

# The rise of philosophy of information in China

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**Abstract:** 80 years of the 20th century, a wave to problems of information go on philosophy discuss surged on the Chinese academics circles, emerged a large number of discuss, papers and several monographs of the issue associated with the philosophy of Information. The text "Outline of philosophy Information Theory "(1985) by Mr. Wu Kun published and publication of the book "Introduction of Philosophy Information Theory "(1987) has become a symbol that the philosophy of information formal established in China. Mr. Wu Kun stress in particular that as the philosophy of information set out of a whole new existence area split mode, that from fundamentally changed the specific way of expression of philosophical problems of basic, so, philosophy of Information is a kind of metaphilosophy Or a maximum of philosophy. Philosophy of Information achieved the first fundamental turn of human philosophy, and thus leads to omnibearing fundamental changes of human philosophy.

**Key words:** philosophy of Information, China, the basic theory

**S**ince the second half of the 20th century, information technology revolution within the confines of world, the information economy, the rise of information society, scientific information scienceize, the social informationize, comprehensive development and progress of socialize of information, centralized and strongly calling a new philosophy of era - the birth of the philosophy of information.

## 1. Philosophy of information of birth in China

80 years of the 20th century, with the introduction of a number of related disciplines and presentations, a wave to problems of the information go on philosophy discuss surged on the China academic circles. And under context of related research, in China academic circles, established a new philosophy of era---which the call of philosophy of information engender for timely. At that time, the academic journals in China, emerged a lot of discussion papers with philosophy of information related issues, also

published a number of monographs. The more influential are:

Wang Ping: "First Exploration Concept of Information" Chinese dialectics of nature research society make list, "Dialectics of Nature Colloquia" People's House, 1983;

Li Ming: " On Information", " Social Sciences in China" 1984. No.4;

Li Ming: "Philosophy of Force and the Philosophy of Information," "Encyclopedic Knowledge "1984. No.11;

Wu Kun (when the Department published the pen name "Fang Yuan"): "Approach of Information Intermediary Theory of Philosophy Epistemology" "Lan zhou Academic Journal" 1984, No. 5;

Cheng Zhong: "What is message?" "Philosophical Researches" 1984.No.11;

Wu Kun: "Outline of Philosophy Information Theory," " The Journal of Humanities" 1985 No. 1;

Liu Changlin: "On the Philosophical Essence of Information," " Social Sciences in China " 1985, No. 2;

Liu Changlin: "the Development of Interaction and Information forms," "Philosophical Researches" 1985, No. 7;

Zhong Yixin: "On Information: Its Definition and Measurement", " Studies in Dialectics of Nature" 1986, No. 5;

Zhong xuefu: "The Concept of Information as a Philosophical Category can It?" "Philosophical Researches" 1986, No. 6;

Wu Kun: " On the in-itself information," "Academic Monthly" in 1986, No. 7;

Wu Kun: "Also Talk about" Philosophy and the Philosophy of Information of Power " " Review of Social Sciences" 1986, No. 8;

Li Ming: " Philosophical Think in Information Age " China Outlook Press in, 1986Edition;

Wu Kun, Li Qi: "Introduction of Philosophy Information Theory " Shaanxi People's press, 1987 Edition;

Wu Kun: "Philosophy of Information--- a New Spirit of the Time," Shaanxi Normal University Press, 1989 Edition.

After 90 years of the 20th century, and the philosophy of information related research heat wave has diminished, with the exception of a few still adhere to the deepening of research in this area, the year this area of keen interest in the study a large number of scholars have shifted to the outside of this area. It is worth mentioning, that in the later period, in addition to Wu Kun and Mr. Li Ming insisted the deepening of research in this field, Mr. Shen Litian and Mr. Luo Xianhan research in this area effective. In 1995, Mr. Shen Litday "Social Science in China," published in No. 5, entitled "orderly weak and strong disorder," the article, try to use the information itself organization's approach to clarify information evolutional the order creation mechanism. In 2005, Mr. Luo Xianhan in the "Acta Scientiarum Naturalum Universitatis Pekinesis" No. 3 published an article entitled " Matter Information Theory: Matter Information System of Various Layers and Their Philosophical Explorations" the paper, in the article, he proposed a theory of dual existence of material and information, and the human spirit phenomena as a kind of complex information the of development go to an advanced stage by brain matter carried. After

this, Mr. Lo has published several papers to further explain his theory.

After entering the 21st century, with the foreign scholars clearly advanced that study direction of philosophy of information, abroad in the field related to the results start to be introduced to China. It in turn triggered a Chinese academic new enthusiasm on philosophy of information. In the scholars for foreign research situation go on present, Mr. Liu gang's work very important. From 2002 he in the relevant academic journals and academic websites published several articles and review articles on translation, the specific description of foreign academics respected that founder of philosophy of information that University of Oxford Philosophy Mr. Luciano Floridi that done research work in philosophy of information. He also takes Mr. Floridi published in "metaphilosophy" a landmark achievement creation of philosophy of information "What is the philosophy of information" translated into Chinese in the Chinese publication "World Philosophy" 2002. N.4, published.

November 2005, China's number of keen scholars of information science and philosophy of information that gathered in Beijing Normal University, held a workshop entitled " Information Science: Interdisciplinary Studies " seminar. After conference colloquia of the publication, including five parts: " first part of the Introduction "; "The second part of the concept of information"; "the third part of the general information theory"; "the fourth part of the Department of Information Science"; "the fifth part of the philosophy of information ."<sup>1</sup>

Here are the colloquia collected part of paper's topics and authors with philosophy of information relevant to the content:

Yan Xueshan University: "Information Science: Its Past, Present and Future";

Luo xianhan: "Development and philosophical significance of the Concept of Information ";

Xie qingjun, Xie Yingchun: "The Definition of a Universal Information (information) ";

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<sup>1</sup> Ma Ainai and so on: "Information Science: Interdisciplinary Studies", Zhejiang Education Publishing House, 2007.

Huang Xiaohan: "Inquiry and Discussion on Information";

Yang Pingan: "Generation of Decide on the Issue of Information";

Hong kunhui Yang ya: "On the Existence of Information in the Complex Relationship";

Chen Yusi: "On Research Objects of the Unified Information Science";

Tian Aijing: "On Information Energy, Three Laws of Informatics and Innovation Model of Knowledge";

Zhong Yixin: "View to Information Science From "Information - Knowledge - Intelligence Unified Theory"";

Miao Dongsheng: "Exploring Information Carriers";

Yang Weiguo: "Different Deep Thought "Carrier of Information "With" Information Carrier """;

Wu Ailian, Wu Kaidi: "Information Life Sciences -- Exploration for Information life, Ontology Information Evolutional law Characteristics";

Wu Kun: "Whole New Breakthrough of Philosophy of Information to Philosophy";

Feng Guorui: "Information Science Technology and Cognitive Intermediary System";

Ji Hailong "The World is a World of Informofers - - A Brief Introduction of Theory of Informofer Materialism Philosophy";

Wang Zhe: "Information Predicament in Network Age."

Five parts of title from in colloquia and the above part of thesis's title can also see the heat of philosophy of information research wave of re-rise in China.

In China, since 80's of the 20th century, started earlier and lasted longer, more fruitful results, influential scholars comes as the philosophy of information Mr. Wu Kun and Mr. Li Ming, Zhong Yixin in the establishment of the general theory of information science as well as information related to philosophical questions.

We have listed above, Mr. Li ming 1984, two more influential published papers: "On information" and "philosophy and the philosophy of information of force." In two papers Mr. Li calls: "the era of reform, inevitably requires philosophy of reform ", the "information age" are bound to produce a

"philosophy of information", and try to establish a new philosophy ---- philosophy of information. In 1986 he published the "Philosophical Think of Information Age" (China Outlook Press), in 1992 published "The Philosophy of Information Theory" (Shaanxi Science and Technology Press), published in 2005 "to restore the dignity of philosophy ---- Philosophy of Information "(China Social Press). Although, due to that held the point of view lack comprehensive and rigorous, Mr. Li released the results discussion of raised many aspects, but a strong sense of the times and bold pioneering spirit continues to inspire people , admirable of call philosophy of information in the outcome of the related shows.

In establishing the direction of philosophy of information, the work of Mr. Wu is not only early start, but a more systematic and comprehensive. 1980 to 1981, also attended the University of Lan zhou, Department of Philosophy undergraduate Wu Kun has completed three papers and philosophy of information related to writing: "Thinking is a higher form of material information activities", "the status and the role of information in philosophy "and" measure of philosophy information ". The first two papers have participated in Gansu Province dialectics of nature research conference the first annual meeting (1981), and to report in conference, caused a greater response from the participants, the basic elements were published in "Journal of Lan zhou University Student Paper Series • Philosophy Social Science "1981, No. 1, "Potential Science Journal" 1981, No. 3, third paper has participated report of Lan zhou University autumn 1981science papers report conference branch of philosophy, the participants also raised the larger response. Wu Kun in April 1982 completed the "Introduction to philosophy of information theory," the first draft of the book, and to this book as an undergraduate thesis at Lan zhou University philosophy department. "Lan zhou Academic Journal," 1984, No. 5 issued a "Introduction of Philosophical Information Theory" in the chapter: "the Information Mesomeric Theory of Philosophy Epistemology". "Humanities Journal," 1985 No. 1 takes "Outline of Philosophy information

theory" as title published the "Introduction of Philosophy information theory," a book of basic points. "Introduction of Philosophy Information Theory" after a book revised expanded and Li Qi cooperation, by the Shan xi People's Publishing House published in June 1987. The book will be scope of information as philosophical the basic of one scope introduction philosophy from the ontology meaning, systematic and comprehensive presented and discussed the philosophical essence of information, classification of philosophy, the nature of three different grade of information three information world (in based comparison with Poppers raised "three worlds" theory, raised including theory of "four worlds" of a material world and three information world), the absolute amount of information, relative amount of information, the relationship between information and related scope of philosophy, philosophical ontological concept hierarchy, the information mesomeric theory of philosophy epistemology, the social information evolutionary theory, philosophy and philosophy of information of power, and the questions of role and so on many aspects information in the philosophy change, pass relevant inquire into book relatively systematic established different from philosophical information theory the practical information theory, proclaimed a new philosophy of era --- the birth of the philosophy of information.

Since 1987, Wu Kun has published papers related with the philosophy of information more than 200 articles, published with the philosophy of information related to academic monographs 11: "Introduction of philosophy Information Theory," (1987), " Philosophy of Information --- a New Spirit of the Times "(1989)," Natural Logic "(1990)," Evolution of Information World "(1994)," Information and Social Development "(1998)," Knowledge and Economy of Information "(2000)," Information Epistemology "(2002)," Philosophical and Philosophical Criticism "(2002)," Philosophy of Information --- Theory, System and Method "(2005)," Argument of the Problem of Philosophy of Information "(2008)," Information, system, complexity thought --- Greece • China • India in Ancient Philosophy, "(2010).

It is worth emphasizing that Mr. Wu, published by the Commercial Press in 2005 " Philosophy of Information --- Theory, System, Method," a book is who on the basis 25 years the results of research integrated works, the book series, including 10 volume, 40 Chapter 70 ten thousand words. This book 10 volume series entitled: is 1.Introduction; 2.Information Ontology; 3.Information Epistemology (first) --- the level of people's information activities and its physiological basis; 4.Information Epistemology (next) - - physiology epistemological the information mesomeric theory; 5.evolutionary theory of information (first) --- natural evolution of information; 6.evolutionary theory of information (next) --- the social evolution of information; 7.the value theory of information; 8.information thinking theory; 9.measure of information; 10.debate and contend. Subject only from the 10 series will be able to see the breadth and depth of content by Wu Kun created philosophy of information.

## 2. What is the philosophy of information ?

In 1989, Mr. Wu emphasized the metaphilosophy nature of the philosophy of information in he's published academic monograph "Philosophy of Information — a new spirit of the times" , And general propose the study scope of philosophy of information. That writes: "Philosophy Information first is a metaphilosophy, from the expansion of its basic theory and could extension many sub-levels of the philosophy. For now, there is no one existing philosophy which is the philosophy of information must not set foot." "Now, my research is still basically limited to elucidate the basic theory of general philosophy of information from the angle of metaphilosophy. At such a level, there are a lot of work we should do. such as , Philosophical essence of information, the philosophy shape and form of information; nature on the different grade of information, the philosophy measure of information; the relationship between information and the past various areas of philosophy; information ontology, information epistemology, information methodology; the evolution of the

information world, information and physical evolution, information and social evolution; holographic, evolution and holographic, similar and holographic; information sociology, information psychology, information aesthetics, information theory of value ; .....there are still have very abundant and a large number of branch issues in the each area field of that listed above . " <sup>1</sup>

July 1995, Mr. Wu attended the "National symposium on information science technology and philosophy conference" in Beijing, he submitted papers for the conference entitled "Scientific Information and Science", and made report to the conference. In the article, he emphasized that: the most general and common theory and method of information science is essentially a transformation of scientific paradigm, this transformation leads to a new modern sense of modern scientific system, which to information theory as the leading knowledge manner. Can be specific divided to this system of subject into six levels: philosophy of information, general information theory, field informatics, category informatics, branch informatics, engineering informatics. In this paper Mr. Wu Kun discussed and corresponding regulations the subject nature, the issue that concerns and should be attention of these six levels, the specific subject has been and will be presentation. The article was published in the "Qinghai Social Sciences," 1997 No. 2.

In 2003, Mr. Wu in his article entitled "Also Talk What is Philosophy of Information and the Rise of Philosophy of Information," the paper is more clearly and expressly statements on the nature of the philosophy of information : " Philosophy of information is a metaphilosophy or highest philosophy that distinguished from all other philosophy." "In philosophy of information takes information as the form of generalized existence, cognitive way, one scale of value evolutionary principles to discuss, and then construct the new information ontology from the height of the metaphilosophy, information epistemology, information production, information sociology, information axiology, information methodology

<sup>1</sup> Wu Kun: "Philosophy of Information--- a New Spirit of the Time," Shaanxi Normal University Press, 1989,31~32.

and information evolutionism, etc. Under these large areas of the philosophy of information could still be included a number of branches philosophy, and then derives subject of the philosophy information of the second, third or deeper levels. "<sup>2</sup>

In 2005, Mr. Wu in his book "Philosophy of Information - --theory, system, method" is emphasize the core station of construction of information ontology in the philosophy of information , He writes: " the information in theory of being sense that has universal and unique character, it is the basis of philosophy of information can be the 'metaphilosophy', 'the highest philosophy' and 'First Philosophy'. Philosophy of Information is "different from all the traditional philosophy and modern philosophy, it is a new world outlook, conception of history, social outlook, values, knowledge outlook, science and technology concept and methodology ". "There may occur substantial differences, essence provision for information go on significance being theory, thus they may derive a very different schools of the philosophy of information."<sup>3</sup>

### 3. Basic theories of Philosophy of Information

In this section of the paper I will present some of M. Wu his key ideas discussed in his philosophy of information. His most detailed presentation of these ideas can be found in his seminal work "Philosophy of Information: Theory, System and Method". Unless otherwise noted, most of what follows has been taken from this work.

Tradition philosophy the primal faith within the framework is that in principle there are two key ideas. The first key principle is existence, which refers to all material and spiritual fields. In this tradition philosophy, existence is equal to matter plus spirit. Philosophers can illuminate the relationship between the mind and existence with the relationship between material and spirit, which is the basic philosophical problem. However, modern

<sup>2</sup> Wu kun : "Also talk what is Philosophy of Information and the Rise of Philosophy of Information," "Studies in Dialectics of Nature" 2003, No. 10 , 6 ~ 9, 14.

<sup>3</sup> Wu kun: " Philosophy of Information --- Theory, System, Method," Commercial Press, 2005, 22.

information science and Philosophy of Information also show that there is an in-self information world distinguished from material world and spiritual world, as well as the spiritual world that is the higher gradation of informational activity. Accordingly, there is necessary to reinterpret the theory of demarcation of existence. This reinterpretation shows existence as the combination of matter and information in which information is in-self information and spirit that is for-self information or re-generative information.

Wu Kun defines this as information as a “philosophical category indicating indirect existence, and also is self-manifesting about the way and form of material existence (direct existence).” He goes on to describe reality as having one material world and three information worlds: is the material world (existence as substance and field), in-self information world (existence as objective inform some), for- self and re-generative information world (existence as subjective spiritual motion), cultural information world.

The theory of dual existence of matter and information must generate the theory of dual evolution of matter and information. Evolution of substance emerges in interaction and synergetic changes, while the interaction also has dual evolutionary effects. The first evolutionary effect of material form is one in which material is viewed as a direct existence changing itself from one direct existence to another. It generates and intermediate vehicle and its activities include associating, transiting and reconstructing through material. The second effect of evolution of informational form involves material as a direct existence changing from direct existence to indirect existence. This results in an accumulation of indirect existence via interaction, rebuilding new forms of indirect existence.

It is the dual evolutionary effect via interaction that make the way of existence becoming dual, that is to say, all things are a unity of direct and indirect existence, as well as material and informosome. Anything is coded by multiple evolutionary relationships with history, current situation and future about themselves via their evolutionary structure. It

is based on the dual evolutionary theory that philosophical spatiotemporal outlook is changed basically. Newton's absolute spatiotemporal outlook and Einstein relativity theory spatiotemporal outlook both is simple static spatiotemporal outlook partition on space-time. As will a point of view of evolution and information lead into inspection on the space-time structure relation, we can discover a complexity relation of space-time of concrete fusion of inherent in significance of information condensation of structure engender. Space-time change in interact, information condensation in space-time change, and correspondingly led to spatialization of time and timeize of space

Any new creation of ordered model never could be given directly and simply except synthetically establishing via interaction among related factors, in another word, self-organization is a general mechanism of information creative model. Investigating from informational activity, phenomenon of self-organization has following characteristics: dynamics—keeping persistence of information model and complex the reconstruction; suitable openness—the necessity of environmental information for self-organization evolution; long-range coherence and nonlinear—construction of the whole information carcass of system ; Inner random—the autonomous uncertainty of elements and the evolution of whole information model of system; inner feedback—the information network and holographic construction; complexity—holographic comprehensiveness based on information model construction. Similarly, it also can show the general process and mechanism of self-organization: Differentiation—decoupling the original information system relation; convergence—exploration of new information model; forming nucleation—the creation of information codon; growth—ergodic construction of information feedback chain indicated by information codon; Copy and spread—the expansion of the amount of information models; variation --- information model innovation; selection and evolution --- the complicate development of information models; alternation of old and new

structure —formation of network carcass of novel whole information of system.

In the early 80's of 20th century, Wu Kun forwarded a of Information mesomeric theory of philosophy epistemology this theory may include two aspects: one is how to generate cognition via the information mesomeric, and the second is the information construction of cognitive process or virtual theory. The first aspect includes the following important points: the information field is the intermediate link of the connection between subject and object; forming cognitive subject and building individual cognitive structure both must based on the information condensed as the intermediary; practice is the process of subject's intentional information transforming to object's structural information (that is to say, to achieve the objectification of subjective information), and cognition is an information activities process via information intermediary.

The second aspect includes the following important points: the information is recognized through different relationship (whether the displaying way of information, or the way of subject knowing information both is a kind of corresponding conversion of different relationship); no direct contact between subject and object; cognition by multi-levelly intermediated (the mediation of factors, at least including the information field, the physiological structure of subject, the cognitive structure of subject, materialized intermediary vehicle); building up cognition via the intermediary (including selection, transformation, composite and reconstruction exacted by intermediary factors on the objective information field); in the construction of the virtual cognition (including the form of the understanding and some the virtual content), virtual reality virtually to cognitive virtual (through direct simulation of the information environment, senses and experience, direct manipulation conversion of senses and experience, so as to realize virtual of person's cognition ).

Actively mastering, use, developing, creating and realizing information is the human social essence, meanwhile, indirect degree of mastering, taking advantage of, developing; creating and realizing information is the criteria of social evolution. Substances

(including the mass and energy) existing in the universe are conserve, while information is not. It is impossible to create or eliminate substances during the production activities except to change the specific structure and order of substances. Standing at the most universal sense, such a structure and order is a method of information encoding, in which the material stuff using by encoding activity has in principle the meaning and value of information vehicle. So, in productive activities, human beings created not the material but only the information (the structural information of material ordered). Insofar as the essence of human production and productivity is only is information production and information productivity. Human social production is the most basic forms of human practical activity. From the perspective of information activities, we can draw a general definition about practice as following: Practice is the process of the subjective information realize at the object, as well as an information "teleonomy" created by subject through implementation of another information "planning" also created by subject influence object, transform special information structure of the object and then produce out.

Value is the effect that things (matter, information, including subjective form of information---the spirit) through interaction between internal and external to achieve. There are two types of facts, one is the fact of the existence of things themselves, and the other is the fact of the change process and results caused by the interaction between things (fact of effect, fact of value). Natural law value is higher than the humanity value, natural law value is the original value, and humanity value is the derived value. Material, in-self information and spiritual values (value of subjective information) is the three most basic form of value. The human different civilization age is takes the different information processing, creation and transmission modes for its technical prerequisite, that is because the new ways of computer network information processing, creation and dissemination that lead to the birth of network culture, so establish the technical prerequisite of the rise of a new information social civilization. The rise of information technology revolution, information

economy and information social civilization, and the way of the social information evolution, the changes and influence of the virtual reality to human cognitive way, and so on, specific show that information to human social development and progress that have enormous value.

Different in accordance with that revealed the theory paradigms, Mr. Wu will the scientific revolution in the human history of science divided into three times, and consider these three scientific revolutions are corresponding realized the three great changes of the scientific world view and way of science thinking. The first time scientific revolution welcomed the scientific achieve of the substance realism world view, and fostered the ways of substance thinking; the second scientific revolution welcomed the scientific achieve of the field energy realism world view, and fostered the way of energy thinking; the third time scientific revolution welcomed the scientific achieve of the information system synthesize and complex world view, fostered the scientific thinking way of information thinking. Information thinking to grasp and describe the essence, characteristic and attribute of things from the structural organization and interdynamic model of relationship, the evolution process and generation process model of the existing Things, then To the structure, relationships, procedures and processes of existing things as the carriers or codes of information, and thus decipher the which contains about the historical state, reality relationship, the content significance and value of indirect existent of future trend of things. In addition, information thinking will be realistic object thing and information again does artificial signifying, and given its particular characterization relationship.

In the recent completion of a paper, Mr. Wu wrote: " Philosophical theoretical innovation not simply lies in change of its areas of attention to this problem or its scope of subject, but more lies in its intrinsic related fields viewpoints, bring forth the new through the old of theories content in basic areas. In the study of philosophy, ontology, epistemology, methodology, philology, practice theory, values, survival theory should be unified. So far what explained by all the

philosophical theories, all philosophical schools are rooted in understanding of scope of their general existing areas and basic on of understanding of the relationship between their to people and object. The understanding way mainly deploy on a couple of relationship: one is the relationship between matter and spirit; another is between subject and object. The difference among different philosophical theories and schools only is some refuse or suspend certain aspects involved in this couple relationships, or the other more emphasize the more important dominant position of either side of both opposite aspects in the couple relationships, even, some more extreme theories support that some elements or method of activities involving in spirit or subject can play absolute and fundamental role in philosophical system, in which showing characteristic of think in absolute terms, simplify and one-sidedness. For example, the main feature of philosophical epistemological turning is will the reference dimension of subject cognitive form in the cognitive activity that gave special emphasis. Philosophy of practice will dimension of subject practice activity gave special emphasis, philosophy of language will the status of form and logic of the symbol carrier of thought activity gave special emphasis, and phenomenology will the intention factors in the subject consciousness gave special emphasis. In view of this, so far the development of human philosophy although in some research areas to achieve the conversion of the research priorities and concerns , But, the foundation of existence and epistemology was never achieved the fundamental change, that is fundamental commitments and concrete interpretation of the binary oppositions between substance and spirit ,and the binary oppositions between subject and object, based on this analysis, so far, the human philosophical development has never been any truly conversion of fundamental theory." " As the concept of information as one of the most basic concept introducing into the philosophy, philosophy of information clarify a novel paradigm of partition of existence field and then fundamentally changed the way of concrete express about basic philosophical issues, therefore, Philosophy of information achieved human philosophical firstly

fundamental conversion and guide  
comprehensive and essential revolution in  
philosophy.”<sup>1</sup>

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<sup>1</sup> Wu Kun: "philosophical basic question and philosophical the fundamental shift", Third session Forum participants Social Science in Chain Frontier Forum Papers (September 2009, China • Xian).

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