Relationship between Algorithm Awareness and Individuals' Attitudes towards Different Viewpoints

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Abstract. Personalized recommendation algorithms have been deeply embedded in the daily information acquisition link, but users' cognition of algorithm operation logic - that is, algorithm awareness - is significantly differentiated. This difference affects the diversity of individual access to information and its tendency to accept different views. This article summarizes the three core mechanisms recommended by algorithms to reshape information acquisition, analyzes the cognitive basis and behavioral consequences of algorithmic consciousness, and examines how information contact participates in the shaping of individual views and attitudes. The study found that the algorithm promoted users to form path dependence to a considerable extent through content customization, sorting criteria and interest prediction. Users with high algorithm awareness are more inclined to actively expand information channels to obtain diverse content, while those with low algorithm awareness are more immersed in a highly similar information environment. As a high-frequency user of the algorithm platform, young users generally show the characteristics of high dependence and low understanding, superimposed on a strong sense of belonging, and are more easily guided by algorithms. Based on this, this paper proposes that algorithm literacy education should be strengthened and the transparency of the platform should be improved to cope with the information bias and opinion polarization in the digital ecology.

Keywords: Algorithmic Awareness; Information Acquisition; Selective Exposure; Youth Group; Opinion Polarization

1 Introduction

With the increasing popularity of social media and information platforms, personalised recommendation algorithms have gradually become the mainstream method of content distribution [1]. Users' information acquisition habits are migrating from active retrieval to passive reception push, and the trajectory of information contact has also been restructured. In this shift, the academic community began to focus on the concept of "algorithm awareness", which is used to describe the individual's perception of the existence of the recommendation system, the understanding of its operating logic, and the prediction of possible consequences [2]. Studies have shown that people's level of algorithm awareness is not equal: users with strong consciousness tend to take the initiative to explore diverse information, while individuals with weaker consciousness tend

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to stay within the scope of platform push. This differentiation is largely related to the breadth of information acquisition and the degree of acceptance of heterogeneous views [3]. In the current information ecology, algorithms not only screen the picture people see, but also may invisibly intervene in the formation and evolution of individual views. Exploring the distribution and characteristics of algorithm awareness may help to understand some laws of the behaviour of digital platform users. This article intends to sort out relevant research, examine how algorithm recommendations intervene in information acquisition, the shaping of algorithm consciousness and possible behavioural effects, the position of information contact in the construction of views and attitudes, and specifically analyse some characteristics presented by young people.

2 Algorithmic Recommendation–Driven Transformation of Information Acquisition

The personalised recommendation algorithm actively completes information push by analysing users' historical behaviour, interest preferences and social relationships, which changes the regular way people obtain content to a certain extent [1]. This transformation is often related to three types of interrelated mechanisms.

The first category can be summarised as the customisation of content. The system will continuously track browsing records, page dwell time and interactive behaviour, and highly match the push content with individual preferences to improve the click rate and usage time [4]. For example, if users watch basketball-related materials many times on the short video platform, the proportion of basketball themes in the information flow may increase significantly.

The second category involves sorting rules. The algorithm synthesises past preferences, content popularity and interaction, predicts the content that users are more likely to be interested in, and prioritises display. This design is easy to make people tend to consume recommended content, and the willingness to actively retrieve other information may be weakened [5]. It is not common to be able to go deep into the information flow, and the behaviour of searching for unfamiliar topics is even more limited.

The third category is preference prediction. The algorithm also tries to speculate on topics that may be of interest in the future based on existing behaviours. For example, after watching several travel videos in a row, the platform will push destination strategies, accommodation suggestions, etc. Such predictions often lead users to specific information tracks before they have formed a clear demand. In the long run, the willingness to explore independently may be reduced, gradually forming a path dependence on recommended content [6].

In this process, psychological factors and behavioural choices are intertwined. At the psychological level, the stronger the trust in the platform, the more users are inclined to accept push, and less likely to actively seek information through other channels [7]. At the same time, people are naturally willing to touch content that is consistent with their existing positions or interests, and this tendency will be reinforced by algorithm recommendations. At the behavioural level, every click, follow and share provides

feedback signals for the algorithm, and the recommendation accuracy continues to improve, and users are more likely to immerse themselves in the specific information flow built by feedback [1].

Of course, algorithm recommendation is not destined to narrow the information horizon, and its impact varies from person to person. Users with a wide range of interests and used to cross-platform verification of information may get relatively diverse content from it; while users with concentrated interests and a relatively single usage path are more likely to enter the narrowing cycle of information under the repeated guidance of algorithms [5]. In addition, the homogeneity of social networks may further strengthen this trend - the more homogeneous the interests within the circle, the more limited the diversity of the push content. This is particularly prominent in young people: they interact frequently online, the feedback signals that the algorithm can obtain is sufficient, and the recommendation accuracy continues to increase, so it is easier to fix some specific information reception patterns [3].

3 The Cognitive Foundations of Algorithmic Awareness and Its Behavioral Consequences

Algorithm awareness usually refers to the degree of an individual's understanding of the recommendation mechanism, covering several levels: whether to perceive the existence of the algorithm, whether to understand its general operation, and whether to realise that it may implicitly be biased [2]. The gap in algorithm awareness between different users is often quite obvious, and this gap will be directly reflected in their respective information acquisition behaviour.

Users with high algorithm awareness should be more alert to the recommended content, examine the information source and recommendation logic, and take the initiative to verify cross-platform [8]. When you see a product recommendation note, you can find the composition analysis and browse the evaluation of different platforms, instead of directly trusting one-sided statements. This kind of habit makes the source of information more diverse, and the understanding of the problem is easier to deepen [9]. Users with low algorithm awareness often accept the push content without criticism, and rarely ask "who recommended this message" and "why it is pushed here". This passive reception state gradually narrows the information path, and the existing position is repeatedly confirmed in the circular push, and the opportunity to contact different voices is reduced.

The formation of algorithm consciousness is affected by multiple factors. People with high digital literacy are more likely to detect the operating traces behind the recommendation system; people with a wide range of information interests have accumulated more cross-platform experience and are more likely to perceive the screening effect of algorithms; users with a high level of education tend to develop the habit of critically using media content earlier [8].

The youth group is an active user group of algorithm platforms. Their dependence on recommended content is relatively high, but most of their understanding of the algorithm mechanism is superficial. Many teenagers can vaguely feel that "the system

seems to know what I like", but they can't say the specific logic behind the recommendation, and even think less about the possible biases in algorithms [3]. Studies have noticed that some teenagers will attribute the recommended content to "random push", while others speculate that the monitoring function of the mobile phone is working, and it is rare to accurately associate their click behaviour with the push content. This cognitive ambituities may weaken their ability to actively assess and adjust information reception patterns. Therefore, helping young people understand the basic logic of algorithms and learning how to actively regulate the information environment may reduce the risk of bias to a certain extent [9].

4 The Influence of Information Exposure on Individuals' Attitudes Toward Different Viewpoints

The attitude of individuals towards different views is largely related to the composition of the information environment they are in. Selective contact theory points out that people tend to seek and pay attention to information that is consistent with their existing position, while unconsciously avoiding or ignoring the opposite voices. This process often consolidates the original attitude [10]. Under the conditions of traditional media, information channels are relatively limited, the content has been edited and checked, and there is not much room for individuals to make selective contact. On the digital platform dominated by algorithm recommendation, this tendency may be significantly amplified.

The algorithm continuously pushes users with content that is highly suitable for their preferences with the help of personalisation and sorting mechanisms. Every click, stay and share of users provides a more accurate basis for judgement for the algorithm, and the fit of the push content continues to improve. With the passage of time, the probability of the proportional significance of homogeneous content in the information flow will increase, while the visibility of heterogeneous views may decrease accordingly [6]. This mechanism forms a mutually reinforcing relationship between the user's own confirmation bias: on the one hand, the user takes the initiative to choose content with similar positions, and on the other hand, the algorithm also filters out other sounds invisibly. Under the joint action of the two, individual attitudes towards different views may tend to be solidified, and even polarised in some cases. For example, users who have a clear position on an issue, if they continue to receive information from the same direction, may gradually think that the objection is not worth rejecting at all, and then reject or even be hostile to it.

However, the academic community has different views on whether the algorithm recommendation is bound to lead to the "echo room" or the "information cocoon room". The research of Dubois and Blank [5] suggests that the impact of algorithms on information diversity is not in a single direction, but is regulated by users' own information interests and usage habits. Users who are used to active cross-platform search and have a wide range of information needs may obtain relatively diverse content from algorithms; while users with more concentrated interests and fixed usage patterns are more likely to fall into the cycle of narrowing information. In this sense, the algorithm itself

does not directly create bias, but rather amplifies the existing behavioural tendencies of users.

Individuals' attitude towards different views is also related to whether they actively seek pluralistic information. People who can consciously look for content from different positions and often carry out cross-platform verification have significantly higher acceptance and understanding of heterogeneous views [11]. Such users often have a strong sense of algorithms, can perceive the possible bias of the recommendation system, and take the initiative to adopt strategies to supplement information. Relatively speaking, users who have been passively receiving pushes for a long time and lack the habit of critical examination are more inclined to regard single-source content as all facts, showing a stronger tendency to reject different views.

In addition, platform design also plays a certain role in this process. Some social media have begun to try to introduce "view diversity tips" or insert cross-positional content into the information flow in an attempt to break the cycle of homogeneous content. However, the actual effect of such interventions has yet to be tested more empirically. At the same time, the degree of user acceptance is also affected by multiple factors such as the strength of the existing position and the trust of the platform, and the direction of effect varies from person to person.

Overall, the impact of information exposure on opinions and attitudes is a multifactor evolutionary process. Whether users can see different views and what their attitude is after seeing it is determined by the user's own choice preferences, the push mechanism of the algorithm and the design method of the platform. To understand this problem, it may be necessary to be wary of a simplified view - that is, attributing all results to the algorithm itself - but at the same time paying attention to the user's own initiative and the intertwining of various factors in the platform ecology.

5 Characteristics of Information Use among Youth in Algorithmic Environments

Youth is the most active user group of the algorithm recommendation system [1,2]. The recommended content on short videos, social media and news aggregation platforms has deeply intervened in many links of their daily information acquisition. This high-frequency and in-depth use makes the information behaviour of young people and the algorithm mechanism form a close coupling relationship.

Contemporary young people often browse the recommended stream directly after opening the application, and "what to see" has become a common habit of receiving [3]. Unlike the previous generation, who grew up in a traditional media environment and were more accustomed to actively subscribing or searching for fixed sources, contemporary youth have given the initiative of information screening to algorithms to a considerable extent. This makes the platform recommendation mechanism largely shape what they can see and what they easily miss.

At the same time, young people still have a rough understanding of the operating logic behind the algorithm. Most of them can vaguely perceive that "the system seems

to understand me", but they can rarely clearly say the specific principle of the recommendation, let alone consciously examine the possible implicit bias of the algorithm [3]. Studies have noticed that some teenagers misjudge the generation mechanism of recommended content and rarely associate their clicks and viewing time with push results. This cognitive state of seemingly understanding may weaken their ability to critically examine the source of information.

In addition, high-frequency social interaction and group identification needs are also amplifying the influence of algorithms. Like, comment, forward, @ friends and other behaviours continue to send rich feedback signals to the algorithm, thus forming a cycle of "social interaction - algorithm feedback - content convergence" [12]. When the interests in the user group are relatively homogeneous, the recommendation system tends to focus on pushing content around common topics, so that the existing consensus within the circle is cycled and strengthened. At the same time, the probability of heterogeneous information that is different from the mainstream preferences in the circle will be included in the recommended sequence correspondingly reduced, thus objectively reducing the possibility of users contacting multiple perspectives, and the hierarchical characteristics of the information environment are becoming more and more obvious.

Of course, the youth group is not completely subject to algorithms. Some users with high digital literacy and awareness of algorithms will actively try to adjust the recommendation results by searching, marking "not interested", switching accounts and even intentionally browsing oppositional content. However, this kind of behaviour with a sense of active intervention is still a minority among young people. In addition, the platform algorithm iterates rapidly, and the adjustment space that individuals can win is actually quite limited [12]. Therefore, to improve young people's awareness of algorithms, it is far from enough to rely on personal efforts. It also depends on the coordinated promotion of multiple levels such as school media literacy education, platform information diversity design and algorithm transparency supervision.

6 Conclusion

This article discusses the reshaping of the information acquisition path of algorithm recommendation, the individual differentiation of algorithm consciousness, the relationship between information contact and opinion attitudes, and the use characteristics of young people. Analysis shows that the algorithm gradually leads users to path dependence with the help of content personalisation, sorting logic and interest prediction, thus inhibiting the willingness to actively explore. However, the impact of algorithms is not one-way: users with high algorithm awareness are more inclined to question the recommended content and cross-platform verification, so as to maintain the diversity of the information horizon to a certain extent; in contrast, users with low algorithm awareness are more accustomed to passive reception, and their information paths tend to be homogeneous, both It is easier to solidify if you have an opinion. There is a mutually reinforcing relationship between selective contact tendencies and algorithm rec-

ommendations, which may exacerbate the polarisation of views under certain conditions, and individuals' conscious exposure to heterogeneous information can play a certain role in this trend. As the core users of the algorithm platform, the young group shows the typical characteristics of high-intensity dependence and shallow understanding, superimposed on the influence of their social interaction needs, and are more likely to be implicitly guided by algorithms invisibly.

Based on the above judgement, at the practical level, it may be necessary to pay attention to the systematic integration of algorithm literacy education, assist young people to understand the basic operating logic of the recommendation system, and gradually develop the habit of active retrieval and critical examination. The platform should consider improving the transparency of the recommendation mechanism and provide more granular content regulation options for individuals. Follow-up research can further examine the actual effect of algorithmic awareness intervention strategies and the differential impact of different platform mechanisms on information diversity. Improving the algorithmic awareness of young people can be regarded as one of the key points to deal with information bias in the digital age and maintain a healthy information ecology.

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