

THE UNIFICATION OF ARABIC SCIENTIFIC TERMS LINGUISTIC TERMS AS AN EXAMPLE*

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1 The Problem

Every scientist knows that one of the requirements of a strict science is a well-defined and agreed-upon terminology. Modern linguistics as understood by most of its practitioners is no exception. But modern Arabic writings dealing with linguistics do not show any conformity or systematicalness in their terminologies. A foreign term might have (in our data up to ten different equivalents. Examples to the point include:

– The word ‘semiotics’ which has been translated as: *‘ilm ar-rumūz, sīmiyūtiyya, sīmiyā’iyya, ‘ilm al-adilla al-lafziyya, ‘ilm al-adilla, ‘ilm as-sīmiyā’, ‘ilm al-‘alāmāt.*

– The word ‘morpheme’ which has been translated as: *mūrfīm, mūrfi-ma, ṣaygam, ṣarfīyya muğarrada, waḥda ṣarfīyya, ṣarfīm, ‘unṣur dāll, dālla nahwiyya, waḥda binyawiyya suğrā*

– And the word ‘phoneme’ which has been translated as: *fūnīm, fūnī-miyya, ṣawtīm, ṣawt muğarrad, ṣawtam, waḥda ṣawtiyya, ḥarf ṣawtī, lā-fiz, mustaswit, waḥda ṣawtiyya suğrā.*

In literature this abundance of words would be considered a bliss but in a particular science as the linguistics science this is a curse. It seems as if no Arab linguist is talking or listening to his colleagues of the art. This is a sad state of affairs since the Arabic language is the

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unifying factor throughout the Arab world and any linguistic disagreement will only relegate it and build a new babel tower that hinders communication between its different parts.

In this research paper we tried to discover the origin (causes) of this diversity and disagreement and if possible, suggest ways of standardizing Arabic linguistic terms.

2 Methodology

In collecting our data (upon which the research paper is based) we have based ourselves on four bilingual (either English-Arabic or French-Arabic) and one trilingual (English-French-Arabic) linguistics dictionaries. These are:

1. *A Dictionary of Theoretical Linguistics* (English-Arabic with an Arabic-English Glossary) and its cognate *A Dictionary of Applied Linguistics* (English-Arabic with an Arabic-English Glossary) by Mohammad Ali Al Khuli (1982, 1986).

2. *A Dictionary of Modern Linguistic Terms* (English-Arabic and Arabic-English) compiled by a committee of Arab linguists (1983).

3. *Dictionnaire de linguistique* (French-Arabic and Arabic-French) by Abdessalem Mseddi (1984).

4. *Dictionnaire de linguistique* (French-Arabic with an alphabetical list of Arabic terms) by Bassam Baraké (1984).

5. *Unified Dictionary of Linguistic Terms* (English-French-Arabic) by the Arab League Educational, Cultural and Scientific Organization (1989).

For simplicity's sake, these dictionaries will be subsequently referred to (in their given order) as dictionary N°1, dictionary N°2, etc. They have been selected on the basis of the following considerations:

1. The first dictionary draws on the Anglo-saxon linguistic terminology and gives full explanations in Arabic with, sometimes, examples besides the Arabic equivalent term, or as it frequently happens, the equivalent terms. The dictionary also contains a bibliography and many

appendices. It is supplemented by *A Dictionary of Applied Linguistics* by the same author.

2. The second dictionary also draws on the Anglo-saxon terminology. It is characterized by the heavy reliance on arabizing English terms (e.g.: *mūrf*, *brāgmātī*, *simīm*, *fūnīm*).

It has brief definitions, but useful as these are, they remain what they are, i.e. definitions or summary explanations but not labels. E.g.:

phoneme: *al-fūnīm* (*waḥda ṣawtiyya mumayyaza*)

phonology: *al-fūnūlūḡiyā* (*dirāsat an-nizām as-ṣawtī*)

Finally, the dictionary, which is a collective work, contains a select bibliography of Arabic books in the field of linguistics.

3. The third dictionary draws on the francophone linguistic terminology. Mseddi avoids simply arabizing words and goes to great lengths in deriving Arabic words from already existing roots (e.g.: *ṣaklam*, *ṣayḡam*, *waqī'a*, *ṣawtamīyya*, *ṣayḡamīyya*). But the terms he suggests are far from being generally accepted. The dictionary contains a long and comprehensive introduction about terminology.

4. The fourth dictionary provides, sometimes, brief explanations and frequently cites more than one equivalent to a French term. Sometimes, it also provides the context. Furthermore, it contains a bibliography about Arabic, French and bilingual dictionaries besides works of linguistics written in the two cited languages.

5. The fifth dictionary is trilingual. It avoids simply arabizing words and too frequently has recourse to compound words often providing more than one Arabic equivalent to a foreign term.

Since the *Unified Dictionary* is the most recently published of those in our list of dictionaries and emanates from a high authority: the Coordination Bureau of Arabization of the Arab League Educational Cultural and Scientific Organization, we think it convenient to provide here a few additional remarks: According to the compilers of the dictionary, their policy in unifying (linguistics) terms was based on the following criteria:

- preferring the Arabic term to loan words,
- frequency of use,

- singularity of composition,
- easiness of production,
- and the productive nature of the word (*Unified Dictionary*, 8).

But the compilers have, sometimes, failed in their own policy; in the sense that one can find 'better' terms in other (previous) dictionaries which, it seems, have been totally ignored by the compilers. Examples from our data include:

acoustics	'ilm al-aṣwāt al-fīziyā'i
competence	al-malaka al-luġawiyya
lexicology	dirāsat al-mufradāt
morph	ṣūrat ad-dālla, ad-dālla al-mit'āliyya
morpheme	'unsur dāll, dālla nahwiyya
phoneme	wahda ṣawtiyya, ḥarf ṣawtī
phonology	aṣ-ṣawtiyyāt al-waẓīfiyya
pragmatics	dirāsa isti'māliyya, brāgmātiyya
semiotics	'ilm al-adilla, 'ilm as-sīmiyā'
stylistics	'ilm al-uṣlūb
syntax	mustawā t-tarākīb, dirāsat at-tarākīb

(none of which is compositionally single and have been rendered by others using single words); and 'tagmemics' (which is arabized in the dictionary but has been better translated¹ by others as *mawqi'iyya* or *qawālibiyya* using an Arabic word); and 'utterance' together with 'sentence' both of which have been translated as *kalām*:

utterance	<i>kalām, ḥadīṭ</i>
sentence	<i>ḡumla, kalām</i>

Of course, it is far from our intention to claim that these are the only lexicographical works touching upon Arabic linguistic terminology. One might mention, for instance, the contributions of: Zakariyā (1980, 1984), as-Saġrūšnī (1984), al-Fahrī (1986), al-Ḥamzāwī (1987).

Needless to say that if one were to broaden the scope of this research to other fields than linguistics then the list of contributors would

¹ 'Better', i.e. according to their own criteria which are, by the way, fairly agreed upon.

be even longer. It is our hope that the reader will enjoy the excursion in the five dictionaries.

In order to determine the degree of agreement among Arab linguists (as represented by the five dictionary writers) we have originally chosen 60 key (basic) terms (ignoring for the moment their derivatives), all of them found in modern linguistics. In this task we relied on our own intuitions and judgements about the frequency, representativeness and/or importance of linguistic terms. These judgments have been further defined and tested by referring to two glossaries contained in introductory textbooks². Of these linguistic terms, we have excluded 8 terms that, we thought, were well known in traditional Arabic linguistics and have retained their old meanings without any substantial change in modern writings. Thus we ended by having 52 key linguistics terms. We thought that a too systematic method of collecting data³ would not have necessarily touched upon the important issues that we would like to raise in the paper.

It is our intention to consider the equivalent Arabic terms suggested by these dictionaries. Putting the list of dictionaries consulted here on a horizontal axis and the list of linguistics terms on a vertical axis and filling in the spaces with appropriate terms we ended by having a chart like the following:

	dictionary 1	dictionary 2	dictionary 3	dictionary 4	dictionary 5
Term 1					
Term 2					
etc.					

² These are: Akmajjan et al. 1984; and Todd 1984.

³ Such an investigator might, for instance, consider a number of different glossaries and extract the most recurrent terms.

The complete table is reproduced as appendix 1. Here it is sufficient to inform the reader that the following conventions have been observed in the chart:

- The Arabic definite article has been omitted from the Arabic entries whenever possible and so have been, most of the time, the explanations accompanying the suggested equivalents.
- A dash indicates the lack of the English or French entry in the relevant dictionary and consequently the lack of an Arabic equivalent linguistic term.
- It goes without saying that a dictionary frequently gives more than one equivalent (or in this case a synonym) to a foreign entry. It also happens that of two suggested synonyms one might be compound and the other single or one arabized and the other derived, etc.
- Finally, it should be mentioned that the chart refers to only 'basic' terms. We have made this distinction between 'basic' and 'related' terms because it is our intention to handle all related terms by rules so that once a basic term is known (all) related terms can be deduced automatically. (See section 3.2.)

3 Analysis

In order to determine the level of standardization of linguistic terms (i.e. agreement among Arab linguists as far as their terminology is concerned), we considered the recurrence of terms in the five dictionaries from which our data are taken. In order to simplify the analysis we have grouped the findings into cases of total agreement among Arabic linguistics dictionaries (the foreign term has the same suggested Arabic term in all linguistic dictionaries consulted here) and cases of partial agreement in which a term occurs in a number of dictionaries but not in all of them. Cases of partial agreement have been further divided into four types: occurrence in 4 dictionaries, occurrence in 3 dictionaries, occurrence in 2 dictionaries and unique occurrence. The results are as follows:

Cases of total agreement	Cases of partial agreement			Unique occurrence
	Occurrence in 4 dictionaries	Occurrence in 3 dictionaries	Occurrence in 2 dictionaries	
5 instances	8 instances	24 instances	40 instances	145 instances

The above table is not difficult to read. It shows that we have recorded:

- Only 5 cases of total agreement.
- 8 cases of terms occurring in four dictionaries,
- 24 cases of terms occurring in 3 dictionaries,
- 40 cases of terms occurring in 2 dictionaries,
- and 145 terms occurring in only one of the four dictionaries⁴. The results come as a surprise. We knew there was little agreement among Arab linguists on their terminology, but we could not guess at the figures.

3.1 *Why this Babel?*

In our opinion, this disagreement and chaos is due to the diversity of methods used in arabizing (the term is used here in a general sense) scientific terminology: For instance a number of methods are available to the lexicographer for forming new words.

The various methods of forming words in Arabic as represented by the five dictionaries can be seen in appendix N^o2. This latter shows that

⁴ This shows the great number of synonyms that are suggested by each dictionary. Compare an imaginary situation where there is no instance of agreement and where each dictionary provides one translation equivalent term, then the total number of words suggested by all dictionaries would be 260 ($52 \times 5 = 260$). An irredeemable situation indeed.

dictionary N°5 scored the highest number of compounded words⁵ and the highest percentage: There are 40 recorded instances, representing a percentage of 57.97% of the total number of suggested Arabic equivalents in that dictionary to the basic 52 foreign words. Dictionary N°3 has scored the lowest number of instances of compounding and the lowest percentage.

As for giving a specific meaning to a general term the highest score is found in dictionary N°4: There are 21 instances representing a percentage of 25.92. The lowest score is found in dictionary N°5.

As for derivation the highest score is found in dictionary N°3: There are 17 instances representing a percentage of 36.17%. The lowest score is found in dictionary N°2.

As for arabization the highest score is recorded in dictionary N°2. There are 10 instances representing a percentage of 17.24 of the total number of suggested Arabic words. The lowest score is recorded in dictionary N°3 and N°5. There is only one instance of arabization in each of these dictionaries.

As for translating words literally (this process is frequently resorted to when the foreign word is compound as in 'complementary distribution', 'free variation', 'deep structure', 'defective distribution' etc.) the scores are roughly close together.

Finally one ought to mention that 'coining' new words or fetching words in the Arabic (linguistic) heritage are insignificant processes of word-formation in the dictionaries consulted here.

The conclusion to be drawn from this is that (apart from literal translation) there are no guidelines as for using one method or another for forming new words. It is a matter that is left for the general disposition of the lexicographer. For instance, dictionary N°1 relies on compounding and giving a specific meaning to a general term; dictionary N°2 relies on compounding, giving a specific meaning to a general term and arabizing; dictionary N°3 on derivation and giving a specific

⁵ Sometimes it is difficult to distinguish a compound word from a (full) explanation. We take a sequence of words as a compound word whenever the single word is missing.

meaning to a general term; dictionary N°4 on compounding and giving a specific meaning to a general term and, finally, dictionary N°5 relies heavily on compounding.

3.2 Key terms and related terms

The relationship between key terms and related terms can be exemplified by the relationship existing between, for instance, 'acoustics' and 'acoustic', 'stylistics' and 'stylistic', 'functionalism' and 'functionalist', 'morphology' and 'morphological', etc.

Quite naturally, words with a common stem are related in one way or another and this relation, quite expectedly, should be retained in the Arabic language. This is not always the case in the dictionaries consulted here. For instance, we have (Al Khuli, 1982):

acoustic	<i>fīziyā'ī</i>
acoustic features	<i>simāt fīziyā'īyya</i>
acoustic phonetics	<i>'ilm al-aswāt al-fīziyā'ī</i>
acoustic properties	<i>ḥāssiyya sam'īyya, ḥāssiyyāt fīziyā'īyya</i>
acoustics	<i>'ilm as-sam'īyyāt</i>
acoustic structure	<i>tarkīb sam'ī, tarkīb fīziyā'ī</i>

But this is totally unsatisfactory. After having suggested *fīziyā'ī* an equivalent to 'acoustic', the reader discovers that acoustic can also be rendered as *sam'ī*. In fact, acoustic simply means 'related to acoustics' (i.e. that branch of knowledge concerned with the scientific study of sound). Furthermore, 'acoustic properties' are not exactly the same as 'auditory properties' just as 'acoustic phonetics' is not the same as 'auditory phonetics'⁶.

Another example illustrating this time the lack of precision in providing equivalents is the following: Both 'phonetic' and 'phonological' have been rendered in Arabic as *ṣawtī* (*Unified Dictionary of Linguistic Terms*). But any student of linguistics would tell you that 'phonetic' is

⁶ For other examples of failing to preserve the 'word family' see Halil 1987:44-46, 56-57.

related to 'phonetics' and 'phonological' is related to 'phonology' and these two branches of linguistics are quite different! A phonetic approach is not a phonological approach.

Finally, it is clear that in order to preserve the 'semantic family' and the 'derivational family' of a word we need not only an alphabetical general dictionary of linguistics but also, and primarily, an encyclopedic dictionary where related terms are explained in relation to each other and in relation to other words in the same 'semantic family' (Halil 1987:64).

3.3 *What makes the standardization of Arabic linguistic (and scientific) terms so difficult?*

In this paper, it has been suggested that the difficulty is not political or geographical (e.g. vast territories of land and diverse political systems) but one of linguistic choice when sound scientific methods of arabization are lacking. It is not difficult to find or coin new words equivalent to the foreign words; the Arabic language is capable of change and innovation and this facilitated by its many roots, diverse derivational forms and various methods of word-formation. It seems as if the Arabic language is doomed to have several words for the same entity.

Quite surprisingly, Arabic terminologies are frequently characterized by various dualities: duality of Arabic and arabized terms (e.g. *hātif* - *tilifūn*, *mirqāb* - *tiliskūb*, *šurtī* - *būlis*, etc); duality of terms derived from French and terms derived from English (e.g.: *azūt* - *nītrūḡīn*, *īdz* - *sīdā*); duality of single and compound words (e.g. *miḡrār* - *miḡyās al-ḡarāra*); duality of dialectal and 'formal' words (e.g.: *bāṣ* - *ḡāfila*); etc. There are plenty of words to choose among them, but it is difficult to get people agree about them. When the Arabs will be active contributors in the field of scientific research and not only consumers, the terminological difficulty will disappear: People recognize terms put forward by the inventors as they recognize the invention itself.

The suggestions for unifying Arabic scientific terms are many, but they often disagree or contradict each other. The Arabic lexicographer

faced with a new word (i.e. a new concept from a foreign language) would first try to find an equivalent one from the Arabic lexemes (roots) and then proceed to make the necessary derivational operations, e.g.:

plane → *tāra* → name of the agent (*fā'il*) → *tā'ira*

radio → *adā'a* → name of the instrument → (*mif'āl*) → *midyā'*

laboratory → *ihtabara* → name of the place of action → *muhtabar*

But if he does not find an appropriate root, this makes his job a bit more difficult for him, and it is at this stage that he is faced with a number of alternative solutions and he has no preference for one or another since his main task is to find an equivalent word, in whatever way, to the foreign one.

With so many Arab (and foreign) specialists working in the same field – each one of them well acquainted with foreign sources (the matter is even worse when these sources disagree among themselves) but none of them listening to his fellow Arab specialists, it is very difficult, if not impossible, to get a standardized scientific terminology in Arabic. Needless to say that the number of people and organizations involved in arabizing terms and the diversity of their convictions, aims and methods make the unification even more difficult to obtain.

The best thing that can be done by language academies and specialized institutions is not putting forward terms that may not be acceptable to everyone (anyway, a translator or writer cannot wait for someone else to provide him with newly formed equivalent words) but acting as a judge or referee towards the numerous terms advanced by the translators and terminologists and providing these people with guidelines and 'rules' – only by acting so can these institutions retain their credibility and integrity. Still, one has to admit that only time will show what terms will survive and what terms will vanish.

What is needed, then is not a word-for-word translation of European scientific and cultural terms as need arises in a random and unsystematic way but an accepted general framework that allows the formation of new words like that based and Greek affixes in European

languages for instance. In what follows I will try to suggest such a framework meant mainly for the basic linguistic terms.

3.4 Some suggested ideas

3.4.1 Systematically render words with the affix 'ology' and '-mics' (having the meaning of 'the study of') as *-yā'*; e.g.:

lexicology	<i>mu'ğamiyā'</i>
morphology	<i>şarfiyā'</i>
morphophonemics	<i>şarfuşawtiyā'</i>
phonology	<i>sawtiyā'</i>
semiology	<i>sīmiyā'</i>

(on the analogy of Arabic words such as *kīmiyā'* and *fīziyā'*.)

3.4.2 Systematically render words with the affix '-tics' as *-yāt*; e.g.:

acoustics	<i>şam'iyyāt</i>
linguistics	<i>lisāniyyāt</i>
phonetics	<i>sawtiyyāt</i>
pragmatics	<i>dar'i'iyāt</i>
semantics	<i>dalāliyyāt</i>
semiotics	<i>sīmiyā'iyyāt</i>
stylistics	<i>ustūbiyyāt</i>

3.4.3 Systematically render words with the affix '-ism' as *-iyya*; e.g.:

functionalism	<i>waz'ifiyya</i>
generativism	<i>tawlīdiyya</i>
structuralism	<i>binyawiyya</i>
transformationalism	<i>tahwīliyya</i>

3.4.4 Systematically render words with the affix '-eme' as *-īm*; e.g.:

morpheme	<i>şarfiīm</i>
phoneme	<i>şawtiīm</i>
sememe	<i>sīmiīm</i>

3.4.5 Systematically render words with the affix '-ist' as *-iyya* or *-ī*; e.g.:

functionalist grammar	<i>nahw waz'ifi</i>
generativist approach	<i>muqāraba tawlīdiyya</i>
structuralist approach	<i>muqāraba binyawiyya</i>

3.4.6 Systematically render words with the affix '-ic' as *-ī* or *-iyya*; i.e.: in forming a relative adjective to a word having plural morphology in Arabic relate to the singular form of that word; e.g.:

ethnolinguistic/	<i>aṭnūlisānī</i>
ethnolinguistics	<i>aṭnūlisāniyyāt</i>
linguistic	<i>lisānī</i>
phonetic	<i>ṣawtī</i>
pragmatic	<i>darī</i>
psycholinguistic	<i>sīkūlisānī</i>
semantic	<i>dalālī</i>
semiotic	<i>sīmīyā</i>
sociolinguistic	<i>sūsiyūlisānī</i>
stylistic	<i>uslūbī</i>

N.B. Exceptionally 'acoustic' is rendered as *sam'iyyātī* / *sam'iyyātiyya* in order to avoid confusion with 'auditory': *sam'ī* / *sam'iyya*

3.4.7 Systematically render words with the affix '-logical' as *-yā*'i; e.g.:

morphological	<i>ṣarfiyā</i> 'i
phonological	<i>ṣawtiyā</i> 'i

3.4.8 Admit coined words as these are shorter and more specific; e.g.:

ethnolinguistics	<i>aṭnūlisāniyyāt</i>
psycholinguistics	<i>sīkūlisāniyyāt</i>
sociolinguistics	<i>sūsiyūlisāniyyāt</i>

3.4.9 Systematically render the affix 'allo-' as *mutaḡayyir*; e.g.:

allomorph	<i>mutaḡayyir ṣarfi</i>
allophone	<i>mutaḡayyir ṣawtī</i>

3.4.10 Systematically render the affix '-logist' having the meaning of 'a specialist in' as *-yā*'i; e.g.:

phonologist	<i>aṣ-ṣawtiyā</i> 'i
morphologist	<i>aṣ-ṣarfiyā</i> 'i

(Confusion with the adjectival form is cleared up by the use of the definite article.)

On considering further data we can formulate the following additional guidelines:

3.4.11 Systematically render words with the affix '-ity' as *-iyya*; e.g.:

acceptability *maqbuliyya*

readability *maqrū'iyya*

3.4.12 Systematically render words with the affix '-er' or '-or' using the form of *ism al-fā'il*; e.g.:

binder *rābit*

governor *'āmil*

3.4.13 Systematically render words with the affix '-ee' using the form of *ism al-maf'ūl*; e.g.:

bindee *marbūt*

3.4.14 Systematically render words with the affix 'un-' as *lā-*; e.g.:

unacceptable *lāmaqbul(a)*

unacceptability *lāmaqbuliyya*

as in *lāmaqbuliyyat al-ḡumla nahwiyyan*

(with the possibility of preceding it with the definite article, e.g.: *al-lāmaqbuliyya*.)

3.4.15 While translating the affix '-able', choose one of the most convenient following options:

a. *al-fi'l al-mudārī' al-mabnī li-l-maḡhūl* as in:

readable *yuqra'* (as in 'This text is readable' *hādā n-nass yuqra'*)

which is different from *hādā nass maqrū'*

writable *yuktab*

b. *ism al-maf'ūl* as in:

acceptable *maqbul*

reliable *mawṭūq bihi*

3.4.16 Systematically render words with the affix '-al' as *-ī*, or *-iyya*; e.g.:

bilabial *šafatānī*

(N.B. the possibility of relating to the dual as well as to the plural and the singular)

derivational *ištiqāqī*

glottal *ḡanḡarī*

grammatical *nahwī*

inflectional *taṣrīfī*

palatal *ḡārī, ḡanakī*

labial *šafawī*

3.4.17 Systematically render words with the affix 'ed' using the form of *ism al-maf'ūl*; e.g.:

labialized	<i>mušaqqa</i>
rounded	<i>mudawwar</i>
voiced	<i>mağhūr</i>

3.5 Two systems of morphology or one?

As stated before, what is needed is a framework based, on the one hand, on *awzān al-muštaqqāt* and, on the other hand, on a system of affixation like that of European languages for instance. Of course, we are not calling for the projection of the above mentioned system into Arabic in any haphazard way. We acknowledge the specificity of each language and its particular way of representing reality and forming words (Halīl 1987:32-33). We also acknowledge the fact that some languages are concatenative whereas others are non-concatinative such as Arabic where derivation is the primary word-formation process (Mseddi 1984: 38-39). But given the fact that the number of word-patterns in Arabic is limited in number and incongruous either in number or in meanings with the prefixes and suffixes used in scientific terms we are led to wonder: how many word-patterns do we need? Ideally, and for the sake of the singularity of scientific terms, each meaningful affix should correlate with a word-pattern in Arabic at least in the context of the arabization of scientific terms. In fact, this is what has been advocated by some linguists when they call for devoting word-patterns to specific meanings (i.e. *taḥṣīṣ aṣ-ṣiyag̃*) such as devoting the form *fi'āla* to a craft or science as in *ṣiwāta* and *ṣirāfa*, that is to say, in other words, equating the form with the suffix '-ology'. Others think it necessary to increase the number of word-patterns (*ziyādat aṣ-ṣiyag̃*)⁷.

From the most cursory view it becomes clear that with so few recognized regular word-patterns in Arabic (*awzān qiyāsiyya*), one cannot, obviously, equate all the senses carried by the suffixes and prefixes used

⁷ For a brief discussion see for instance al-Idrīsī, *Iṣtiqāq* 119-120.

in the formation of scientific terms with word patterns – otherwise a particular word-pattern such as *al-masdar aš-šinnā'ī* might have up to 7 senses. In our data it renders the following affixes (-ics, -ology, -eme, -ism, -graphy, -ist, -ity);

-ics: as in	stylistics	<i>uṣlūbiyya</i>
	pragmatics	<i>dirā'iyya</i>
-ology: as in	semiology	<i>'alāmiyya</i>
	morphology	<i>ṣaygamiyya</i>
-eme: as in	phoneme	<i>fūnīmiyya</i>
	morpheme	<i>ṣarfīyya muğarrada</i>
-ism: as in	functionalism	<i>wazīfiyya</i>
	structuralism	<i>binyawiyya</i>
-graphy: as in	lexicography	<i>qāmūsiyya</i>
-ist: as in	structuralist approach	<i>muqāraba binyawiyya</i>
-ity: as in	acceptability	<i>maqbuliyya</i>

In our framework (of translation) it indicates three senses (the -ity notion, the -ist notion and the -ism notion) – one of which simply coincides with the usual way of forming *an-nisba*.

With such a state of affairs, obviously, the word-pattern has lost all meanings. It is clear, then, that we are faced with two options: either to increase the number of regular word-patterns or to adopt a system of affixes.

In fact, there is no major difference between these two systems. For instance, is the form *fa'līm* as in *ṣarfīm* and *ṣawtīm* a new word-pattern or is it a root + suffix? (The same thing applies to the form *fa'liyā'* and *fa'liyyāt* as in *ṣarfīyā'* and *ṣawtiyyāt*). We are, rather, inclined to think of such forms as consisting of root plus suffix – at the cost of having a dual system of morphology because it allows the formation of new words from quadriliteral words and more.

Of the Greek and Latin roots commonly used in the construction of scientific and technical terms as prefixes and suffixes, Ahmad Sh. Al-Khatib has listed 243 such affixes in his *A New Dictionary of Scientific and Technical Terms* (1971, 1982). Of these, we have subtracted 57 as the most commonly used in linguistics. We felt it necessary to provide

translations (even tentative as these are) and examples of these affixes because these latter ones are, sometimes, at the very basis of the systematicalness of a science as can be seen in the following examples:

phonology → phone → phoneme → allophone
 morphology → morph → morpheme → allomorph
 intonation → tone → toneme → allotone
 graphology → graph → grapheme → allograph

In the absence of a recognized and unified translation of the affixes no unification of Arabic scientific terms can be achieved. What happens is that the same prefix or suffix will be translated in various ways as in the following examples with the prefix 'allo-' (with the meaning of a contextually determined variant):

allophone *ṣawtam ta'āmuli* (Mseddi's dictionary)
 allosème *ma'nam siyāqī* (Mseddi's dictionary)
 allophone *mutaḡayyir ṣawtī* (Al Khuli's dictionary)
 allophone *badal ṣawtī* (*Unified Dictionary*)
 allophone *badīl ṣawtī* (Baraké's dictionary)

The analysis of the Greek and Latin roots just discussed above revealed that it may be possible to find equivalents (unified translations) of those that have acquired the status of scientific (linguistic) affixes, such as allo-, -eme, etc. But this is not possible for those affixes that are also part of everyday language (i.e. those that do not have a single specific meaning). We call the first type systematic affixes and the second type non-systematic affixes.

As an example of a systematic affix we have 'pro', e.g.:

pro-locative	<i>badīl makānī</i>
pro-adjective	<i>badīl an-na't</i>
pro-constituent	<i>al-mukawwin al-badīl</i> or <i>badīl al-mukawwin</i>
pro-verb	<i>badīl al-fīl</i>

(with the exception of pro-noun **badīl al-ism ay aḡ-damīr*. The exception is due to the fact that the word *damīr* has already been used.)

As an example of a non-systematic affix we have 'dis-', e.g.:

displaced language	<i>luḡa muzāḡa</i>
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displaced speech	<i>al-kalām ‘alā ġayr al-ḥādir</i>
disambiguate	<i>izālat al-ġumūd</i>
displacement	<i>ibdāl makānī, izāḥa</i>
dissimilation	<i>mubāyana, taḥāluḥ</i>
discontinuous	<i>munfaṣil, mutaḡazzi’</i>

4 Conclusion

Obviously, one advantage of such a ‘system’ of translating scientific terms is that words with a similar form in, let’s say English, carrying within themselves a shared meaning will retain, when translated, a similar form. E.g.:

morph-eme	<i>mūrfīm</i>
phon-eme	<i>ṣawtīm</i>
sem-eme	<i>sīmīm</i>

(‘eme’: the smallest unit of morphological, phonological, and semiotic analysis.) In this way, the lexicographer knows before hand that a word with ‘eme’ will be translated as *-īm*; a word ending with ‘-tics’ will be translated as *-yāt*, and a word ending with ‘-ology’ will be translated as *-yā’*, etc.

What ought to be stressed here is that this is not simply a matter of form, it is rather part of the systematicalness of the linguistic science as we explained before.

Furthermore, with this system we can, sometimes, improve on foreign terminologies. For instance, we can make irregular forms in other languages regular in Arabic. E.g.:

phonology (the study of the rules governing the way sounds are combined to form words in a language): *ṣawtiyā’*

but syntax (the study of the rules governing the way words are combined to form sentences in a language): *tarkībīyā’*

A final word: In this paper, we have started by considering the terminological stocks suggested by five dictionaries. These have provided us with a corpus and a stimulus but, on the basis of certain considerations, we have ended by suggesting our own terminology.

APPENDIX I

Some Basic Linguistics Terms and their Arabic Equivalents

	AL KHULI	COMMITTEE	MSEDDI	ARAB LEAGUE	BARAKĒ
1. acoustics	'ilm as-samiyyāt	akūstikā, 'ilm as-sawt (al-fiziyā'i) allumūrf	samiyyāt šaklam	'ilm as-sawt al-fiziyā'i badal šarfī	'ilm as-samiyyāt badil šarfī, badil šaklī
2. allomorph	allumūrf, mutağayyir dalāli	allūfūn	šawtam tā'ammulī	badal šawtī (wağb adā')	badil šawtī aw lafzi
3. allophone	mutağayyir šawtī	ħubsa	ħubsa	ħubsa	ħubsa, ufaz, 'ıyy
4. aphasia	ħubsa	mumātala, tamā'ul	idğām	taqrīb (šawtī), mušakala	idğām, muğawara, mumātala
5. assimilation	mumātala	tabwīl fī n-nizām ar. ramzi	—	tabwīl al-wağf	—
6. code-switching	tabawwul luğawī	qudra, kefāya (luğawıyya)	qudra	malaka luğawıyya	kefāya (luğawıyya), maqdıra (luğawıyya)
7. competence	maqdıra (luğawıyya)	tawzī' takāmulī	tawzī' takāmulī	tā'āqub bi-t-tamāfī	tawzī' takāmulī
8. complementary distribution	tawzī' takāmulī	šāmit	ħarf	šāmit, ġamid	šāmit
9. consonant	šāmit, ħarf šāmit	tawzī' nāqış	tawzī' nāqış	istiğraq // nāqış	tawzī' // nāqış
10. defective distribution	—	šā'it murakkab	ħaraka muzdawwiġa	mušawwit muzdawwiġ	šā'it muzdawwiġ, šā'it tūnā'i
11. diphthong	šā'it, šā'it tūnā'i				

12. distinctive feature(s) *sima mumayyiza* *malāmih mumayyiza* *sima tamyizīyya* *sigāt mumayyiza* *sima mumayyiza, muḥāriqa*
13. ethnolinguistics *‘ilm al-luġa al-atnūli- ġī, ‘ilm al-luġa al-irqī taġġuyur hurr* *‘ilm al-luġa al-atnūliġī lisāniyyāt aġnāsīyya* *lisāniyya irqīyya, lisāniyya atnūliġīyya*
14. free variation — *ħurriyyat at-tawāruḍ* *ħurriyyat al-wuqū‘/al-wurūḍ, taġġuyur/tabaddul ħurr*
15. glottal/glottis *ħanġari / mizmār, zardama* *ħanġari / mizmār / futħat al-mizmār* *ħanġari / futħat al-mizmār* *zardama, ħanġari / zardama, mizmār, fī l-ħanġara*
16. idiolect *labġa fardīyya, lukna* *labġat al-fard* *labġa fardīyya* *labġat fard, labġa fardīyya*
17. immediate constituent(s) *mukaawināt mubašira* *mukaawin mubašir* *mukaawin mubašir* *mukaawināt mubašira*
18. jargon (= argot) *raṭāna* *raṭāna* *raṭāna* *raṭāna, urġa*
19. lexicography *šinā‘at muġamīyya* *šinā‘at al-muġam* *qāmīsiyya* *šinā‘at al-ma‘āġim* *muġamīyyāt*
20. lexicology *‘ilm al-mufradāt* *dirāsāt al-mufradāt* *dirāsāt al-mufradāt (film matn al-luġa)* *‘ilm al-mufradāt, liġza*
21. linguistics *‘ilm al-luġa* *‘ilm al-luġa* *lisāniyyāt* *‘ilm al-luġa, lisāniyya, al-suniyya*
22. minimal pair(s), minimal contrast *taqābul ašġar, tunā‘īyya suġrā* *azwoġ duryā*
23. morph *mūrf* *mūrf* *tašakul* *mūrf, wabħa birtawīyya*
24. morpheme *mūrfim, mūrfima, saftīyya muġarrada,* *mūrfim, saġġam* *wabħa nabwiyya* *mūrfim, wabħa birtawīyya suġrā*

25. morphology	šarṭim 'ilm as-šarṭ	'ilm as-šarṭ, biryat al-kalima	seygamīyya	'ilm as-šarṭ	'ilm as-šarṭ
26. morphophoneme	funīm sarṭi	wahda šawīyya · sarṭiyya	—	harṭ ganbi (wahda šawīyya sarṭiyya)	—
27. morphophonemics	'ilm al-funīmāt as-šarṭi	'ilm al-ašwāt as-šarṭi	—	'ilm al-ašwāt as-šarṭi	'ilm ašwāt al-binnā
28. performance	adā'	adā'	ingāz	adā'	adā' / ingāz (luḡawi)
29. phone	šawṭ (kalāmī, luḡawi)	šawṭ kalāmī	šawṭ	isāla, šawṭ muḥassal	šawṭ (kalāmī)
30. phoneme	funīm, funīmīyya, šawṭim, šawṭ muḡarrad	funīm	šawṭam	wahda šawīyya, harṭ šawī (funīm)	funīm, laḡi, muḥassawī, wahda šawīyya šuḡrā
31. phonetics	'ilm al-ašwāt, šawīyyāt	'ilm al-ašwāt (al-luḡa- wīyya)	šawīyyāt	šawīyyāt	'ilm al-ašwāt
32. phonology	'ilm al-funīmāt	funīmūlūḡiā	šawṭamīyya	šawīyyāt wazīṭiyya	šiwāta, 'ilm wazā'if al-ašwāt
33. phrase	'ibāra, šibbu ḡumla	ta'bīra	munazzam ismī	maḡmū'a, tarkīb	tarkīb
34. phrase structure rules/grammar, rewrite rules	qawā'id at-tarākīb al- 'ibāriyya	naḡw al-bīna an-nizā- mīyya	qā'idat al-istikāb	naḡw tafṭī'i li-l-binnā at-tarkībīyya, qā'idat al-bīna at-tarkībīyya	qawā'id i'adat al-keitāba
35. pragmatics	'ilm ar-rumūz	—	darā'iyya	dirāsa isti'māliyya/ brāḡmāṭiyya	—
36. psycholinguistics	'ilm al-luḡa an-naṣī	'ilm al-luḡa an-naṣī	lisāniyyāt naṣīyya	lisāniyyāt naṣīyya	lisāniyya naṣīyya, 'ilm al-luḡa an-naṣī
37. semantics	'ilm ad-dalāla, 'ilm al-mā'āni	'ilm ad-dalāla	dalāliyya	'ilm al-mā'āni	'ilm ad-dalāla (ilm al-mā'āni)
38. sememe	šimīm (al-wahda al- muḡarrada li-d-dalāla)	šimīm	maḡlam	wahda dalāliyya, mā'nā murakkab	maḡlam (wahda muḡarrada li-d-dalāla)

39. semiology	'ilm ar-rumūz	'ilm ar-rumūz	'alāmiyya	(= semiotics)	sīmiyā', siyāma
40. semiotics	'ilm ar-rumūz	sīmiyūtiyya	sīmiyā'yya	'ilm al-adilla, 'ilm as-sīmiyā'	'ilm ar-rumūz, 'ilm al- 'alāmāt, sīmiyā'yya
41. sociolinguistics	'ilm al-luġa al-iġtimā'i	'ilm al-luġa al-iġtimā'i	lisāniyyāt iġtimā'yya	lisāniyya iġtimā'yya	lisāniyya iġtimā'yya
42. speech act	fil kalāmī	'amal/hadaṭ kalāmī	hadaṭ al-kalām	_____	fil/hadaṭ kalāmī, fil/hadaṭ kalām
43. speech community	ġamā'a luġawiyya	mūġtamā' kalāmī	ġamā'a luġawiyya	mūġtamā' kalāmī	ġamā'a luġawiyya, maġmū'a lisāniyya
44. speech therapy	'ilāġ 'uyūb an-nuṭq	'ilāġ an-nuṭq	'ilāġ an-nuṭq	_____	biryya, tarkīb
45. structure	tarkīb, biryya	biryya, tarkīb	biryya	binā', binyya	ustūbiyya,
46. stylistics	'ilm al-asālīb,	'ilm al-uslūb,	uslūbiyya	'ilm al-uslūb	'ilm al-uslūb
	'ilm al-balaġa	uslūbiyya		maqtā'	maqtā'
47. syllable	maqtā'	maqtā'	maqtā'	maqtā' šaw'i	
48. syntax	'ilm an-naḥw, naḥw,	nazm al-ġumla	tarkīb	muṣawwa' at-tarākīb; dirāsāt at-tarākīb	'ilm an-naḥw
	nazm al-kalām,				
	binā' al-ġumla				
49. system	nizām	nizām	nizām	nizām	nizām, nasaq
50. tagname	qālib	tegmim	waqī'a	taglejmim	qālib
51. utterance	qaww; nuṭq	maniġq	maḥfūz	kalām, hadiṭ	qaww, maniġqa, 'ibāra, kalām, hadiṭ
52. vowel	šā'it	šā'it	ḥaraka	muṣawwit	šā'it, muṣawwit

APPENDIX II

Table of the distribution of the various methods of Arabic word-formation

	Dictionary 1		Dictionary 2		Dictionary 3		Dictionary 4		Dictionary 5	
	Instances	%	Instances	%	Instances	%	Instances	%	Instances	%
Compounding	29	42.64	26	44.82	8	17.02	26	32.09	40	57.97
Giving a new ...	14	20.58	11	18.96	12	25.53	21	25.92	9	13.04
Derivation	8	11.76	4	6.89	17	36.17	12	14.81	7	10.14
Arabization	6	8.82	10	17.24	1	2.12	6	7.40	1	1.44
Translation	8	11.76	7	12.06	7	14.89	10	12.34	9	13.04
Coinage	1	1.47	0	0	0	0	0	0	0	0
Heritage	2	2.94	0	0	2	4.25	6	7.40	3	4.34
Total	68		58		47		81		69	

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