84

TOWARDS THE CREATION OF A UNIFIED SCIENTIFIC TERMINOLOGY IN ARABIC

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ABSTRACT: Background to lexical reform of Arabic and the role played by the Coordination Bureau of Arabisation in standardising scientific terminology. Linguistic purism and methods of word formation favoured by the Academies. Practical difficulties in creating a unified terminology as a result of an excessively conservative attitude to Arabic. The influence of Western languages through borrowing and loan translations. Conclusion.

The following three varieties of Arabic are referred to in this paper:

Classical Arabic (CA):
              the language of the Qur'an and Islam.

Modern Standard Arabic (MSA) (also called Literary Arabic):
              the language of school and university instruction,
              of formal speech, and of the media.

Colloquial Arabic:
              the language of informal speech, folklore, and
              popular drama.

In the nineteenth century Classical Arabic was manifestly unable to cope with the demands of the New Age - dictionaries were full of obsolete words, a multiplicity of synonyms, and imprecise scientific terms. For example the word tayr denoted 'anything that flew' and thus referred to not only birds but insects and any other flying creatures. (1). It was the contact with Western cultures that provided the impetus for lexical reform - which focussed principally on scientific terminology. The first language academy in the Arab world was established in Damascus in 1919. Significantly it was called al-majma ᶜal-ᶜilmiy al-ᶜarabiy (The Scientific Arabic Academy). Three other language academies were subsequently set up in different Arab countries - Egypt, Iraq and (most recently) Jordan. This proliferation of institutions reflected a major problem in terminology creation in the Arab world - duplication of effort and a consequent lack

of uniformity. In a bid to correct this trend a summit conference of language Academies was held in Damascus in 1956 and subsequently a Union of Arabic Academies was formed. However it was not until 1969, when the Coordination Bureau of Arabisation (CBA) was established in Rabat under the auspices of ALESCO (Arab League Educational Cultural and Scientific Organisation), that the problem of standardising terminology was really taken in hand. Since its inception the CBA has been very active in producing trilingual glossaries of scientific and technical terms in English, French and Arabic. It should be stressed that the CBA's role is not coining but rather coordinating new terminology. The new terminology is created by the Academies, by scholars working in universities and ministries, by lexicographers compiling general and specialist dictionaries, and by writers and translators. The CBA's task is to coordinate these efforts and to organise periodic conferences at which lists of terms in a particular field are 'ratified' by experts from institutions all over the Arab world. As an extension of its activities, the CBA is currently storing such standardised terminology in the Siemens Data Bank in Munich in preparation for the establishment of a Central Terminological Data Bank for the Arab World.

Much of the duplication in terminology creation in Arabic can be attributed to geographical and political factors - the sheer size of the Arab world (and the problems of communications therein) and the concern of Arab states to build up their own particular educational systems and develop their own political identities. However, in this connection, we must consider two further factors: the role of Classical Arabic and the influence of Western languages. Arabs are proud of their language for a number of reasons - religious, historical and cultural. Arabic is the language of the Qur'an and Islam; it was also the medium by which Greek science passed to the West (through translations into Arabic in 8th Century Iraq and later retranslations into medieval Latin). Thirdly, Arabic is the means whereby - theoretically at least - educated Arabs from different states can communicate and, as such, is a potent factor in Arab world unity. It was natural therefore that 'purists' should advocate that word-formation should, as far as possible, be carried out using the native lexical resources of the language and that loan translations and direct borrowings from other languages should be discouraged. The method of vocabulary creation originally preferred by the Academics was revival of archaisms (termed al-istinbāṯ or 'discovery'). Early instances of this method were successful - an example is the word qiṯār which originally denoted 'a line of camels' and, by figurative extension, was applied to 'a railway train'. Another example is jarīda which in Classical Arabic meant 'a stripped palm branch used for inscriptions' and came to mean 'newspaper'. However many terms proposed by scholars failed to become accepted in the languages - examples are jammāz ('a swift-footed ass or camel') proposed for 'tramcar' and irziz ('the sound of rain or thunder') for 'telephone'! (2). In MSA today there are a number of doublets, one of the pair being the native term proposed by the Academies and the other a loan word favoured by the majority of educated speakers and understood by the man-in-the-street: examples are hātif (lit. 'invisible caller')/ tilifūn and marnāh (derived from the verb ranā 'to gaze at')/tilivizyūn.

A second method of word formation favoured by the Academicians was derivation using native lexical roots and patterns. The derivational resources of Arabic are in theory extremely powerful. An example is the pattern fiᶜālah which has the meaning of 'craft'; by inserting roots

into this pattern we can derive the names of numerous crafts such as ḥidādah ('blacksmithery'), sibāka ('foundry worker's trade'), nijāra ('carpentry'). An Egyptian linguist proposed a list of 196 derivatives from the root ṣahara ('to melt, liquefy, or fuse'). As Stetkeyvych says 'The remarkable thing about this list is that each one of the individual derivatives actually possesses a clear and usable meaning'(3). Numerous neologisms have been coined by derivation in MSA, for example from the patterns demoting 'locality' we have maṣnaᶜ (factory), maṭbaᶜ (press), majmaᶜ (academy), masraḥ (theatre), maṭār (airport), mawqif (bus stop) and mahaṭṭah (station). Nevertheless, it is fair to say that the theoretical potential of derivation as a means of word formation has not been matched by practical achievement. In the thirty year period up to 1965 the Academies of Cairo and Damascus sanctioned only 2500 derived items between them(4). On the other hand this method of word coinage has led to duplication of technical terms in many cases: Hamzaoui cites three derived terms proposed for 'handlebars' - al-miqwad, al-muwajjih, and al-mudawwir(5).

The excessive conservatism exhibited by the purists towards Arabic has certainly delayed the realisation of the goal of a unified scientific vocabulary in which (a) every distinct scientific concept or object should be represented by a distinct term, and (b) no scientific concept or object should be represented by more than one term. It has done so in three ways. First, by discouraging the adoption of loan words but attempting to impose recherché and sometimes faintly ridiculous archaisms. The result is that neither term becomes established as in the case of the doublets quoted above. There is a feeling among the purists that loan words will destroy the 'spirit' of the language, whereas in reality any living language adopts and adapts loans to its own phonological and morphological patterns with no visible ill-effects. Arabic has demonstrated considerable dexterity in adapting such loans as 'televise' by reanalysing the word as a four consonant root tlfz from which the verb talfaza, participle mutalfaz, and noun tilfāz are derived in accordance with Arabic patterns. The status of these lexemes however is uncertain since they are derived from a loan word. The very term for 'loan-word' in Arabic (kalimah dakīlah) ('intrusive word') is instructive. The irony in this case is that the purists choose to attach such impeccably derived lexemes, but in doing so, leave the door open to loan translations which have poured into the language in recent years. Secondly, by encouraging scholars to derive technical terms from native roots, the Academies have arguably added to the difficulties of standardisation which the CBA now faces. Synonyms, for which Arabic has long been famous and which threaten the precision of scientific language, are once again in fashion. Thirdly, because of the insistence on 'Arabising' scientific terms, much effort has had to be expended in finding (often lengthy) Arabic equivalents for concise Latin terms. An example cited by Monteil is manis tricuspis (ant eater) for which the Arabic equivalent is ākil an-namal ḏū l-ḥarašīf al-muṭalat al aṭraf (literally, 'eater of ants possessor of scales with three sides')(6). This procedure has the additional disadvantage that Arabic is often out of step with other major world languages which have generally adopted Latin or Greek terms in the binomial science classification. For example, acacia gummifera is rendered in Arabic as the caique as-sanṭ as-samġiyy.(7).

No discussion of Arabic terminology would be complete without a reference to the influence of Western languages upon the vocabulary of the language. It was originally as a result of contact with European culture that lexical reform of Arabic was initiated.

Western technology has been introduced into the Arab world principally through English and French. English or French is a second language in all Arab states and, generally speaking, a knowledge of the second languages is indispensable for career advancement. We have already noted instances of doublets in which the loan word is preferred over its native counterpart. At least here there is a choice, but at the colloquial level it is quite common to find a loan technical term for which there is no accepted lexical unit in the Standard Language. Terms for car-parts provide a well-known example. In Iraq, the term for 'clutch' is klatš, in Egypt dibrayāj, in Libya fressione (loans from English, French and Italian respectively). A dictionary definition exists - jihāz ta ^{cv}sig at-turūs but there is no accepted lexical unit in MSA. A car manual studded with these sorts of descriptions can provide a real puzzler even to a specialist(8). There is a great temptation to choose the simpler alternative - the loan word. Essentially, the problem is that MSA does not yet have established equivalents for many of these technical terms, and, until it does, localised loan words are likely to remain in use.

Even in cases where there is an established term for a scientific concept in MSA, lexical variation may occur as a result of borrowing from different sources. Thus both nitrogen and its French counterpart azote exist as loans in MSA, posing a potential communication problem for speakers from different parts of the Arab world.

In spite of the efforts of the purists to ensure that terminology creation is undertaken from within the lexical resources of the language, it is likely - although this could only be confirmed by research - that the bulk of scientific terms have been rendered into Arabic by loan translations or direct loans, as is the case in other registers such as political or economic. A recent CBA terminology conference seemed to acknowledge the inevitably of borrowing: it agreed guidelines on the correct methods for adapting foreign terms into Arabic.

I conclude that, despite the laudable efforts of the past decade, a unified scientific terminology is not yet a reality in the Arab world. It is one thing to standardise terminology; it is another to impose it. An essential prerequisite is the coordination of scientific curricula in schools and universities but, clearly, this is still some way off. Meanwhile, there is no doubt that the CBA has managed to bring some order out of the previous chaos.

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 (7) ibid.

 (8) Aziz (1982) p. 27.