

# Chinese Studies on Informal Logic and Critical Thinking—An Overview

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## Abstract

This article traces the developmental trajectory of informal logic and critical thinking in mainland China. It surveys the current developmental situation relating to their curricula, the establishment of teaching material, translations of leading works in these fields, academic writings, dissertations, research organizations and so on. Furthermore, the present article particularly aims to cast some light on the important shifts of research trends in informal logic and critical thinking, from those being introduced from outside to those moving in the opposite direction. Finally, it will also address the currently existing inadequacies and expectations for the future development of these fields of study in China.

**Keywords:** informal logic, critical thinking, fallacies, arguments

## Kitajske študije o neformalni logiki in kritičnem mišljenju – pregled

### Izvleček

Članek sledi osrednji razvojni smernici neformalne logike in kritičnega mišljenja na geografskem območju celinske Kitajske. Članek tako preučuje trenutno stanje v razvoju z ozirom na učne načrte, ustvarjanje učnega gradiva, prevajanje vodilnih del na področju, objavljena znanstvena dela, disertacije, raziskovalne organizacije in tako naprej. Nadalje si prizadeva osvetliti najpomembnejše premike raziskovalnih trendov na področju neformalne logike in kritičnega mišljenja, od tistih, ki prihajajo od zunaj, do tistih, ki se gibljejo v nasprotni smeri. Nazadnje članek obravnava tudi trenutno obstoječe pomanjkljivosti ter pričakovanja o prihodnjem razvoju teh študijskih področij na Kitajskem.

**Ključne besede:** neformalna logika, kritično mišljenje, zmote, argumenti

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## The Introduction of Informal Logic and Critical Thinking to China

The beginnings of the informal logic (IL) can be tracked back to the 1970s, when American and Canadian studies in informal logic developed as a result of critiques of baby logic. However, in the initial period of reinstatement of logical education, Chinese logicians still rarely had the opportunity to come in contact with Anglophone literature on IL. Instead, they derived their lessons about the notions of argument and fallacy from the parts on “logic and language” (including “fallacy”) contained in introductions to standard logic (a model representative of baby logic). Because theory of fallacy is in fact an addition to the theory of proof, its two main characteristics—that is the diversification of types of argument and contextualization of argument assessment—easily leads scholars towards IL. Therefore, such research on the theory of fallacy naturally turned into the beginning of rise of IL in Chinese academia. In 1984, during his travels in China, John Nolt, a professor at the University of Tennessee, paid a brief visit to Nanjing Institute of Technology (Southeast University). When he was talking about “IL in China”, this was in fact equivalent to speaking about “IL is *not* in China”: although the Chinese philosophers who engaged in a conversation with Nolt were “surprisingly well-informed about recent Western developments”, none of them “had yet heard of IL” (Nolt 1984, 45). Four years later, however, the situation in Chinese academia had already changed.

It is highly probable that the early use of the term “informal logic” in the Chinese literature can be traced back to the year 1988 (Ding and Wu 1988, 28). From this year onwards, for almost 20 years the theory of fallacy represented the heart of Chinese research on IL. In this period of time, more than one hundred research articles and popular essays were published in scientific periodicals. In addition to that, Chinese academia also saw the publication of four treatises on the theory of fallacy: *Fallacy: The Pitfall of Thinking* (*Miuwu: siwei de xianjing* 谬误：思维的陷阱, written by Ding Huang 丁煌 and Wu Hongzhi 武宏志 (1990)); *In Search for the Misty Regions: The Quintessence of the Science of Fallacies* (*Wuqu de xunmi: miuwuxue jinghua* 雾区的寻觅：谬误学精华, by Huang Huaxin 黄华新 and Tang Jun 汤军 (1990)); *On Fallacy* (*Miuwulun* 谬误论, by Huang Huaxin, Ding Huang and Wu Hongzhi (1993)), and *Studies on Fallacies* (*Miuwu yanjiu* 谬误研究, by Wu Hongzhi and Ma Yongxia 马永侠 (1996)). Between the years 1994 and 2010, Huang Zhanji 黄展骥<sup>1</sup> published almost 80 articles on the theory of

1 Huang Zhanji carries on the scientific spirit of his teacher Yin Haiguang 殷海光. Since 1966 he has devoted himself to the public teaching of logic and the theory of fallacy. The five volumes of the best-selling Hong Kong published “Snail Series” (*Woniu congshu* 蜗牛丛书) represents an anthological collection of several hundred of his lectures, a course of popular lectures issued in the form of a television series, newspaper columns and articles, as well as scientific articles and essays.

fallacy in various Chinese scientific journals. By combining Chinese traditional culture and everyday life, Huang carried out an analysis of fallacies of argumentation in natural languages and established a link between this kind of research and research on logical paradoxes. At the same time, he also enthusiastically assisted younger scholars, in particular doctoral students, in their research on the theory of fallacy. Around 2002, the majority of scholars of in the field of theory of fallacy shifted their attention to research on the fundamental theory of IL, because they discovered that in order to solve the problem of fallacies they had to rely on a complete foundational theory of logic of argument.

The first specialized text that provided an introduction to IL as a new branch of logic emerged in 1990 (Wang Zuoli 1990). Soon afterwards, a special column “Lectures on Informal Logic” was established in the only specialized periodical on logic at the time, *Logic and Language Learning* (*Luoji yu yuyan xuexi* 逻辑与语言学习). For this column, Ruan Song 阮松 of Nankai University published a series of five consecutive articles introducing the rise of IL, argument evaluation, implicit premises, informal fallacy and argumentation construction.<sup>2</sup> Starting in 1991, Wu Hongzhi also published, either in cooperation with Ding Huang and Liu Chunjie 刘春杰 or on his own, several articles on IL, in which he provided a more exhaustive and profound discussion of the main topics in the field. Ultimately, Liu Chunjie’s *Studies in Argument Logic* (*Lunzheng luoji yanjiu* 论证逻辑研究 (1999)) pushed research on IL forward towards its eventual rapid development. A decade later, Wu Hongzhi, Zhou Jianwu 周建武 and Tang Jian 唐坚 co-authored the monumental (more than 800,000 Chinese characters long) volume *Introduction to Informal Logic* (*Feixingshi luoji daolun* 非形式逻辑导论 (2009)), in which the authors provided a detailed and accurate description of the panorama of global studies of IL. Apart from being a clear representation of Chinese scholars’ deep understanding and holistic grasp of this new branch of logic, this book also played an important role in attracting the interest of young scholars to enter the field of IL.

In the wake of the advances in research on the theory of fallacy and IL, the opportunities and means to learn from international experiences increased considerably. Through such experiences, Chinese scholars discovered that, regardless of whether critical thinking (CT) and IL were closely interrelated in their historical origins and theoretical foundations, in the final instance both of them focused on the common educational ideal. In this respect, the possibility emerged that

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Among these works, his manner of distinguishing between “argument x” and “fallacy x”, or his analysis of linguistic fallacies, were not inferior to the theories advanced by the contemporary American and Canadian experts in the theory of fallacy.

2 Apart from that, Ruan Song also published three further articles on informal logic in other Chinese periodicals (Ruan 1991; 1993; 1996).

CL and IL represented a new way, path, and methodology conjoining logical education with pedagogics. In this way, quite expectedly, they became among the special points of interest of logical research and education science in 21st century. Although the term “critical thinking” appeared in China earlier than the term “informal logic”, in around 1985, its full and exact introduction and research did not arrive until the 21st century. In the academic circle of logic, several important events occurred that contributed to the promotion of research in IL and CT. Thus, in 2000, “Informal Logic and Critical Thinking” was included in the “10th Five-Year Research Plan and Subject Guide for the Academic Discipline of Logic” published under the organization of the Ministry of Education and edited by Professor Cui Qingtian 崔清田. In December 2002, the Beijing Association of Logic held the “Scientific Symposium on Formal Logic and Informal logic and Critical Thinking”, which was the first specialized academic meeting devoted to CT and IL in the country. The first Chinese textbook on CT, entitled *Critical Thinking* (*Pipanxing siwei* 批判性思维 (Luo 2004)) was produced by a group of logicians at Nankai University. This textbook, which gave prominence to informal argumentation rather than formal (deductive) argumentation, endeavoured to link argumentation with effective communication. Huang Shunji 黄顺基 and Su Yue 苏越 organized and completed the work *Logic and Knowledge Innovation* (*Luoji yu zhishi chuangxin* 逻辑与知识创新 (2002)), with the project financed by the National Social Science Fund of China. In their work, CT and IL are regarded as instruments of knowledge innovation. Subsequently, at the “Advanced Scientific Forum on Logic and Knowledge Innovation” (April 2004), hosted by Renmin University of China and Nanjing University, the *Logical and Theoretical Innovation* project was set in motion, which aimed to publish a series of books including a textbook on critical thinking (*pipanxing siwei* 批判性思维). In the following year, the textbook *Critical Thinking—With Argument Logic as an Instrument* (*Pipanxing siwei – yi lunzheng luoji wei gongju* 批判性思维——以论证逻辑为工具, Wu Hongzhi and Liu Chunshu (eds., 2005)) was published as a result of joint efforts of several professors at Chinese universities. Soon afterwards, the textbook *A Course in Critical Thinking* (*Pipanxing siwei jiaocheng* 批判性思维教程, Gu Zhenyi 谷振诣 and Liu Zhuanghu 刘壮虎 (2006)) was published as a part of the 10th Five-Year National Plan Textbooks for General Higher Education. In addition to this, an academic exchange group for “Critical Thinking and Informal Logic” was established at the seventh general assembly of the Chinese Association of Logic (May 2004), which further strengthened the momentum of CT and IL in Chinese circles. At the same conference the “First Awards for Excellent Achievements of the Chinese Association of Logic” were given to a few research works on informal logic. In this way the teaching and research directions of IL and CT also gained an important confirmation within Chinese academic

circles. Finally, the *State of Research in National Philosophy and Social Sciences of the 10th Five-Year Plan and Developmental Trends of the 11th Five-Year Plan* (*Guojia zhexue shehui kexue “shi wu” yanjiu zhuangkuang yu “shiyi wu” fazhan qushi* 国家哲学社会科学“十五”研究状况与“十一五”发展趋势) also provided an overview of research in logic in the framework of the 10th Five-Year Plan, as well as the new research trends as planned for the 11th Five-Year Plan, in which IL and CT together was “regarded as a young scientific branch, whose practical significance obtained a wide-ranged and ample attention”, “in the following five years, the main focal directions ought to include ... critical thinking”, establishing “critical thinking and logic” as one of the main subjects of the developmental plan for the science of logic, and “research of the function and application of logic in critical thinking” (*Quanguo zhaxue shehui kexue guihua bangongshi* 2006, 345). As things currently stand, the fact that IL and CT are the objects of intensive attention within national research plans has set the foundation for the rapid development of both fields in the near future.

Although the systemic theories of IL and CT are foreign creations, China also has its own native resources. With argumentation as its core, ancient Chinese logic emphasized a non-deductive style of argument and the context of argument. Regarding textbooks, there also exists a tradition of expositions on argument and the principle of sufficient reason. The article “On the Logical Analysis of Texts and the Question of Logical Teaching” (*Lun wenzhang de luoji fenxi yu luoji jiaoxue wenti* 论文章的逻辑分析与逻辑教学问题),<sup>3</sup> authored by the Logic Teaching and Research Section of Renmin University of China and published in the journal *Teaching and Research (Jiaoxue yu yanjiu* 教学与研究 (1958, No. 10)), voiced an appeal that teaching of logic should be connected to the “actual thinking practice” of humans, criticizing traditional logic for its use of artificial material to explain logical knowledge and the lack of logical analysis of levels of discourse. The article further indicated that in practice when using our knowledge of traditional formal logic we do not know where to start an analysis of narrative or expressive texts, while, as an alternative, it proposed a procedure for analysing the structure of thought, which would emphasize the formal diversity and richness of expression of inferences, judgments, concepts, and their relations. By observing grammar, rhetoric, and logic, as well as some forms of inference that exceed the analytical capacity of instruments of traditional logic, the article’s intention was to open up “a new lively way of practice of logical teaching” or “a new direction in logical teaching” (Logic Teaching and Research Section 1958, 14). Twenty years

3 More than two decades after its first publication, and “on the request of readers”, the text was republished by the Information Centre for Social Science of Renmin University of China in its publication *B3 Logic (Luoji B3 逻辑 B3, 4 Volumes, 1980)*.

later, these ideas from 1958 were implemented and advanced in the work *Logic of Speaking and Text Writing* (*Shuohua xie wenzhang de luoji* 说话写文章的逻辑), which expressed doubt about interpreting logic as formal logic, while explicitly suggesting that logic of spoken and written language should include both logic of reasoning and argument, as well as logic of description and narration (Wang, Zhang and Zhang 1980, 6–7). The research on narrative argument and narrative rationality, conducted in the international research on argumentation from 1989 onwards, confirmed the earlier views of Wang Fangming and others. Soon afterwards, certain treatises on discourse and textual logic (Wang and Zhao 1982; Sun Zupei 1986; Chen Zongming 1989) as well as the *Logical Application from Multiple Perspectives* book series (*Luoji yingyong duo shijiao congshu* 逻辑应用多视角丛书, Su Yue (1990, 10 volumes)), were all permeated with the essential connotations of IL. Unfortunately, such work did not explicitly relate to or integrate IL. Recently, arguing within the framework of argument logic, Zhou Jianwu's book *An Analysis of Argument Validity: A Guide to Logic and Critical Writing* (*Lunzheng youxiaoxing fenxi: luoji yu pipanxing xiezuo zhinan* 论证有效性分析：逻辑与批判性写作指南 (2016)) considered literary analysis from the practical perspective of critical thinking and writing, regarding critical writing as an extremely effective way of practicing logic and training one's capacity to perform critical thinking.

## The Overall Situation of Research on IL and CT in China

Akin to the situation in the US and Canada, from the initial introduction of the elementary knowledge on symbolic logic into Chinese university textbooks questions like “what ought to be taught in the framework of university logic?” and “how does it have to be taught?” were always under consideration. At the turn of the century both IL and CT gained a foothold in mainland China, and “the third way” of reforms of logical teaching, that is a general curriculum consisting of CT as an objective and using IL as a means, was also promoted. The proposal to “polarize” logical teaching—educating experts in logic deals with deep learning and research of modern logic and the all-round education with intensively generalized education in CT—also followed suit (Zhou and Mao 2003; Zhou 2014). Following in the same line, a profusion of different curricula and textbooks of the IL and CT type also emerged. Apart from these developments, since 1997 logic has been listed as an exam subject for MBA entrance exams (drawing from the methods of American GRE, GMAT and LSAT). While the content of this kind of exam in logic has got even closer to IL and CT over the years, the university curriculum in logic has not adapted to this kind of training. This produced an external stimulus for the reformation of logical teaching.

In his work *Argument and Analysis—The Practical Use of Logic* (*Lunzheng yu fenxi – luoji de yingyong* 论证与分析——逻辑的应用 (2000)), Gu Zhenyi linked together the knowledge of traditional logic with the practical training in argument analysis, providing the first systematic response to the new needs. Starting in 2003, he also took the initiative by establishing a course on “Logic and Critical Thinking” at the China Youth University of Political Studies and Peking University. Based on the lecture notes for this course, together with Liu Zhuanghu he co-authored the textbook *A Course in Critical Thinking* (*Pipanxing siwei jiaocheng* 批判性思维教程 (2006)). Almost at the same time, lecturers in logic at the China University of Political Science and Law, East China Normal University, Yan’an University and other institutions also started organizing elite courses on CT, in particular general elective courses on the subject. In the past few years, Huazhong University of Science and Technology hired the Canadian scholar Dr. Dong Yu 董毓 as a visiting lecturer, who started the first course on CT at the university, providing an impetus for the development of teaching CT within every academic discipline, which in turn brought about a very favourable demonstration effect at the national level. Shantou University, on the other hand, offered its integrative thinking program (creative thinking + critical thinking + systemic thinking) of “Comprehensive Training System for Thinking” to all of its students. Chinese education relating to IL and CT also has certain special characteristics. Due to the restrictions in specialized study programs at Chinese universities, according to which one is not allowed to alter the titles of courses already listed in individual programs, it is not so simple to completely replace the compulsory courses on logic with IL or CT. As a result of this, there emerged at Chinese universities numerous courses entitled “Logic and Critical Thinking”. Sometimes it is even the case that lecturers are only allowed to fill occasional gaps which appear in the course of carrying out the general course on logic with content related to IL or CT. As regards the establishment of textbooks, IL has been blended into the content relating to CT. Led by a certain notion of CT, in their book *Critical Thinking* (*Pipanxing siwei* 批判性思维 (2010; 2016)), Wu Hongzhi and Zhou Jianwu constructed a relatively complete system of argument logic. The book *The Principles and Methods of Critical Thinking—Towards a New Cognition and Practice* (*Pipanxing siwei yuanli he fangfa – zouxiang xin de renzhi he shijian* 批判性思维原理和方法——走向新的认知和实践 (2010; 2017)), written by Dong Yu, provided a broader perspective on the transition from the consumer of knowledge to the producer of knowledge, creating a fusion between analytical, clear, real, adequate, optimal, in-depth thinking and dialectical thinking, which is not anymore limited to the scope of logic and corresponds to a form of general curriculum that oversteps the constraints of conventional logical curricula. Apart from such publications, recent years have also seen the publication of popular readers

on this topic (e.g. Xie (2017); Dong (2017)), while online courses on IL and CT have also been developing rapidly. One such textbook is Xiong Minghui's 熊明辉 *A Course in Critical and Creative Thinking* (*Pi-chuang siwei jiaocheng* 批创思维教程 (2019)), which strives to bring forth courses in innovative entrepreneurship education, and combines critical thinking and creative thinking. Aside from Xiong's textbook we should also mention the university MOOC textbook by Wang Yanjun 王彦君 (2020). Subsequently, various textbooks or training manuals on CT for elementary or secondary schools also emerged one after another (e.g. Zhao Guoqing 2016; 2019; Wang Jing 2017; Xu Fei 2019). Various books were also published embodying the spirit of CT and containing the contents of CT, on, for example, university-level foreign languages (Wen Qiufang 2012; Li Yingxin 2017), pedagogy (Rong Yanhong), medicine (Wang Weili), secondary school physics (Wang Changjiang 2015; Wang Ming 2021), linguistics (Yu and Zhang 2017;), and history (Zhou Hong 2020). Also noteworthy are the general teaching of CT launched at Nanjing Zhonghua High School and the primary school affiliated to Huazhong University of Science and Technology. Moreover, translations of important works on IL and CT have also been growing rapidly. Starting with the Chinese translation of John Chaffee's *Thinking Critically* from 1989, Chinese translations of similar works have only been continuing to emerge. In 1997, the Shanxi Education Press released the most extensive project of translated and edited works on CT, which still continues to be published, namely the "Philosophy for Children Book Series" (*Ertong zhexue congshu* 儿童哲学丛书), in which 14 books of Matthew Lipman, a renowned expert in CT and the founder of philosophy for children (a well-known mode of CT), have been published. In 2013, the Mechanical Industry Press in Beijing started publishing a series of books on CT, which currently includes 14 individual works, while Xuelin Publishing House and the Shanghai People's Publishing House jointly published the *Guanghua Self-Enlightenment—Critical Thinking Translation Series* (*Guanghua qidi - pipanxing siwei yicong* 光华启迪-批判性思维译丛; 5 Volumes). By and large, all well-established foreign textbooks on CT have been introduced to China, among which several editions of the same textbooks have also been translated and published in Chinese, while some of them have even obtained different Chinese translations. These include the following:

Neil Browne, and Stuart M. Keeley. *Asking the Right Questions: A Guide to Critical Thinking* (1994, 1st edition).

Brooke Noel Moore and Richard Parke. *Critical Thinking* (2009, 9th edition).

D. Alan Bensley. *Critical Thinking in Psychology* (1997, 1st edition).



Gerald M. Nosich. *Learning to Think Things Through: A Guide to Critical Thinking Across the Curriculum* (2011, 4th edition).

Peter A. Facione, and Carol Ann Gittens. *Think Critically* (2016, 3rd edition).

Theodore Schick, and Lewis Vaughn. *How to Think About Weird Things: Critical Thinking for a New Age* (2010, 6th edition).

Gary R. Kirby, and Jeffery R. Goodpaster. *Thinking: An Interdisciplinary Approach to Critical and Creative Thought* (2007, 4th edition).

Sharon Bailin, and Mark Battersby. *Reason in the Balance: An Inquiry Approach to Critical Thinking* (2016, 2nd edition).

Stephen D. Brookfield. *Teaching for Critical Thinking: Tools and Techniques to Help Students Question Their Assumptions* (2011, 1st edition).

Most interest has been given to the representative works of two schools of CT. Thus, from the school of Pragma-dialectics (established by Frans H. van Eemeren, who regarded critical discussion as a method of CT), five works have been translated into Chinese:

Frans H. van Eemeren, and Rob Grootendorst. *Argumentation, Communication, and Fallacies: A Pragma-dialectical Perspective* (1992, 1st edition).

Frans H. van Eemeren, and A. Francisca Snoeck Henkemans. *Argumentation: Analysis and Evaluation* (1996).

Frans H. van Eemeren, and Rob Grootendorst. *A Systematic Theory of Argumentation: The Pragma-dialectical Approach* (2003).

Frans H. van Eemeren, et al. *Handbook of Argumentation Theory* (2014).

Eveline T. Feteris. *Fundamentals of Legal Argumentation: A Survey of Theories on the Justification of Judicial Decisions* (2017).

Apart from these, there are also works like *Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life* and *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life* by Richard W. Paul and Linda Elder which have been translated into Chinese more than once. In 2016, the Foreign Language Teaching and Research Press introduced the 21 volumes of *The Thinker's Guide* by Linda Elder and Richard Paul. However, in Chinese translations of CT works there are two obvious problems: there exist major discrepancies between the manner of translation of some key terms (such as “argumentation” or “dialectics”), and the nonprofessional manner of translating logical terminology in some volumes.

For expertise-related reasons, naturally there only exist a few Chinese translations of research works on IL, amounting to the following four: Douglas Walton's *Legal Argumentation and Evidence* and *Character Evidence: An Abductive Theory*, James B. Freeman's *Argument Structure: Representation and Theory*, and Stephen E. Toulmin's *The Uses of Argument*.

The most representative research work in the fields of IL and CT is a series of studies issued by the 21st Century New Logic Institute at Yan'an University (established in 2008): apart from the above-mentioned *Introduction to Informal Logic* (2009), these also include the work *Argument Schemes* (*Lunzheng xingshi* 论证型式, written by Wu Hongzhi (2013)) which investigated the pivotal concepts of IL with several problems related to the argument scheme. A comprehensive in-depth discussion of elementary problems in CT was provided by the work *Preliminary Explorations into Critical Thinking* (*Pipanxing siwei chutan* 批判性思维初探 (Wu Hongzhi, Zhang Zhimin and Wu Xiaobei 2015)). The book series *Logic of Science* (*Kexue luoji* 科学逻辑) consists of works like *Scientific Inference—Logic and Methodology of Scientific Thought* (*Kexue tuili – luoji yu kexue siwei fangfa* 科学推理——逻辑与科学思维方法 (Zhou Jianwu 2017; 2020)); *Scientific Analysis—Logic and the Scientific Method of Deduction* (*Kexue fenxi – luoji yu kexue yanyi fangfa* 科学分析——逻辑与科学演绎方法 (Zhou Jianwu 2020a)), and *Scientific Argument—Logic and the Scientific Method of Evaluation* (*Kexue lunzheng – luoji yu kexue pingjia fangfa* 科学论证——逻辑与科学评价方法 (Zhou Jianwu 2020b)). Setting out from the concept of CT, these books combine an abundance of scientific cases, providing an analysis of logical inference and argument in the context of science. The book *Studies in Critical Thinking* (*Pipanxing siwei yanjiu* 批判性思维研究 (Wu Xiaobei 2018)) delved into the problem of translation of the English term “critical thinking” itself, trying to sort out the notion of CT within the context of critical rationalism and analysing the possibility of complementing Western-style CT with Chinese-style CT. Scholars from other scientific institutes also published a certain number of specialized treatises on CT. Thus, for instance, the book *Informal Logic and Critical Thinking* (*Feixingshi luoji yu pipanxing siwei* 非形式逻辑与批判性思维 (Wang Kexi 2007)) attempts to provide a clear explanation of the relationship between logic and CT from the theoretical perspective. The book *Litigational Argumentation: A Logical Perspective of Litigation Games* (*Susong lunzheng: susong boyi de luoji fenxi* 诉讼论证: 诉讼博弈的逻辑分析 (Xiong Minghui 2010)) uses the framework of IL to implement two transformations of research in legal inference: that is, the shift from legal argument to litigational argumentation, and the shift from various kinds of frameworks of litigational argumentation to a game-theoretical framework. In so doing, the work integrated the assessment standards of logical, dialectical, and rhetorical argument.

The book *Research on Toulmin's Idea of Argument Logic* (*Tuermin lunzheng luoji sixiang yanjiu* 图尔敏论证逻辑思想研究 (Yang Ningfang 2012)) systematically discussed the “logical turn” represented by Toulmin’s “material logic” or “working logic”. On the other hand, the book *Reason, Reasoning, and Reasonableness: On Stephen Toulmin's Theory of Argumentation* (*Liyou, tuili yu helixing—Tuermin de lunzheng lilun* 理由、推理与合理性——图尔敏的论证理论 (Song Xuguang 2015)) exploits several new sources of material to expand and deepen Toulmin’s theory. The book *The Main Progenitors of Informal Logic* (*Fei-xingshi luoji sixiang yuanyuan* 非形式逻辑思想渊源 (Chen Wei 2017)) traces IL back to Aristotle’s topics and rhetoric, Toulmin’s material logic, Perelman’s new rhetoric, Hamblin’s theory of fallacy and similar. Taking Mencius and Socrates as models, the book *How to Conduct Criticism—Mencius' Fury and Socrates' Grief* (*Rube jinxing pipan—Mengzi de fennu yu Sugeladi de youshang* 如何进行批判——孟子的愤怒与苏格拉底的忧伤 (Gu Zhenyi 2017)) compares Chinese and Western styles of criticism and systems of logical argumentation. This work further tries to remodel and optimize certain elements from Chinese cultural tradition with the use of CT. The book *Argument of Case Facts—A Research Approach of Critical Thinking* (*Anjian shishi lunzheng—yi zhong pipanxing siwei de yanjiu jinlu* 案件事实论证——一种批判性思维的研究进路 (Yu Hui 2018)) focuses on legal reasoning, in particular on the CT of case and fact arguments as its main topic. By focusing on questions such as the three stages of questioning (to question or doubt), presenting alternative options (plurality of opinions), and forming judgments as its elementary structure, the work studies the awareness and skills of setting critical questions, conceiving alternative options and forming judgments required by the subject in the process of passing case- or fact-related arguments.

From 2007 onwards, the Chinese academic world experienced a rise of the number of doctoral dissertations on IL and CT, with research subjects including Walton’s theory of fallacy (Li Yongcheng 2007), Toulmin’s theory of argument (Yang Ningfang 2008), Johnson’s informal logic (Xie Yun 2009), Woods’ theory of fallacy (Chen Xinquan 2014; Shi Tianbiao 2015), Perelman’s techniques of argumentation (Cai Guangchao 2017), argument scheme (Yu Shiyang 2019; Liao Yanlin 2020), ancient Chinese argumentation (Yan Linqiong 2020), and legal argument (Xu Mengxing 2015; Li Yang 2016; Huang Xianqing 2016). The number of doctoral dissertations on IL is not lower than and even surpasses the number of dissertations written at the same time in American or Canadian universities. In the field of CT, the doctoral dissertations started to appear earlier, such as a dissertation entitled “A Study in Theory of Critical Thinking and Its Evaluation Techniques” (*Pipanxing siwei lilun jiqi ceping jishu yanjiu* 批判性思维理论及其测评技术研究” (Luo Qingxu 2002)). Afterwards, however, only a

few dissertations were published that researched topics such as fostering the CT skills of university students (Liu Yi 2010; Tian Dan, 2012; Huang Fang 2013), the relationship between CT and creative thinking (Zhu Rui 2017), designing courses on CT (Huang Cunliang 2019), and the use of CT in judicial practice (Yu Hui 2017).

Renowned Chinese research institutes for IL and CT include the Institute of Logic and Cognition at Sun Yat-sen University (1997) as the Social Sciences Research Base of the Ministry of Education, Institute for Modern Logic and Application of Logic of Nanjing University (2003), Centre for the Study of Language and Cognition at Zhejiang University (2005), 21st Century New Logic Institute at Yan'an University (2008), International Institute of Argumentation Studies at Jiangsu University (2016),<sup>4</sup> Centre for Research in Innovative Education and Critical Thinking at Huazhong University of Science and Technology (2017),<sup>5</sup> Institute of Reasoning, Argumentation and Communication at Southwestern University of Finance and Economics (2017), and so on. At the same time, IL and CT also started entering Chinese dictionaries and encyclopaedias. Thus, for instance, the *Comprehensive Dictionary of Logic* (*Luojixue da cidian* 逻辑学大词典 (Peng Yilian and Ma Qinrong 2004) already included terminology from IL and CT. The new edition of *Encyclopaedia of China—Philosophy* (*Zhongguo da baike quanshu – Zhexue* 中国大百科全书-哲学), which is currently in the making, will also include a certain number of new entries from IL and CT. Furthermore, the first (1990), third (2000) and sixth (2015) Jin Yuelin Awards were all given to studies on IL and CT. At the same time, quite a lot of research projects on IL and CT were subsidized by the National Social Science Fund of China. More importantly, in the same period of time a considerable number of impressive scientific articles on IL and CT were published in significant domestic periodicals, while outstanding works on IL and CT were also often reprinted in the *Logic* (*Luoji* 逻辑) full-text series published by the Information Centre for Social Science of Renmin University of China. The main annual conference on CT (which also includes teacher trainings) is “The National Discussion Forum on Critical Thinking and Innovative Education” (*Quanguo pipanxing siwei he chuangxin jiaoyu yantaohui* 全国批判性思维和创新教育研讨会), which has already been held nine times and has an extremely wide influence. Although national conferences specialized exclusively on IL are still few in number, major conferences on logic, such as the General Assembly of Chinese Association of Logic, conferences of the Branch for Formal Logic, conferences on legal logic, legal method and legal rhetoric, and

4 The institute was originally established in 2009. In 2016 the institute moved to Jiangsu University.

5 This institution received a large subsidy from its alumnus Qu Xiangjun 屈向军, who has a profound understanding of the theory of CT.

so on, usually include special panels on IL and CT. The special committee for logical education, established in 2017 in the framework of Chinese Association of Logic, strives to advance a harmonious fusion between all-round education and logical thinking, actively promoting work related to education in CT in primary and secondary education. In cooperation with the Renmin University of China Press, the committee also released the “Critical Thinking and Foundational Education Curricula Book Series” (*Pipanxing siwei yu jichu jiaoyu kecheng jiaoxue congshu* 批判性思维与基础教育课程教学丛书, edited by Lin Shengqiang and Zhong Haixia 2019). Currently, there exists very favourable momentum for the use of IL and CT in fields like legal logic and legal methodology, as a consequence of which both have had significant impacts on these fields.

A major event in Chinese advances in CT, which is worth remembering for the future, is that in 2021, the Shanghai Education Publishing House started issuing China’s first periodical specialized on CT, the *Journal of Critical Thinking Education* (*Pipanxing siwei jiaoyu yanjiu* 批判性思维教育研究, issued annually). This will inevitably become the frontline publication for research on CT in China, the central platform for disseminating essential information, the main window for presenting cutting-edge achievements in the field, and one of the most significant nodes in the development of the field in China.

## Integrating into the International Academic Circles

In the last 10 years, the statistically significant standards of the development of Chinese research of IL and CT have undergone a gradual improvement from simple “introduction from the outside” to the concurrent undertaking of high-end import and export of ideas. This process has been manifesting itself in the following six aspects:

1. Inviting world-class experts on IL and CT to China for academic exchanges. From 2009 onwards, foreign scholars like Ralph H. Johnson, J. Anthony Blair, Douglas Walton, Christopher W. Tindale, Frans H. van Eemeren, James Freeman, John Woods, Hans V. Hansen, David Zarefsky, and Frank Zenker in the field of IL, and David Hitchcock, Mark Battersby and Peter Facione in the field of CT, have delivered a series of lectures or reports related to the general situation in the field at various conferences or Chinese institutes, such as the Research Institute for Logic and Cognition at Sun Yat-sen University.

2. An increasing number of Chinese researchers and PhD students visit major centres of research in the US, Canada and the Netherlands to engage in elementary and advanced studies or take part in cooperative research projects. At these leading institutions they are able to learn from the best scholars in the fields IL and CT, and advance in their studies in a straight line towards the very frontiers of these fields.
3. Frequent appearances of Chinese researchers at international conferences on IL and CT. The quadrennial international Conference of Argumentation organized by the International Society for the Study of Argumentation (ISSA), the annual meeting of the Canadian Association for Informal Logic and Critical Thinking (AILACT), as well as the biennial conference of Ontario Society for the Study of Argumentation (OSSA), are all often attended by Chinese scholars, who present their research reports and papers. Lastly, the 10th Conference of the ISSA will be held between June 28 and July 1, 2022, at Jiangsu University (Zhenjiang, China).
4. From 2007 on, more than 40 articles on IL and CT written by Chinese scholars have been published in international scientific journals and conference proceedings. Listed as the first authors (corresponding authors), Chinese scholars who have published their articles in the international journal *Argumentation* (indexed in SSCI and A&HCI) include: Liang Qingyin 梁庆寅 (2011), Xie Yun 谢耘 (2015, 2019), Xiong Minghui (2019), Yan Linqiong 闫林琼 (2019), Wu Peng 吴鹏 (2019), Zhang Chuanrui 张传睿 (2019), Yu Shiyang 于诗洋 (2018, 2020), Niu Zezhen 钮则圳 (2020), Wang Jianfeng 汪建峰 (2020), Ju Shier 鞠实儿 (2021), Liao Yanlin 廖彦霖 (2021), and Wang Bin 王彬 (2021). Moreover, Chinese authors who have published their works in the journal *Informal Logic* (indexed in A&HCI) include Xie Yun (2017) and Yu Shiyang (2019), while Xie Yun (2019; 2022) has published in the online journals *Argumentation* and *Argumentation and Advocacy*.<sup>6</sup> One of the signs of the international recognition of Chinese research in IL and CT is also the appointment of Xiong Minghui and Xie Yun as board members of the international journals *Argumentation* and *Informal Logic*, respectively. Current Chinese research on IL is not only closely connected with

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6 Naturally, there also exist minor articles related to IL and CT that were published in the journal *Argumentation* under the names of Chinese institutions. These include articles coauthored by Liu Yameng 刘亚猛 (2004), Feng Jieyun 冯捷蕴 and others (2021).

international academic circles, but is also able to contribute original views on the most pressing problems arising as part of the latest advances in science. Thus, for instance, in the past few years the problem of conductive argument became one of the focal points of current scientific advances. Regarding this problem Jin Rongdong 晋荣东 (2011), Xie Yun (2017)<sup>7</sup> and Yu Shiyang (2019) published important articles, which both had a certain impact on the field of IL. In the field of CT, contributions by Chinese scholars to international scientific journals have mainly been made in the domain of education research. Examples include the two articles by Ren Xuezhu 任学柱 (corresponding author) published in *Learning and Instruction* (SCI) and *Intelligence* (SCI) in 2020.

5. Participation in writing international handbooks and manuals. Such scholars are, for example, Xiong Minghui and Xie Yun who took part in creation of the *Handbook of Argumentation Theory* (2014), and Dong Yu who participated in the compilation of *The Palgrave Handbook of Critical Thinking in Higher Education* (2015).
6. Pursuing frontier research, interviewing world-class scholars in the fields of CT and IL. Having served as a driving force for the “turn towards argumentation” in Chinese rhetoric, Wang Jianfeng (2018; 2019) conducted interviews with Christopher W. Tindale, Douglas Walton, J. Anthony Blair, Ralph H. Johnson and Frans H. van Eemeren,<sup>8</sup> discussing the relationship between IL and rhetoric. Moreover, Liao Yanlin conducted interviews with Douglas Walton and Hans V. Hansen,<sup>9</sup> in which he set out to provide a general narrative on the most recent developments in IL and the theory of argumentation.

## Concluding Remarks

As predicted more than 30 years ago by John Nolt, the teaching and research of IL has huge potential at Chinese universities—if more Chinese people were

7 His paper “Conductive Argument as a Mode of Strategic Maneuvering” received the 2017 AILACT award for an academic article.

8 These interviews were published in *Contemporary Rhetoric* (*Dangdai xiucixue* 当代修辞学) (2018 (1); 2019 (1)).

9 These interviews were published separately in *Philosophical Trends* (*Zhexue dongtai* 哲学动态) (2021 (1)) and *Philosophical Analysis* (*Zhexue fenxi* 哲学分析) (2021 (1)).

to participate in the field of IL, they would undoubtedly bring about new ideas which would offer enormous enrichment for our branch of science (Nolt 1984, 45). The overview presented above shows that these predictions have actually come true. However, we must also remain clear-headed and recognize our own shortcomings (Chen Bo 2018, 679). Some authors simply “renamed” textbooks on traditional logic or introductory logic so that they appeared to be textbooks on IL and CT. Such textbooks, that made no real use of elementary concepts from IL and CT, revealed a poor grasp of the fundamental spirit of IL and CT. How to appropriately treat the relationship between logic, especially formal logic, on the one hand, and IL and CT on the other, has become the crucial point of CT teaching. At the same time, monographs systematically researching IL and CT are still very few in number, while there is an even greater lack of treatises written in English or translations of Chinese works into foreign languages. We still look forward to works similar to those created by renowned scholars such as Trudy Govier, Ralph H. Johnson, Douglas Walton, and James B. Freeman. Apart from that, research on the Chinese tradition of argumentation or developmental history of Chinese logic which would derive from the perspective of IL is worth attempting. On the other hand, the strength and intensity of research in IL and CT is still insufficient, for China still has no academic organization specializing in research on IL and CT. Among young scholars who have finished their doctoral dissertations on IL and CT, there are quite a few who, after their promotion, stop working in these fields. Observing from a more holistic perspective, unlike in many other countries the Chinese educational authorities still have not responded to the initiative raised by the United Nations, namely to institute CT as the objective of education and to put cultivating student’s CT into the strategic plans for the development of national education and introduce it among the principal standards of education. We can only hope that, someday in the future, the requirements for CT will first be carried out within the K-12 education system. I firmly believe that, along with the drive to establish a law-based society in China, the research on IL and CT will also usher in a golden age of self-development.

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