic platforms also present an individualized mode of control that, unlike other media, reduces user autonomy. TikTok should not be treated as a uniquely dangerous technology or as a traditional media panic. It is more productive to treat TikTok panic as representing both a legitimate concern about a platform's tendency to erode user autonomy, and a greater form of technological determinism.

***Keywords:*** media panic, TikTok, algorithmic recommendation, media effects, user autonomy

## 1. Introduction

There has always been fear and concern with the integration of new media into society, and this fear continues to this day. Previous generations often thought that new media would ultimately break the attention span of individuals, corrupt morality, social relationships, and/or social judgment. The concept of moral panic describes the ways in which new social phenomena are formed, and become focused, on one single expression of fear [1]. Meanwhile, criticism of technological determinism illustrates that while different technologies shape social realities in numerous ways, and bring different outcomes in varying situations, media cannot be viewed independently of society [2]. These two views summarize the major issues that underlie debates pertaining to TikTok.

One reason TikTok is a good case is that, in addition to being a media platform built around short videos, it has an advanced recommendation system to automatically generate personalized feeds. The current study provides a qualitative case study, and integrates comparative historical analysis and reviews of media effects and platform literature. The key issue is to determine whether media

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panic is caused by genuinely new features of personalized media, and if not, what concerns are caused by recommendation systems.

Understanding the aforementioned issues is helpful to differentiate prior patterns of media panic, and to consider recent platform changes in terms of power, personalization and transparency.

## 2. Historical patterns of media panic

### 2.1. Media change and repeated social anxiety

There are repeated social patterns underlying the media panics. Although each social panic is unique in certain ways, the overall outline of the pattern remains fairly consistent. If one wants to understand media panic in modern times, one can look to how public attention amplified panics in previous times.

Television, which dramatically changed household life in the 1950s and 1960s, also became part of everyday life as a new channel for news and entertainment. Fears about TV began to emerge as parents, teachers, and others grew concerned about television's effects on children and society. Concerns about violence and addiction quickly dominated discussions. Those fears reverberated in debates about electronic and interactive media, and more recently, the internet, social media, and other digital media. As the media and the concerns changed, the underlying outline of the anxiety remained fairly constant. These concerns, which arise with new communication technologies, need not be largely misplaced or unfounded to justify societal concern. New forms of communication quickly integrated into people's daily life become a medium for society's anxiety about the future and the unknown.

Williams' analysis of television helps demonstrate that new technologies don't spontaneously generate social change. Rather, the intersection of culture, economics, politics, and social change generated new forms of communication. With regard to communication technologies, the relationship between cause and effect is usually apparent, although people can often simplify social change to an effect created by technology (e.g., television destroys families, radio causes social upheaval, etc.). Because most schools of thought agree that new technologies are informed by cultural, social, economic, and political changes, they explain how the same technologies can be used in a variety of different ways.

As previously stated, new social changes are often expressed in the form of a cause-and-effect relationship with technology and social changes. The effect new technologies can have on social and cultural change is often the chief concern of many people.

### 2.2. Media effects with active users

The dominance of the liberal democratic perspective allows us to apply a method of analysis that focuses on the reasons users have for their use of the media (Uses and Gratifications) [3]. People employ media to fulfill various needs (e.g., for information, entertainment, or interpersonal interaction and identification). Denying the effects of media does not resolve the concerns of social change. It postulates that media use is partly informed by the things users want to do.

Sparks also acknowledges that the assumption of uniform effects of the media on the audience, which is a cornerstone of the hypothesis of media effects, is challenged by the limited effects school of thought [4]. Media use depends on individual differences, goals and social context. This is relevant to TikTok, because time spent on the platform cannot be treated as a single homogeneous exposure. One user may utilize the platform to seek entertainment, while another may use the

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platform to find information, yet another may use the platform to make or find friends, or socialize, and so on. The recommendation system is also designed to respond and encourage a variety of behaviors.

On the other hand, users are not completely detached from media systems. Cultivation theory is in line with Sparks' argument. The theory is concerned with a media user's belief in social reality and with a user's attitudes and worldviews rather than with a user's behavior [5]. From an algorithmic point of view, the most relevant effect of a media platform may not be how single videos control a user, but rather, how the media platform organizes, curates, and frames what appears "normal", "important", "popular" and "threatening".

Media panic becomes misleading when it removes user choice, and a completely active audience model becomes misleading when it does not take into account how the media environment determines the available options and what is presented to the user.

## 3. TikTok as a case of algorithmic media

### 3.1. From shared media to personalized feeds

Kaye, Chen, and Zeng also note that the main difference between TikTok and older mass media is that the latter relies on algorithmic recommendations [6]. Since the media is largely recommended, rather than sought, the user doesn't see much control over what TikTok suggests to her. There is little evidence that the recommendation system assigns a priority to users' explicit ratings, such as Likes or Follows. There is also little evidence to suggest the recommendation systems prioritize control over by whom users want to be suggested or recommended. This supports the argument that the social media ecosystem favors media that reinforce online activities rather than facilitate offline activities.

The main suggestion algorithm on TikTok also adapts to my consumption patterns. The recommendation system rewards and punishes people for their content based on the messages and signals it receives from its users' attentions and behaviors. Therefore, if a user is attending a recommended video, it can reinforce and reward the video for being recommended, suggesting that the act of watching can influence the recommendation system. This suggests that the media itself is designed to shape its audience to make recommendations and influence users' attitudes toward the platform.

According to Gillespie, algorithms decide which information is relevant and therefore visible to users [7]. This selection is socially important since it impacts a user's participation in various facets of public culture and the ways in which knowledge is organized. Therefore, an algorithmic system goes beyond a simple technical infrastructure. It incorporates choices about relevance, ranking, moderation, and visibility.

Television, for example, gives the viewer a much clearer infrastructure to work with. Broadcasting regulations are visible to users and editors of television programs are usually identifiable. The recommendation systems of streaming services, in comparison, create a sequence of content personalized to the user, but very little of the logic behind the selection process is explained to the user. Users of streaming services see the results, but not the process of selection. This, in part, explains the contemporary obsession with TikTok.

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### 3.2. Attention, autonomy and algorithmic power

TikTok raises a number of concerns beyond data. Among the most pressing is how the app captures and redirects user attention. Continuous scroll, rapid recommendation, and short videos encourage the rapid consumption of thousands of pieces of content. Research on TikTok is still developing, and Montag, Yang, and Elhai note the empirical research on the app pales in comparison to its engagement [8]. Their review outlines TikTok in connection with Uses and Gratifications and problematic social media use.

There is ample room for research. Strong public claims about attention and addiction can and do precede the evidence. Before the availability of empirical studies, TikTok and other platforms could be addressed with regard to the problematic uses of media. Heavy use of TikTok may be part of a larger problem, but in isolation, the direction of the causal relationship between the two remains unknown.

The design of algorithmic platforms, nevertheless, shifts the concern with attention to a more structural level. As Nieborg and Poell suggest, in an age of platformization, the cultural production and circulation of the world is rapidly dominated by a handful of platforms. Content is not produced for an audience; rather, it is altered to comply with the requirements of the platform. It is very much like a feedback system that connects the users, content creators and the platform [9].

Several issues with your analysis remain. A user can still swipe away from videos to look for other content, or leave the app completely. As I mentioned earlier, choices are always made relative to a filtered menu of options. Bucher's account of algorithmic power helps here to avoid saying that TikTok algorithms dominate social life [10]. Rather, the power of TikTok algorithms lies in structuring the conditions under which social information and actions are made possible. This is a more accurate way of understanding TikTok as compared to mind control.

Pariser's idea of filter bubbles becomes more troublesome when you consider that TikTok's algorithms are reinforcing and rewarding some kinds of content and user behaviors over others. This is done without the user's full knowledge or understanding. As Bucher notes, "It is in the field of personalization that the effects of algorithmic power become most precise" [10]. Though users are still free to make choices in this curated environment, those choices may be narrow. For example, if a user's first choice is made between videos of 5 different genres, and the user chooses the genre that is most rewarded and reinforced by TikTok's algorithms, the user may then be presented only choices between videos of that genre [11].

TikTok's recommendation system quickly reinforces filter bubbles. As opposed to other platforms, the feed quickly evolves to show the same kind of posts, which leads to the illusion that the platform adapts to user preferences. In reality, the selection process happens behind the scenes and the user has less control over the process.

This is where transparency comes into play. Users can observe some aspects of the content that is shown to them, but cannot access the full scope of the data, rankings, or processes that define the feed, including moderation and monetization. Gillespie points out why algorithmic relevance should be analyzed as a social and institutional process rather than a computational one [7]. Ultimately, it's not sufficient to say that an algorithm is correct, relevant, or accurate. It is essential to understand who defines relevance and what goals are served by the process.

Zuboff offers a more critical analysis of the relation between data and behavior in regard to surveillance capitalism [12]. Digital platforms collect behavioral data and use it to build a system of predictions, which are further used in commercial systems. TikTok is not automatically aligning with Zuboff's framework, but data collection, behavioral predictions, and their convergence with

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surveillance, raise legitimate public concerns. The user is not just consuming content. User behavior is also captured.

This factor distinguishes algorithmic media from earlier media forms. Television was able to shape a collective symbolic environment, but it couldn't adjust the next episode for the viewer based on its understanding of the viewer's behavior. Algorithmic recommendation impacts the adaptiveness and the personalization of the exposure to media. That said, the presence of stronger negative impacts of algorithmic media does not rule out the value of analyzing algorithmic media in this new form.

## 4. Discussion: continuity and change in TikTok panic

### 4.1. What repeats earlier media panics

Some aspects of the recent TikTok panic repeat features of other media panics. For example, as mentioned above, TikTok, like other digital media, has been cast as youth media and, therefore, as potentially corrupting media for children and adolescents. Concern for the safety of children and youth is always legitimate and may even be justified; however, this concern can also be a way of projecting and channeling concern about the state of society in general and adult society.

Another repeated feature is techno-determinism. There is a compressed view of technological causation in which TikTok, or digital media more generally, is directly and singularly responsible for phenomena such as the shortening of attention spans, the rise of extreme and dangerous polarizing political views, social malaise, social isolation, and social decline. Williams suggests that in such cases, we ignore the social organization of technology and consider how it may serve different ends for different social groups [2]. We may also consider other theories, such as the more user-centric Uses and Gratifications theory, which makes similar points at the level of the individual user [3].

The final repeated point is the tendency to go from singular examples to general social conclusions. The most striking, and often harmful, examples of content and extreme cases of use are the most newsworthy. These examples can dominate news cycles and frame the entire platform as negative and harmful. As cited previously, this can be a consequence of the panic response to harmful content.

All the points made above do not suggest that public concern is completely unjustified. It is axiomatic within the fields of communications and media studies that content can influence belief and that repeated exposure can be a means to an end to alter belief [5]. The problem occurs when the possibility of belief change is translated to mean automatic and uniform belief change.

### 4.2. What is new about algorithmic platforms

The reason to take TikTok panic somewhat seriously is the fact that algorithmic platforms restructure the media ecology. Algorithmic systems personalize recommendations based on past behavior and therefore increase the likelihood of that behavior occurring in the future. Gillespie's work on algorithmic relevance [7], Bucher's analysis of algorithmic power [10], and Nieborg and Poell's account of platformization [9], all provide insight into these changes.

First, algorithmic systems enable large-scale personalization. Millions of users can have individually tailored recommendations at the same time. Second, there is a black box nature to algorithms. Algorithmic systems encode logic for ranking and sorting recommendations, but the rationale may not be fully evident to the user being ranked or to the end user consuming the

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recommendation. Third, there is continuous data feedback. Every user action may be input data that alters recommendation systems.

These features modify traditional media-effects theories. Cultivation theory posits that repeated exposure to media can lead to similar perceptions of the world [5]. Algorithmic systems, however, can lead different users to repeatedly be exposed to different mediated realities. Uses and Gratifications theory posits that media users are active participants in forming perceptions of the media [3]. However, with algorithmic recommendations, users may select from a set of options that are organized and controlled by the platform.

This creates a middle position between panic and dismissal. TikTok is not a machine that autonomously shapes user behavior. In the same way, it is not a neutral tool and does not simply mirror user preferences. It is recursive. Users behave in certain ways and shape TikTok through their actions. At the same time, TikTok shapes the parameters of possible user behavior. This relationship is a reason we should analyze algorithmic media in the context of the criticisms levied in earlier technology panics.

## 5. Conclusion

Similarities and differences exist when earlier media panics and current TikTok-related concerns are compared. Similarities include the declining social order language and the focus on youth. Similar technologies also include TV, video games, and the Internet.

Given mixed evidence on whether these technologies cause behavior and whether they amplify social concerns, moral panic theory and techno-determinism help us explain the anxiety directed toward new and emerging technologies. The uncertainties surrounding these technologies can be projections of people's larger, diffuse social anxieties.

That said, TikTok is not an exact repeat of other tech-related moral panics. The algorithm ensures different, individualized, and constantly changing media exposures. In this sense, the platform shapes user choices and behavior without total user control.

This difference is important for later discussions of algorithmic media. Public discussion should refrain from arguments that specific platforms automatically cause large-scale social decay. Such arguments should especially be avoided when evidence for such statements is still largely missing. However, this should not be used to justify a "see-no-evil" attitude towards recommendation systems and other models with a strong institutional element. Recommendation systems should provide more information about their models and data to alleviate justified criticism. Media literacy has to deal with judgment of content as well as the visibility of content. This includes how platform designs shape the possibilities of content control.

A moderately critical approach to TikTok panic recognizes that, although there may be legitimate causes for concern, the panic may also overstate technologies' power and potential control. The more helpful distinction is to separate unsubstantiated claims about direct technological control from legitimate concerns about personalization and algorithms that shape the control over attention and the structure of media.

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