

TERMINOLOGY WORK IN VIETNAM

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As one aspect of language planning and language treatment, terminological work in Vietnam¹ has been going on for at least five decades, initially through efforts of individual science teachers and journalists - even when the medium of instruction was still the French language - then later through concerted efforts of educational leaders working around colleges and universities and institutionalised bodies. Even prior to 1945, many political, historical and economic terms used by the press in Vietnam had become current "even among non-specialists". With the development and evolution of political life and the increase in literacy among the masses since that date, new words had to be invented to express new ideas and concepts in textbooks, pamphlets and newspapers and magazines. Teachers at all levels called upon to use their mother tongue as the medium of instruction contributed to the elaboration of an increasingly wealthy jargon for each branch of the social and natural sciences. This paper will focus on the innovative processes by which Vietnamese intellectuals regardless of their political leanings have collectively evolved a scientific and technical terminology.

At the beginning scientists and science teachers advocated different methods in coining new terms in the 1940s. Some wanted to use French words, particularly in chemistry; others suggested the transliteration of those French terms into Vietnamese; still others preferred the use of Sino-Vietnamese loanwords (e.g. lưu huỳnh đưỡng thấp for *anhydride sulfureux*). A number of writers advocated the use of vernacular terms used in everyday parlance. There were even those who recommended the reading aloud of international symbols (em-en-ô-hai for MnO^2 , S-hai-uy-K for $S^2U K$), or the coining of a term based on the formula (hiêm siêm át khở hai for $H^2 (SO_4)_2$, or even the use of some pig-Latin-like device (bại for "hạch b(ên) (t)ai" a *ganglion next to the ear*, tác for "t(am) (gi)ác" a *triangle*), suggestive of the Chinese method of fan-chie or Vietnamese nói lái.

The history of terminological work undertaken by Vietnamese educators and scientists goes back to 1942, when Professor Hoàng Xuân-Hãn, mathematician, historian and philologist, published his *Danh-từ khoa-học*, a "collection of terms denoting scientific ideas and based on French" (Hoang 1948:vii). This pioneer work has since been reprinted many times (Saigon 1948, Paris 1951, Saigon 1970). In the 1948 reprint edition, made necessary because the 1946 reprint had been destroyed by fire during the Franco-Vietnamese hostilities in the capital city of Hanoi, Professor Hoàng reproduced a statement he had made in the first issue of the review *Khoa-học* 'Science' in 1941:

The language of every country can become a scientific language, and only necessity is the mother of invention. This review *Khoa-học* will prove that there is no difficult question that cannot be explained in Vietnamese. Whether the explanation

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is clear or not depends on the person doing the explaining. Whether it is understood clearly or not depends on the hearer. This is true of any country and any language.
(as cited in Hoang 1948:viii)

Earlier in a paper entitled *Vocabulaire scientifique en langue annamite* read before the Indochina Council on Scientific Research on 29 October 1941, Professor Hoang explained his objective and methodology as follows:

... mon but est de chercher un mot simple ou composé correspondant à chaque mot scientifique français. Je me suis imposé la règle suivante: utiliser le plus possible les mots de la langue ordinaire; éviter les périphrases pour désigner les idées simples et autant que possible pour les idées composées; garder les mots formés antérieurement et d'un usage courant bien qu'illogique. Quand la formation annamite perd de la concision et de la clarté, j'ai utilisé les racines chinoises.
(1948:v)

In the Paris reprint edition of 1951 of this eminently innovative and ingenious glossary of terms in mathematics, physics, chemistry, mechanics and astronomy, the Introduction (xi-xlix) listed eight requirements for the coining of new terms (xi-xviii), then examined the three methods used (xix-xxiii), previous experiences (xxiv-xxvii), and the principles followed by the author (xxviii-xxxiv), and finally provided the chemical nomenclature (xxxv-xliv).

Of Professor Hoang's eight requirements, which have been repeatedly cited by other terminology workers, the first five pertain to the content and the last three to the form of each newly-coined term.

On the first requirement - that "each idea has to have a term" - he said that it is necessary to use not just monosyllabic words, but also 2-syllable and 3-syllable words to take care of future concepts. The second requirement stated that each term "must refer only to one particular idea", and the third requirement specified that "one idea cannot be expressed by several terms". Indeed the author cautioned teachers against using homonyms or synonyms: he thus proposed two different terms *nguyên-tử* and *đại-nguyên-tử* as corresponding to the two senses of French *atome*, but only a single term *cỏ-lo-rua* for both French terms *chlorure* and *chlorhydrate*.

Since according to the fourth requirement, a term "must help us remember its idea easily", the coinage *hình-học* was chosen for geometry (instead of *ký-hà-học*) because it would make one think of shapes (*hình*). The word in everyday language for *to converge* is *tụ*, but since in science this verb involves the idea of an accumulation, the compound *qui-tụ* was offered.

The *solution of an equation* should not be translated as *rễ root*, but *nghiệm-số* since it is "a number which, when substituted for the unknown number of an equation, would prove the latter right" (xiii).

Fifthly, "terms in different fields must form a uniform and interrelated whole". Thus for the equivalent of *reflection*, the term *phản-xạ* was chosen for use in physics as well as in acoustics and mechanics, leaving the better known word *phản-chiếu* for only the former field. Whereas laymen use *khinh-khí*, a Chinese loanword meaning *the light gas*, the scientific term proposed was *hyt-rô*, which would correlate with *hyt-rua*, *hyt-rat*, *hyt-roc-xyt*, *hyt-ric*, etc. denoting '*hydrure, hydrate, hydroxyde, hydrique*', respectively. This last consideration

constituted the most difficult condition in the elaboration of a scientific terminology, according to Professor Hoàng (xiv).

The sixth requirement is also the first criterion regarding form. The compound *thu-sai*, which means *aberration*, to be distinguished from *sai error*, would exist side by side with such compounds as *cầu-sai spherical aberration*, *sắc-sai chromatic aberration*, etc., in which the stem *sai*, clipped from *thu-sai*, is combined with other Chinese-borrowed modifiers, in the determiner-determined order. Precedents for this process of shortening were *cách-trí leçon de choses*, from *cách-vật trí-trí to investigate things and to deepen knowledge*, *danh-giá prestige*, from *danh-tiếng fame, renown*; and *giá-trị value, worth*.

The next criterion pertains to the phonology of a new term, which must sound all right to Vietnamese ears. Thus *cô-nic conic(al)* would be more acceptable than *xi-pi-ra-lở spiral*, which sounds un-Vietnamese. Here Professor Hoàng mentioned a common phenomenon whereby a Sino-Vietnamese syllable is combined with a native lexeme that has the same meaning: *cơ-hội opportunity*, *tùy theo according to*, *thờ-phụng to worship*, *danh-tiếng fame, renown*, *thời giờ time*, etc., resulting in better cadence.

Finally, a scientific term must be invented "in consonance with the history of other ordinary terms in the language". Here Professor Hoàng discussed foreign loanwords in Vietnamese. Those from French have been shortened or adapted to Vietnamese phonotactics: *bơ* from *beurre*, *phó-mát* from *fromage*, *ô-tô* from *auto*, *bù-loong* from *boulon*, etc. As for the Chinese loanwords - usually referred to as *Hán-Việt Sino-Vietnamese* - such as *địa-cầu earth, globe*, *thiên-văn astronomy*, *động-vật animal*, *thiên-tạo natural*, etc., they exist side by side with a host of borrowed elements which have been thoroughly assimilated and integrated in the Vietnamese vocabulary: *sắt iron* from 鐵, *thiết*; *xưa ancient* from 初; *sở; xem xét to examine* from 瞻察 *chiêm-sát*, etc.

The author of *Danh-từ khoa-học* then proceeded to analyse the advantages and disadvantages of each of the three methods used in word coinage. First of all, ordinary words in the everyday language cannot be very efficient as scientific terms, even though they may have been thoroughly assimilated, because what is needed is a scientific term, and not a descriptive and explanatory phrase. The word *chảy*, which means *to flow*, *to melt*, and also *to leak*, would not be adequate as the equivalent of *fusion*. Combinations of free native lexemes, moreover, would result in lengthy phrases. They fulfil only the fourth, seventh and eighth requirements, but not the others.

The second method, transliteration, fails to meet criteria (4), (6), (7) and (8), but will be satisfactory only if not abused (Hoàng 1948:xxiii).

Of the three methods, the last one, using Sino-Vietnamese forms, would fulfil all eight requirements, as shown in the table on page xxiii of *Danh-từ khoa-học*.

Professor Hoàng mentioned the experience of the Japanese, who use numerous transliterations from English and German and also Sino-Japanese terms, and of the Chinese, who by the mid 1930s had already worked out their appropriate scientific terminology (xxvi-xxvii). Vietnam's legal and political terminology had been elaborated in various administrative, penal and criminal codes issued under the French Government-General of Indochina, so it would afford a useful precedent for later workers in other disciplines.

Transliterating requires the addition of new letters to represent phonemes or syllables, such as p- (Vietnamese words not beginning with this voiceless bilabial stop), z- (this initial fricative being represented by a non-barred d in the quốc-ngữ orthography), ce, ci, cê, as well as -ol and -al, to be distinguished from -on and -an, respectively (xxxiii).

Professor Hoàng insisted on the use of hyphens in compounds or transliterated terms. As for the practice of running syllables together, although he did not use it in the earlier edition, calling it "a very useful but very daring device", he later resorted to it in the Paris edition of 1951.

Another highly useful glossary is Đào Văn Tiến's (1945, reprinted in 1950), which contains terms from the natural sciences - biology, physiology, zoology, botany, geology, etc.

Throughout the anti-French resistance war and during the partition of the country, 1954-1975 (into the Democratic Republic of Vietnam in the north, and the Republic of Vietnam south of the 17th parallel), scientists and scholars in both zones continued their terminology work to satisfy the needs of teaching and research.

Seven French-Vietnamese glossaries containing about 40,000 terms in five different disciplines appeared: Bùi Huy Đáp 1948 for agronomy; Trịnh Đình Cung 1951, Lê Khắc Thiển and Phạm Khắc Quảng 1951 for medicine; Đào Văn Tiến 1950 for botany; Đỗ Xuân Hợp 1951 for surgery; Đào Trọng Hội 1954 for economics and finance; and Phạm Xuân Thái 1954 for philosophy. Most of the terms in those glossaries, however, were still Chinese loanwords. After the Geneva Agreements of 1954 put an end to French rule, but provided for the partition of the land, some scientists promoted the use of terms that had been internationalised while others said that those should be used only when necessary, and Sino-Vietnamese terms were still widely used (*hoà-xa* for *railroad*, *train*, *giao-động-đồ* for *oscillogram*, etc.).

The exciting terminological work contrasted sharply with the situation under the French colonialists' educational system, in which the medium of instruction was French and the exams followed the patterns in metropolitan France. It should be remembered that, prior to 1945, in senior high school classes taught in French, Vietnamese was relegated to the status of a second foreign language after English, German or Spanish (Nguyễn Văn Huyền 1969:46).

Professor Ngụy Như Kontum, then Rector of the University of Hanoi, in the article "Vietnamese as a medium to teach basic sciences" (1969) provided a comparison between French-trained university teachers like himself and their young students during the early 1940s in terms of preparedness. The former, according to Professor Ngụy Như Kontum's reminiscences, "often felt at a loss, when using our native tongue to express delicate feelings, and even common ideas, not to speak of complex and abstract notions, having learned French since childhood" (1969:80). By contrast, the latter - their students, particularly in the Lycée du Protectorat, nicknamed Trường Bưởi 'Pomelo School' - in small groups named "Dragon Group", "Thunder Group", promoted the use of Vietnamese in daily conversation and in serious discussions of scientific topics and the avoidance of 'macaronic' language (Ngụy Như Kontum 1969:80; Nguyễn Đình-Hoà 1975:44-45).

Professor Trần Hữu Tước, one time Vice-President of the Vietnam Medical Association in Hanoi, also related his experience of giving lectures in Vietnamese, upon his return from France:

Living abroad for fifteen years, I had to learn and teach medicine in French. In 1946, when I came home and received a chair in otorhinolaryngology in the Hanoi Faculty of