

Analysis of the Current Situation and Pathways for Improving Scientific Research Management

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Abstract: Scientific research management is closely connected with research innovation and the transformation of research outcomes, playing a vital role in promoting the development of scientific research and the prosperity of social sciences and philosophy. As China embarks on a new journey towards building a socialist modernized country, the field of social sciences and philosophy faces new missions for the era, while scientific research management confronts new situations and requirements for research development and innovation. This paper starts by analyzing three main pairs of contradictions in scientific research management and argues that by focusing on innovative incentive mechanisms, establishing new concepts, and creating an "academic community," it is possible to effectively enhance the level and efficiency of scientific research management, thus providing inexhaustible momentum for innovation and development in China's research field.

1. The New Situation Facing Scientific Research Management

The current social landscape is characterized by diverse ideological trends, the shift to a new normal in economic development, profound changes in the international development environment, the critical phase and challenges of reform, the emergence of various deep-rooted contradictions and issues, an increasing array of risks and challenges, and intensified clashes and exchanges in global ideological and cultural interactions. In this context, it is urgent for philosophy and social sciences to play a more significant role. Scientific research management, as a crucial foundation and guarantee for the development of philosophy and social sciences, must adapt to the trends of the times, keep pace with the times, and explore innovative approaches to promote research development while meeting the needs of research advancement.

The world is currently facing a once-in-a-century transformation, with the COVID-19 pandemic bringing about numerous uncertainties. The global economic recovery is confronted with severe challenges, requiring the exploration of pathways and methods through technological innovation to address crucial global issues and meet the challenges of the times. China is comprehensively promoting the construction of a world-leading science and technology powerhouse, a crucial moment that continuously injects core momentum into the dream of becoming a science and technology powerhouse. Faced with increasingly fierce international competition and severe external challenges, it is essential to continuously transform research achievements and transition the research-industry chain to the research-value chain. Therefore, the new international situation

also presents new requirements for scientific research management.

2. Inherent Contradictions in Scientific Research Management and Their Impacts

Contradictions exist in all things and serve as the driving force behind their development. Scientific research management is a systematic task, where the key elements include the routine management work, researchers, and scientific research managers, corresponding to the processes, the beneficiaries, and the actors, respectively. Throughout the development of scientific research, these three elements face their own inherent contradictions.

2.1 The Game of Management and Service

Scientific research management possesses the dual attributes of administrative management and public service. It is a task that employs authority to manage scientific research throughout the entire process, including project application, approval, process management, completion, outcome translation, financial oversight, and awarding of research achievements. The scientific research management system in China originated from the Soviet Union model and has been deeply influenced by traditional planned economy practices. The functional orientation of research management departments primarily focused on administrative functions, utilizing administrative measures to handle transactional tasks, leading to a phenomenon of prioritizing management over service. However, scientific research management also carries the attributes of public service. Internally, research management departments cater to a wide range of researchers within the organization, providing services such as research consultation, project application, and financial management, demonstrating notable public and open characteristics. Externally, in order to meet the needs of research development, research management departments need to acquire more external resources and integrate them to form an expanding network of resources.

The concept of building a "service-oriented government" has brought the idea that management departments should provide services to the institutions and individuals they manage into people's awareness. Influenced by this notion, scientific research management has begun to transition from the previous administrative-led model to a service-oriented model. Due to the relatively short duration of this transformation and the inertia of thinking in the workplace, the relationship between research management departments and researchers still predominantly follows a management-subordinate dynamic. Communication between management personnel and researchers is primarily unidirectional, lacking in two-way dialogue. As a result, a peculiar phenomenon has emerged in practical work: while researchers perceive scientific research management personnel as arrogant and high-handed "managers," the latter self-deprecates as "waiters" who merely cater to their needs.

Although the dual attributes of scientific research management are synchronized in time and consistent in space, they do not manifest as a harmonious unity in actual scientific research management work. Instead, they form a contradictory relationship in mutual opposition. How to prevent this contradictory relationship from becoming a hindrance to the development of scientific research and instead transform it into a driving force for progress is a question worthy of in-depth exploration.

2.2 The Opposition between Research Assessment System and High-Quality Outcome Orientation

The research assessment system plays a crucial role in determining the value and level of scientific research outcomes, providing strong guidance and motivation for researchers. While

China has a significant quantity of research achievements, few have gained international recognition. Academician Li Guojie pointed out, "China ranks 9th in the number of SCI papers published worldwide but ranks 120th in the number of citations per paper."^[1]

This phenomenon is related to the research assessment system. China's research evaluation system was established based on foreign experiences. To achieve management uniformity and operational convenience, standardized evaluation methods are generally adopted, with a focus on quantitative assessment. The mainstream approach involves quantifying the number of monographs published by researchers, papers published in certain journal tiers, research achievement awards received, and the number of projects obtained. These factors are converted into scores based on certain weights, which directly influence salary performance and professional title evaluations. While this evaluation method has some scientific and impartial aspects, it tends to push the value orientation of academic research toward utilitarianism, leading researchers to pursue "research GDP"^[2] excessively and fostering a hurried and impatient academic atmosphere.

On one hand, due to limited time, researchers prioritize "quick wins" and invest more time and effort into areas that are easily recognized, such as publishing papers and books. Consequently, fewer individuals dedicate themselves to in-depth research, compromising the original intention of "enduring a decade of obscurity to produce substantial work." This significantly impacts fundamental research, not only weakening researchers' innovative capabilities but also undermining the foundation and capacity to drive innovation-led social development. On the other hand, the impetuous academic atmosphere has resulted in a crisis of research integrity. In recent years, cases of research misconduct have emerged, and research integrity has become a significant obstacle to the healthy and orderly development of China's scientific and technological fields. The emergence of these issues is partly due to a lack of individual academic ethics but more critically attributable to the various flaws within the evaluation system.

China has proposed that economic and social development should prioritize promoting high-quality development, placing greater emphasis on improving development quality and efficiency. Shifting from quantity-oriented growth to quality enhancement is also a current task in scientific research. In response, the Ministry of Education, Ministry of Science and Technology, and other departments have successively issued documents such as "Measures to Eliminate the Negative Orientation of Solely Focusing on Papers in Science and Technology Evaluation (Trial)" and "Measures to Standardize the Use of SCI-related Indicators in Higher Education and Establish Correct Evaluation Orientations." These initiatives aim to eliminate the negative orientation of solely focusing on papers and promote the continuous improvement of the research assessment system, creating a favorable environment for the high-quality development of scientific research.

In the face of the new era and new circumstances, the research assessment system must prioritize "quality" and fulfill its inherent value demands. Through joint efforts at the national level and within research institutions, it should continue to provide intellectual support for the country's innovative development.

2.3 The Conflict between Job Burnout and the Need for Optimized Research Management

While the lack of enthusiasm among researchers has garnered widespread attention, it is also important to focus on research management professionals. Research management involves various aspects such as projects, funding, and outcomes. With the advancement of scientific and technological innovation, there is an urgent need for a responsive research environment. Research management personnel face increasingly challenging missions and heightened work pressures. They are immersed in tedious administrative tasks, and the widening income gap between them and researchers further diminishes their value, leading to a diminishing sense of accomplishment and a

weakened sense of fulfillment. This can result in feelings of powerlessness and fatigue, commonly known as job burnout.

The concept of job burnout was introduced by American scholar Freudenberger in 1974. It mainly refers to a psychological state of physical and mental exhaustion and diminished personal accomplishment under work-related stress. It is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment.^[3] The manifestations of job burnout among research management professionals include: (1) low mood and lack of motivation and initiative. They mechanically complete tasks without actively planning the development of research management work. (2) Weakened sense of responsibility. Job burnout can lead research management personnel to develop misconceptions about their role, feeling like an "outsider" in the research field, and believing that their efforts have little impact. This can result in avoidance of responsibility and procrastination. (3) Low sense of value identification. Research management personnel serve the development of scientific research and focus on researchers. However, their sense of value and recognition are generally low. According to a survey conducted by the Chinese Association for Science and Technology Workers' Condition Investigation Site, only 14.7% of respondents received relevant skills training, 79.5% felt a lack of promotion opportunities, and 66.8% felt low recognition. With the increasing proportion of highly educated talent in research management, the disparity between expectations and reality can lead to significant psychological gaps and "identity anxiety."

As China's investment in scientific research continues to increase, and the rapid development of the scientific and technological field, research management plays a crucial role in transforming knowledge into productivity. The content and complexity of research management are diversifying, and new situations constantly present new requirements for research management. Job burnout directly leads to the loss of research management talent, unstable teams, and low levels of specialization, posing obstacles to the optimization of research management. Research management professionals, as the frontline workforce responsible for the smooth operation of research work, have a close relationship between their physical and mental well-being and their work attitude, which is crucial for the healthy development of scientific research.

3. Reflections on the Path to Addressing the Main Contradictions in Scientific Research Management

Contradiction is the fundamental driving force behind the development of things. The development of human society is a continuous process of discovering, understanding, and resolving contradictions. This requires us to correctly handle the existing contradictions in the specific practice of scientific research management, turning them into a driving force for scientific research innovation and development, as well as for the innovation and development of scientific research management.

3.1 Innovative incentive mechanisms to create a positive work atmosphere

Talent resources are the most valuable resource, and in order to fully tap into the value of human resources, it is necessary to pay attention to talent incentives. By employing both material and spiritual incentives, we can fully mobilize the enthusiasm of researchers and scientific research managers, enabling them to dedicate themselves wholeheartedly to scientific research and scientific research management, thereby enhancing the level and development of scientific research.^[4]

In 2011, the Ministry of Education issued the "Opinions on Further Improving the Evaluation of Philosophical and Social Science Research in Higher Education Institutions," which pointed out the need to correctly recognize the role of citation data such as SCI, SSCI, and CSSCI in research

evaluation, abandoning the practice of using the level of publishers and journals as the standard for judging the quality and level of research achievements. Since 2013, the Ministry of Education has successively issued policy documents such as the "Opinions on Deepening the Reform of Scientific and Technological Evaluation in Higher Education Institutions," the "Indicator System and Evaluation Points for Scientific and Technological Classification Evaluation in Higher Education Institutions," and the "Notice on Conducting Pilot Reforms of Scientific and Technological Evaluation in Higher Education Institutions." These policy measures fully demonstrate that the country is vigorously promoting the reform of the scientific research management system, and they also provide a basic direction for the reform of scientific research management mechanisms and evaluation systems.

For researchers, the evaluation mechanism is most closely related to them. In order to stimulate the intrinsic motivation of researchers, it is necessary to optimize the evaluation system and effectively integrate it with the incentive mechanism. Following the overall requirements of "goal-oriented, classified implementation, objectivity, fairness, and emphasis on effectiveness," the evaluation system for research achievements is transitioning from a rigid "one-size-fits-all" approach to a more flexible and scientific system. The evaluation methods should reflect comprehensiveness and diversity, considering the scientific value, economic value, social value, and cultural value of research achievements from multiple dimensions. In terms of implementation, first, the evaluation of research value should be centered around achieving benefits, correctly balancing the relationship between quantity and quality, focusing not only on "quantity" but also on "quality." Second, implement differentiated evaluation methods by basing them on disciplinary categories and develop different incentive measures for different types of research achievements. Apply immediate evaluation and rewards for applied research achievements that demonstrate short-term value, while adopt delayed evaluation for basic theoretical research that takes a longer time to demonstrate value. Third, organically combine positive incentives with negative incentives. Negative constraints such as negation, criticism, job transfers, and dismissals should be implemented for individuals who hold research positions but have long neglected research work to urge them to return to the right track and actively engage in scientific research.

In addition, most research institutions currently have established "Management Measures for Research Achievement Rewards" mainly to provide material rewards for researchers who have achieved results, but they overlook the importance of spiritual rewards. In response to the spiritual needs of researchers, arrangements can be made for them to participate in further education and training that benefits the further development of scientific research. Recognition can also be given based on the impact of their research achievements, and awards can be established and presented.

For scientific research managers, it is equally important to improve the assessment and evaluation system and establish effective incentive mechanisms. On one hand, based on the basic criteria of "morality, ability, diligence, achievements, and integrity," indicators and weights should be established according to job responsibilities, nature of the positions, and workload. The combination of quantitative and qualitative assessments should be used to break away from "averagism" and solve the issue of "everyone benefiting equally." On the other hand, the "National Medium- and Long-Term Plan for the Development of Science and Technology Talents (2010-2020)" states that efforts should be made to enhance the professional and specialized capabilities of scientific management personnel. New requirements for the construction of a strategic scientific management team with high professional competence, strong management skills, modern scientific qualities, innovative consciousness, and strategic vision have been emphasized.^[5] Therefore, targeted training should be provided to scientific research managers, which not only improves their ability to solve practical difficulties and optimize scientific research management work, but also enhances the professional quality of the scientific research management team,

serving as an effective way to alleviate personal professional burnout among scientific research managers. Supporting scientific research managers to actively participate in scientific research innovation activities while fulfilling their job responsibilities is also an effective measure of spiritual motivation.

3.2 Establishing new development concepts

Scientific research management departments are primarily administrative departments. Due to institutional reasons, administrative management has always dominated the field of scientific research management in China. With the advancement of the "streamlining administration, delegating powers, and improving regulation" reform in the field of science and technology, the demand for "de-administration" in scientific research management has become increasingly urgent. The passive and rigid management approach that focuses on control needs to be transformed into a more proactive and flexible "service-oriented" model. It is necessary to shift the focus of work from management to service, effectively providing logistical support for researchers, truly embodying the service concept of "horizontal and vertical coverage," and genuinely serving researchers and the development of scientific research. The New Public Management movement that emerged in the 1970s advocated that public services should adhere to a "customer-oriented" approach, transforming the concept of government management from a power-centered ideology to a service-oriented ideology that focuses on serving the public. Scientific research management work also has attributes of public service. Therefore, in scientific research management work, we can draw on this proposition, which requires scientific research management departments to adhere to a "researcher-oriented" and "research-oriented" approach, reducing management efforts and increasing service efforts.

Scientific research management work is a complex and innovative task. In addition to routine work, scientific research management professionals should consciously extend their management functions and proactively plan their work with foresight, openness, and creativity. They should coordinate and organize researchers to invest their time and energy into scientific research, which not only facilitates the orderly conduct of scientific research work but also enables individuals to realize their value and enhance their self-identity.

3.3 Building academic communities

"Community" is a notable concept in the Western scientific research and education fields and is inevitably mentioned in the reform of the scientific research field. In China, some scholars have proposed concepts such as "research community," "inter-school cooperation community," and "teaching and research backbone community," and have conducted preliminary explorations in theory and practice.

An academic community refers to "a group of like-minded scholars who adhere to common ethical standards, respect, connect, and influence each other, and promote the development of academia, thereby forming a collective."^[6] Building an academic community aims to integrate forces and cultivate a group capable of consistently producing high-quality scientific research outcomes. With the highly developed information technology and the increasing interdisciplinarity and interpenetration of various disciplinary fields, there is a growing need for scientific research work to move away from isolated efforts and embrace intellectual sharing, resource sharing, and creativity sharing, forming an interactive mode of scientific research operation.

Applying Kuhn's theory of "scientific community," the most essential element in building an academic community is constructing a shared "paradigm," including values, epistemology, methodology, and so on. Therefore, an academic community should have the following basic

characteristics: (1) Self-organization: An academic community is not a top-down imposed organizational form but a naturally developing organization that brings together collective wisdom with conscious and free choices. (2) Openness: Openness should be the most distinct characteristic of an academic community. An academic community should not be a framework with clear geographical or disciplinary restrictions but a freely combinable structure that allows for the intake of new members and the exit of old members to maintain organizational vitality. (3) Self-discipline: "Academic evaluation, academic standards, and academic disputes, all academic issues can only be resolved by the academic community." The freedom of academic activities determines that the academic community itself plays a crucial role in the governance of academic misconduct. The establishment of internal academic norms is based on consensus reached by internal members and forms spontaneously. Therefore, it carries more binding force than external rules.

In the construction of an academic community in the new era, it should not be limited to individual scholar organizations but should also include larger concepts such as departments, platforms, and institutions. The concept of "inter-school community" has long existed in the field of education, referring to learning-oriented organizations formed by multiple schools across regions. The scientific research field can draw on this practice to form learning-oriented scientific research organizations that are cross-regional and cross-disciplinary, with the unit as the smallest element. Members break through barriers of identity and responsibilities, collaborate on research topics as a bond, participate collectively in decision-making, negotiate division of labor, share information and achievements, mutually influence and contribute, and enhance the research capabilities of member units, produce high-quality research outcomes, and promote the formation of an open and developmental pattern in scientific research.

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