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uced by means of these methods vary, sometimes considerably, as to their agreement with the morphological patterns of Arabic, and their degree of practicability .

Most of the views we have discussed suggest an absence of a clear understanding of the linguistic change. A case in point is *Al-ishtiqāq* which is deemed as a distinctive process of word formation; it seems to be employed by some Arab linguists as an argument against any type of development outside the range of this process. We think that this view is somewhat rigid, because languages are always liable to adaptation according to the change taking place in any society. The Arab society, like other societies, is incessantly changing and developing. This has led to a serious problem facing the Arabic language, because nowadays it is faced with the problem of adapting itself to the flux of innumerable neologisms referring to new concepts which were not existent in the past.

Thus from the beginning of the 19th century, the language has had to assimilate a host of neologisms in both its oral and written forms. This process of assimilation could hardly be avoided at a time when the Arab society became fully aware of its shortcomings. To assimilate these neologisms, we believe that all processes of word formation must be utilized with no emphasis on one method rather than the other, since they all contribute to enriching the Arabic vocabulary.

These attempts are represented by the Arab Academies of language which have been directly concerned with various aspects of classical Arabic.

The first language academy was established in Damascus in 1919, called "al-Majma' al-Ilmiyy al-'Arabiyy (The Scientific Arabic Academy). It consisted of two major committees. A literary and linguistic committee and a scientific one. The latter committee took charge of enlarging the scope of the technical and scientific subjects. The academy has concerned itself with gathering and editing manuscripts and published books. Furthermore, attempts were made to arabize the curriculum of teaching.

(1) The Egyptian Academy was established in (1932). Since its inception, it has addressed itself to the task of creating scientific and technical terminology needed for various disciplines as well as different branches of government. As a rule, the academy opposes any usages which do not conform to the basic rules of Arabic; nevertheless, it has examined and approved a large number of grammatical features and lexical items of modern usage which not violate the structure of classical Arabic.

The Iraqi Academy (al-majma' al-'ilmi al-'Iraqi) was founded in 1947 by the Ministry of Education. On the whole, the linguistic movement in Iraq came late, due to several factors, but mainly to the absence of educational activities similar to those which occurred in Syria .

The fourth academy was recently founded in Jordan.

The creation of scientific and technical terminology has been the major challenge to which the main efforts of the academies have been devoted. They have coined and continue to coin a large number of technical terms for almost all fields of knowledge. But the major problem which none of the academies has been able to resolve is how to make classical Arabic effective in meeting the requirements of modern life without major alterations to its structure and vocabulary.

Conclusions

This paper is an attempt to discuss the application of word formation methods in Arabic and the extent to which they conform to the structure of Arabic. As we have seen, lexical creation and coinages introduced

(1) See Al-To'ma (1970) pp. 710-713

terms on the grounds that this will result in an overflow of foreign terms, that can in the end corrupt and deform the language and even overwhelm it. They insist on the processes of (Al-istinbât. or discovery) and (al - ishtiqaq or derivation) from Arabic roots, alleging that adopting these methods of word creation instead of At-ta'rib is the only way to ensure safeguarding the integrity of the language. Thus for the Arabized word *utumubil* (automobile), they prefer the coined word *sayyarah*; for *taramway* (trolley car), the word *jammâz*, and so on (1) .

Thus Arabic has not borrowed wholesale like certain languages and most borrowings have been from French, e.g./ *aristuqratiyya*/ and/ *dimuqratiyya*/, from English, e.g./ *fulklur*/ and /*kuktil*/ and from Italian, e.g. /*sigàra*/ .

Language Academies and the Standardization of Arabic Terminology:

The fact that the Arab World has split into a number of political units has been a major deterrent to achieving some measures of linguistic standardization and uniformity, especially at a time of transition from a medieval to a modern society. Moreover, the absence of a supra-national language academy that would regulate the efforts of individuals and official agencies was also in itself a reason of diversity in a language persistently in need of important adjustments. This awareness was strongly felt in each of the Arab countries and in the Arab World as a whole.

From the 1930's onwards, it has been generally realized that the independent efforts of individuals and academies for linguistic revival would prove inconclusive and would add to the difficulties of the Arab countries if they were not fully coordinated. The effects of the serious differences related to the choice of technical vocabulary and scientific expressions, besides, contradictory approaches to the same linguistic problems became strongly felt and attempts were made to solve the differences with a call for a unified effort. For example in the 1930's a move was made to unify the postal service in the Arab World through the use of a uniform Arabic terminology .

However, various attempts have been made by the purists on the official level to check the foreign elements entering into the language.

(1) Chejne, Anwar,G. (1979) *The Arabic Language, Its Role in History* pp. 151-152 .

i.e. through putting two full words together, and because their segmentation is unpredictable.

Much controversy has arisen about the applicability of al-naht in Arabic. The opponents of *manhūtah* constructions base their arguments on the difficulty of comprehension they present for many of them are puzzling and can only be understood in a context or when one knows the origin of their constituents. Added to this are other problems such as spelling and pronunciation. For these reasons, compounds of these kinds are rarely used, and they do not constitute an important part of the Arabic vocabulary. The proponents of al-naht in Arabic on the other hand say that this process of word formation is necessary for enriching the language with many new constructions through producing economical terms and helping us to avoid long constructions(1) as in :

/al-qabtarix/ (prehistory)

/(ma)qabla t-tarix/

Some old Arabic *manhūta* formations are like *sabhala* 'to say *subhana l-lāh*' and *dam'aza* 'to say *'adāma l-lāhu 'izzaka*' (may Allah perpetuate your prosperity)

Examples of modern *manhūta* formations are:

/dimkhalawiy/ (intracellular)

/baykawkabi/ (interplanetary)

/sarnama/ (somnambulism)

6- At-ta'rib (Borrowing) :

This method is supposedly the (last resort) after other methods of word creation have failed. In At-ta'rib, certain terms which are deemed untranslatable are transliterated into Arabic like 'chocolate' and 'bourgeoisie'

Al-Kasimi (1979) contends that for the last five decades, a linguistic controversy has been raging between 'innovators' and 'purists' in the field of linguistics. The innovators advocate borrowing from English, French and even from colloquial dialects of Arabic in order to meet the ever-increasing need for scientific discoveries and technological inventions, while the purists disagree with the adoption of borrowed

(1) Stetkevich, J. (1970), the language of science pp. 62 -- 67

is determined or defined by another element. The determined noun which is always the first element is called *'al-mudāf* 'the annexed' while the determining element which is the second is called *'al-mudāf ilayhi* (called by Beeston 'the amplifying term') (1) and the relation existing between the elements is called *'al-idāfa* 'the annexation'.

Western languages, mainly English and French have been the main sources from which Arabic adopts scientific compounds of this type . Hence we have:

/qasab as-sukkar/ (sugar cane)

/rajul ad-dafadi' (frogman)

/'aqrabu l-bahr/ (scorpion fish)

/najmu l-bahr (starfish)

AI - Murakkabu l-mazjiy Mixed Compound' is mainly used with names of people and places and it consists of two juxtaposed nouns. In most compounds of this type, the two components are joined orthographically as in *Ma'dikarb* (a man's name) and *Ba'labakk* (a town in Lebanon) .

In modern Arabic, more compounds of this type have been introduced into the language, whose elements can be either joined or written separately like *ra'sumal* 'capital' and *qà'immaqàm* 'approx. district governor'

A-Murakkabu l-'isnàdi 'Predicative Compound' is rare in Arabic and it is used in proper nouns of people and places. It consists of a verbal element and a nominal one following it, which in Arabic could stand as an independent sentence. Examples of this type are the classical example *ta'abbata sharran* 'he carried mischief under his arm' and *Jàda l-haqq* (lit. 'God gave with generosity') .

5 - AL - Naht:

AL - Naht in Arabic is similar to blending in English because in both languages they consist of a process where by one word can be formed one word joined to the splinter of another word, from the splinters of two words or (in Arabic) the splinters of more than two words. The resulting forms are identified by their morphological irregularities because they are not formed in the same way as other types of compounds

(1) Beeston (1970) p. 40.

Nevertheless, it is fair to say that theoretical potential of derivation as a means of word formation has not been matched by practical achievement. Moreover, duplication of technical terms has resulted from this method of word coinage; there are three derived terms for 'handle-bars'— *al-mauajjih*, *al-miqwad* and *al-mudawwir* .

A careful examination of the early vocabulary is bound to reveal the fact that the occurrence of morphological patterns with their respective meanings has not been a consistently observed process. A noun of instrument, a noun denoting motion, a name of a disease, etc. may be denoted by words assuming morphological patterns other than the respective ones mentioned before. Here are some cases where words denoting names of diseases have patterns other than *fu'al* or *fa'al*:

/xilfah/ (diarrhoea)	<i>fi'al</i>
/haydah/ cholera)	<i>fa'la</i>

A word assuming the pattern *fu'al* or *fa'al* is not necessarily denotative of a disease or ailment, for instance:

/shu'a'/ (beam ray)	<i>fu'al</i>
/barad/ (hail)	<i>fa'al</i>

The instances of patterns we have just discussed are already occurring in the language but at present being adapted to certain specific significations in the language of science. But the main fact that should be realized before any attempt to revive further patterns that were operative in early Arabic is that these patterns are not sufficient enough to meet the large variety of concepts brought about by scientific and technological progress.

4- Compounding :

We can define compounding as the adding together of two lexemes (independent lexical morphemes) to make a new lexeme as is the case with 'gunpowder' and 'spaceship'.

Traditionally, classification of Arabic compounds falls under three categories : '*al-murakkabu l-'idafiy* 'the compound with the construct relation', '*al-murakkabu l-mazjiy* 'the mixed compound' and '*al-murakkabu l-'isnadiy* 'the predicative compound'.

Al-murakkabu l-'idafiy is realized by what is known as '*at-trakibu bil-'idafa* 'compounding by the construct relation' where one nominal

b- Structures of the derivational affix type:

e.g. /la-silkiyy/ (wireless)

/‘al-lāwa‘iy (subconscious)

Loan translation may also involve al-ishtiqāq (neologismes derived through translation), as for example: ‘al – tamiyiz al – ‘unsuriyy’ (racial discrimination)

3- Al-Ishtiqāq (Derivation)

A glance at the literature concerned with the development of Arabic vocabulary suffices to indicate that Al-Ishtiqāq (derivation) in Arabic has been and indeed still is a major method of word creation in Arabic .

Al- Ishtiqāq refers to the derivation of words from native triconsonantal roots by means of prefixes, infixes and suffixes according to the patterns of the language.

Medieval philologists recognized three types of derivation. These are 1- Minor Derivation (Al-Ishtiqāq as-sagīr), 2-Major Derivation (Al-Ishtiqāq al-kabīr or qalb), 3-Root Modification (Ibdāl). The two processes were important at an earlier stage of Arabic but are no longer productive in MSA,. Minor derivation, on the other hand, is enormously productive in Arabic and it is the only form of derivation which remained fully operative after the formative stage of the Arabic language. The following qawālib have a fairly constant meaning:

fi‘āla : profession, type of activity

fa‘alān: concepts denoting flowing movement

fu‘al : illness

fa‘‘al : profession

fa‘‘ala : intensive faat-moving machine

maf‘al, maf‘il’ maf‘āla : nouns of place/time

mif‘al, mif‘al, mif‘ala : nouns of instruments .

..The pattern *fi‘ala* which means ‘craft’ can give us names such as *siḥaka* (‘foundry worker’s trade’) and *hidada* (‘black smithery’). By derivation many neologisms have been introduced into MSA . From the pattern *maf‘il* we can derive the term *mawqif* (bus stop), from *muf‘il* we can derive *mujhir* (microscope), from *maf‘ala matba‘a* (press) and from *fa‘‘al* the term *matār* (airport) is derived .

Based on our reading of Stetkevych (1970) and writers, we have found six methods of word creation. They are as follows:

1- AI-Istinbat (Discovery) :

Some Arab linguists contend that words do not die in Arabic and that they can always be brought to life. This method of vocabulary creation (AI- Istinbat) is the most favoured by the academies. The native resources of the language are utilized. There are two types of Istinbat :

a- 'Ihya' Fasih al-Luga: Reviving old words with basically the same meaning as before, The following are examples of this type:

/al;mantiq/ (logic)

/al-màdda/ (matter)

/al-jawhar/ (essence)

b- Extend figuratively meanings of old words (al-wad' bil-majaz) :
The following are examples of this type.:

jarida ('stripped palm branch for writing' - 'newspaper')

dabbàba ('war tower'-'tank')

qitar ('file of camels'-'train.

Many of these words were proposed by writers and journalists and later sanctioned by the academies. Some of the academies' own proposals were unsuccessful:

e.g. *irziz ('sound of a distant thunder'-'tramcar')

In MSA nowadays, a number of doublets are used. One of the pair is the native term and the other is a loan word used and understood by educated people and laymen such as hâtif (lit. invisible caller' / *tilifün*- 'telephone') and marnà (derived from the verb rana 'to gaze at' / *tilivi-zyün*'-'television'). (1)

2- Loan Translation :

This is a form of borrowing. The concept is borrowed (or the semantic structure is imitated and expressed) using native Arabic words. such terms can be classified structurally:

a- Idâfa constructions:

e.g. 'ilm al-'ahyà' (biology)

'ilm an-nafs (psychology)

natihàt as-sahàb (sky scrapers)

(1) Emery, P.G. (1982) Towards a Unified Scientific Vocabulary in Arabic. pp4-5.

used for the same referent (dialect differences) and social factors are constantly at work influencing the meanings of words. Word meanings are constantly changing (although the process may take hundreds of years, e.g. *awful, nice, terrible, hound, meat* and often we can notice words falling into disuse (e.g. *aerodrome, wireless.....*). Thus there is an endemic conflict between the demands of scientific vocabulary and reality of semantic change in language.

The main aim of this paper is to delineate the major factors which helped the growth of the Arabic language and the aspects that featured the development of (MSA) as far as scientific and technical terminology is concerned.

At the beginning of the Twentieth Century, there were a number of linguistic problems concerning the modernization of the Arabic vocabulary. It was evident that the vocabulary of scientific and technical writings was not standardized in the Arab World. The impact of Western civilization confronted the Arab World with the serious linguistic problem of expressing a vast and ever-increasing number of new concepts for which no words in Arabic existed. The creation of a scientific and technical terminology is still a major intellectual challenge (1).

Classical words are a further problem. Arab writers and authors steeped in classical tradition and they frequently draw on words which were already archaic in the medieval times (2). As far as the Arabic Language is concerned, it should be noted that it has an abundance of synonyms. By contrast, scientific concepts should be represented ideally by precise and accurate scientific terms. Certain words express concepts which were out of step with 'modern' scientific notions, for instance, the word 'tayr' denoted in (classical Arabic) anything that flew (birds, insects, etc.) while in modern Arabic it is used to refer to birds only.

Consequently, a major objective of the Arabic League Academies was lexical reform (al-'islah al-lugawiyy). The aim of these academies was to modernize the Arabic vocabulary. By so doing, the language could handle and express modern ideas adequately.

(1) Wehr, Hans (1980) p. 8

(2) Wehr, Hans (1980) p. 9

**Aspects of Lexical Development
In Modern Standard Arabic**

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Introduction**

After four centuries of Ottoman and Western colonisation, the Arabic language—which is nevertheless considered by Prominent orientalists as having made possible the first progress of science in the Middle East—became rigid and sterile. All efforts to modernize Arabic and put it on an equal footing with modern western languages have so far proved ineffective. This is due to the fact that the gulf of four centuries has led to a lack of a large number of neologisms in Modern Standard Arabic (MSA) in all disciplines (1).

The rapid development in science and technology has raised terminological problems which even the most highly developed countries are finding difficult to solve. Thus it is easy to visualize the situation in the Arab World, despite the fact that the exhaustive terminology of Arabic left its stamp on technical progress and on the experimental sciences throughout the Middle Ages and until the beginning of modern times.

The terminological problems caused by the scientific and technological advance have not been confined to Arabic. They exist in all language situations to an extent. For example, there are in English well-known differences in the vocabulary referring to cars. British English uses *bonnet*, *bumper*, *boot*, which American English uses *hood*, *fender*, and *trunk*.

The root of the problem is that scientific language needs to be precise (ideally one word for one referent) and language by its nature is not neat and tidy. Geographical factors give rise to different words being

(1) Ibn Abdallah, Abdel-Aziz (1976) Problems of Arabization in Science p. 5.