Pan-Arab and international cooperation in technical terminology

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INTRODUCTION

It has always been my contention, as a linguist, that linguistic matters play a vital role in enhancing the development of many third world nations which, due to historical circumstances, have been dependent on other nations in the fields of science and technology. In the Arab world, for instance, scientific literature in English and French represents the major or primary source of information in such fields. Thus, Arab scholars have to either learn English or French or have relevant literature translated into Arabic. In fact, both procedures have been followed with different degrees of success.

However, in order for Arabs to translate into Arabic or to write in it they have to face the important task of dealing with terminology in various fields of knowledge. This is certainly not an easy task, because they have to Arabise (through coinage, adoption or translation, etc.) scores of thousands of scientific and technical terms. Production is only one part of the problem; a more difficult and challenging task, according to Arab scholars, is coordination or unification. The fact that there are twenty-two Arab countries, with many terminology-producing agencies and individuals poses a major obstacle in the process of unification and coordination. The problem becomes more evident when we realise that there are at least two different language sources for the terminology being Arabised, and that different Arab countries cooperate with different foreign agencies – Mauritania, Morocco, Algeria and Tunisia communicating with French-speaking agencies, and almost the rest of the Arab world communicating in English with foreign agencies. To cite one example, let us have a look at the translation of the term 'computer'. For English-based terms

in Arabic the process of computing (calculating, dealing with numbers) represents the basis for the Arabic equivalent (al-haasib al-aali), whereas it is the concept of putting things in order that is being emphasised in French 'ordinateur', hence the Arabic words based on it (rattaabah, nazzaamah).

In this short paper, I will talk briefly about the agencies of technical terminology production in the Arab world, with some mention of agencies operating outside the Arab world. This will be followed by a brief comment on coordination and cooperation in this field on the pan-Arab level. Finally, I will discuss the issues related to Arab-international cooperation.

TECHNICAL TERMINOLOGY PRODUCTION

The Arab world

In an earlier paper on scientific terminology in the Arab world (Sieny, 1985), I stated that there are many agencies in the Arab world officially or unofficially responsible for terminology production, in addition to individual activities. I mentioned the Academies of Cairo, Damascus, Iraq and Jordan. The research institutes of Morocco, Kuwait and Libya form a second category. Pan-Arab organisations and associations (standards, agricultural development, administration sciences, oil producing countries, steel and iron, physicians, chemists, mathematicians, pharmacists, etc.) are a third category. A fourth category includes university centres and departments. In a fifth category we may include publishers and individuals. Oil companies in the Middle East may be considered a sixth category. (See Sieny, 1985 and al-Khoury, 1986 for details.) Two important agencies deserve to be added to the former list. One is the young but active Beit al-Hickmah ('House of Wisdom') of Tunisia, established in 1983. This official Tunisian agency has its own Institute of Translation and Terminology which is involved in both theoretical and practical activities in the field of terminology (Marzouki, 1986). The other agency, if we may call it so, is the RAB 13/0/81 project, directed by Professor al-Hamzaoui, which was responsible for the Arabisation of more than 35,000 terms in the fields of telecommunications, including those of space. To my knowledge, the project offices were closed upon the completion of the projects assigned to them, late in 1986. (See al-Sammaan, 1985 and al-Hamzaoui, 1986.) Besides the above agencies, we may also mention one of the very important ad hoc committees on the pan-Arab level. This is the Committee for the Unification of Military Terminology for the Arab Armies. It produced, under the sponsorship of the Syrian government first, and then the United Arab Republic government, a dictionary of 40,000 entries, which was published in 1961. Another committee was formed by the Arab League in Cairo in 1968. In 1970, a revised version of the *Unified military terminology* was published in four parts: English-Arabic, Arabic-English, French-Arabic and Arabic-French (al-Faisal, 1982, p. 24; al-Khoury, 1986, p. 6.).

Terminology production outside the Arab world

In addition to agencies in the Arab world, we have to mention agencies in other parts of the world that have been involved in the production of Arabic technical terminology. Agencies of the United Nations are the first that come to mind in this regard. For example, more than ten years ago Unesco published a dictionary of conference terminology. I am sure that other agencies, such as FAO, UNIDO and others, must have also been involved one way or another in producing Arabic terms in their own fields of activities, especially since Arabic is now considered one of the official languages of the United Nations.

Earlier I mentioned the involvement of oil companies in the production of technical terminology. There are many other large companies that are also involved in such work at least for their own use. For instance, a couple of years ago, IBM through its Kuwait Scientific Center sponsored the Arabisation of a few thousand computer terms. During my visit to Siemens' headquarters in Munich in August 1983, I was informed that the translation department of the company had a large collection of cards for technical Arabic terms, some of which had been produced by the department itself.

Furthermore, the Language Management Corporation of New Jersey in the United States boasts of a big bilingual (English-Arabic) set of technical dictionaries. Quite a few of the terms are produced by the staff of the company, which is a translation bureau that uses computer-aided translation. I am sure there are many similar cases in different parts of the world.

PAN-ARAB COOPERATION AND COORDINATION

Some causes of confusion

Before discussing the processes of cooperation and coordination in the field of technical terminology in the Arab world, it might be helpful to identify a few of the causes that have lead to the confusion in this area – some of which are linguistic, some administrative, and others are personal or even political.

Linguistic factors

We may mention three different types of causes of multiplicity of synonymous Arabic terms for the same concept:

(1) Richness of the Arabic language, hence the presence of a large number of synonyms for some concepts. This factor is intensified by the polysemous nature of the source language terms. To take a simple example, the English term 'structure' has many meanings not only in different subjects or fields of specialisation but even in one and the same field, like linguistics. This leads to different Arabic equivalents, such as binyah, binnaa', tarkiib, haykal, etc.

(2) Arabisation procedures account for synonymy in the area of terminology on many occasions. By Arabisation, I mean the process of providing Arabic equivalent terms for foreign ones.[1] Terminologists in the Arab world are not in total agreement on specific and exact procedures, which is understandable, given the fact that terminology as a science is a new field of investigation. In fact, only a very few academic institutions in the Arab countries teach it. (Abid, 1986; al-Hamzaoui, 1986; Anwar al-Khatib, 1986; Ibrahim, 1986.) We also know that there are different schools of terminology as well. Finally, it is a known fact that the application of terminology procedures is subject to many subjective considerations. (See al-Kasimi, 1982; Amr, 1986; Helaiel, 1986 for suggestions on terminological studies in the Arab world.)

Typical among the various procedures of coining technical terms in Arabic are: (a) finding a term from Arabic scientific heritage (which itself provided many European languages with terms like 'zero', 'algebra', etc.); (b) translation of a foreign term using the different 'translation procedures' mentioned by Newmark (1981), such as transcription/transliteration, literal translation, calque, cultural equivalent and translation label. Most of these procedures have their own problems, such as who is doing the transliteration, and on what basis (if there is any), etc.

(3) The third major linguistic factor of divergence is the fact that the Arab world is basically divided in two groups with regard to the main foreign/second language used by the countries. Roughly speaking, it can be said that Arab countries west of Libya are French-oriented – though Lebanon and Syria are not easy to classify neatly. This means that any term that is based on some form of translation is bound to be influenced by the source language (usually English or French), which sometimes 'forces' terminologists to accept or adopt at least two Arabic equivalents or terms for some technical terms. In fact, I personally witnessed this when I was twice a member of the revising team for the RAB project mentioned earlier *(cf.* Ibrahim, 1986).

Administrative factors

These include, among others, factors such as the absence of an official terminological body, or absence, to my knowledge, of laws that give these bodies the power of standardisation which is the case with most of the Academies. Another factor here may be the slow progress of official agencies in the production of Arabic terms for thousands of new concepts in various spheres of knowledge, thus forcing writers and translators to coin their own terms. Poor dissemination of new terminology is another example of what I call administrative factors. This is both related to and independent from the issue of coordination.

It is related in the sense that poor coordination leads to poor dissemination and vice versa. Dissemination is independent from coordination in the field of

technical terminology, because the distribution of publications in the Arab world is itself a problem.

However, I think the most important of the administrative factors is that of the multiplicity of terminology-producing agencies mentioned earlier in this paper and elsewhere (Sieny, 1985). This leads to the urgent need for coordination of terminological activities in the Arab world.

Coordination and cooperation

Official agencies

In my paper published in *META,* June 1985, I mentioned some efforts for coordinating terminological activities in the Arab world, the most important of which was the establishment of the Bureau for the Coordination of Arabisation in the Arab World (BCAAW), which is one of the agencies of the Arab League Educational, Scientific and Cultural Organisation (ALESCO). Unfortunately, the Bureau is poorly equipped to handle such a vital and big task, despite the heroic efforts of its staff.

Other agencies include the Association of Arab Academies. But it has also been very slow, due to many reasons.[2]

Some people have had hopes in more specialised pan-Arab organisations and associations, such as the Arab Standards and Metrology Organisation, the Organisation for the Development of Agriculture, the Association of Arab Physicians, etc., which have in fact been actively involved in the attempt to coordinate terminological activities, each in its own field of specialisation.

Among the procedures followed by the Bureau of the Coordination of Arabisation in the Arab World are the following:

—Publication of 'proposed' terminology in its official organ *al-Lisan al-'Arabi (The Arab Tongue)*, which is an annual bulletin that contains articles on linguistic and terminological issues as well as a section devoted to terminological glossaries, prepared mostly by individuals.

—Publication of 'agreed upon' dictionaries/glossaries in various disciplines, either on its own or in collaboration with various Arab agencies, such as the Academies. These bi- or trilingual glossaries are the ones that theoretically received the blessings and approval of the participants in the 'Arabisation conferences' organised by the Bureau.

—Arabisation conferences: these are conferences organised by the Bureau every three years to discuss and approve scores of thousands of terms proposed by different agencies and/or individuals in various disciplines and collated by the Bureau. Representatives from different Arab countries are invited to participate in these conferences, the latest (fifth in the series) being held in Amman two years ago. Due to the limited duration of the conferences and the amount of time given to the participants to scrutinise the proposed terms as well as the limitation of representation, these

conferences have, in my opinion, managed to bring 'formal' rather than substantive agreements and approval of many glossaries.
— Ad hoc committees: on certain occasions the Bureau has invited scholars in a certain discipline to sit together and discuss proposed terminology in their respective fields of specialisation.

The results of these activities are normally published. However, probably due to the limited resources of the Bureau, few copies of these publications are printed – a few thousand each – and they are rarely reprinted; hence many of them are 'unavailable'. This unavailability, and the poor distribution of these publications, severely limits the effectiveness of the 'coordination' by the Bureau, despite what I called earlier its heroic efforts. (For more details on the Bureau's activities, see Bin-Abdallah, 1982 and Bin-Yakhlif, 1986.)

Committees and projects

I have already mentioned that one form of pan-Arab cooperation and coordination was through ad hoc committees formed for specific terminological assignments, an example of which was the Committee for the Unification of Military Terminology.

The best example of the 'projects' is the RAB project, mentioned earlier, which enlisted the help of translators, engineers and terminologists nominated by different official Arab agencies either for the preparation of the Arabic equivalents for the terms given in English, French and Spanish or in reviewing and revising them. The project was supported by Arab agencies, including the Arab Association for Telecommunication, and international agencies as well, more of which later.

Towards a better future

Due to the problems of coordination and cooperation in the field of technical terminology in the Arab world, many institutions and individuals have been studying the situation and offering suggestions. The most interesting and important event in this regard was, in my opinion, the Tunis conference, held in July 1986. The conference was sponsored by two Arab agencies and Infoterm. The Arab agencies were: the Arab Standards and Metrology Organisation (ASMO), and the Tunisian National Institute of Standards and Industrial Property (INNORPI). The conference, which lasted four days (July 7-10) was attended by experts from almost all the Arab countries. Speakers representing various international organisations and non-Arab countries actively participated in the conference and its working committees, which made the conference more of a conference on international rather than 'Arab' cooperation in terminology as it was called. Many of the suggestions and ideas given below reflect either directly or indirectly some of the thoughts expressed in that conference.

Matters of methodology. Earlier I mentioned that one of the causes of the chaos in terminology is often the absence of correct methodology in the production of new terms. For example, polysemy and synonymy are abundant in many works by the same agency or individual. Transliteration of Roman script in Arabic is often inconsistent even for words with the same European language. It is true that some people have already discussed such matters, the earliest work being that of al-Shihaabi (1955). The Cairo Arabic Language Academy has also issued some guidelines (see al-Khatib, 1981). But the problem is still there. This accounts for the fact that in the Tunis conference and on earlier occasions many papers suggested the need for the development of an 'Arabic theory' (Amr, 1986), or a good methodology (Anwar al-Khatib, 1986; al-Hamad, 1986; Bin-Murad, 1986; Helaiel, 1986; Abid, 1986). Others offered some propositions towards a science of terminology (Ahmad al-Khatib, 1982; al-Kasimi, 1982) and procedures for standardisation (al-Hamzaoui, 1985 and 1986) while others talked about training in terminology and the need for it (Helaiel, 1986; Abid, 1986).

Role for the thesauri. Some Arab agencies are of the opinion that the preparation of comprehensive thesauri might solve part of the problem of standardisation and unification of terminology in the Arab world. For example, Gabriel (1986) says of the translation of the ninth volume of *The International Patent Classification* done by the Union of Arab Councils for Scientific Research, 'It is also a step forward into stabilising technical terms and standardising them.' (English abstract of Gabriel, 1986). Itayem of ASMO suggested the need for the preparation of a 'comprehensive unified Arabic thesaurus that could be used for the storage and retrieval of data ...' (Itayem, 1986).

More support for BCAAW. Many experts have been talking about the need for more support for BCAAW (the Bureau for the Coordination of Arabisation in the Arab World), in terms of manpower, facilities, equipment and finances in order for it to fulfil its duties in a manner commensurate with the task assigned to it (al-Khouri, 1986; Bin-Yakhlif, 1986; Didawi, 1986).

Terminology databank(s). A few years back, Ali al-Kasimi (then an expert with BCAAW) expressed the need for a 'central terminology databank' in the Arab world to help the process of coordination and cooperation in the area of technical terminology (al-Kasimi, 1979). In his Tunis paper, al-Kasimi suggests an additional task for the termbank; that is, it should provide a facility for storing actual scientific and technical writings in Arabic to help terminology work. Al-Hamad in his 1986 paper calls for the establishment of a terminology-making (rather than coordinating) body which would make use of the databank. Amr (1986) and al-Marrakchi (1986) speak of an Arab terminology network. In fact, INNORPI of Tunisia expressed its willingness to host and/or make its newly-established Qimam (terminology database) facilities available for the proposed

project. In his paper, al-Marrakchi outlines the proposed network (1986).

When I suggested the establishment of the Saudi Terminology Bank (BASM) in 1983 to the Saudi National Centre for Science and Technology (SANCST), one of the objectives was stated as being the coordination of terminological work, since the dependence of different agencies and individuals on one central agency would provide a practical basis for both coordination and cooperation. (Sieny, 1986, p. 196) This is especially important for the elimination of duplication of effort and the creation of unnecessary and undesirable synonymy, which was one of the reasons for starting with the storage of terminology not easily accessible to translators, due to poor dissemination.

It is my opinion that a combination of the suggestions mentioned above is necessary to bring about an effective process of coordination and unification of technical terminology in the Arab world.

ARAB INTERNATIONAL COOPERATION IN TECHNICAL TERMINOLOGY WORK

Arab international cooperation in the field of terminology and related activity has always taken various channels and forms. These forms include consultation, cooperation, collaboration and training.

Consultation

The Bureau of Coordination of Arabisation in the Arab World (BCAAW)

BCAAW has been the official organ responsible for providing Arabic terminology to various international organisations. Normally, it is BCAAW that is consulted by foreign institutions interested in obtaining 'official' Arabic terms, because it is responsible for the dissemination of the Arabic terms approved by the participants in the Arabisation conferences referred to earlier. However, in practice other Arab agencies, including the Academies, are being consulted as well, due to the fact that the officially recognised terms are insufficient to answer the needs of the users of the language, be they native Arab or foreign. For example, when the Arabic Language Institute at Riyadh University started its dictionary of modern linguistics terminology, more than ten years ago, BCAAW had no official reference for such a project. The committee resorted to the publications of the Cairo Arabic Language Academy. Naturally, other references were used as well. I expect this to be the normal process which a foreign agency may have to go through to find Arabic terms before its own translators and/or terminologists make their own terms.

Dictionary consultation

Dictionary consultation is the most common type of consultation that Arabic terminology producers resort to in the preparation of technical terms. Sometimes 'official' dictionaries are used, such as in the case of the *Unified Military Dictionary* which used the Canadian English-French Dictionary as a basis (al-Faisal, 1982).

Consultation and termbanks

International cooperation manifests itself very clearly in the development and operation of terminology databanks in the Arab countries. We can speak of three banks in the Arab world: Lexar of Morocco, developed by the Institute of Studies and Research for Arabisation in Rabat, the Saudi Terminology Databank (BASM) of KACST (formerly SANCST) in Riyadh, and the Terminology Database (Qimam) of Tunisia, respectively.

    The Lexar project was started more than a decade ago when it stored terminological data in the computers of the European Space Agency in Italy. I recall having been told that some of its terminologists were trained at Termium of Canada.

    In preparation for the establishment of BASM, I had the pleasure of visiting most of the European termbanks, in addition to visiting Infoterm and ISO for consultation. Those visits proved to be of great value to the project, the software for which was developed by the computer department of KACST (Sieny, 1986).

    Innorpi of Tunisia had consultations with Normaterm of France, according to Zuhair al-Marrakchi of the said Institute, before the establishment of its Qimam (al-Marrakchi, personal communication).

    I am sure international cooperation with the Arab world will be enhanced with the further developments taking place at the three termbanks and elsewhere in the Arab world.

Cooperation

Among the typical examples of cooperation is the arrangement made between Siemens, AG and the Saudi National Centre for Science and Technology (now King Abdul-Aziz City for Science and Technology (KACST)), where Team of Siemens provides English, French and German technical terms in such fields as microelectronics, cable and power engineering, while KACST provides the Arabic equivalents for the 25,000 terms through its own termbank BASM, the data being exchanged electronically, using the MATER format.

    The other example is the agreement between KACST (formerly, SANCST) and Klett Interpart of Stuttgart, with the support of the West German government. Under this agreement, Klett will electronically store 15,000 technical terms in various specialisations in Arabic, English and French, obtained from BCAAW, and provide the German equivalents for them. These

will then be handed over to KACST in machine-readable form.

The third example of Arab international cooperation in the area of technical terminology is best seen in the RAB project mentioned earlier. This project involved finding and producing terms in the fields of telecommunication and space communication, provided in English, French and Spanish by the International Telecommunication Union in Geneva. The project was jointly sponsored by ITU, UNDP, the Arab Telecommunication Union and ALESCO (the Arab equivalent of Unesco), with the host government of Morocco providing office facilities. The project reflected another type of pan-Arab cooperation, for while the translators came from Algiers, Egypt, Iraq and Morocco, the reviewer-revisors were experts from the same countries in addition to Saudi Arabia, Sudan, Syria and Tunisia. The project manager was from Tunisia, too.

Cooperation in the sponsorship of publication of technical terminology is best seen in *The Unified Medical Dictionary* (Arabic, English, French) whose latest edition was sponsored by the World Health Organisation (WHO), the Council of Arab Ministers of Health and the Association of Arab Physicians.

Since terminology is one of the instruments of standardisation, all Arab standardisation agencies are involved in it, one way or another. The Arab Standards and Metrology Organisation has its own terminology committee that tries to work closely with TC 37 of ISO in this important area of international cooperation.

Collaboration

By the term 'collaboration' I mean cooperation involving publishers. A typical example is found in the preparation of the 'technical dictionaries' series, which is a series of dictionaries that contain terms in Arabic, English, French and German, with definitions in Arabic. An East German publisher and an Egyptian (al-Ahram) have been collaborating in their preparation. Librairie du Liban has also been publishing a series of 'illustrated' technical dictionaries in collaboration with some European publishers. Usually the dictionaries, which are concept-oriented, with definitions in English and graphic illustration, are supplemented by an English-Arabic glossary. The Arabic translation of Compton's *Illustrated Scientific Dictionary* is another example. This was a result of the cooperation between Encyclopaedia Britannica International Ltd and Dar al-Ma'arif of Egypt.

However, I think the preparation of the Arabic version of *McGraw Hill's Dictionary of Science and Technology* (with about 108,000 entries) sponsored by the Arab Development Institute of Tripoli, Libya, represents the most ambitious project of its kind in the Arab world. The dictionary, whose manuscript was finished more than two years ago, should come out in three or four big volumes. It is the product of a large number of specialists from different countries, particularly Lebanon (where the Institute has its branch) and Syria.

(Information provided in personal communication with the late Shukri al-Faysal, one of the project editors.)

Training

The training of Moroccan terminologists in Canada was mentioned earlier. King Saud University has been considering a training programme in terminology in cooperation with Infoterm and possibly one or two Western termbanks, prior to the operation of the University's Terminology Databank for the Humanities ('MAJMA'), which is intended to complement BASM.

CONCLUSION

The vistas of pan-Arab as well as Arab international cooperation in the area of technical terminology are infinite. Attempts have been made in the last few decades to enhance this type of activity. It is obvious that there is room for improvement on the methodological aspect of terminology in the Arab world, as well as in the area of coordination and utilisation of electronic devices as instruments of documentation and terminology, quality control and production, and of dissemination. Much work is also needed to have more efficient procedures for the publication and dissemination of terminological references (theoretical and practical). It is through these types of improvements that cooperation will be boosted and facilitated both at the pan-Arab and international levels.

NOTES

1 The term 'Arabisation' is a problem in itself, as it has been widely used to refer to different types of activity: (a) the adoption of a foreign term, with or without some modification, as in 'tilifizyon' for television; (b) the process of finding Arabic equivalents for foreign terms, in which sense I am using the word here; (c) the process of using Arabic in place of a foreign language in various institutions, such as education, administration, politics and economics, etc., with the accompanying process of sometimes substituting Arabic cultural values for the foreign ones.
2 It might be of interest here to note that membership in some of the Arabic language Academies is not exclusive nationality-wise. Cairo Arabic Language Academy, for instance, has members from different Arab countries, some of whom are members of Academies in their own countries. This should help indirectly in the process of coordination to some extent.

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