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Original Paper

Research on Ecological Imbalance and Sustainable Governance of Algorithmic Platforms

Chen Ni[1*]

[1] School of Humanities, Tongji University, Shanghai, China

[*] Corresponding author

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Abstract

The widespread application of artificial intelligence and algorithmic technologies has gradually made algorithmic platforms an important field for information dissemination, social interaction, and value creation. However, while algorithmic recommendation and data-driven resource allocation mechanisms improve operational efficiency, they may also give rise to problems such as capital concentration, the homogenization of actors' behavior, and a decline in ecological diversity. Drawing on Bourdieu's field theory, this paper conceptualizes algorithmic platforms as a new type of technological field jointly constituted by multiple actors, capital distribution, and technological rules, and analyzes the internal relationships among algorithmic habitus, capital concentration, and the erosion of diversity. This study argues that algorithmic platforms shape actors' practices through data feedback and resource allocation mechanisms and may reinforce existing advantages in the ongoing process of structural reproduction, thereby causing structural imbalance in the platform ecosystem. Accordingly, this paper proposes basic pathways for the ecological governance of algorithmic platforms in terms of capital balance, actor empowerment, diversity protection, open governance, and collaborative governance, aiming to provide a theoretical reference for understanding the structural problems of algorithmic platforms and their sustainable development.

Keywords

algorithmic platforms, field theory, algorithmic habitus, platform governance

1. The Algorithmic Platform Ecosystem as a New Type of Technological Field

The Bourdieu's field theory includes three core elements: field, capital, and habitus, which correspond respectively to algorithmic platforms [In Bourdieu's theory, "distinction" is mainly used to explain how cultural practices are differentiated through aesthetic preferences and lifestyles and how they are

legitimized and reproduced. Therefore, in the analysis of algorithmic platforms, distinction is not treated as an independent analytical module but as a structural result of the operation of algorithmic capital.]. Here, field corresponds to the algorithmic platform ecosystem; actors correspond to platform enterprises, users, creators, algorithm developers, regulators, and others; field rules correspond to recommendation mechanisms, ranking rules, moderation rules, and so on; and capital competition corresponds to data capital, computational capital, attention capital, and algorithmic capital. Habitus corresponds to users' behavioral patterns and creators' algorithm-adaptive modes of production.

In this structure, algorithms are no longer understood as neutral computational tools [Tarleton Gillespie, but rather constitute an important generative mechanism of field rules. Through technological processes such as ranking, filtering, and prediction, algorithms not only participate in information processing but also directly participate in the generation of structures of visibility, thereby giving attention allocation, resource flows, and value realization pathways algorithmized characteristics.

Compared with traditional social fields, the algorithmic platform field exhibits pronounced technological characteristics. In traditional fields, rules mainly operate through institutions, culture, and social norms, whereas in algorithmic platforms, rules are realized through code, models, and computational logic. Recommendation and evaluation mechanisms jointly constitute the basis of order in the algorithmic field and determine how actors enter the platform ecosystem and how they obtain resources and value. Therefore, the algorithmic field is not a completely open and equal space but a technological field characterized by structural differences. Whether actors can gain advantages depends crucially on whether they adapt to algorithmic regulation and possess the corresponding capital. The algorithmic field is a relational structure jointly constituted by platforms, users, developers, content producers, and regulatory institutions. Different actors continuously compete and cooperate over capitals such as data, traffic, attention, and knowledge, and form a dynamic relational network under the regulation of algorithmic rules.

Bourdieu argues that a field is not a simple social space but a structural network formed by different actors around resource possession, rule competition, and positional relations. Within a field, there are specific rules. Different actors occupy different positions according to the types and amounts of capital they possess, and they continuously maintain or change existing structures through practice. Actors in the algorithmic field occupy different positions due to differences in capital. For example, platforms possess algorithms and data capital, users possess behavioral data, creators possess content, and developers possess technology. These and possibly other actors, occupying different positions and possessing different forms of capital and content, constitute networked structural relations.

2. Imbalance of the Algorithmic Field

As an ecosystem, the algorithmic field possesses capacities for self-organization and dynamic evolution. However, while mechanisms of structural reproduction improve systemic efficiency, they may also lead to ecological imbalance. When algorithms continuously reinforce existing advantages and optimize

established objectives, the algorithmic field gradually tends toward closure and homogenization. This imbalance is not an algorithmic error but the result of the combined operation of capital distribution, rule mechanisms, and feedback logic within the algorithmic field.

2.1 Algorithmic Habitus: The Structured Generation of Actors' Behavior

Earlier Bourdieu did not invent the concept of "habitus"; rather, he extensively reworked it from ancient Greek philosophy. As for the antithetical term of "habitus," it appears in his later works and is used to express the primary relationship between the individual and social space. One of the most essential aspects of habitus theory is that it emphasizes the pre-conscious characteristics of action, namely, acting without deliberation and without presupposing the intentionality of conduct.

"Habitus" is one of the core frameworks of Bourdieu's field theory. He defines habitus as behavioral dispositions formed by individuals through long-term social practice. In traditional contexts, habitus corresponds to social structure, and habitus in turn corresponds to individual behavior. In the algorithmic field, by contrast, the algorithmic environment shapes individual behavioral feedback, thereby forming habitus. For example, by viewing recommended content, users develop interests and preferences, which leads the algorithm to continue recommending similar content, thereby further reinforcing those preferences. This is not coercion; rather, actors actively participate in structural reproduction.

Algorithmic habitus differs fundamentally from Foucault's theory of discipline. Foucault's discipline is external, whereas Bourdieu's habitus is internal. Foucault's discipline is the shaping of subjects by external hidden power without their awareness, whereas Bourdieu's habitus is the active practice of subjects to reproduce structure.

If Foucault's theory of discipline explains how algorithmic platforms discipline subjects through algorithmic mechanisms, Bourdieu's theory of habitus further explains why subjects actively adapt to algorithmic logic and continuously reinforce the algorithmic field itself in practice. The former focuses on the direct effects of algorithmic power on individuals, while the latter focuses on how algorithmic structures achieve long-term stability through actors' practices. Thus, algorithmic discipline embodies the process of power operation, whereas algorithmic habitus embodies the process of structural reproduction.

Algorithmic habitus does not achieve control through explicit commands but through environmental shaping and practical adjustment. Actors are not forced to obey algorithms; rather, in pursuing efficiency and benefits, they actively adapt to algorithmic rules. However, this active adaptation further reinforces the algorithmic structure itself, making actors' practices part of structural reproduction. Therefore, the core problem of the algorithmic age is not merely that algorithms control people, but that in adapting to algorithms, people also participate in the continuous generation of algorithmic structures.

Algorithmic habitus further drives algorithmic ossification, whereby platforms, through data-learning mechanisms, transform historical behavioral patterns into the basis for future resource distribution, causing existing pathways to be continuously reinforced in feedback loops. The core mechanism of algorithmic ossification lies in feedback loops: users' browsing, clicking, dwelling, and interaction

behaviors are structured into calculable data and enter the model training process. The updated model further governs the next round of content distribution, thereby forming a mechanism of path dependence and advantage reinforcement. In this process, users' space of choice is continuously constrained at the structural level.

The generative basis of algorithmic ossification lies in the aforementioned data and feedback-loop mechanisms. Algorithmic ossification is not only a technical phenomenon but also a structural contraction mechanism. User autonomy is constrained by structural presuppositions. The information, content, and options to which users are exposed have already been filtered and ranked by algorithms, thereby forming a guided choice environment. In this context, users no longer fully possess complete subjectivity; rather, they are closer to a calculable variable within the system structure. More crucially, this limitation is not presented in an explicit form of repression but is gradually internalized through efficiency improvement and experience optimization.

Accordingly, algorithmic ossification is not a control mechanism in a simple sense but a process that continuously compresses the space of behavioral distribution through structural stability. Autonomy is formally preserved, structurally reconstructed, and gradually transformed in practice into dependence on system pathways.

2.2 Capital Concentration and the Matthew Effect

Different subjects within the algorithmic field are not in an equal state; rather, they occupy different positions due to differences in capital possession. Capital not only determines subjects' competitive capacity within the field but also determines their possibility of obtaining further resources. In the algorithmic field, data capital, algorithmic capital, and attention capital are highly interrelated and exhibit a tendency toward continuous concentration under the operation of algorithmic feedback mechanisms.

Traditional capital concentration relies on economic and institutional advantages, whereas the capital mechanism of the algorithmic field relies on technology and datafication. Platforms with more users and data can train more precise models and improve recommendation and prediction capabilities. More precise algorithms can in turn enhance user experience and attract more users, thereby further expanding the scale of data. This process forms a mutually reinforcing cycle among data, algorithms, and user scale [Nick Srnicek, Platform Capitalism, Polity Press, 2017, pp. 75–77].

Advantages in algorithmic platforms do not simply arise from market competition but are continuously produced within the field through capital circulation. Subjects with a stronger capital base occupy a more advantageous position, while those in a disadvantaged position find it difficult to break through the existing structure. This process displays clear characteristics of the "Matthew effect" [Robert K. Merton, "The Matthew Effect in Science," Science, 1968, 159(3810), pp. 56–63], namely, advantaged subjects obtain more development opportunities due to initial capital accumulation, while disadvantaged subjects are further marginalized due to insufficient resources. On content platforms, creators with a higher traffic base are more likely to obtain algorithmic recommendations and thus gain more attention and data feedback. In contrast, newcomers or non-mainstream content producers may find it difficult to enter

mainstream communication spaces due to a lack of initial exposure.

From the perspective of field theory, this is not merely the result of individual competition but the result of the joint operation of algorithmic rules and capital structure. By learning from historical data and user behavior, algorithms transform previously formed advantageous relationships into an important basis for future resource allocation, thereby continuously reinforcing the existing structure. Therefore, capital concentration in algorithmic platforms embodies a new form of structural reproduction [Pierre Bourdieu, "The Forms of Capital," in Handbook of Theory and Research for the Sociology of Education, J. Richardson (ed.), Greenwood Press, 1986, pp. 241–258]. Existing advantages enter the algorithmic system through data sedimentation and are further reinforced in future resource allocation. This mechanism means that although algorithmic platforms remain ostensibly open, a highly stable hierarchical structure may form internally.

The stability of the algorithmic field depends on the relative balance of resource distribution and dynamic competition among subjects. However, in the algorithmic platform ecosystem, resource allocation mechanisms do not entirely follow the logic of natural competition; rather, they form a new structure of concentration under the combined effects of algorithmic ranking, traffic allocation, and user feedback. Among these, the Matthew effect becomes an important manifestation of ecological imbalance in algorithmic ecosystems.

The so-called Matthew effect refers to the process in resource competition whereby advantaged subjects obtain more resources due to initial advantages, and resource accumulation further reinforces their advantageous position, ultimately forming a cyclical structure in which the strong become stronger and the weak become weaker. This cycle causes resources in the algorithmic field to gradually concentrate among a small number of subjects. While algorithms improve the efficiency of resource allocation, they also alter the competitive structure within the ecosystem, causing an originally open and pluralistic ecosystem to gradually form a hierarchical structure. When algorithms continuously favor content types that have already been proven effective, platforms tend to replicate successful models and reduce attention to novel, non-mainstream, and low-frequency value. The innovativeness and differentiation within the ecosystem are therefore compressed, and subjects' behavior gradually adjusts toward algorithmic preferences. Over time, content homogenization and value convergence may emerge.

2.3 Erosion of Diversity

The erosion of diversity is a natural result of capital concentration and algorithmic habitus, and this process can be analyzed through field theory. In the algorithmic field, because access to resources is highly dependent on platform distribution mechanisms, users and creators tend to adjust their behavior to adapt to algorithmic rules, thereby forming strategic convergence. This phenomenon weakens ecological diversity.

The stability of an ecosystem depends not only on efficiency but also on differentiation and diversity. However, the operating logic of algorithmic platforms often takes predictive accuracy, user satisfaction, and resource allocation efficiency as its main objectives, which makes algorithms tend to reinforce

existing preferences and mature models while reducing their capacity to accommodate uncertainty and difference. From a technical logic perspective, algorithms rely on historical data for prediction. The more sufficient the existing behavior, the more accurate the algorithmic prediction; the more accurate the prediction, the more the platform tends to continue recommending similar content. Therefore, algorithmic systems inherently tend toward path dependence

From the perspective of field theory, the erosion of diversity is essentially a decline in the openness of the field. When a certain form of capital becomes the main criterion of evaluation, other forms of value may be marginalized. For example, in a platform environment dominated by attention capital, highly interactive and highly circulated content is more likely to gain recognition, while content with long-term value but weak short-term feedback may be overlooked.

Therefore, the problem of diversity in algorithmic platforms is not simply a reduction in information but a problem of the homogenization of value evaluation systems. By continuously optimizing existing objectives, algorithms gradually form a stable but closed value structure within the field. Successful models are continuously replicated, marginal models gradually disappear, and the space for innovation is continuously compressed. From the perspective of the technological ecosystem, a truly healthy technological ecosystem requires not only efficiency but also the maintenance of differentiation and openness. Excessive reliance on algorithmic optimization may cause the ecosystem to lose its capacity for self-renewal.

3. Sustainable Ecological Governance of the Algorithmic Field

Ecological governance of the algorithmic field cannot be simply understood as restricting technological development; rather, it involves establishing an open, pluralistic, and collaborative ecological structure. Algorithmic platforms are not simple technical systems but a new type of technological field constituted jointly by capital, rules, and subjects' practices. Algorithms achieve structural reproduction through capital conversion and feedback mechanisms, thereby leading to ecological imbalance. Therefore, the core of algorithmic ethical governance is not to restrict technology but to reconstruct the capital relations and subject coordination mechanisms within the algorithmic field [Luciano Floridi, The Ethics of Information, Oxford University Press, 2013, pp. 333–336]. The structures within a field are not immutable. Although capital distribution and rule mechanisms affect subject positions, new modes of practice and institutional arrangements can also transform field relations. Therefore, the key to algorithmic ecological governance lies in readjusting modes of capital flow, optimizing rule structures, and enhancing the capacity of different subjects to participate in ecological construction.

3.1 Algorithmic Capital Balance and Rule Governance

Bourdieu argues that inequality within a field originates first from the uneven distribution of capital. Therefore, the primary goal of algorithmic ecological governance is not to eliminate capital differences but to prevent the excessive concentration of any single form of capital, which would create structural domination. In the algorithmic field, data capital, computational capital, and attention capital constitute

the core resources that determine subject positions. At present, platform enterprises occupy advantageous positions in the algorithmic field by virtue of data scale, computing resources, and distribution capacity, while users, creators, and small and medium-sized developers participate less in the process of capital distribution. Therefore, a balancing mechanism for algorithmic capital needs to be established.

At the level of data capital, it is necessary to improve the system of data rights and interests so that data contributors can obtain reasonable data benefits and feedback. Data should not be regarded merely as a resource for platform operation but should be understood as an ecological resource jointly generated by user behavior. Platforms need to enable data producers to participate in the process of data value formation through data authorization, benefit feedback, and data circulation mechanisms.

At the level of computational capital, it is necessary to reduce the degree of concentration of algorithmic capacity. At present, large platforms rely on computing resources and model capabilities to form technological advantages, making algorithmic capacity an important threshold for entering the platform ecosystem. It is necessary to promote the development of foundation models, the construction of public computing resources, and the sharing of algorithmic infrastructure so that more subjects can participate in algorithmic innovation.

At the level of attention capital, it is necessary to optimize platform traffic allocation mechanisms. Algorithmic recommendation should not be based entirely on commercial mechanisms and short-term interaction indicators; rather, evaluation dimensions such as content diversity, public value, and innovativeness should be added, so as to prevent attention resources from continuously concentrating among advantaged subjects. The core of algorithmic capital governance is not to eliminate differences but to form dynamic competition and maintain a virtuous cycle within the field.

Governance of the algorithmic field requires attention not only to algorithmic results but also to algorithmic rules themselves. An important problem with current algorithmic platforms is that recommendation, ranking, and evaluation mechanisms are decided internally by platforms. Ordinary individuals find it difficult to participate in and understand the process of rule formation. This causes algorithmic rules to become a hidden structure, and platforms acquire de facto rule-making power. Therefore, it is necessary to promote the governance of algorithmic rules.

Algorithmic transparency mechanisms should be strengthened. Transparency does not mean fully disclosing algorithmic code; rather, it requires platforms to provide explanations for important algorithmic mechanisms that affect users' rights and interests. For example, what factors form the basis for recommended content? What logic governs information ranking? By improving algorithmic explainability, subjects can understand their own positions in the algorithmic field.

Algorithmic impact assessment mechanisms should be introduced. Similar to environmental impact assessment, before deploying major algorithmic systems, platforms should assess the social impacts they may cause, such as whether they lead to information bias or reinforce group inequality. Algorithmic oversight mechanisms should also be established, with the participation of regulatory agencies, professional organizations, and social groups, so as to achieve external oversight of algorithmic rules.

3.2 Subject Empowerment Governance

Within Bourdieu argues that habitus embodies how structure becomes embedded in the subject. In algorithmic platforms, users and creators are not directly controlled; rather, over the long term they gradually adapt to behavioral patterns consistent with algorithmic logic. Habitus is the result of structure acting upon individuals and also a mechanism that maintains the reproduction of existing structures. In the algorithmic field, algorithmic logic likewise influences subjects in an indirect manner. Therefore, governance should focus not only on the algorithmic field itself but also on the positions and capacities for action of subjects within the field. If subjects can only passively accept and adapt to algorithmic rules, then even if algorithms become more transparent, structural inequality in the field will continue to persist. Truly effective governance should enable subjects to acquire the capacity to participate in rule formation, adjust algorithmic relations, and participate in resource allocation.

It is necessary to enhance users' cognition of algorithmic mechanisms and subjects' understanding of the algorithmic environment. Algorithmic platforms reduce users' decision-making costs through personalized recommendation, but at the same time they gradually make users dependent on the information pathways provided by algorithms. In this process, although users possess freedom of choice behavior, they often lack the capacity to understand how information is generated. Therefore, algorithmic platforms should improve the explainability of algorithmic operation so that users can understand recommendation logic, data usage methods, and paths of algorithmic influence. By improving algorithmic cognition, subjects can move from being adapters within the algorithmic environment to reflective actors.

It is necessary to enhance content producers' participation in algorithmic rules. In the algorithmic platform ecosystem, creators not only produce content but are also affected by the algorithmic evaluation system. Traffic indicators, interaction data, and recommendation weights gradually become important criteria for measuring content value, causing creators to develop behavioral patterns of production oriented around algorithmic indicators. This phenomenon reflects the formation of algorithmic habitus: subjects actively adjust their strategies in order to obtain more resources, thereby further reinforcing algorithmic logic. Therefore, algorithmic platform governance needs to avoid a single logic and instead establish a multidimensional evaluation system.

It is necessary to grant subjects a certain degree of data participation rights. In the algorithmic field, data are not merely technical resources but ecological capital jointly generated by user behavior. At present, data value is mainly realized through platform algorithms, and data contributors usually find it difficult to participate in data use and value distribution. Therefore, subject empowerment not only means protecting personal data security but also reunderstanding the position of data producers in the algorithmic ecosystem. Through data authorization, feedback on data use, and protection of data rights and interests, users can be transformed from providers of data resources into participants in data governance.

Institutional channels for subject participation in algorithmic governance should be established.

Algorithmic rules are not merely technical issues; they involve resource allocation, value judgment, and social impact. Therefore, the formation of algorithmic rules cannot be entirely determined internally by platform enterprises and technical developers; rather, it needs to incorporate the participation of multiple subjects such as users, experts, and social organizations. For example, through algorithmic impact assessment, public feedback, and external oversight, different subjects can participate in the process of adjusting algorithmic rules.

Subject empowerment does not eliminate differences within the field but changes the conditions of action for subjects in the field. Although actors in the field are affected by existing structures, they are not completely determined by structure. By improving subjects' capacity for capital accumulation, enhancing their capacity to participate in rules, and expanding their space for action, subjects can act back upon field structures and promote the formation of new modes of practice. Therefore, the goal of algorithmic governance is not to establish a technological space without structural differences, but, on the basis of acknowledging the complexity of the algorithmic field, to enable different subjects to possess the capacity to participate in shaping structures.

3.3 The Principles of Diversity and Symbiosis

Traditional Ecological governance first requires maintaining ecological diversity. Current algorithmic systems tend to optimize deterministic outcomes, but the development of an ecosystem depends on difference and change. Therefore, algorithmic design should not take efficiency and predictive accuracy as its sole objectives; rather, it should consider the coexistence of different values, different subjects, and different content types.

Specifically, it is necessary to avoid a single evaluation standard dominating resource allocation and, through algorithmic mechanisms, to improve the visibility of marginal content and disadvantaged subjects so that the algorithmic ecosystem maintains an open structure. The core of the principle of diversity lies in preventing algorithms from compressing the complexity of the real world into a single indicator system.

The principle of diversity in the algorithmic field is not simply about increasing the quantity of content but emphasizes maintaining difference and openness within the ecosystem. On the one hand, it is necessary to avoid the algorithmic evaluation system relying excessively on a single indicator, so that the platform ecosystem is not completely dominated by commercial value; on the other hand, it is necessary to guarantee the possibility for different types of subjects to enter the platform, express views, and participate in value creation.

From an ethical perspective, the principle of diversity requires algorithmic systems to consider not only what content is more popular but also what content has value in its existence. The healthy development of the platform ecosystem cannot rely solely on data traffic and user preferences; rather, it should maintain a dynamic balance between efficiency and diversity. Only by maintaining the pluralistic coexistence of subjects, content, and value forms can algorithmic platforms avoid falling into closed loops and achieve long-term stable development.

The algorithmic platform ecosystem is not a system unilaterally controlled by the platform but is jointly constituted by the platform, developers, creators, and users. Therefore, governance needs to shift from a relationship of control to a relationship of symbiosis. Platforms should not only focus on their own commercial interests but also consider the balance among users' data contributions, creators' value production, and technological labor input. Especially when data capital becomes a core resource, the issue of data value distribution should be reconsidered [Shoshana Zuboff, The Age of Surveillance Capitalism, PublicAffairs, 2019, pp. 344–347], so that data producers can obtain more reasonable participation and feedback. The principle of symbiosis emphasizes that the stability of a technological ecosystem is not built on the advantage of a single subject but on the common development of multiple subjects.

In reality, platform ecosystems are not naturally equal. Platforms control algorithmic rules, data resources, and technological infrastructure, occupying advantageous positions in ecological relations. Although users, content producers, and other participating subjects participate in value creation, they often lack the capacity to influence rule-making and benefit distribution.

Therefore, the principle of symbiosis emphasizes mutual dependence and balance of interests among different subjects in the platform ecosystem. Platforms should not regard users merely as data sources or traffic resources but should regard them as co-builders of the ecosystem. Users' data contributions, content creation, and behavioral participation constitute an important foundation of platform value, and platforms should also assume corresponding responsibilities to achieve value sharing. In an ethical sense, symbiosis does not mean eliminating differences between platforms and users, but establishing a fairer, more stable, and more sustainable ecological relationship on the basis of acknowledging differences.

3.4 The Principle of Openness

Traditional The healthy development of the algorithmic ecosystem requires maintaining openness. Openness means not only technological openness but also openness of rules and openness of participation. On the one hand, it is necessary to improve the transparency of algorithmic operating mechanisms so that subjects can understand how algorithms affect their own behavior and resource allocation. On the other hand, it is necessary to enhance subjects' capacity to participate in algorithmic governance, so that algorithmic rules are no longer entirely determined by a small number of technical subjects [Frank Pasquale, The Black Box Society: The Secret Algorithms That Control Money and Information, Harvard University Press, 2015, pp. 8–10]. The significance of the principle of openness lies in preventing the algorithmic field from gradually becoming closed and enabling more subjects to participate in the formation of ecological structures. The algorithmic ecosystem needs to maintain: transparent rules, open interfaces, and subject participation.

The principle of openness has become an important direction for the ecological governance of algorithmic platforms. Openness here does not mean fully disclosing all technical details but emphasizes understandability, oversight capacity, and participatory capacity in the process of platform operation. Platforms need to establish a reasonable balance between the protection of commercial secrets and social

responsibility, so that algorithmic mechanisms possess a certain degree of transparency.

Openness requires that the algorithmic decision-making process be explainable, enabling users to understand important algorithmic outcomes that affect their rights and interests. For example, mechanisms such as recommendation ranking, content filtering, and credit evaluation should avoid completely unexplainable technological decisions. Openness requires that platform governance incorporate more social subjects, so that algorithmic rules are no longer determined by a single technical organization.

From an ecological perspective, openness is an important condition for a system to maintain vitality. A closed ecosystem easily forms internal loops and path dependence, whereas an open ecosystem can continuously absorb new resources and values through external exchange. Only by maintaining moderate openness can algorithmic platforms avoid technological monopoly and achieve healthier development.

3.5 Collaborative Governance

This The algorithmic platform ecosystem is characterized by complexity and dynamism, and a single subject can hardly achieve effective governance. Therefore, it is necessary to establish a multi-actor collaborative governance model. Platform enterprises need to assume technological responsibility, developers need to pay attention to the value impacts of algorithms, regulatory agencies need to establish institutional norms, and users need to enhance their awareness of digital participation. Through the joint participation of multiple subjects, it is possible to prevent the algorithmic field from being dominated by a single capital logic so that technological development remains coordinated with social values.

The goal of ecological governance is not to eliminate algorithmic influence but, on the basis of acknowledging algorithms as a technological structural force, to achieve a rebalancing of capital, rules, and subject relations within the algorithmic field.

Reliance on internal platform governance alone can no longer solve complex ethical problems. Algorithmic platforms involve multiple dimensions, including technological development, data use, commercial interests, user rights, and social values, and their governance requires the joint participation of multiple subjects. Collaborative governance emphasizes the formation of a shared governance structure among platforms, governments, technical developers, users, and social organizations. Unlike traditional governance models, collaborative governance does not involve a single subject unilaterally formulating rules; rather, it forms a dynamic adjustment mechanism through interaction among multiple subjects.

The goal of collaborative governance is not to eliminate differences in the platform ecosystem but, on the basis of acknowledging subject differences, uneven resources, and conflicts of interest, to establish a dynamic balancing mechanism capable of coordinating relations among different stakeholders. As a complex ecosystem jointly constituted by technological systems, social subjects, and institutional environments, the operating logic of algorithmic platforms depends not merely on algorithmic efficiency and technological optimization but on the coordination among data, resources, rules, and values. The key to governance is not to pursue absolute equality among all subjects but to prevent a particular subject

from forming structural domination through advantages in capital, technology, or rules.

Collaborative governance needs to transcend traditional approaches to technological governance and regard the platform as a continuously evolving technological field. The design of technological rules, the operation of algorithmic mechanisms, and the flow of data resources should all be incorporated into the governance framework, so that efficiency objectives form a coordinated relationship with value objectives such as fairness, diversity, and openness. A healthy platform ecosystem requires not only maintaining technological innovation but also ensuring the continued participation and development of different subjects, enabling the algorithmic field to maintain ecological vitality through dynamic adjustment.

The operation of the algorithmic field is not a simple process of information processing but a process of structural reproduction driven jointly by capital flows, algorithmic rules, and subjects' practices. Through data capital accumulation, algorithmic capital conversion, and feedback mechanisms, algorithms reinforce existing structures and further form algorithmic habitus, causing subjects to actively adapt to algorithmic logic. In this process, capital concentration, the erosion of diversity, and ecological fragility become important ethical risks of the algorithmic ecosystem. Therefore, the core of algorithmic governance does not lie in negating technology but in promoting the algorithmic field to move from closure toward a sustainable ecology through the principles of diversity, symbiosis, openness, and collaboration

4. Conclusion

The algorithmic platform, while improving the efficiency of information dissemination, promoting resource allocation, and driving digital innovation, also faces problems such as capital concentration, the convergence of subjects' behavior, and a decline in ecological diversity. Based on Bourdieu's field theory, this paper regards algorithmic platforms as a new type of technological field jointly constituted by multiple actors, capital distribution, technological rules, and subjects' practices, and analyzes the main manifestations of ecological imbalance in algorithmic platforms and their formation mechanisms.

This study argues that the ecological imbalance of algorithmic platforms is not caused simply by algorithmic technology itself but is closely related to the continuous interaction among capital distribution, algorithmic feedback, and subjects' practices. Algorithmic recommendation and resource allocation mechanisms may reinforce existing advantages, enabling subjects with more data, technological capacity, and traffic resources to obtain more development opportunities. At the same time, in order to adapt to platforms' evaluation standards, users and creators may gradually adjust their own behavior and content production strategies, thereby intensifying the convergence of subjects' practices and constraining the diversity and openness of the platform ecosystem.

In response to the above problems, this paper proposes corresponding governance approaches in terms of capital balance, subject empowerment, diversity protection, open governance, and collaborative governance. The sustainable development of algorithmic platforms requires not only improving

technological rules and resource allocation mechanisms but also attending to the participatory capacity and development opportunities of different subjects, reducing the excessive influence of a single evaluation indicator on content production and subjects' behavior, and improving platform governance mechanisms through multi-party participation. Only by establishing a reasonable balance between technological efficiency and social value can the openness, fairness, and sustainable development capacity of the algorithmic platform ecosystem be enhanced.

In conclusion, field theory provides a useful analytical perspective for understanding capital relations, subjects' practices, and structural reproduction in algorithmic platforms. Placing algorithmic platforms within a framework of interaction between technology and social relations helps transcend purely technological governance approaches and further reveals the structural causes of platform ecological imbalance. Future research can also combine specific platform cases and empirical materials to conduct in-depth examinations of algorithmic resource allocation, changes in subjects' behavior, and the actual effects of governance measures, thereby providing more targeted theoretical foundations and practical references for the sustainable governance of algorithmic platforms.

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