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Promoting “Six Transitions” in Think Tank Research

Jiaofeng PAN
Institutes of Science and Development, Chinese Academy of Sciences, Beijing 100190, China School of Public Policy and Management, University of Chinese Academy of Sciences, Beijing 100049, China,
jfpan@casisd.cn

See next page for additional authors

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Promoting “Six Transitions” in Think Tank Research

Abstract

The article analyzed the current characteristics and situation of think tank research both domestically and internationally, and raised the ideas that think tank research need to achieve "six transitions" especially under the background of think tank construction agenda of Chinese government, which is to transition from empirical to scientific research, from discrete to systematic approach, from randomness to normativeness, from pure academic-oriented to integrative studies fitting both academic and practical requirements, from static to stable style, and from a single discipline basis to comprehensive and consistent research. Based on long-term experiences and practices in policy and strategic research, Prof. PAN Jiaofeng at the Institutes of Science and Development, Chinese Academy of Sciences (CASISD) proposed a new method for think tank research, namely the think tank double helix methodology. The methodology comprises of two cycles:the external cycle featuring three stages-the deduction of research question, the comprehensive research, and the regression to the real problem, and the internal iterative cycle involving two mutually embedded helixes-DIIS at the process level and MIPS at the inherent logic level. The DIIS helix emphasizes that the research must follow a step-wise process beginning at data (D) collection, and proceeding to information (I) revelation, intelligence (I) synthesis, and arriving at solution (S) formation; while MIPS helix stresses that the content of the research must follow a logical pathway starting from mechanism (M) analysis, developing to impact (I) analysis and policy (P) analysis, and finally arriving at solution (S) formation. In the booming field of think tank research, the double helix methodology represents a fundamental work to advance the scientific development of think tank research, given that it provides a pathway to promote the "six transitions" as mentioned above and to establish think tank research as a science. The methodology would provide think tank research with a new way of thinking, practice guidelines, and operational approach, hence establishing a research paradigm for think tank research. As a new way of thinking, it aims at eliminating the scattered, fragmented and simplified style of thinking, giving way to a more holistic and systematic mindset. As a practice guideline, it offers a global, panoramic and full-process reference for think tank research, covering both the process and the content of the research. As an operational approach, it plays an instrumental role in gathering the wisdom of experts and scholars with various academic backgrounds and experiences, and comprehensively integrating methods and tools of different types. Therefore, this article explains in detail about how to utilize the think tank double helix methodology as the basic theoretical and methodological paradigm, so as to promote the "six transitions", and reveals the value and significance of the think tank double helix methodology in promoting the scientific development of think tank research.

Keywords

think tank research, think tank double helix methodology, six transitions

Authors

Jiaofeng PAN, Feng ZHANG, and Xiao LU

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Promoting "Six Transitions" in Think Tank Research

PAN Jiaofeng[1,2], ZHANG Feng[1,2], LU Xiao[1]

1. Institutes of Science and Development, Chinese Academy of Sciences, Beijing 100190, China;
2. School of Public Policy and Management, University of Chinese Academy of Sciences, Beijing 100049, China

Abstract: The article analyzed the current characteristics and situation of think tank research both domestically and internationally, and raised the idea that think tank research needs to achieve "six transitions" especially under the background of think tank construction agenda of Chinese government, which is to transit from empirical to scientific research, from discrete to systematic approach, from randomness to normativeness, from pure academic-oriented to integrative studies fitting both academic and practical requirements, from static to stable style, and from a single discipline basis to comprehensive and consistent research. Based on long-term experiences and practices in policy and strategic research, Prof. PAN Jiaofeng at the Institutes of Science and Development, Chinese Academy of Sciences (CASISD) proposed a new method for think tank research, namely the think tank double helix methodology. The methodology comprises two cycles: the external cycle featuring three stages—the deduction of research question, the comprehensive research, and the regression to the real problem, and the internal iterative cycle involving two mutually embedded helixes—DIIS at the process level and MIPS at the inherent logic level. The DIIS helix emphasizes that the research must follow a step-wise process beginning at data (D) collection, proceeding to information (I) revelation and intelligence (I) synthesis, and arriving at solution (S) formation. The MIPS helix stresses that the research content must follow a logical pathway starting from mechanism (M) analysis, developing to impact (I) analysis and policy (P) analysis, and finally arriving at solution (S) formation. In the booming field of think tank research, the double helix methodology represents a fundamental work to advance the scientific development of think tank research, given that it provides a pathway to promote the "six transitions" as mentioned above and to establish think tank research as a science. The methodology would provide think tank research with a new way of thinking, practice guidelines, and operational approach, hence establishing a research paradigm for think tank research. As a new way of thinking, it aims at eliminating the scattered, fragmented, and simplified style of thinking, giving way to a more holistic and systematic mindset. As a practice guideline, it offers a global, panoramic, and full-process reference for think tank research, covering both the process and the content of the research. As an operational approach, it plays an instrumental role in gathering the wisdom of experts and scholars with various academic backgrounds and experiences, and comprehensively integrating methods and tools of different types. Therefore, this article explains in detail about how to utilize the think tank double helix methodology as the basic theoretical and methodological paradigm, so as to promote the "six transitions", and reveals the value and significance of the think tank double helix methodology in promoting the scientific development of think tank research.
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Keywords: think tank research; think tank double helix methodology; six transitions

Think tank influences the macro decision-making, leads the innovative direction, and innovates theoretical methods. It provides policy suggestions and services to the government via high-quality consulting report, provides knowledge and information to the public via research reports, and provides innovative tools and perspectives to academia and decision-making circles via research on theoretical methods. On a national scale, think tank is an important knowledge-producing organization serving the decision-making of the government, which can connect multiple fields and subjects such as policies, sciences, business, media, and the public, playing a role as bridge. In the context of globalization, think tank has gradually become a platform for countries to participate in global governance and increasingly participated in international exchanges and communications, playing a role in public diplomacy. To give full play to the role of think tank, high-quality products become the core competence of think tank, and the research quality will determine the future of a think tank.

Many think tank institutions and their research results are highly dependent on individuals' wisdom and experience. In the Brooking Institution, a mature think tank in the United States, for example, scholars have an excellent academic background and most of them have the experience of serving in governments and private sectors, with both high academic reputation and influence in politics. These highly qualified

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Corresponding author: LU Xiao, E-mail: luxiao@casisd.cn

and experienced scholars can produce high-quality products of thought and facilitate the transition between ideological research and policy practice, thereby laying a foundation for the Brooking Institution as the world's leading think tank.

However, the high dependence on individuals' wisdom can restrict the research of a think tank to a certain extent. Constrained by an individual's wisdom, knowledge, and experience, the think tank research is mostly empirical, discrete, random, static, pure academic-oriented, and on a single discipline basis. Specifically, such think tank research is characterized by individual's experience-dependent ideological results, discrete topics, random research methods, perspectives at static time points, academic-oriented subjects and methods, and the limitation to single disciplines learned by or familiar to researchers [1]. Considering the intricate property of policy issues and profound effects of policies, such research cannot support decision-making. Globally, comprehensive think tanks represented by RAND Corporation attach great importance to method innovation and support the issue addressing in public policies and strategy through research and development of methods, technologies, and tools, which represents the development trend of think tanks. However, such comprehensive think tanks are rare in general. Think tank research needs to achieve transitions from empirical to scientific research, from discrete to systematic approach, from randomness to normativeness, from pure academic-oriented to integrative studies fitting both academic and practical requirements, from static to stable style, and from a single discipline basis to comprehensive and consistent research.

How can we promote the above "six transitions" in think tank research? A variety of think tanks and experts have conducted research in different aspects, providing ideas and methods for facilitating the "six transitions". The think tank double helix methodology (Figure 1) systematically provides an effective theory, method, path, and solution. Professor Pan [2], with years of experience and practice in policy and strategy research, proposed a double helix structure of think tank research, namely the think tank double helix methodology. This methodology starts with problems and ends with solutions, comprising the external cycle featuring "the deduction of research question, the comprehensive research, and the regression to the real problem", and the internal cycle involving two mutually embedded and iterative helixes, DIIS at the process level and MIPS at the logic level, thus forming the double helix. In the internal cycle, the DIIS helix means that the research must follow a step-wise process beginning at data (D) collection, proceeding to information (I) revelation and intelligence (I) synthesis, and arriving at solution (S) formation. The MIPS helix stresses that the research content must follow a logical pathway starting from mechanism (M) analysis, developing to impact (I) analysis and policy (P) analysis, and finally arriving at solution (S) formation.

In this paper, we analyzed the situation and problems of think tank research, explained the "six transitions" in think tank research, and theoretically expounded the significance and paths of the think tank double helix methodology in promoting the "six transitions" of think tank research.

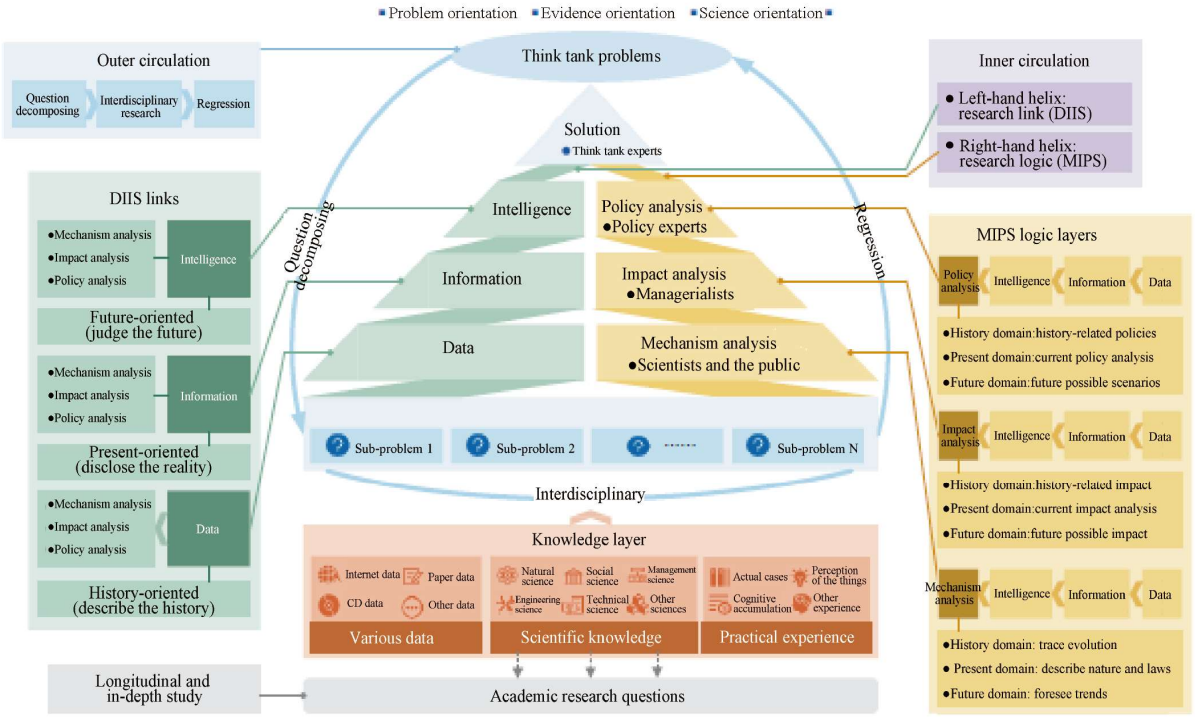

Figure 1 Double helix structure of think tank research [2]

1 Promoting the transition from empirical to scientific research

Influenced by the organizational characteristics and fundamental attributes of think tanks, the available think tank research is highly dependent on the experience of researchers and scholars rather than the existing knowledge system, making them less scientific. The think tank double helix methodology takes think tank research as a science, and integrates scientificity into the orientation, philosophy, process, and logic of research.

(1) The think tank double helix methodology emphasizes the orientation to problem, evidence, and science, and epitomizes the scientificity of research methods. Problem orientation is the essential characteristic of scientific research, and theoretical exploration or empirical experiment verification in all scientific research start with problems. Evidence orientation emphasizes that the whole research process and the formation of the conclusion are a scientific evidence-based process. Science orientation reflects that comprehensive research should be carried out with collected data, scientific knowledge, and practical experience in the whole process. Data here is a concept in a broad sense, including statistic data, literature data, semantic data, cases, and information, which is consistent with the requirements of new scientific paradigm driven by data science.

(2) The external cycle, "the deduction of research question–the comprehensive research–the regression to the real problem", reflects the thoughts of both reductionism and deductionism and embodies the philosophical and scientific thought of the think tank double helix methodology. Reductionism, also known as constructionism, is the main research paradigm in classical physics. It explores the most basic particles constituting the material world as well as the interactions between particles and laws they follow, so as to study the objective material world. The think tank double helix methodology stresses the analysis of complex problems, as the thorough analysis is beneficial to the in-depth research of a problem. The understanding of the whole depends on the study of its components, which reflects the thought of reductionism. With the progress in science, scientists discover that reductionism cannot perfectly explain such complex systems as human life and society. When a number of components are put together to form a system, the system will show characteristics and laws completely different from those of components. Reductionism seems futile when encountering the problems in scale, level, and complexity [3]. Therefore, the deductionism paradigm began to dominate and the scientific community began to study the nature and law of a large number of components put together in the middle of the 20th century [4]. Think tank research involves various aspects such as economy, society, technology, and international relationship, which is more complex and unpredictable than the objective world concerned in scientific research. Therefore, the think tank double helix methodology highlights the integration of the research process, and needs to decompose problems under the guidance of reductionism. Instead of putting together research results of sub-problems mechanically, the formation of solution needs to take into account the mechanism, interaction, feedback, and impact at different levels and in different social fields, which fully reflects the principle of reductionism. Thus, the think tank double helix methodology itself also reflects the transition and integration of scientific paradigms.

(3) The internal cycle of the think tank double helix methodology fully reflects scientificity. Being data-based, the DIIS helix emphasizes the fundamental role of data, adopts both qualitative and quantitative methods, and combines data information and expert wisdom, all of which enhance the scientificity of the whole research process. The MIPS helix highlights the mechanism, impact, policy, and solution. The mechanism analysis is an integrative process, and the research process from mechanism, impact to policy is also a practical process of incorporating the research results into the policy considerations.

2 Promoting the transition from discrete to systematic approach

For a long time, scholars and teams with various academic backgrounds from different research institutions undertake research tasks according to the needs of decision-making departments, providing diversified perspectives and solutions for decision-making. Such research is characterized by scattered and fragmented topics, crossed and repeated tasks, and instable research forces and teams, which are not systematic, holistic or institutionalized. The think tank double helix methodology is actually a set of systematic solutions for think tank problems, aiming to strengthen the systematicness of think tank research. The systematicness is involved from problem to solution, from research process to research content, from data research to expert intelligence, and from mechanism exploration to policy design.

(1) From problem to solution. One of characteristics of the think tank double helix methodology is that it starts with problem and ends with solution, thus forming a looped and systematic method for research. The external cycle and the internal cycle (DIIS and MIPS) of the think tank double helix methodology start with problems, and are regressed, converged and aggregated to solutions from research process and research content, thus forming a systematic, structured, and organized method system that is correlated, integrated, and embedded.

(2) From research process to research content. The DIIS

helix and MIPS helix in the think tank double helix methodology define the process and elements of think tank research from research process and research content, respectively. They are mutually embedded, iterative, and converged to the solution, thus forming the systematicness from research process to research content.

(3) From data research to expert intelligence. From the perspective of research process, the DIIS helix emphasizes a basis of data, guidance with sufficient information, and prediction based on expert wisdom. It reflects the combination of quantitative and qualitative methods and the combination of objective data information and subjective expert experience, thereby achieving a fully structured and systematized research process.

(4) From mechanism exploration to policy design. From the perspective of research content, the MIPS helix stresses that the research involves the mechanism and multiple dimensions (such as economic, social, and political elements) of a research problem. It investigates the possibility and rationality of the problem entering the policy horizon through the analysis on its impact scope and extent, thereby developing the policy and forming a solution. Logically, the method is step-wise and correlated. Thus, the systematicness of the research content is formed among the mechanism, impact, policy, and solution.

3 Promoting the transition from randomness to normativeness

China's think tank construction is developing toward the goal of being specialized and high-quality, which is the process of think tank research transiting from randomness to normativeness. The think tank research highly dependent on individual experience, academic achievements, and available disciplinary approaches presents a random characteristic in the problem analysis, theoretical paths, method selection, and result forms. The think tank double helix methodology provides an all-round and comprehensive method for the normalization of the process, logic, elements, organizations, results, and other aspects of think tank research. The normativeness is manifested in such aspects as the methods, organizations, and results of the research.

(1) The think tank double helix methodology improves the normativeness of research methods. The DIIS helix involves four normative research processes (data collection, information revelation, intelligence synthesis, and solution formation), and the MIPS helix involves four normative content elements (mechanism analysis, impact analysis, policy analysis, and solution formation). During the think tank research, these processes and content elements are correlated and indispensable to each other.

(2) The think tank double helix methodology strengthens the normativeness of research organizations. Large-scale think tank research requires a diversified expert team and a large group of participants, which makes think tank research greatly different from academic research in the organization and implementation. The traditional research mode depending on a scholar or research group is no longer effective, and a multi-disciplinary, crossed and versatile team is needed. The organization mode of large-scale comprehensive think tank research needs to be innovated urgently. The external cycle (the deduction of research question, the comprehensive research, and the regression to the real problem) of the think tank double helix methodology provides a macro framework for the research organization. The DIIS and MIPS helixes of the internal cycle provide normative methods for the micro research of each sub-problem, and norms and rules for the implementation of research.

(3) The think tank double helix methodology enhances the normativeness of research results. The results of think tank research involve macro, medium, and micro contents such as the development strategies, plans, laws and regulations, systems and mechanisms, policies and measures of a country. The carriers of the results include suggestions for decision-making, theoretical methods for academia and think tank circles, and research reports for the public. The think tank double helix methodology can identify the audience of the results more clearly. For example, in the MIPS helix, the results of mechanism analysis are often provided to the academia, and those of impact analysis can arouse the attention of stakeholders and the public. The results of policy analysis and solution formation can serve the decision-making. Thus, the definition of attributes and audience can significantly improve the normativeness and pertinence of think tank results, thereby greatly increasing the impact and effect of the results.

4 Promoting the transition from pure academic-oriented to integrative studies fitting both academic and practical requirements

China's think tank scholars mostly work in universities, research institutions, and research-based institutions directly under the decision-making departments. Particularly, the scholars in universities are mainly engaged in discipline construction, talent cultivation, and academic research, and, to some extent, provide advice for government decision-making based on their work. Such composition of scholar community determines that most of the existing think tank research in China is pure academic-oriented and there is still a long way to go before it develops to the decision-making practice. In 2013, the Third Plenary Session of the 18th Central Committee of CPC decided to strengthen the construction of new think tanks with Chinese characteristics and

establish a sound consultation system for decision-making. This decision marked that China began to explore the construction of specialized think tanks to serve the decision-making, so as to improve the modernization of China's governance system and capacity. This means that think tank research needs to be connected to realistic problems and decision-making needs, and makes itself more practical and operable. With the profound understanding of the relationship between academic research and think tank practice, the think tank double helix methodology connects the academics and practices by an operable method to achieve the transition from pure academic-oriented to integrative studies fitting both academic and practical requirements.

(1) The think tank research fitting both academic and practice requirements is still academically based. The overall concept and structure of the think tank double helix methodology reflect the fundamental role of academic research. The DIIS helix emphasizes data collection and information relevation, which is also a process of academic research. The results of information revelation can be taken as those of academic research aiming at revealing laws and exploring principles. The MIPS helix based on the mechanism also stresses the fundamental role of academic research. For the think tank results with important and positive impact on policies, the academic research and theoretical ideas embedded in them can reveal the underlying mechanism and are advanced and profound [5].

(2) Think tank research emphasizes the practical value and decision-making impact of the research results. Practical value is an important criterion to evaluate the quality of think tank results. The key step of DIIS helix from pure academic-oriented to integrative studies fitting both academic and practical requirements is to introduce the expert intelligence, adopt the method combining objective analysis and subjective judgment, and thus achieve the integration of academic research and practice. The MIPS helix starts with the mechanism analysis and develops to the impact analysis involving economic, social and other aspects, which is an important step for concerning the impact of practice. The results of impact analysis can determine whether the problem concerned corresponds to decision-making, and to what extent the problem should be considered in policy-making. Stages from impact analysis to policy analysis effectively define the problem domain that the decision-making focuses on, which is an important step towards policy practice.

5 Promoting the transition from static to stable style

The think tank research usually serves the solution of realistic problems, mainly the realistic scenario. However, the decision-making supported by think tank research will be effective in a long period. Meanwhile, the social realities of the past and the continuity of the previous policies should also be considered for policy-making. Therefore, think tank research needs to consider the history, present, and future, and transform the static research based on the present into the stable research involving the history, present, and future.

(1) To achieve the transition from static to stable style, the think tank double helix methodology presents the concept of time domain in think tank research, and defines the history, present, and future domain characteristics of think tank research. In the DIIS helix, data collection, information relevation, and intelligence synthesis focus on the effects on the history domain, present domain, and future domain, respectively. In the MIPS helix, the mechanism, impact, policy analyses have effects on the history domain, present domain, and future domain. In addition to solving the realistic problems in the present domain, future-oriented solutions should also be proposed after systematic research and comprehensive analysis about the impact on the future domain.

(2) The think tank double helix methodology highlights the simulation of future scenarios. Scenario analysis conducted throughout the history, present, and future domains can promote the transition of think tank research from static to stable style. As the world is becoming increasingly complex, think tank researchers and decision makers face the challenges of uncertainty in analyzing and predicting the future development. Scenario analysis, one of the key part of the think tank double helix methodology, describes and predicts the possible development conditions in the future. It can provide several possible policy solutions in uncertain and unpredictable future scenarios and form solutions under the constraints of different scenarios.

6 Promoting the transition from a single discipline basis to comprehensive and consistent research

Think tank research involves multiple fields including economy, society, science and technology, politics, environment, and people's livelihood, which covers natural science, engineering science, humanities and social science. Think tank research needs to transit from a single discipline basis to comprehensive and consistent research, which is reflected not only in the integration of discipline basis and knowledge field but also in the consistency of the innovation chain of think tank research from academic theory to decision-making.

(1) The think tank double helix methodology constructs an innovation chain of think tank research from theoretical research to decision-making solution. Think tank research not only requires a solid research basis but also needs to be oriented to decision-making practice, emphasizing the combination

of academic theory and practical needs. Therefore, an innovation chain from theory to empirical research and further to policy should be formed for think tank research. The think tank double helix methodology insists on the beginning of research problems, in which the MIPS helix forms the innovation chain from mechanism analysis to impact analysis, policy analysis, and solution formation in the content, and the DIIS helix connects the theoretical research and the empirical research based on data and expert intelligence in the process. In this way, the quantitative and qualitative methods can be organically combined to form the innovation chain from theory to empirical research and further to solution.

(2) The think tank double helix methodology provides a specific method for the transition of think tank research from a single discipline basis to comprehensive and consistent research. The think tank double helix methodology suggests the analysis of problem from multi-disciplinary perspectives, comprehensive and consistent research by an interdisciplinary team, and the solution formation by multi-disciplinary paths. The DIIS and MIPS helixes are based on the existing multi-disciplinary knowledge system and involve the knowledge and methods of different disciplines in the whole research. The knowledge systems of natural science, engineering science, and humanities and social science become the knowledge basis of think tank research which is characterized by convergence and complexity. The natural science and engineering science are especially closely related to the science & technology think tank. Problems, such as the development and external effect of science & technology, that are focused on in the science & technology think tank can be accurately evaluated in the future domain only when we have a profound understanding of the history, trend, and microscopic mechanism of natural science and of the relationship between science, technology, and engineering. The knowledge system of humanities and social sciences can not only include the perspectives, theories and methods of different disciplines such as economics, sociology, psychology, history, and philosophy into think tank research, but also promote the development of think tank research towards a people-oriented, socially understandable, and historically continuable direction.

(3) The innovation chain of think tank research needs to find its interface, association, and location with the existing knowledge systems and discipline systems. It is worth noting that management science, policy science, and decision-making science are most closely associated with think tank research, and the links between domains can be obtained by the MIPS helix. The three knowledge systems provide mechanism-based and regular research results to support the mechanism analysis of think tank research. The microcosmic research of management science can support the evaluation of the impact of think tank research on problems concerned, namely the impact analysis. The research on the policy content, tool, and process can help support the policy analysis. The theoretical research on the decision-making principle, procedure, and method and the empirical research on the subjects, process, conditions, and objects of decision-making support the solution formation and improve the scientificity of decision-making. We can say that the three knowledge systems not only constitute the knowledge base of the MIPS mechanism layer but also locate the impact, policy, and solution of MIPS, inputting knowledge for the analysis of these logic layers.

7 Summary and prospect

The think tank double helix methodology constructs a paradigm from theory to method, which provides the method for promoting the “six transitions” of think tank research. The methodology is a thinking method of think tank research, striving to eliminate the scattered, fragmented, and single style of thinking and giving way to a holistic and systematic mindset. As a practice guideline, it offers a global, panoramic, and full-process reference for think tank research, covering both the process and the content of the research. As an operational approach, it produces a scientific, normative, and systematic solution by the coupling, iteration, and interaction of DIIS and MIPS helixes. As an organizational approach, it plays an instrumental role in gathering the wisdom of experts and scholars with various academic backgrounds and experiences, providing a reference for the organized, large-scale, and multi-subject think tank research [1].

Different knowledge systems, such as science, technology, and engineering, are gradually separated during the human cognition and transformation of the objective world. Think tank research aims at extremely complex research subjects and needs the innovation of corresponding methods and paradigms. The think tank double helix methodology, based on the existing knowledge systems, emphasizes the orientation to problem, evidence, and science and aims to establish think tank research as a science. The methodology emphasizes the development of analytical tools in the research process and content and includes scenario analysis and uncertainty analysis in decision-making, revealing the necessity of constantly developing the think tank technologies. Furthermore, the methodology provides methods for topic selection, organization, implementation, and evaluation of think tank research tasks of different scales, and creates conditions for promoting simple think tank tasks into a systematic and organized project. Therefore, the methodology provides an innovative paradigm for promoting think tank research into a science, developing think tank technologies and forming the think tank engineering.

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PAN Jiaofeng, Professor, Doctorial Supervisor, President of the Institutes of Science and Development, Chinese Academy of Sciences (CASISD), Co-director of China Innovation Strategy and Policy Research Center funded by Research Office of the State Council and CAS, Chairman of the Chinese Association of Development Strategy Studies, Vice President of China Law Association on Science and Technology, Vice Chairman of China Association of Scientific and Technological Achievements Management, Vice Chair of National Technical Committee on Science and Technology Evaluation of Standardization Administration of China. He is one of the specially-appointed experts of the Chinese People's Political Consultative Conference. He was awarded the honorary title of "Young and Middle-aged Experts with Outstanding Contributions". His research focuses on S&T strategic planning, innovation policy, think-tank theory and method research. He originally proposes the Basic Logical System of Think Tank Research and Double Helix Methodology of Think Tank Research. He has presided more than 60 major decision-making advising research projects, and has achieved a batch of influential outcomes in terms of major decision-making consultations and research theory. He has published more than 200 leading authored research reports, policy recommendations, and academic articles, as well as more than 10 coauthored or chief-edited monographs. E-mail: jfpan@casisd.cn

LU Xiao, corresponding author, PhD. Professor of the Institutes of Science and Development, Chinese Academy of Sciences (CAS), Executive Deputy Director of the Research Center of Scientific Norms and Ethics of Academic Divisions of CAS. Her research interests are around social network and organizational studies, sociology of science, science and technology ethics, and think tank methodology. She has published a couple of articles in core journals at home and abroad, including Research Policy, Science, Technology and Society, EASTS, Studies in Science of Science, etc. E-mail: luxiao@casisd.cn