

CNCTST under the Magnifier

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(Note: CNCTST is the abbreviation of “China National Committee for Terms in Sciences and Technologies”)

1. Historical background

The outstanding Chinese ancient philosopher and scholar Confucius has a world-wide famous saying:

*“If language is not correct, then what is said is not what is meant;
if what is said is not what is meant, then what must be done remains
undone;
if this remains undone, morals and art will deteriorate;
if justice goes astray, the people will stand about in helpless confusion.
Hence there must be no arbitrariness in what is said.
This matters above everything.*

-----Confucius”

In the Warring States period of China, which began 2500 years ago, at that time, there were many nascent schools of thought in China ,i.e. the Hundred Schools of Thought (諸子百家); One of those representative figure, Mo Di (Mozi, 470 BCE–ca. 391 BCE) introduced concepts which were useful to his rulers, some concepts were extended by the School of Forms and Names (the School of Names 名家 Ming jia, ming=name) , which began a systematic exploration of logic.

The following Chinese ancient philosopher Xunzi (313 BCE-ca.238 BCE) also discussed the purpose of having names. He told us that we have names in order to illuminate noble and base and distinguish same and different, he associated a failure to understand the purpose of names with a saying, i.e. “are confused about using names and thereby bring disorder to names”, and a failure to understand the role of the senses in grounding linguistic distinctions leads to the confusion about objects which brings disorder to the use of names as well; He discussed the cognitive and communicative functions of names, but emphasized on the social, political and moral functions of names. He argued that the similarities and differences among cognitive objects provide the ontological basis for regulating names; the sensation and cognition of such similarities and differences provide the epistemological basis. He also

investigated the position and functions of names in the system of argumentation. he also insisted that single and compound terms can be shared without difficulty ,he tried to explain what this means by distinguishing between terms of different level of generality, i.e. a single and a compound term do not repel one another when the compound term distinguishes a part of the extension of the single term, e.g. the word “thing” (or “wu”) can be used for anything at all; it is the “great shared name.” ;In order to separate different kinds of things, we use “separating names” such as “bird” and “beast”, stopping only when we cannot further separate different kinds. In addition, Xun zi claimed that the appropriateness of names, especially the appropriateness of using particular names for particular kinds, derives from agreement and custom. That is, he suggested the principle and process of “establishment of names by social conventions and customs.”

Thereby Xunzi has been praised as the pioneer in the Chinese terminology theoretical researches for his inspirational thoughts for terms.

To sum up the above, since the ancient China, Chinese terms were the most important medium for the efficient communications among intellectual people and for their rulers, and the process of rectifying names is a complex negotiation between the ruler, the moral and intellectual elite, and the people.

Moreover, according to the book “History of science and technology in China” written by Dr. Joseph Needham, the Chinese Sciences and technologies once occupied an extremely brilliant position during our human beings’ history, esp. from the 3rd to 15th century. The Chinese Four Great Inventions: the compass, gunpowder, papermaking, and printing, were among the most important technological advances, only known to Europe by the end of the Middle Ages 1000 years later, and These Four have changed the whole face and state of things throughout the world ,not only in literature, but also in warfare, and in navigation etc. as well.

Among many Chinese ancient scientific and cultural documents which appeared before the 18th century, such as in “Onbalance”, in “Dream Pool Essay” , “Exploitation of the works of Nature” ,as well as in “A complete Treatise on Agriculture” even in the literature writings, i.e. “The book of Songs” and “Elegant”, there existed plenty of scientific and technological terms; This proves that our Chinese ancestors paid much attention to the work of endowing the scientific and technological concepts with the most correct designations or names during their scientific and technological practices.

Some Chinese ancient scientists, such as Heng Zhang, KuoShen, GuangQi Xu, etc. always noticed to offer the precise designations for the scientific and technological concepts in their works. For example, in his “Dream Pool Essay” , KuoShen gave the concept of “oil” the correct Chinese denomination along with the correctly scientific explanation ; Since then, due to its precision, this Chinese name or designation for “oil” was popularized and it is used until today. GuangQi Xu also coined plentiful Chinese names or terms for various new concepts appeared in the

agriculture, soil, astronomy or irrigation work etc. during his time.

The process to give a scientific or a technological concept with a precise name, i.e. to designate or denominate a certain concept with a certain term, should be based on the exact and true understanding of this concept; As a result, since the Chinese ancient time, it was commonplace that scientists should participate in the work of coining Chinese scientific and technological terms.

However, when we reviewed Chinese long history, we can realize profoundly that due to its thousands of years' feudal society, the development of Chinese sciences and technologies had lagged behind many western countries. Just as Dr. Joseph Needham wrote in his book "Science in Traditional China"-- "Chinese civilization did not spontaneously develop modern natural science as Western Europe did, though China had been much more advanced in the fifteen pre-Renaissance centuries".

The long-term closed - door policy of Qing Dynasty grievously obstructed the healthy and natural development of science and technology in China.

When the time went into the year of 1909, as more and more Chinese intellectuals called for introducing western advanced science and technologies, the first authorized agency for compiling the terms in the scientific and technological fields had been set up, but the achievement was just "a Comparison Table for Terms in Mathematics between Chinese and Some Other Western Languages" .

In the year of 1919, the Chinese Committee for Examination of Terms in Sciences had been set up; until 1931, this agency had examined scientific terms in 14 subject fields totally.

In 1932, Chinese government established an official institution ---"National Institute for Compilation and Translation" which dealt with issues concerning examining, standardizing and promulgating terms but just in sciences and technologies. This institute was supported financially by Chinese government and all staff's salaries were provided.

In 1950, Chinese government set up "The Working Committee for unifying the Academic Terms", and it was divided into 5 sub-groups:

- 1) Natural Sciences;
- 2) Social Sciences;
- 3) Medical sciences;
- 4) Literatures and Arts;
- 5) Current affairs.

Chinese Academy of Science took over the concrete tasks, and invited and appointed 150 scientists to be members of this committee for examining and standardizing terms in mathematics, physics, chemistry, biology, astronomy, psychology, archaeology ,linguistics, agriculture science ,etc subject fields.

Until the middle of the 1960s, the terms in tens of subject fields had been examined and promulgated.

However, due to the "Chinese Cultural Revolution", "The Working Committee for unifying the Academic Terms" had to stop working and was dissolved.

2. The Social Background of the building of CNCNST

The year of 1978 was a very significant year during the Chinese contemporary history, the first Chinese Science Conference was held after the 10-year Cultural Revolution disaster. During the Cultural Revolution which lasted from 1966-1976, all regularities of developing a healthy society and Science and technologies had been

dramatically damaged. In 1978, the Chinese Science Conference pulled the curtain for carrying out the policy for opening the door to the outside world and developing the Sciences and Technologies with their steady paces.

Under this brilliant social background, the old staff in “The Working Committee for unifying the Academic Terms” which was dissolved during that 10-year social catastrophe wrote a letter collectively, and delivered it to the Chinese government to call for rebuilding this committee. The reason was very obvious: As more and more exchanges and communications with the outside world, and with the rapid development of economy, science and technologies, not only there will appear more new concepts but also there will be thousands of new terms imported from outside, if there were not the work of unifying or standardizing Chinese terms at the national level, in a country with 1.3 billion and more population, esp. in the academic circles, the chaotic phenomena in casually designating or translating new concepts will appear inevitably.

The vice-prime minister at that time read this letter, and instructed the State Science Commission and the Chinese Academy of Science to do a research and make a decision. In December of 1978, the State Council of Chinese government approved the State Science Commission and the Chinese Academy of Science to build a special committee named “China National Committee for Terms in Natural Sciences” headed by the Chinese Academy of Science, but this committee will work via the comprehensive cooperation at the national level. In the name of the State Science Commission and the Chinese Academy of Science, the 1-st class scientists, engineers, professors, experts will be invited to participate in this terminological unification and standardization work nationwide. Prof. Yan, JiCi, an outstanding academician and the then vice-president of the Chinese Academy of Science was nominated to be the president of this incoming Committee.

After 5-year preparation, the preparation group under the lead of Prof. Yan JiCi, not only tried their best to organize and collect the old drafts but also tried to contact more partners. During this period, the State Council endowed this incoming committee with greater power; this committee will work on behalf of the Chinese government, and its working scale had been enlarged.

In 1984, the then vice-president of the Chinese Academy of Science, Prof. Qian SanQiang, a prominent academician and a famous nuclear physicist was appointed to be the president of this incoming committee.

2.1. The Establishment of the China National Committee for Terms in Sciences and Technologies (CNCTST)

In April 1985, the founding Conference of “China National Committee for Terms in Natural Sciences” was held in Beijing, the then vice prime minister sent his celebration letter, many academicians attended this conferences. 67 1-st class specialists or professors across the whole China was appointed as the members of this committee. Prof. Yan, JiCi, who was the then vice-Chair man of the Standing Committee of the National People's Congress made an important speech during this

conference, the then president of the Chinese Academy of Science also emphasized the significance for the work of approving and unifying Chinese terms from the historical angle.

During this conference, some leaders or experts from other important sections of the Chinese government, i.e. from the Chinese Academy of Sciences, the Ministry of Sciences and Technology, Ministry of Education, the General Administration of Quality Supervision, Inspection and Quarantine, the State Administration of Radio, Film and Television, the General Administration of Press and Publication the Chinese association of Science and Technology, the State Intellectual Property Office, the National Natural Science Foundation, and the State Language Commission etc. form the standing committee of “China National Committee for Terms in Natural Sciences”, i.e. they are appointed to be vice-presidents or acted as the members.

It was announced that: “China National Committee for Terms in Natural Sciences” was established upon the approval of the State Council of the People’s Republic of China, it is the unique organization authorized by the State Council on behalf of Chinese government to examine, approve, and promulgate the Chinese Terms in Sciences and technologies. It has been supported financially by Ministry of Finance.

According to the prescription issued by the State Council of P.R. of China in 1987, Terminologies promulgated by “China National Committee for Terms in Natural Sciences” are authoritative and have a binding force in China, they should be used and obeyed obligatorily by all authorities and organizations in China including scientific research and education institutes (universities etc), Press and publication units, companies or other enterprises or agencies etc.

From 1996, the Chinese economic system in the mainland of China had changed; it was transformed from its traditional and planned economy system into socialistic market economy system. In order to cater to the need of reformation, in December of this year, this Committee changed its name into “China National Committee for Terms in Sciences and Technologies” (the abbreviation: CNCTST) due to the enlargement of its working scale, it not only examined and approved Chinese Terms in the basic Science and technology subject fields, but also covered engineering, applied sciences, medicine sciences and some interdisciplinary sciences etc. Its cooperation partners also include Chinese Academy of Medical Sciences, Leaders or experts from the Chinese Academy of Engineering, the Academy of Military Science of Chinese People’s Liberation Army were invited as the vice-presidents and members of CNCTST as well.

In 2003, the website of CNCTST was opened to the Public, it provided free service. In December of 2004, the General Administration of Press and Publication released a new regulation named as “Provisions on quality Control of Published books”, it required the Publishing circles (Presses and Publishing Houses) in China to make use of the standardized Chinese Terms promulgated by CNCTST, and regarded the misuse as an error in the Publishing work. All kinds of teaching materials to be published are recommended to adopt the promulgated terms.

In 2005, for the sake of completing the system of Chinese Terminology as a whole,

CNCTST was empowered to start to examine, approve and promulgate Chinese terms in Social Sciences and Humanities, the 1st-class experts from the Chinese Academy of Social Sciences become the vice president and members of CNCTST since then. In 2014, Chinese government advocated the policy “Governing the country by law”, as a result, via the help of scholars in the legislative fields, CNCTST launched a research on the possibilities and grounds for establishing some legislative measures for its Chinese terminological standardization work. The draft version of “the Regulation for managing Chinese Terms in Sciences and Technologies” is one of the achievements, and the investigation about the current situation of making use of the standardized Chinese terms promulgated by CNCTST showed its very positive result, i.e. 70% of academic articles and books published by the important academic communities or publishing Houses had adopted the Chinese terms standardized by CNCTST.

2.2. How does CNCTST work: its Ways, Principles and Methods.

The term of office in CNCTST is 5 years. From the beginning of 2015, CNCTST is working under the lead of its 7th standing committee. The State Committee of Science and Technology and the Chinese Academy of Sciences have jointly invited more than 130 distinguished scientists, scholars and specialists around China to serve as members of CNCTST.

The general office of CNCTST is its administrative body. The standing vice-president of CNCTST is the director of this general office. He is responsible for dealing with the daily affairs. As an entity, CNCTST is responsible for formulating principles, plans and programs for organizing the work for examining, approving and promulgating Chinese terms, and for coordinating, exchanging and unifying Chinese terms in Chinese-speaking regions at home and abroad, esp. between mainland and Taiwan of China.

At present, the general office is developing its work mainly in 7 aspects, in my paper I just focus on its main aspect:

- (1) Its main duty is to organize the activities for examining, standardizing and approving Chinese terminologies in various subject fields: it has a very close cooperation with various professional associations, almost covering all academic fields. Experts recommended by professional associations are the main force in undertaking the concrete Chinese terminological standardization work.

On the basis of the general frame of sciences and technologies (including medical sciences and social sciences and humanities), a general system skeleton of Chinese terminologies as a whole had been built up. This system specially referenced the National Classification Standards and Codes, Subject Classification and Professional Catalogue of Chinese Ministry of Education, Directory of all Academic Disciplines of Science and Technology Association of China; it also referred to the Project Application List of the National Natural Science Foundation, and based itself on the Chinese Library Classification as well. Its main purpose is to provide a useful help for

organizing the Chinese terminological standardization work in general. As far as the subject fields in the social sciences and humanities are concerned, the general system skeleton of Chinese terminologies is designed by the Chinese Academy of Social Sciences specially. Considering that the concepts in the interdisciplinary subject fields or new emerged subject fields are not mature and in the process of development, the Chinese terminologies in these fields are not the main focus of CNCTST in this moment.

The main workflow in organizing the activities for standardizing and promulgating Chinese terminologies is as follows:

To form various special sub-committees via the help of related professional associations or together with other authorized academic agencies in China.

After a special subcommittee has been set up, (e.g. in cooperation with the Chinese Medical Association, on the basis of the system of medical sciences, various terminological subcommittees e.g. in Psychiatry, Internal Medicine, Microsurgery etc. have been built up), CNCTST will issue the appointment certificates to the related first-class experts in this sub-domain and invite them to act as the members of this sub-committee. Afterwards, every sub-committee still can create its groups according to the need for examining and standardizing terminologies in its more detailed branches.

CNCTST has its special principles for standardizing and examining Chinese terminologies in every sub-domain, these principles are based on the combination of the ISO/ DIS704 and other related ISO terminological standards (e.g. of ISO 10241-1992, ISO 1087-1:2000, ISO 704:2009, etc.) and also reference the successful experience of the former Soviet Union, with some necessary modifications according to Chinese language's characteristics. For instance, these principles emphasize "one-to-one correspondence between a designation and its corresponding concept", "monosemy", "unambiguity", "systematic", "conciseness", "nationality", "internationality", "being customary" "scientificity" etc. when dealing with designation issues. If these principles appear to be contradictory or paradoxical during the practical process of standardizing Chinese terms, the indispensable compromises are always made via the adequate discussions among related experts and terminologists, at times the Chinese linguists are also involved. Besides, CNCTST consulted Chinese National Terminology Standards (Terminology work-- Principles and Methods GB/T 10112 1999, GB/T 15237.1-2000, GB/T 16785-2012, etc) as well.

The concrete work for collecting terminologies in every sub-domain starts from building up a whole conceptual system based on the knowledge system of this sub-domain. On the basis of those above-mentioned principles, CNCTST compiled its handbook for guiding how to build up this kind of conceptual system and for how to select terms properly for designating corresponding concepts, even for how to develop precise definitions. For instance, the conceptual relations used in the concrete

standardization practices are mainly: hierarchical relations ((generic relations: superordinate-subordinate, corordinate-corordinate etc), partitive relations)) as well as non-hierarchical relations (e.g. association relations—sequential relations, causal relations, temporal relations etc.).The hierarchical relation occupies the most part of the conceptual systems in our standardized Chinese terminologies. When assigning designations to concepts, we try to pursue one-to-one unambiguous correspondence. synonyms, homonyms ,homographs and polysemic phenomena (polysemy) are avoided whenever possible. As far as developing definitions is concerned, we mostly make use of intensional definition (connotative definition), and try to avoid wrong definitions (e.g. try to avert circle definitions, unnecessary negative definitions, and try to make definitions not too narrowed or not too broader etc.).

However, I should not deny some deficiencies which still exist in our work, i.e. Chinese terminologies promulgated by CNCTST have covered more than 100 subject fields, its practical situation has shown the fact that the old principles for standardizing Chinese Terms have their limits, they need to be revised and enriched.

In reality, “concepts” have their dynamic nature; they in fact develop with the time, even if some of them change slowly. Briefly speaking, the reality has its conflict with our traditional “prescription” terminological principles and methods, e.g. “the univocity principle”and the principle of “concepts are clear-cut” can not be realized idealistically in practice, esp. in social science and humanities fields and in some application-oriented sciences, even in some interdisciplinary sciences (or newly-emerging disciplines).For, these traditional principles are too rigid, sometimes synchronic, and sometimes seem to be unrealistic. Meanwhile, not only in social sciences and humanities, but also in some applied sciences, as far as their research objects are concerned, they are different from those in natural sciences, all above have their own respective concepts, categories and values. The concepts in social sciences and humanities can not escape from the influence of human beings’ various subjective factors or non-physical factors; therefore, it is difficult to maintain their precise and accurate status. For instance, in social sciences or humanities, scholars prefer to use ordinary (general) language, and trend to adopt some phrases to express their emotions, thoughts, experiences, or perceptions ;As a result, the terms in the above fields cherish their special characteristics with ambiguities, vagueness, it is normal that implicit metaphors are unavoidable at times. Because of these above facts, some Chinese scholars and terminologists also put forward their opinions to advise to enrich the current “principles and methods” with some descriptive elements. It is admitted that to standardize Chinese terms in non-pure natural sciences are not easy but complicated, all distinctive elements and the special regularities in these fields should be considered and respected. E.g. some names of theories, of methods, of academic schools, even of important historical events or agencies etc. should be collected in order to maintain the completeness and scientificity of the knowledge system in some subject fields. In the light of the fact that “Synonym phenomena” exist inescapably in the non-natural sciences, descriptive terminology methods should be taken into account reasonably.

The relatively stable and already standardized terms should be revised regularly, In fact when assigning suitable designations to those uncertain or unstable concepts, the descriptive methods are more superior to the prescriptive ones; for, the former are based on the dynamic state of concepts, and do not eliminate the reality.

(2) Setting up a special neology or neologism working committee connecting with various professional associations which is responsible for reporting neologisms appeared in relevant sub-domains. Afterwards, these neologisms will be discussed fully, examined by terminologists, by domain experts in respective sub-committees, and by linguists from the State Language Commission as well. After then, these neologisms are promulgated to the public.

As far as the principles here used are concerned, with regard to those neologisms (neoterms) which are newly-emerged but have not become mature yet, as well as in respect of those terms which are temporarily or permanently difficult to be standardized, we are advised to provide the descriptive data for various users, so as to satisfy the practical needs of the society. And actually, it is very wise to record those neologisms appeared in the newly emerged disciplines by means of the descriptive terminology methods at first, since it is a wonderful preparation for further standardizing these terms when the knowledge systems or concept systems in these disciplines become stable in the future.

(3) Developing the Chinese terms contrastive work between mainland and Taiwan of China.

Chinese terminologies between mainland and Taiwan of China are slightly different; esp. not only in the pronunciation but also in writing. Since the middle of the 1990s, CNCTST has started to cooperate with “the National Institute for Compilation and Translation” in Taiwan in drawing out the contrastive versions of terminological glossaries with simple and complex (traditional) Chinese characters. Until now, the contrastive books of terms in over 20 subjects used in Mainland and Taiwan of China, as well as oversea versions (in traditional Chinese characters) in 8 subjects and “The Common Dictionary in Sciences and Technologies Across the TaiWan Strait” have been published already.

(4) Developing the terminological theory researches at home and at the international level.

CNCTST collaborates with some famous universities in China to hold terminological theory seminars or symposiums annually in order to build up a system of terminological theory with Chinese characteristics gradually. Meanwhile, under the more and more globalizing background, CNCTST notices to develop the academic communications at the international level: it sends its staff to attend the terminological summer school every year held by TermNet, and it has published a series of translation works concerning terminological theories from German and Russian languages; ...When conditions are permitted, CNCTST tries to attend international terminological conferences for catching up with the advanced trend and exchanging ideas with colleagues abroad. As a positive return, many terminological organizations all over the world have already paid CNCTST visits since 1985. CNCTST became a member of Infoterm in 2006. Accompanying with this, through cooperating with

some Universities of China, CNCTST has set up a terminological theory research center with Russia, some researches on terminological theories popularizing in German-speaking countries and popularizing in Western Europe and in Canada are being undertaken.

(5) Providing regular training courses almost annually for transmitting terminological knowledge to editors working in important Publishing Houses or Press units nationwide. Those teaching materials are written by experienced terminologists in the CNCTST.

(6) Taking charge of publishing a terminological research periodical “CHINA TERMINOLOGY” and organizing the terminological research forums at home.

(7) Making efforts to help the public to cultivate the terminological consciousness in cooperation with the main mass media in China (such as XinHUA News Agency, China Central Television (CCTV), with important newspapers and China Central Radio Station etc). Besides, CNCTST makes a close cooperation with China National Knowledge Internet(CNKI), Baidupedia, Interactive Encyclopedia and with main Chinese companies, so as to urge these influential software agencies to make use of the promulgated, Chinese terms. In “GuangMing Daily” newspaper, there is a column written by CNCTST for reporting its work at regular intervals. CCTV sometimes holds a special forum to interview 1st-class scientists, scholars, linguists and terminologists, and to consult their opinions on the importance and necessities of making use of the standardized terms.

(8) China is a big country with 56 nationalities(or Ethnic Groups). The Han nationality occupied 91.6% of the whole population. Among the other 55 minority nationalities, the Inner Mongolia Autonomous Region, as well as the Xinjiang Uygur [Uighur] Autonomous Region and Tibet Autonomous Region have their National Language Work Committee respectively; the corresponding committees for terminologies standardization or translation, which are subject to their Language Work Committees, are carrying out the work of terminology standardization or normalization inside their respective nationalities. At present, their main method of work is to translate the CNCTST-promulgated terms into their respective national languages.

3. Summary and Conclusion.

According to the survey made by the Beijing Language and Culture University in 2014, there are 70%of important academic publications in China taking use of the standardized and normative Chinese terms promulgated by CNCTST.

Since the establishment of CNCTST, 95 sub-committees have been set up. More than thousands of scientists and experts have participated in the terminological standardized work. CNCTST has so far promulgated Chinese terminologies in more than 100 subjects.

CNCTST has its on-line official term database linked to “China Knowledge Resource Integrated Database”; it provides free online term retrieval and inquiry service for the public. All newly updated terminologies in various subject fields can be found through this portal. Through related links shown on interface, the public can easily

find out the promulgated terminologies in various subject domains. As far as those under being pre-promulgated terminologies are concerned, they also can be found conveniently via clicking related navigating links; the public can feed back their own opinions to the CNCTST via a special email address shown on line. Our term database uses Kbase full text database management system; it contains 350,000 standardized Chinese terms with their English equivalents, and most of them have precise definitions. The “standardized Chinese terminologies retrieval Service” via WeChat has also been put into use for the Public.

All these achievements have already laid a good foundation for unifying and developing Chinese terms esp. in the scientific and technological fields in Chinese-speaking regions world-widely.

Meanwhile, there still exist some difficulties at present, i.e. CNCNST still needs the satisfactory financial supports from Chinese government or through private channels; otherwise, many terminological projects could not be initiated, many efforts still need to be further made in propagating the importance of terminological activities to the public continuously.

However, we are always optimistic for our future.

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