

2-20-2022

Integration of Natural and Social Sciences: Only Way to Develop New Think Tanks of High Quality— On Construction of Think Tank Science

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Recommended Citation

LIU, Xizhong (2022) "Integration of Natural and Social Sciences: Only Way to Develop New Think Tanks of High Quality— On Construction of Think Tank Science," *Bulletin of Chinese Academy of Sciences (Chinese Version)*: Vol. 37 : Iss. 2 , Article 4.

DOI: <https://doi.org/10.16418/j.issn.1000-3045.20211108004>

Available at: <https://bulletinofcas.researchcommons.org/journal/vol37/iss2/4>

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Abstract

The relationship between natural science and social science has experienced convergence, separation, and convergence again, shows a trend of accelerated integration under the background of modernization. The genes of new think tanks come from the two sources, i.e., natural science and social science, which is the demand for decision-making consultation that put forward by modernization construction. The only way to develop the new think tank of high quality is to establish the organizational leadership and policy traction system of think tanks that integrate natural science and social science, the internal and external coordination system of think tank research, the scientific construction and personnel training system of think tanks, the decision-making consultation service and achievement evaluation system, and the driving system that complements the national strategic scientific and technological forces and the national strategic ideological forces. Promoting the formation of a strong reality orientation is the road must follow for the high quality development of new think tank, and so as for the new think tank to strengthen the national strategic thinking force and promote the modernization of the national governance system and governance capacity.

Keywords

natural science, social science, integration, new think tank, science of think tank

Citation: LIU Xizhong. Integration of Natural and Social Sciences: Only Way to Develop New Think Tanks of High Quality—On Construction of Think Tank Science [J]. Bulletin of Chinese Academy of Sciences, 2022 (2).

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Abstract: The relationship between natural science and social science has experienced convergence, separation, and convergence again, showing a trend of accelerated integration under the background of modernization. The genes of new think tanks come from the two sources, i.e., natural science and social science, which is the demand for decision-making consultation that put forward by modernization. The only way to develop the new think tank of high quality is to establish the organizational leadership and policy traction system of think tanks that integrate natural science and social science, the internal and external coordination system of think tank research, the scientific construction and personnel training system of think tanks, the decision-making consultation service and achievement evaluation system, and the driving system that complements the national strategic scientific and technological forces and the national strategic ideological forces. Promoting the formation of a strong reality orientation is the road must follow for the high-quality development of new think tank, and so as for the new think tank to strengthen the national strategic thinking force and promote the modernization of the national governance system and governance capacity. **DOI:** 10.16418/j.issn.1000-3045.20211108004-en

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At a symposium on philosophy and social sciences on May 17, 2016, General Secretary Xi Jinping noted that the development level of a country depends on that of both natural sciences and social sciences. A country not prosperous in natural sciences can by no means take the lead in the world, and the same is true of a country denied prosperity in philosophy and social sciences. The world today is experiencing the changes unseen in a century, inspiring not only technological competition but also the contests among ideas. Accordingly, the contest between countries occurs in both science and technology as the hard power, and think tanks on humanities and social sciences as the soft power. Both natural and social sciences represent major variables in determining national strategic competitiveness. Natural sciences play its role more in creating material wealth to advance the prosperity of a country and its people by building up the hard power. Social sciences mainly serve to bring spiritual wealth to improve national and social governance, thus enhancing the soft power for national development. For this reason, we should not only strive for the high ground and achieve self-reliance and self-improvement in science and technology to enhance the national strategic technological power, but also compete for the superiority in thoughts and theories and the voice in ideology and promote the independence and controllability of social sciences so as to build up the national strategic ideological power. As a key link and major growth

area for the coordinated development of natural sciences and social sciences, new think tank represents an important platform for enhancing national strategic ideological power. Integrating natural and social sciences to foster the science of think tank oriented to practical issues is the only path for the high-quality development of new think tanks and further for the new think tanks to build up national strategic ideological power and boost the modernization of national governance system and capacity.

1 Relationship between natural sciences and social sciences from a historical perspective: convergence, separation, and re-convergence

The development of science has experienced convergence, separation, and re-convergence. At present, science in the world is developing towards both strong separation and strong convergence. The strong separation refers to the increasing division of science that brings a growing number of new disciplines. The strong convergence refers to the growing associations (crossing, penetration, and integration) between disciplines^[1]. In a sense, natural sciences and social sciences are interlinked in the root, become separate at the branches, and then merge into a community where they shadow each other.

Received: 2022-01-23

Supported by: “333” Talent Cultivation Project of Jiangsu Province (BRA2019035)

1.1 Trend from natural sciences to social sciences

Marxism was developed on the basis of the advancement of natural and social sciences in the 19th century. Karl Marx^[2] believed that natural sciences and social sciences were mutually inclusive and intersected. He opined that history was, in itself, natural history, or in other words, nature became a realistic part of the process of human. And natural sciences would include the science about human in the future, just as science about human involved natural sciences: it would be a branch of science. Lenin^[3] put forward that the strong trend from natural sciences to social sciences existed not only in the era of William Petty but also in that of Karl Marx, and it might be even stronger in the 20th century. The surge of modern technological revolution is profoundly reshaping the relationship between natural sciences and social sciences in traditional terms. A large number of comprehensive, marginal, and interdisciplinary science branches such as environmental science, space science, marine science, and energy science are emerging and becoming intertwined with social sciences, with their contents and connotations long beyond the scope of simple natural sciences. Accordingly, the convergence between natural sciences and social sciences has become an irresistible trend for the development of modern science.

1.2 Foundation of philosophy and social sciences laid by major science centers in the world

In the history of science since modern times, five science centers have been formed in the world, including Italy in the 16th century, the United Kingdom in the 17th century, France in the 18th century, Germany in the 19th century, and the United States in the 20th century, which also means four major shifts of the centers. The formation and shift of the world science centers represent a product of multiple contributors, among which philosophy and social sciences play a leading role in ideological emancipation, serve as a guide with philosophical ideas, pave the way by creating favorable social atmosphere, ensure a secure means with institutional innovation, and foster this process via spiritual power^[4]. If scientific knowledge is compared to a disk, its edge represents the empirical knowledge acquired from experiments, the part inward the theoretical knowledge in science, and the center the fundamental philosophical viewpoint about the nature. The mutual inspiration between science and philosophy has contributed to the brilliant human civilization. It turns out that philosophy and social sciences steer and underpin the development of natural sciences and technologies. Specifically, philosophical thinking usually serves as the testing ground for scientific thinking, and ideological revolution boosts technological and industrial revolutions^[5].

1.3 Separation and convergence of natural sciences and social sciences since the founding of the P.R.C.

Having undergone long separation, natural sciences and

social sciences now present a trend of accelerated integration. The Opinions on Further Fostering the Prosperity of Philosophy & Social Sciences issued by the CPC Central Committee in March 2004 put forward “four points of equal importance” on philosophy & social sciences and natural science, stressing to push forward the crossing and mutual penetration between philosophy & social sciences and natural sciences.

(1) From the perspective of colleges and universities. China adjusted the department setting of colleges and universities nationwide from June to September in 1952 to build up a talent pool and the teaching resource for industrial development, foster the development of special colleges, and reorganize and consolidate comprehensive universities. This measure caused the imbalance featuring the superiority of natural sciences to social sciences. The Ministry of Education and the Ministry of Finance issued the Plan for the Prosperity of Philosophy & Social Sciences in Colleges and Universities (2011–2020) in November 2011. The Plan noted that we should take full advantage of the complete disciplines in colleges and universities, strive to advance the interdisciplinary research, promote the integration between different disciplines of philosophy & social sciences, and also the integration of philosophy & social sciences with natural sciences and engineering technologies, and explore new academic fields and new areas of disciplinary growth. The emerging comprehensive universities across China, even including some universities of science and technology, have set the colleges and departments dedicated to philosophy and social sciences, which has partly reduced the imbalance between natural sciences and social sciences.

(2) From the perspective of the Chinese Academy of Sciences (CAS). Of the first 15 research institutes established by CAS in June 1950, four were dedicated to social sciences. In June 1955, the Academic Divisions of CAS was established, with the Division of Philosophy and Social Sciences as one of the four divisions. On May 7, 1977, Chinese Academy of Social Sciences (CASS) was officially established on the Division of Philosophy and Social Sciences of CAS with the approval of the CPC Central Committee, and positioned as a solid stronghold on Marxism, the supreme research platform for philosophy and social sciences in China, and a major think tank of the CPC Central Committee and the State Council. In September 2020, CAS established the Institute of Philosophy, which aims to keep track of the general trend of technological advance from the perspective of philosophy and enhance China’s technological originality. The institute is committed to pushing forward technological innovation, philosophical development, and civilization progress by forming an alliance between scientists and philosophers.

(3) From the perspective of the cooperation between natural sciences and social sciences. In March 1978, Sun Yefang the famous economist and Qian Xuesen the famous scientist wrote to each other to discuss the issues concerning marginal science and technological revolution. In October 1984, as

Xue Muqiao the famous economist talked with Qian Xuesen, the two giants respectively dedicated to social sciences and natural sciences jointly called for the integration and penetration between disciplines, advocating interdisciplinary cooperation and development. Since 1985, many famous scientists represented by Qian Xuesen have been calling for the establishment of an alliance between natural sciences and social sciences. In 1986, the Committee for Promoting the Alliance between Natural Sciences and Social Sciences was established within the Standing Committee of the China Association for Science and Technology (CAST), with Qian Sanqiang as the director. In 1991, Qian Xuesen wrote twice to Yu Wen, then Secretary of the Party Group of CASS, proposing the combination of academic groups on natural sciences and technologies with those on social sciences into a unified community. In April 2003, to study science and humanities from the perspective of national strategy, and national strategy from the perspective of science and humanities, Lu Yongxiang the famous scientist and Zheng Bijian the famous theorist jointly initiated the Forum on Humanities for Chinese Scientists, which received the support from many well-known scientists and scholars on humanities. Meanwhile, the relevant exploration efforts have also been made at the provincial level. For instance, in January 1987, Tianjin Federation of Social Sciences, Tianjin Association of Science and Technology, and Tianjin Academy of Social Sciences pioneered the efforts in China to form the Alliance of Two Communities, which was then renamed the Alliance of Two Sciences (Natural Science and Social Science) in September 2015. In September 2003, Beijing took the lead in establishing a joint conference between the communities of natural sciences and social sciences, a relevant summit forum, and a joint research base for the coordinated innovation between social sciences and natural sciences.

1.4 Reality orientation and integration trend of natural sciences and social sciences facing the overall strategic vision of the great rejuvenation of the Chinese nation and the profound changes unseen in a century

At a symposium on the work of philosophy and social sciences in May 2016, General Secretary Xi Jinping stressed the urgent needs for philosophy and social sciences to play a better role in the face of five new major changes. First, the social ideas and value orientations are becoming increasingly active, accompanied by the coexistence of mainstream and non-mainstream cultures, and the collision of social thoughts. Second, China's economic development has entered a new normal, accompanied by the profound changes occurring in the international environment for development. Third, the reform has been in the critical stage featuring emerging underlying contradictions and problems together with increasing risks and challenges. Fourth, the world is experiencing the exchanges, merging, and contests among ideas and

cultures. Fifth, China has entered a stage of full and strict governance over the CPC which is facing the emergence of intensive risks and tests.

At a symposium of scientists in September 2020, General Secretary Xi Jinping pointed out that never before in China have scientific and technological solutions, and strong innovation as the primary driving force, been so much needed for economic and social development and the improvement in people's livelihoods. Further, he put forward the orientations to the forefront of science and technology in the world, the main battlefield of the economy, the major needs of the country, and people's lives and health ("four orientations").

Both the "urgent needs in the face of five major changes" proposed to those engaged in philosophy and social sciences and the "four orientations" to scientists show a clear direction to practice. This means that the research in both social sciences and natural sciences should be out of the "ivory tower", attach equal importance to academic research and application rather than unilateral emphasis on academic research, and value more the application of policies and strategies and technical products. As General Secretary Xi Jinping has noted, as there is a growing trend towards the integration between disciplines, between science and technology, between technologies, and between natural sciences and social sciences, never before have science and technology been influencing so profoundly the future of a country and also people's lives and well-being^[6]. China attributes mainly its boom to the demographic dividend at the early stage of the reform and opening-up and to talent dividend since 2000. As the socialism with Chinese characteristics enters a new era, efforts should be made to enhance the spiritual character and moral quality of talents while improving their literacy and making full use of the talent dividend, so as to maximize the balanced use of talent dividend and cultural dividend^[7]. One of the major means to achieve this goal lies in the integration and cooperation between natural sciences and social sciences.

2 Mechanism for coordination between natural sciences and social sciences from the perspective of high-quality development of new think tanks

The absence of internal connectivity and external integration between natural sciences and social sciences, as well as the uneven development of think tanks in the two major fields for long, is one of the major causes for the under-resourced growth and low output quality of some new think tanks. Due to the traditional immediate relationship between think tanks and social sciences, together with the larger proportion of management and promotion subjects of new think tanks in philosophy and social sciences, the development of think tanks presents the imbalance between social sciences and natural sciences. That is, social sciences embrace larger size and higher display of think tanks than natural sciences. Ac-

cording to the statistics by the joint panel of the China Think Tank Research and Evaluation Center of Nanjing University and the Think Tank Research and Release Center of Guangming Daily at the end of 2020, Chinese Think Tank Index (CTTI) system included 15 736 experts, among whom, those in the fields of economics, law, and management account for 25%, 22.9%, and 17.6%, respectively, those engaged in literature, engineering, and education 6%–7%, and the experts in other disciplines small proportions. At the moment in China, think tank experts are more clustered in the area of humanities and social sciences, while the number of think tank experts dedicated to natural sciences remains to be increased ^[8]. In a sense, the building of new think tanks is advanced mainly amid the commitment to social sciences for the present, with the potential for the building of think tanks in natural sciences yet to be fully unleashed. Therefore, there is an urgent need for the integration between the think tanks in the two major areas, so as to combine the development of think tanks with their services in decision-making.

2.1 The growth of western think tanks is based on both natural sciences and social sciences

Think tanks are largely the products of the combination of natural sciences and social sciences. For instance, the RAND, a famous think tank in the United States, focused on engineering and natural sciences in the first few years as for its departments or personnel. In 1947, the RAND brought together a large number of famous economists and social scientists at a meeting in New York, which was followed immediately by the establishment of the department of economics and social sciences within the corporation. For another instance, the faculty at the Science, Technology, and Society Department of Massachusetts Institute of Technology report high integration of the disciplines they are dedicated to. The professional background of the faculty covers the natural sciences such as aeronautics, aerospace, nuclear engineering, physics, chemical engineering, mechanical engineering, and electronic engineering, as well as humanities and social sciences such as history of science, history of technology, history, sociology, psychology, and anthropology. The department emphasizes the joint research both within the department and by use of external resources, thus bringing creative achievements featuring disciplinary integration for application ^[9].

2.2 New think tanks involve both natural sciences and social sciences

Think tanks of science and technology make up an important part of the new think tanks with Chinese characteristics. The CAST has been pushing forward the building of think tanks in science and technology since 2010. The Ministry of Education issued the Plan for Advancing the Building of University-based Think Tanks with Chinese Characteristics in February 2014. The Plan emphasized that while giving priority to the construction of a group of national think tanks

by focusing on the building of 2011 Collaborative Innovation Center and key research bases in humanities and social sciences, we should build the research bases of soft sciences in universities. That means to build a group of national think tanks dedicated to national and international strategic issues on science and technology based on the existing strategic research institutions of comprehensive universities. The General Office of the Central Committee of the CPC and the General Office of the State Council released the Opinions on Strengthening the Construction of New Types of Think Tanks with Chinese Characteristics in January 2015. The Opinions underscored that while pushing forward the innovation-driven development of think tanks of the CASS and the Party School of the Central Committee of CPC (National Academy of Governance) and the improvement of think tanks in universities, we should work to build high-level think tanks featuring technological innovation. Specifically, centering on the goal of building an innovative country and implementing the innovation-driven development strategy, research institutions are encouraged to study the development trends of science and technology at home and abroad so as to provide consulting services and carry out scientific evaluation for prediction and pre-judgement, which will foster the deep integration of technological innovation and economic and social development. In addition, it is emphasized that we fully unleash the advantages of CAS, Chinese Academy of Engineering (CAE), and CAST in advancing scientific and technological innovation to support the national strategy, planning, layout, and policy-making in science and technology, so as to build them into an innovation-guided high-end think tanks in science and technology featuring good national reliance, public reliability, and international reputation ^[10]. At the 20th Academician Conference of CAS, the 15th Academician Conference of CAE, and the 10th National Congress of CAST in May 2021, General Secretary Xi Jinping called for efforts to strengthen the functions of CAS and CAE as national high-end think tanks and give full play to the role of strategic scientists in consultation and evaluation to serve national decision-making.

2.3 The consultation demands of the Party committee and government for decision-making cover both natural sciences and social sciences

Decision-making is dependent on both natural sciences and social sciences. As think tank research involves multiple areas such as economy, society, science and technology, politics, environment, and people's livelihoods, the relevant disciplines it covers span natural sciences, engineering, and social sciences. Accordingly, it is required that the research by new think tanks steer away from the previous efforts in a single disciplinary area towards integrated research. This is reflected not only in the integration of disciplinary bases and knowledge areas but also in the connection from academic theory to the innovation chain in think tank research ^[11].

Think tanks aim to solve practical issues and serve the

decision-making of the Party committees and governments, which calls for the integration of natural sciences and social sciences. Focusing on high-level decision-making, we can see the deficiencies in the research system of research institutions in China. That is, natural sciences and social sciences are separate and have no platform for exchanges between each other, let alone the valuable policy-related suggestions through exchanges and collision. What is worse, there is even prejudice against each other. There is an urgent need to identify the significance of the connection and cooperation between natural sciences, engineering, and social sciences^[12]. The rate of economic growth and science and technology as the instrument have been valued in the building of a moderately prosperous society in all aspects. To build a modern socialist country in all respects, we need to attach importance to the quality of economic growth and all-round development of people, especially high-quality development, high-quality life, and efficient governance. As the complex, diverse, and multi-disciplinary policy-related issues call for the coordinated development of social sciences and natural sciences. To tackle some major practical issues facing China's economic and social development, we need both natural sciences as the innovation driver and social sciences as the intellectual support.

2.4 The development trend of new think tanks involves both natural sciences and social science

As the essential attributes and characteristics of new think tanks, interdisciplinarity and synergy distinguish them from traditional think tanks. Compared with traditional think tanks that can offer solutions with one individual's own ideas, new think tanks need not only more comprehensive knowledge and information and more scientific methods of their experts, but also emphasize the coordination between disciplines, between fields, and between communities. The think tank research based on natural sciences calls for the relevant policies and strategic thinking from social sciences, while that based on social sciences needs the support of research methods and data from natural sciences. There is an urgent need for think tank research to move from the traditional mode of small workshop, small production, and individual academic operator towards the cooperation of large plants, large-scale production, and large teams, and from the thinking of a single discipline towards the thinking featuring interdisciplinary collaboration between natural sciences and social sciences. Such collaboration in think tank research will improve the quality of think tank products.

3 The integration and coordination between natural sciences and social sciences will improve the quality of new think tanks and facilitate the modernization of national governance

The respective advantages and synergistic effect of natural

sciences and social sciences should be used to achieve the connection, integration, and coordination beyond natural sciences and social sciences. This is the only way to improve the quality of new think tanks and strengthen the role they play in national governance modernization. At present, efforts should be made to build five systems for developing high-quality think tanks based on the integration and coordination between natural sciences and social sciences.

3.1 Organizational leadership and policy traction system of think tanks that integrate natural science and social science

We should build up the top-level design of think tanks that integrate natural sciences and social sciences to improve the organizational leadership, policy guide, and practice advancement mechanisms of think tanks.

(1) Organizational leadership system. We should give full play to the role of the council of national high-end think tanks and that of local new think tanks and establish a more integrated organizational leadership system of new think tank that integrates social sciences and natural sciences, so as to contribute to the contact, connection, and cooperation between the think tanks in natural sciences and those in social sciences.

(2) Policy track system. We should improve the design at the institutional and policy levels, establish the operation system for think tanks integrating natural sciences and social sciences through institution restructuring, function reorganization, and the establishment of alliances, thus ensuring policy and institutional support for the integration and coordinated development of think tanks in social sciences and natural sciences.

(3) Discipline layout of new think tanks. The layout of new think tanks should emphasize the power of think tank experts and integrate fully the elements of natural sciences, rather than be limited to social sciences, thus bringing a group of entity-based cross-community think tanks. Colleges and universities should offer new courses in humanities and engineering by integrating natural and social sciences, and strengthen the policy and strategic orientation of scientific and technological research, so as to give full play to the role of natural science research in the building of new think tanks.

3.2 Internal and external coordination system of think tank research

The think tanks in natural sciences need the support of policies, strategies, and value judgments from social sciences, while those in social sciences entail urgently technological empowerment such as big data and artificial intelligence. A new think tank without the support of natural sciences, like a house built on sand, will find it difficult to get well established. It can hardly go further if denied the part of social sciences, due to the lack of guide of values and strategies. Therefore, a coordination system should be established for natural sciences and social sciences.

(1) Integration of research resources within think tanks. It is required that think tanks in technological innovation introduce the research resources in social sciences, and think tanks in social sciences introduce such resources in natural sciences. In this way, we can gain the synergy of research resources and methods to achieve the mutual empowerment and strength complementation through the establishment of cross-community research teams, thus training a group of interdisciplinary think tank experts with the professional background in both natural sciences and social sciences.

(2) Integration of methods for think tank research. The think tank research in social sciences requires the thinking and methods of natural sciences, particularly big data technology. We should integrate the data collected from the relevant experiments and surveys and the data released by relevant government departments with the big data obtained through modern information technology. Further, we should integrate the meticulous and intensive efforts of natural sciences with the simple and extensive efforts of social sciences, and the rigorousness and technical thinking of scientists with the intellectuality and value-related thinking of experts on social sciences. The integration of research methods between natural sciences and social sciences will improve the research quality of new think tanks^[13].

(3) Cooperation between think tanks in natural sciences and social sciences. We should encourage the cooperation between research institutions in natural sciences (e.g., CAS and CAE) and those in social sciences (e.g., CASS and the Development Research Center of the State Council), and between the natural sciences community (CAST) and the social sciences community (Federation of Social Sciences). Efforts should be made to push forward the association between the two communities, and encourage the joint efforts of scientists in natural sciences and social sciences to tackle key problems, thus making breakthroughs in major technological projects, major policy innovation, and major strategy design.

3.3 Scientific construction and personnel training system of think tanks

Making up an important part in mutual complementation between natural sciences and social sciences, new think tank serves as a good carrier for the high-level alignment between natural sciences and social sciences. As the science of think tank represents a big science beyond specific disciplines and research fields, classifying it as a specific area such as science of strategy, public policy science, or library and information science has limitations.

(1) Building the science of think tank across social sciences and natural sciences. With emphasis on decision-making theory and interdisciplinary research, we should advance the innovation in research methods, policy analysis tools, and technical means, build an interconnected information sharing platform, so as to ensure theoretical and methodological support for think tank research. Furthermore, we should consolidate the scientific basis of think tank

research by using scientific theories, methods, and logic. By following the paradigm and logic of scientific orientation and research, we should endow think tank research with falsifiability to form objective and practical conclusions oriented to practical issues, thus building the research into the science of think tank^[14]. It is suggested to push forward the transition from the convergence to intermingling, and then to integration between natural sciences and social sciences before forming the science of think tank bridging natural sciences and social sciences, which shares the scientific characteristics of applied science and empirical science, and serves as a bond between knowledge and policy, as well as between theory and practice.

(2) Building a talent pool for think tanks across social sciences and natural sciences. Amid his integration of personal ideal into the future of his motherland and the ideas of technological science into the demand of the nation, Qian Xuesen, an outstanding scientist renowned both at home and abroad and the founding father of China's aerospace industry, represents one of the most brilliant strategic scientists. He is highly accomplished in the integration between natural sciences and social sciences by replicating the theory of system science and the practice of system engineering in various areas such as society, economy, and management, in addition to leading the development and test of "two bombs and one satellite" (atomic bomb, missile, and artificial satellite), greatly contributing to China's national defense science and technology industry. Currently, both the community of science and technology and think tanks show urgent demand for strategic scientists. Accordingly, it is necessary to improve the social science literacy of the experts in natural sciences and technology talents and strengthen the innovation in policy, strategy, institution, and ideology corresponding to the innovation in science and technology. In so doing, we can train a group of strategic scientists and technology talents and release greater potential of humanistic ideas in scientific research, thus better serving the national strategic decision-making.

3.4 Decision-making consultation service and achievement evaluation system

Decision-making consultation services are provided not only at policy-and strategic levels but also at solution and technical levels, calling for the support of both social sciences and natural sciences.

(1) Encouraging more experts to do policy-oriented scientific research. In 1963, a report from the Organisation for Economic Co-operation and Development (OECD) divided the decision-making scientists participate in into two categories: policy for science and science for policy. The former concerns the decision-making on science and technology, which is generally made by scientists independently, and the latter is the public decision-making based on science and technology, effectiveness of which is built on sufficient scientific demonstration^[15].

(2) Optimizing the organization of the decision-making consultation committee. As research in areas such as technological innovation, industrial development, territory, and low-carbon environmental protection requires the support of natural sciences, it becomes urgent to establish a decision-making consultation service system integrating natural sciences and social sciences. The Party committees and governments at all levels should establish relevant decision-making consultation committees in a more open profile to encourage the cooperation of experts in both social sciences and natural sciences.

(3) Promoting the equivalence of outcome evaluation system. We should improve the evaluation method of research and pay more attention to the practical applicability of research outcomes rather than the number of papers published. An evaluation system featuring the equivalence between academic outcomes and think tank outcomes, and between the outcomes in social sciences and natural sciences should be established.

3.5 Driving system for modernized national governance

Both history and reality have repeatedly proved that social development does not simply depend on the advance of natural sciences and technologies, but also on the system and values for the proper application of new achievements of natural sciences and technologies. Such being the case, philosophy (humanities) and social sciences become indispensable [16]. The modernization China pursues, faced with a huge population, is about the common prosperity of all the people, the coordination between material advance and cultural progress, the harmony between human and nature, and peaceful development. For that to happen, we should be equipped with both developed natural sciences and prosperous social sciences, which means the pursuit for both technical and ideological power. As an important part of national innovative capacity, social sciences provide theoretical inspiration for the ideological power serving national strategies. If the main momentum of national economic growth lies in more natural sciences and technological innovation, the main power for national governance modernization comes more from social sciences and think tank innovation. Riding the building of new think tanks, we should carry forward the integration of natural sciences and social

sciences, and foster the ideological power serving national strategies that matches the scientific power, so as to sustain China's modernization under the two major drivers, making the Chinese nation stand proudly among the nations of the world.

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(Translated by ZHANG L)



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