

project of a European dictionary of scientific terminology

by

Theodore Papadopoulos

Director,

Cyprus Research Centre, Nicosia

«Προκαταρκτική Εισηγητική Σημείωσις»
υποβληθεῖσα εἰς τὸν Γραμματέα τῆς
Ἐπιτροπῆς Ἀνωτέρας Παιδείας καὶ
Ἐρεῦνης τοῦ Συμβουλίου τῆς Εὐρώπης
ἐν σχέσει πρὸς συζητήσεις λαβούσας
χώραν εἰς τὸ Συμβούλιον Πολιτιστικῆς
Συνεργασίας (Conseil de Coopération
Culturelle).

I. scope and definition

1. The project of a semantical unification of scientific terminology may properly be conceived in the form of a *European Dictionary of Scientific Terminology*, the scope of which should encompass the theoretical and methodological aspects of the human and physical sciences as well as, by extension, the main themes of their pragmatic content.
2. It is not recommended that the Dictionary should bring within its scope the technical and very specific terms proper to each specialized discipline. This would be beyond the requirements of the project, since the very technical and specialized terms in use by specialized disciplines do not give rise to ambiguity or significant semantical divergencies.
3. The proper field of the Dictionary may be defined as the conceptual and methodological stock common to the human and physical sciences, that is the field within which the need for a semantical unification arises.
4. The terminological field should be in principle treated as a whole, without undue distinctions between human and physical sciences. This is justified (and necessitated) by the common foundation of knowledge, the possibility of universal application of theoretical methodology, the growing bridging over of the gap between social and physical sciences, and the process of convergence, actually under way, of the several branches of knowledge towards a unified system of knowledge, a process parallel and contrarywise to the high degree of specialization reached by modern science.
5. The Dictionary should be also conceived with a view to serve practical needs of scientific research. The growing adoption of the interdisciplinary approach in the treatment of specific scientific and social problems is a case to the point. The interdisciplinary approach poses as particularly significant the problem of conceptual coordination of research, without giving a solution to which it cannot justify its own scope and method.

II. principles of elaboration

1. Any principles of elaboration of a European terminological Dictionary should be formulated with regard to past experience and tradition on the matter. This experience proves (a) that such a project is not a new idea, (b) that the problem of conceptual unification has been dealt with

- from many sides, and (c) that its undertaking anew can profit from accumulated experience.
2. As a convenient point of departure of this tradition may be taken Leibniz' project of an *alphabetum cogitationum humanarum*, whereby this great European thinker laid the foundation of a universal language to be expressed by means of a suitable system of signs fixing up in an unambiguous manner the content of philosophical and scientific concepts. Of Leibniz' project may be retained the principle of attributing to concepts mathematical values, such as to circumscribe their scope and content within a clearly definitional area. Such an identification of concepts, by eliminating the possibility of confusion and overlapping, would render possible a true scientific dialogue and a testing of contradicting and opposed views. Leibniz' system would further ensure the semantical convertibility of scientific terms on account of the mathematical quantification on which it is based.
 3. The mathematical analysis of logical terms as conceived by George Boole (see *Mathematical Analysis of Logic*) carries further the idea of translating philosophical concepts into mathematical signs. The contrary process, upheld by Frege (*Grundgesetze der Arithmetik*), of reducing mathematics into logic, proceeds from the idea that a formal mathematical sign is not an isolated concept, but one related to semantics. Both theories have a direct bearing on a terminological elaboration in that they lay the principles of a convertibility of qualitative into quantitative terms and vice versa.
 4. The School of logical positivism (Vienna Circle) provides a theory of full formalisation of concepts and, therefore, a useful basis of elaboration of a terminological dictionary. The principles of a unification of knowledge by way of identification and delimitation of the meanings are inherent in the doctrine of logical positivism.
 5. A more specific instance of the logical positivism bearing on the problem of the unification of scientific terminology is provided by R. Carnap's researches on the syntax of language (see *Logische Syntax der Sprache*). Carnap's distinction between pure and descriptive syntax of language can provide the structure of a hierarchy of concepts, stretching from the basic abstract logico-mathematical terminology to that deriving from the empirical content of each discipline.
 6. The transition from the fundamental formal logico-mathematical level to the more specific empirical content of the special branches of knowledge requires a degree of concession to be allowed by the formal method in favour of the

empirical definitions deriving inductively from the empirical data of science (L. Liard, *Des définitions géométriques et des définitions empiriques*). Such concession in favour of empirical terminology is especially necessary in those human sciences which have not as yet attained a degree of accuracy such as found in the physical sciences, and therefore a terminology covering their needs has to be drawn from their own empirical content.

7. The reconciliation of the formal exigencies of logical definition with the material necessities dictated by the empirical content of special disciplines in course of development constitutes one of the mayor tasks of the project of a unified terminological dictionary. It is a matter to decide whether, in view of the distance between formal, quasi-mathematical, and empirically derived definitions, the dictionary should be conceived on two levels, a general logico-mathematical one of basic terms and concepts, and a specific one for each of the disciplines not as yet susceptible of formalisation, the terminology of which will have to be derived from their empirical content.

III. linguistic foundations

1. The common spiritual foundations of European science and culture require that the linguistic basis of a European Dictionary of Scientific Terminology should be provided by the Latin-Greek linguistic stock, which historically projects itself into modern European languages and still continues to provide the etymological stuff for the formation of scientific and cultural terms.
2. The task of building up a unified scientific terminology will further necessitate a correlation of the material deriving from the respective linguistic stocks which have served as the main vehicles of development of modern European science and culture, the Roman, the German, and the Anglo-Saxon.
3. The lexicographical background for the elaboration of the dictionary is provided by sufficiently advanced lexicographical instruments, rendering unnecessary, except in special cases, any excursion into the general lexicographical field. All major European languages possess well elaborated historical dictionaries, supplemented by a sufficient number of specialized terminological dictionaries covering special branches of knowledge.
4. Major deficiencies in the lexicographical instruments should be pointed out.
 - (a) In the case of classical languages:
The *Thesaurus Linguae Latinae*, an international academic enterprise, started since the very be-

gining of the present century and coordinated down to the Second World War by the Deutsche Akademie der Wissenschaften on Berlin, has been brought to completion of only half the total work. A parallel *Thesaurus Linguae Graecae* has been also conceived by the International Academic Union and sectionally planned by periods, but this project has barely been touched upon from the point of view of practical execution, with the notable exception of the recently completed *Patristic Greek Lexicon*, by G. Lampe, published by Oxford University Press.

- (b) In the case of the French language, for which a lexicographical treatment on historical principles has been carried out only up to the XVIIth century (Godefroi, Huguët). This lacuna is being provided for by the *Inventaire de la langue française*, sponsored by the C.N.R.S. et al., which undertakes a full lexicographical treatment of the French language on a comprehensive scale.

IV. practical applications

1. While terminological dictionaries, monolingual, bilingual, or multilingual covering the field of exact and technical sciences relatively abound, those relating to the human sciences, although not lacking, are mostly deficient, chiefly because of lack of multilingual correlation of the terms treated, but also because of notable semantical variations observable among dictionaries of the same class. A notable exception is Lalande's *Vocabulaire technique et critique de la philosophie*, which has undergone important revisions and adaptations spread over the years 1902 and 1923 and continues to receive amendments and additions. This dictionary correlates philosophical terminology in four major European languages, English, French, German, Italian, and owing to successive elaborations it should be a precious *instrument de base* for future work in the terminologies of the human sciences.
2. Notable projects of treatment of scientific terms conceived on a European scale in course of execution have to be taken into account either as affording an experimental field, or, eventually, as providing the right principles and methods to be availed upon in the case of a new project. Of such projects, one of the most relevant to the Committee's purposes is the *International Dictionary of Regional European Ethnology and Folklore*, prepared under the auspices of the International Council of Philosophy and Humanistic Sciences and published by the International Commission of Folk Arts and Folklore. Two volumes of this dictionary have hitherto appeared, dealing, the first with general ethnological concepts, the second with Germanic Folk literature. Ten other volumes are envisaged, designed to cover all regional aspects of European Ethnology and Folklore.
3. The first volume of the dictionary aims at giving definitions of ethnological and folkloristic terms and concepts common to all national developments of these disciplines. Although the dictionary is strictly synchronical, the historical approach is not entirely neglected, as it has to provide the background for the definition of a term. The most important feature of the dictionary from a European point of view is the identification of the unity of the definition against the linguistic plurality of the terms, given in five European languages. This makes for a unified approach to the definition of concepts and a delimitation of their content, which is not affected by linguistic differentiation. Whenever a term is appropriate to one language only, the ground is prepared for its adoption in other languages.
4. The second volume deals with the terminology of the national Germanic folk literature, covering Danish, Faroese, German, Dutch, Icelandic, Norwegian, Swedish, and Old English folk science terminology. The delimitation of terminology within one ethnic group is necessitated by the richness of the material and the peculiarities of the national approaches to its treatment. It points at the same time to the difficulties of correlating national terminological data with those of another national field. Theoretically speaking this should not be so. An immediate correlation and unification ought to be a desideratum, which, however, is unattainable at the time, given the relatively uncoordinated status of European research and science, at least in what relates to the field of national folk traditions. In these fields the intervention of foreign scholars is scarcely to be comparable with the amount of research carried out by national scholars. It becomes necessary, therefore, in cases as the one illustrated by the above, to abide, in the first place, by the terminological situation as established by national scholars and carry over the task of correlation and unification at a later stage, i.e. after clearing and fixing up national terminologies. Such procedure would allow to by-pass the difficulties and defects inherent in attempts at a wholesale treatment of terms without correlation of differentiated definitions. (Cf. R.H. Thouless' criticism of H.C. Warren's *Dictionary of Psychology*, Lund, 1935, cited by Ake Hultkrantz, *German Ethnological Concepts*, p. 13, note 3.)

V. concluding remarks and suggestions

1. The elaboration of a dictionary of scientific terms is a task of vast scholarly dimensions, the necessity of which has been strongly felt for some time so much among the strictly philological circles as among scholars devoted to the social and positive sciences.
2. The problem posed has been dealt with variously and in many different sectors. The efforts of theoretical students exhibit partial and sectional achievements as well as inadequacies and failures. Some noteworthy projects partially covering the requirements and needs of scholars are already under way, and these should be taken account of and availed upon whenever a comprehensive project has to be undertaken and put into execution.
3. The Committee cannot by its own means assume

the responsibility for such a vast undertaking as implied by the elaboration of a dictionary of scientific terms, unless it would be in a position to actuate more powerful organs of the Council of Europe disposing the means of setting up the required scholarly organization and financing the project.

4. Given the lexicographical and other terminological projects under way in several countries and in various scientific fields, it is recommended that the Committee's role should be confined to one of supporting and coordinating those projects, until it should be in a position to unify the whole project and carry it on under its direction. The ideal procedure for achieving this would be by instituting a permanent scientific Bureau or Committee, composed of European experts, to assume up the matter within the frames of the Council of Cultural Cooperation.

Τὸ ἄρθρον τοῦ κ. Πανταζῆ Τερλεξῆ, «Ἐξωτερικὴ Πολιτικὴ καὶ Ἐθνικισμὸς στὴν Τουρκία», καθὼς καὶ ἄλλη ὕλη ἐπρόκειτο νὰ δημοσιευθοῦν εἰς τὸ τεῦχος 15-16. Ἡ δημοσίευσίς των, ἡ ὁποία δὲν κατέστη δυνατὴ διὰ λόγους τεχνικοῦς, θὰ πραγματοποιηθῆ εἰς τὸ τεῦχος 17.