MORPHOPHONEMICS OF LOANWORDS IN ARABIC

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A natural by-product of translation is the adoption of technical, scientific, and culture-specific terms for which ready-made equivalents are either unavailable or unpopular. The infiltration of loanwords into standard Arabic is a landmark of the flexibility of Arabic morphology. Yet, the methods of analyzing assimilated (i.e., Arabicized) loanwords often assumed an impressionistic, arbitrary nature. The current study attempts to linguistically diagnose systematic phonological and morphological changes and provide a typology for classifying them, while also accounting for anomalies. The study adopts a comparative morphophonemic approach to SL/TL forms from the point of view of lexical etymology and the methodology of classical philology and modern linguistics.

0. Introduction

‘A pure language is a poor language’

A natural by-product of translation is the adoption of technical, scientific and culture-specific terms for which ready-made equivalents are either unavailable or unpopular. The process whereby a particular language incorporates in its lexicon words from another language is technically designated by such terms as ‘borrowing’, ‘lending’, or ‘adoption’, though the latter is usually the case (see Ali 1987: 87).

This study analyses a corpus of loanwords in Arabic with the purpose of investigating the phonological and morphological adaptations that are applied to the incoming lexical items. The term ‘adaptation’, as Holden explains, refers to the process in the recipient language of altering the phonological (and at times the morphological) make-up of the loanword (see Holden 1972:4). ‘Adoption’, on the other hand, is a term that describes the borrowing into the recipient language of loanwords while preserving their original form and pronunciation as per the donor language (Thornberg 1980:524). In Arabic, some loanwords are fully naturalized and thus become the roots for further derivations. Others, however, remain foreign or partially translated.

1. The concept of ‘Arabicization’ and the status of loanwords

Arabicization is a process whereby foreign words are incorporated into the language with phonological or morphological modifications so as to be congruent
with Arabic phonological and morphological paradigms, hence the term ‘analogue
Arabicization’. Yet, whereas Sibawayh (author of *al-Kitab*) and al-Jawaliqi
(author of *al-Mu’arrab*) recognize all foreign vocabulary used by the Arabs, yet
distant from Arabic models some of it might be, al-Hariri and al-Zamakhshari
advocated that loanwords that violate Arabic patterns degenerate the language (see
Ali 1987:87). Al-Hariri, for example, includes in his treatise on solecism a number
of borrowings that are in breach of Arabic patterns (Ali 1987:97-8)

<table>
<thead>
<tr>
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<td>Loan-form</td>
<td>Pattern</td>
<td>Loanword</td>
</tr>
<tr>
<td>هانون /hawn/</td>
<td>قاعل</td>
<td>هانون /hawun/</td>
</tr>
<tr>
<td>‘mortar’</td>
<td>/faʔal/</td>
<td>/fuʔal/</td>
</tr>
<tr>
<td>دستور /dastur/</td>
<td>فطول</td>
<td>دستور /dustur/</td>
</tr>
<tr>
<td></td>
<td>/faʔul/</td>
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</tr>
<tr>
<td>سردار /s̱rdab/</td>
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<td>سردار /s̱rdab/</td>
</tr>
<tr>
<td>‘cellar’</td>
<td>/faʔal/</td>
<td>/fuʔal/</td>
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</table>

Table 1. Non-analogical patterns of loanwords

With regard to methodology, Eid propounds that Arabization is, by and
large, sanctioned by common usage and does not follow any rigid analogical rules.
While early philologists were busy at work in their attempt to lay the canons for
the process of Arabicizations by describing the already-assimilated words, their
ultimate goal was to formulate rules in line with Arabic morphological patterns.
Such rules were, however, vulnerable to exceptions (Eid 1980:118). This could be
accounted for by the fact that their data was in itself inconsistent and marred by
anomalies. They were simply applying rules of Classical Arabic morphology to
foreign lexical items that have their own rules in the source language. Important in
this context is Yowell Aziz’s (1983:80) view on the application of ancient methods of
transliteration:

... the ancient Arabic writer was not always consistent in his (translitera-
tion) methods. Some of the ancient practices are no longer suitable...

In a nutshell, those who undertook the task of translating foreign books into
Arabic, or those who came into contact with speakers of other languages, had no
preset rules for Arabicizing foreign words. The transliterated form of a given
loanword was, thus, in accordance with their best knowledge of its pronunciation
(Eid 1980:118). At times, some translators were not adequately fluent in the source
language, and, therefore, the transliteration form of a given loanword may be the
end product of a mispronunciation rather than any real phonological or morpho-
logical modifications.
2. Types of phonological and morphological changes in loanwords

This section examines systematic segmental or suprasegmental alterations in loanwords. The aim is to determine whether such changes are rule-governed in view of the canons of Arabic phonology and morphology. Changes may range from assimilation, dissimilation, metathesis, and elision to doubling or replacing one or more segments of the original. In his book *al-Kitab*, Sibawayh (1317 A.H.: 342) remarks that

*[the Arabs] often change the condition of a word from what it was in the foreign language by assimilating to Arabic those letters which are not Arabic and replacing a letter, though it occurs in Arabic, by another one. Furthermore, they change the vocalization as well as the position of augmentative letters without attaining the Arabic word structure. For after all, it is a word of foreign origin whose power to attain the Arabic word structure or not, as in the case of أَمَرُ /ajur/ 'red tile', إِبْرَاهِيمٌ /?)brahim/, إِيْسُأَمِلٌ /?brisAm/ 'silk', إِسْمَأَعِيلٌ /?sma?il/ 'pants', سَرَاوِلٌ /sAravil/ 'pant', or فَيْرُوزٌ /fayruz/ 'turquoise', and كَهْرَمَانٌ /kAhrman/ 'amber'.*\(^1\)

Al-Karuri (1986:351) on the other hand, ascribes all changes that take place in loanwords to one governing criterion. He defines this as the tendency by the Arabs to attain sound harmony.

2.1. Sounds existing in both the loanform and Arabic, yet are replaced by similar sounds of the same natural class \(^2\)

Sibawayh (1317 A.H.: 342-3) hints at such segmental changes in his book *al-Kitab*:

‘Often they change the combination of a word from what it was in the foreign language, by assimilating to Arabic letters such as are not Arabic, and replacing a letter, even though it be like Arabic, by another one.’ But, they may have a noun unchanged when its letters are like theirs.\(^3\)

He (Shayr 1980:127) further describes some irregular changes of loanword sounds that have Arabic counterparts. For instance, he cites the word سَرَاوِلٌ /sAravil/ ‘pants’ (from شَوَأَوْلِ /?Aravil/ ‘pants’), in which the ط /?/ was replaced by a س /s/, and the Persian سَرَوْلَ /sAravil/ ‘a ladle’, which was Arabicized as قَفْشِيللٍ by replacing the ك /g/ by a ق /q/, the ج /j/ (or rather ج /?) by a ش /s/, and the final ذ /z/ by a ل /l/ (by regressive assimilation under influence of the original ل /l/).

Al-Khafaji (1371:4) remarks that irregular changes of loanword sounds that have indigenous counterparts are confined to the ج /?/، س /s/، ط /?/، غ /?/، ل /l/، and the ج /?/. Yet, al-Jawaliqi (1966:90, 118, 209, 221) cites instances of similar cases. For example, he traces the origin of the word التوْ /tu:/ ‘rasberry’ to the Persian التو /tu/ (i.e. ت /t/، ح /?/، خِبدَ /h?rba/ ‘chameleon’ to Persian خِبَدَ /h?rba/ (i.e. خ /x/، ح /?/، ت /t/، ط /?/، ث /?/)، the word الطَّابِق /tabiq/ ‘frying pan’ to Persian طابق د /tabq/ (i.e. ت /t/، ط /?/، ث /?/). Indeed, these sounds, along with those mentioned by Sibawayh and Al-Khafaji, constitute but few members of a larger group. For instance, in the course of our study we
came across some frequent changes of foreign segments that could have been retained intact by dint of having corresponding Arabic equivalents. Some of these segments/sounds include the following:

A. Consonants

(1) Hamza:

In Persian, a "hamza" is often replaced by other segments:

1/2/ - ع /Ω: akhatis (Greek) – ع /Ω: akhatis (Greek) – ع /Ω: akhatis (Greek)

2/ - غ /Γ: 1/2/ - غ /Γ: thiryakos (Greek)

3/ - ث /Δ: 1/2/ - غ /Γ: thiryakos (Greek)

4/ - ج/Δ: 1/2/ - غ /Γ: thiryakos (Greek)

Similarly, the hamza (or its equivalent) is velarized in loanwords from other languages (Holden 1972: 4).

5/ - خ /Γ: 1/2/ - غ /Γ: thiryakos (Greek)

6/ - د/Δ: odor (Syriac)

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/d/ - moda (Italian) - /mudˤ/ 'fashion'
/δ/ - /θ/ - /δAw加州/ (Persian) - /θAw加州/ 'dill'
/r/: /q/ - /r/ - /sDarar/ (Persian) - /sDar/q/ 'pavilion'
/r/- /q/ - /kenda/ - /kanda/ (Persian) - /kanda/ 'huge'
/m/: - /barmil/ (i. e. 2nd /r/- / m/)

/z/: /dʒ/ - /zangAl/ (Persian) - /dzAldzAl/ 'a little bell'
/s/: /sAr/ - /sAmar/ 'despicable'
/θ/: /θaruq/ - /θaruq/ 'despicable'
/θ/: /δ/ - /hAr/ (Hebrew) - /hAr/ 'thicket or woodland'
/s/: /qachicho/ (Syriac) - /qissis/ 'priest'

/γ/: /γadich/ (Hebrew) - /γadich/ 'grave'
/γ/: /γ/ - /γ/ 'outo' (Syriac) - /tubut/ 'idol or seducer'

/θ/: /θ/ - /θArBuwan/ (Persian) - /θurd3uwan/ 'purple'
/θ/: /θ/ - /θ/ 'outo' (Syriac) - /tubut/ 'idol or seducer'

/f/: /b/ - /balBam/ 'phlegm'
/f/- /θ/: /θum/ 'garlic'
"/k/: /k/ - /k/ - /k/ 'bread tin'
(16) /l/: there are no consistent cases of ل segmental changes:

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Persian</th>
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<tbody>
<tr>
<td>/l/ - 1/ل/</td>
<td>/l/ - 1/ل/</td>
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<tr>
<td>/l/ - 2/ل/</td>
<td>/l/ - 2/ل/</td>
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<td>/l/ - /ل/</td>
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(17) م /m/: n /n/: pamodora (Italian) - بندورة /bəndurə/ ‘tomato’

(18) ن /n/: م /m/: جاباز /gâbâz/ (Persian) - /ɡâbâz/ ‘gynastic’ (alternatively pronounced جيترا /gītrā/)

(19) ﺡ /h/: ﺡ /h/: ﺡ /h/: رتینج /ratintosh/ ‘resin’ (here the final sound /e/ was treated on par with ﺡ /h/).

A NOTE ON ﻤ ﻤ /h/ IN PERSIAN LOANWORDS

Sibawayh (1317A.H.: 342-343) remarks that Persian speakers replace ﻤ ﻤ /h/ by either a هاء /ʔ/ or a ي /y/ in fast speech. Thus, the Arabs replace final Persian ﻤ /y/, which contravenes Arabic morphological restrictions on final segments, by its nearest equivalent(s), viz., the ﺡ /dʒ/ or alternatively the گ /k/ or the ﺪ /q/. In other words, final Persian ﻤ /h/ which is replaced in Arabicized loanwords by a هاء /ʔ/ or ﺡ /dʒ/ or /h/or ﻤ /y/ or ﻤ /z/ or ﺪ /q/ or گ /k/ (see above under 19; ﺡ /h/ is originally a ﻤ /y/ and not a هاء /ʔ/).

Al-Karuri. (1986: 390) however, traces the origin of the final Persian ﻤ /h/ to Middle (pahlavi) Persian in which the final ﻤ /h/ was pronounced as گ /k/ (which could, in turn, be the Persian گ /g/) the change is, therefore, phonologically warranted). Further, he notes that the final ﻤ /h/ was at times replaced by a ﻤ /dʒ/ or Square /q/ in order to show inflectional endings. In some cases, it was mistaken for the feminine ﺮوزن /ruzn̄/ /ruznət/ ‘a hatch’.
Ali (1987:109-10) attributes such changes of foreign sounds which have native Arabic counterparts to ‘the tendency of Arabic sounds to combine in certain sequences rather than in others’ (i.e., phonotactic cluster sequences). With regard to the velarization of sounds like ك /k/، س /s/، د /d/، ت /t/، and the hamza by replacing them with their emphatic counterparts, viz. ط /t/، ض /d/، ق /q/، ع /u/، ص /s/، and ق /q/، and س /s/، س /s/، ط /t/، ت /t/، respectively, he observes that ‘early Arabs were keen to preserve the character of Arabic. Emphatic sounds, being among the salient features of Arabic, must thus have been felt to be more capable of embodying this distinction rather than the non-emphatic which are common to most languages’. In other words, whether the Arabs consciously or subconsciously velarized the س /s/، د /d/، ت /t/، and the ك /k/، their aim was to exploit the phonological potentials of the language in order to give loanwords an Arabic characteristic (El-Sheikh 1977:440).

B. Vowels

The earliest reference made to the change of vocalization while Arabicizing loanwords is to be found in the book of Sibawayh (1317 A.H.: 343):

Further, they change the vocalization as in زور /zawr/ and أشوب /ashub/ which are rendered as زور /zur/ ‘falsehood’ and أشوب /ashub/ ‘mixture’.

B.1. Short vowels

Here, we will use Arabic approximants to represent foreign vowels for reasons of uniformity.

(1) فتحة /a/(or its near equivalent):

(1.1) ألف /a/: bus (English) – باص /baṣ/ (instead of the possible form بص /baṣ/)

(1.2) ضمة /u/: khabast (Ethiopic) – خز /χubz/ ‘bread’

(1.3) كسرة /i/: cambiale (Italian) – كميلة /kimbiyalah/ ‘bill of exchange’

(2) ضمة /u/(or its near-equivalent):

(2.1) ضمة /u/: gaborouto (Syracian) – جروت /dʒabrur/ ‘omnipotence’

(2.2) كسرة /i/: ovrizon (Greek) – أيريز /əibriz/ ‘pure gold’

(2.3) ضمة /u/: neon (English) – نيون /niyun/ instead of نين /niyun/

(2.4) كسرة /i/: mangonan (Greek) – منجننيق /mændʒəniq/ ‘mangonel’

(3) كسرة /i/(or its near-equivalent):

(3.1) كسرة /i/: enchelis (Greek) – ألكليس /əlnqalis/ ‘cell’

(3.2) كسرة /i/: isotiria (Greek) – أسطورة /əstʊsturə/ ‘fable’

(3.3) كسرة /i/: tighnon (Greek) – طاجن /tadjʊn/ ‘frying pan’

(3.4) كسرة /i/: kazik (Turkish) – خازوق /χɔzuq/ ‘pole or dirty trick’

(3.5) كسرة /i/: candela (Greek) – قدديل /qändil/ ‘lantern’

B.2. Long vowels

(1) ألف /a/(or its near-equivalent):

(1.1) ألف /a/: كامندژه /kəmændʒəh/ (Persian) – كمنجة /kəmændʒəh/ ‘violin’
2.2. Sounds not constituting part of the Arabic phonological system

Such sounds are often replaced by their nearest homorganic equivalents. Sibawayh (Sibawayh 1317 A.H.: 242-3) notes that,

...the Arabs assimilate (foreign) letters to Arabic letters... Thus, Persian /g/ is changed into either a ج /dʒ/ or a ق /q/ or a ك /k/ as in جریز /dʒɜrbuz/ or كربق /krubq/, respectively. Similarly, they replace the /p/ by a ف /f/ as in فین /fɪn/ or a ب /b/ as in بردن /bɪrdən/...

In like manner, al-Jawaliqi (1966:6) remarks that the Arabs

...often change loanwords... by substituting foreign phonemes by their nearest homorganic Arabic equivalents. At times, they may replace foreign phonemes by heterogeneous (i.e., heterorganic) substitutes. It is imperative to accommodate such changes lest Arabic should be infiltrated by 'foreign' phonemes.

He further quotes al-Jawhari on the subject and comments on the latter's use of the word 'interfere with' in the sentence 'لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا لْا L

In al-Muzhir, al-Yasü'i (al-Seyuti 1958, vol.1:274) classifies Arabic phonemic substitutes for foreign sounds into two categories:
(a) Phonemes that regularly replace foreign sounds: These include the 
\( b \), \( q \), \( q^{a} \), \( /d\), \( k \), and the \( /f/ \). Such phonemes often replace sounds that have no Arabic equivalents.

(b) Phonemes that are used to substitute for foreign sounds on an irregular basis: these include the \( /l/ \), \( /s/ \), and the \( /fr/ \), though, as was discussed earlier under 2.1, some of these phonemes may replace sounds that have identical Arabic equivalents.

Nevertheless, it seems that philologists of late have erronously confined segmental changes to the above-mentioned phonemes, despite the fact that Sibawayh and al-Jawaliqi were merely citing examples rather than providing an exhaustive account of the subject. Besides, al-Jawaliqi was primarily interested in Persian loanwords in Arabic and, hence, his comments and notes were directed towards the corpus of loanwords that was at his disposal. Indeed, nowadays the subject of foreign sound substitution has become more diverse with the increase in the number of loanwords and the number of source languages. In the following, we will present some examples of replacing phonemes that are lacking in the phonological system of Arabic.

A. Foreign consonants

(1) /p/: This segment constitutes an accidental gap in Arabic phonology and orthography though, as will be discussed below, a devoiced version of the /b/ (i.e., [b]) occurs in certain consonantal clusters (Thornberg 1980:530).

(1.1) /p/- \( b/\): operette (French) — أوبريت /\( \text{\textmu}b\text{\textmu}r\text{\textmu}t/ ‘operetta’

(1.2) /p/- \( f/\): spongos (Greek) — إسفنج /\( \text{\textmu}sf\text{\textmu}ndz/ ‘sponge’

In certain cases a /p/ can be replaced by both a \( b/\) and a \( f/\) in two versions of the same loanword, e.g.,

\( \text{\textbar} \) (Persian) — /\( \text{\textbar} \)/ ( \( \text{\textbar} \)/) both meaning ‘a sword’

Notice the homorganic feature (labial) in both the original sound and its replacements.

(2) /v/: 

(2.1) /v/- \( b/\): (mainly in old loanwords): ovrizon (Greek) — إبريز /\( \text{\textnu}briz/ ‘pure gold’

(2.2) /v/- \( d\): anchova (Spanish) — أنجوا /\( \text{\texta}\text{\textnu}dzh\text{\texta}h/ ‘anchovis’

(2.3) /v/- \( f/\): archives (French) — أرشيف /\( \text{\texta}\text{\textnu}f\text{\texta}\text{\textmu}l/ ‘archives’

(2.4) /v/- \( w/\): varnish (English) — ورشه /\( \text{\textw}\text{\texta}\text{\textnu}mij/ (cf. the French ‘verniss’)

(3) /\( \text{s}/\): 

(3.1) /\( \text{s}/\): 강마 /\( \text{\textk}\text{\textm}\text{\texta}dzh\text{\texta}h/ (Persian) — كمانجة /\( \text{\textk}\text{\textm}\text{\texta}dzh\text{\texta}h/ ‘violin’

(3.2) /\( \text{s}/\): شاي /\( \text{\texth}\text{\texta}\text{\textj}/ (Persian) — شاي /\( \text{\texth}\text{\texta}\text{\textj}/ ‘tea’

inch (English) — إنش /\( \text{\texti}\text{\textn}/ ‘inch’
Certain loanwords may have alternative spellings as in:

\[ /\text{d}\text{z}\text{ub}\text{h}/ \text{(Persian)} \rightarrow /\text{sub}\text{A}\text{k}, \text{sho}\text{b}\text{k}/, \text{sub}\text{d}\text{z}/, \text{sub}\text{q}/, \text{sub}\text{d}\text{z}/ \text{all meaning} \text{‘a rolling pin’} \]

The \(/\text{s}/\) may also be rendered as \(/\text{t}+\text{s}/\) as in: sandwich \text{(English)} - \\
\text{sandwich} /\text{s}\text{and}\text{A}\text{w}\text{it}\text{s}/.

In some cases, a loanword may have alternative forms as in:

\[ /\text{g}/ \text{(Persian)} \rightarrow /\text{b}\text{urk}\text{a}r/, /\text{f}\text{urk}\text{a}r/ \text{both meaning} \text{‘compasses’} \]

Also notice that the \(/\text{g}/\) in sagrougo /\text{sukru}\text{d}\text{z}\text{ah}/ \text{‘platter’} was replaced by both a \(/\text{k}/\) and within the same word by a \(/\text{z}/\).

\[ /\text{g}/ - /\text{q}/ \text{Groschen (German)} - /\text{q}\text{i}\text{r}\text{s}/ \text{‘piaster’} \]

Al-Yasu’i (1959:215) claims that the Arabs used a sound similar to the \(/\text{g}/\) but it was abandoned later. Consequently, the \(/\text{g}/\) in /\text{b}\text{h}\text{s}/ \text{(Persian:} /\text{k}/\text{d}\text{z}/ \text{used to be pronounced, for example, in the dialect of Hijaz as a} /\text{g}/\) (Anees 1961:68); hence, the change of the \(/\text{g}/\) to \(/\text{d}zing/\) of a \(/\text{k}/\) or a \(/\text{g}/\).

\[ /\text{z}/ \text{Montage (French)} - /\text{muntadz}/ \text{‘montage’} \]

\[ /\text{z}/ \text{régime (French)} - /\text{rid}\text{dizim}/ \text{‘diet’} \]

Note that both the original sound and its Arabic equivalent are continuant, coronal, sibilant fricatives.

A NOTE ON MARGINAL CONSONANTAL PHONEMES

In assimilating foreign sounds, reference is usually made to ‘marginal phonemes’, i.e., classes of sounds found only in loanwords, such as the \(/\text{z}/\) in the pronunciation of /\text{vidyu}/ \text{‘video’} and /\text{vidam]/ \text{‘vitamin’} ‘vitamin’, the \(/\text{g}/\) in /\text{k}\text{u}\text{ng}\text{r}\text{is}/ ‘congress’ and the \(/\text{s}/\) in /\text{s}int/ \text{‘inch’} or /\text{arz}/ \text{‘sharaz’} \text{(alternatively written} /\text{e}\text{r}\text{z}/ \text{‘sharaz’} \text{‘Charles’}. But there is no good reason to treat these sounds as phonemes, whether marginal or not, of Arabic.7 They may best be regarded as non-Arabic insertions and hence may be pronounced with their original phonetic features, though orthographically written in the nearest Arabic alphabetical symbols. In effect, when we consider the replacement of foreign sounds by their Arabic near-equivalents we could be talking about a process of assimilation on a binary level of spelling and pronunciation or simply a phonemic change at the level of
spelling, but with the retention of the phonetic quality of the source-language phoneme.

In the loanword تلفزيون / Tilfizyun/, the /v/ sound of the original television almost always shows transfer, i.e., it is pronounced [v] though written ف in Arabic (Ali 1987:117). Yet, the analogical form تلفاز / Tilfaz/, is not likely to show such a transfer, since it corresponds to a native morphological pattern in line with سيرال / Siral/ ‘shirt’. This indicates that full phonological assimilation goes hand in hand with full morphological integration (Ali 1987:117).

With regard to the /p/ in loanwords, Thornberg (1980:53) observes that the /p/ occurs as an allophone of Arabic /b/ in the environment of syllable or word-final position in some borrowed lexical items such as:

- helicopter – (هيلوكوبتر) [hlīlkupṭer]
- captain – (کاپتن) [kaptīn]
- express – (إكسبرس) [zīkspres]

To account for such exceptional cases, with respect to the general borrowing rule that stipulates /p/ – /b/, she quotes Zughloul’s explanation, which can be cast in the following notational rule:

\[ /b/ \rightarrow /p/ \ [\text{-vd}] \]

In other words, the [+vd] /b/ becomes [-vd] before another [-vd] consonant. Also, she refers to Vennemann, who argued that the process of assimilation is a weakening process and the fact that it occurs in syllable-final position is natural due to the universal strength relations,’ according to which, ‘in syllable-final position we are likely to observe processes of weakening’ (Thornberg 1980:532).

It is likely that Thornberg may have overlooked the fact that what she calls exceptional cases are but dialectal pronunciations of the orthographic form, for the phoneme /b/. /p/ remains a gap in Arabic proper, and the occurrence of not only the [p] as an allophone, but also of the /tʃ/, /g/, or even the /v/ in the pronunciation of Arabicized loanwords depends on:

(a) Level of education: some educated Arabs may tend to imitate the original source sounds of loanwords with a feedback from his or her previous knowledge of the source language.

(b) Dialectal influences: some dialects may, out of sluggishness of speech, aspirate the /b/ \rightarrow /bʰ/, while others may adopt the entire loanword with a reproduction of its source sounds.

Further, it should be pointed out that one of the examples given, namely express – [zīkspres] has been mistranscribed, since the actual pronunciation of the loanword in Arabic is إكسبرس [zīkspir̥es] with a break in the consonantal cluster. In such an environment, the /b/ can not be made [-vd] by reason of being surrounded by two [+vd] segments.

Rather than a [-vd] allophonic version of the /b/, we have, as Thornberg (1980:350) quite rightly observes, a devoiced /b/. However, Thornberg states that the devoicing occurs when the /b/ is in initial position in a stressed syllable before
low, mostly back vowels. Yet, the examples cited by her are either confined to certain dialects or are brand names. The latters’ pronunciations are highly irregular and are not subject to a given phonological rule. Indeed the /b/ in words like ping-pong, pepsi, tape, or pipe (as cited by Thornberg) is likely to be devoiced by way of original sound transfer through imitation, though Thornberg does not deem it to be so.

Instead, what we have is a general assimilation rule whereby a /b/ is devoiced before [-vd] consonant, i.e., /b/- /b/ [-vd]. This rule may optionally apply in the pronunciation of ٍشیب [tʃibs], ٍکشبنت [kaʃtin], and any other word with a similar consonantal sequence, including native Arabic words such as ٍنیس [dɪbs] ‘date syrup’.

Finally, Thornberg (1980: 534-5) notes that ‘since /?/ is neither phonemic nor is it represented in the orthography of Arabic, it is changed to a nasal + obstruent sequence...’. The articulation of the adapted form is something akin to /n/+ /k/((or /gh/), but not quite an /?/.

She cites some examples, among which are:

- Boeing - /bəwɪŋ/
- Westinghouse - /westɪŋhɔus/
- Tang - /tæŋŋ/  

Exception to the rule: ping pong - /bɪŋ bɔŋ/  

It seems that Thornberg was misled by the transliterated form of the above words, since in actual speech نغ /nə/, نح /ndʒ/ or even دك /nk/ are all pronounced as /?/, or to be exact, /n/+ /ɡ/, regardless of the orthographic representation. Thus, for example, the word congress is transliterated either as كونجرس or كونجرس but almost always pronounced /kʊ?ɪɹs/or /kʊŋɜɹs/. Another equally interesting example is انجلترا /ʔɪŋɡɪlˈtɛɹə/, or alternatively /ʔɪŋɡɪlˈtɛɹə/, from French انجلترا, meaning ‘England’. Here, both the ج /dʒ/and the ك /k/ are pronounced as a /ɡ/, yet, the /?/ is, to use Thornberg’s term, separated into two segments: د /dʒ/ (or ج /k/) with كسرة /ʃ/ infixed after the ج /dʒ/ (or ك /k/). Thus, the Arabic word would read ٍانجلترا. Once again, the exact pronunciation of the Arabicized form is determined by education and feedback from the speaker’s knowledge of the source language.

B. ASSIMILATION OF FOREIGN VOWELS AND DIPHTHONGS

Both Sibawayh and al-Jawaliqi make reference to the change of the vowel quality of loanwords upon their assimilation into Arabic. Thus Sibawayh (1317 A.H: 342) states, ‘وغيروا الحركة ‘they (the Arabs) change the vowels’, while al-Jawaliqi includes with other phonological modifications the substitution of a vowel by another as well as making a vowelized (consonant) vowelless and vice-versa (al-Jawaliqi 1966: 6).
In the following, it will be seen that, as with other segmental changes, the quality and length of foreign vowels is determined by way of approximation rather than by any sound phonological criteria.

(1) /ā/ - م + فحة

champagne /ʃāpən/ (French) - /šambanya/ شمبانيا
parlement /parləmən/ (French) - /barlaman/ برلمان

(2) /æ/ - فحة

sandwich /sændwɪtʃ/ سندويش

(3) /ɛ/ - /ɪ/:

étiquette /etikɛ/ (French) - /ʔɪtiʔkɛ:/

(4) /ɛ/ - /æ/:

mannequin /manɛkɛn/ (French) - /mənɪˈkæn/

(5) /ɛə/ - /ə:/

batteria /bætəriə/ (Italian) - بطارياء /bɔ’tarjyə/ /battarjyəh/

(6) /ɔ/:

(6.1) /ɔː/ - /oː/:

doceur /dʊkər/ (French) - /dʊkəɾ/ دكتور

(6.2) /ɔː/ - /iː/:

ciffeur /kwafɛr/ (French) - /kwaf3:r/ كوفير

(7) /y/ - /iː/:

jupe /ʒyːp/ (French) - /dʒɪˈb/ (as in جوب) مينيجوب

(8) /u/ - /uː/:

rhumatism /rʊmətɪzəm/ (English) - /rʊməˈtɪzɪm/ روحتمزم

(9) /ə/ - /iː/:

deluxy /ˈdɛlɪks/ (French) - /dɛlILks/ ديلوكس

(10) /ɔː/ - /oː/:

coupon /kʊpɔ/ (French) - /kubɔ:n/ كوبون

(11) /ɛ̝ː/ - /kə/:

qalab /ˈɡælɜb/ (Ethiopic) - /dʒilab/ جلب /qilab/ ‘gown’

Yet, according to al-Karuri, if a /ə/ is adjacent to a bilabial, it is changed to a سمة /u/ (al-Karuri 1986):

e. g., /χɔbəst/ (Ethiopic) - خبز /χɔbζ/ ‘bread’

/berhan (Ethiopic) - برهم /berhan/ ‘proof’

2. 3 Stress shift

This type of change is incurred on loanwords in Arabic owing to:

(a) Mispronunciations in the absence of diacritics or as a result of a transliterational error on the part of the translator. e. g.,

étiquette (French) - /ʔɪtiʔkɛ:/ while according to the French pronunciation /etikɛt/, it should be /ʔɪtiʔkɛt/.

nylon (English) - نلیون /nɔylən/ نايلون /naylən/ instead of نیلون /naylən/ نايلون /naylən/.

keramis (Greek) - قرمش /karmid/ instead of قرماد /qarmid/.

Note that in most of the above examples the stress is shifted from the first to the second syllable.

Such erroneous pronunciations, which could also be the result of mistransliteration of the original source word, are but part of the problem of
... how to represent (foreign) pronunciation within the framework of the Arabic script. For the dictionary user who knows (the foreign language) well, no pronunciation aid would be necessary. Such a user will recognize the word or pronounce it from his knowledge of its (original) spelling. But the dictionary user who does not know (the foreign language) may wish to pronounce the loanword in a recognizable approximation of its native form... The loanword may be respelled in parentheses with the Arabic vowels and consonants that are closest to the foreign phonemes... (Issa 1986:448).

(b) The influence of Arabic stress patterns

Arabic tends to place the primary stress on the next-to-the-last syllable. This often results in accentuating or prolonging the stressed sound, as summed up by Ibn Jinni in al-Khasa'is (Ibn Jinni 1952:315):

When short vowels are accentuated, they are changed to their corresponding long vowels. Thus, a كسرة /ال/ is turned into an ألف /a/, a كسرة /ل/ into a و /i/, and a ضمة /و/ into a و /u/.

Examples are:

/ل/ - /ل/ - a /ل/ (Persian) - لوبیاء /lubya?/ ‘bean’
/ل/ - /ل/ - /ل/: candela (Greek) - گنبدی /qandil/ ‘lantern’
nickel (English) - نیکل /nikAl/ ‘nickel’ (mineral)
/و/ - /و/ - Chimos (Greek) - خیاموس /χαύμος/
technology (English)/ technologie (French) - تكنولوجيا /t?knuludʒya/

Similarly, the stress shifts to the syllable before the last accounts for the doubling of the ک in دکان/dukan/‘store’ (from Persian: دکان/dukan/)11 and the ر /t/ in راج /durradʒ/ ‘francolin (zool)’ (from Persian: تراج /t?radj/) (Shayr 1980:61).

Some cases of stress shift may entail (medial) segmental deletion or assimilation, as in قرمد /qarrmid/‘roof tile’ (from Greek: keramis), wherein the medial vowel a was dropped owing to transposing the stress to the /ل/, which as a result was turned to a و /i/ in قرمد /qarrmid/ ‘a village and its outskirts’ (from Persian: روستا /rusdaq/, رستاق /rusdaq/ ‘a village’ (from Persian: روستا /rusdaq/), the was shortened as a result of the stress shift.

Finally, in the word جربان /d3?ribban/‘scabbard’ (from Persian: جربان /k?riban/), we have a case of doubling the پ/b/ and shortening the پ /i/.

2. 4 Segment and features addition

2.4.1Declustering by way of epenthesis

In order to break consonant clusters, Arabs interpose a vowel, whether initially or medially (usually after the first consonant), or by prefixing an additional syllable composed of the glottal stop ؕ (hamza) and a short vowel, thereby creating a new syllable of the type CVC, which is permissible in Arabic. Thus, for example, the consonantal string of CCC in words like ice cream and express is broken into

2.4.2 Libras in the word...
CVCC in their Arabicized counterparts /aṣṣāṣ / /kṣṣāṣ/. Similarly, CC in Italian balcon and French cadre is broken into CVC in /bālakunah/ /and /kadr/.

Initial consonant clusters also undergo epenthesis, either by prefixing a همزة or inserting a vowel, as in the following examples:

- klīma (Greek) - /qilim/ 'region'
- spirito (Italian) - /isbītu/ 'alcohol'
- stade (French) - /stad/ 'stadium'

Anomalies:

- flourescent (English) - /flurisant/ 'fluorescent'
- styrofoam (English) - /stayrufum/ 'styrofoam'
- festīn (Persian) - /kūṭuban/ 'thimble'

2.4.2 To show inflection, a همزة or a ج is sometimes added finally to loanwords ending in a vowel or a /h/: e.g.,

- خرباء - /hirba2/ 'chameleon'
- رائتيج - /ratig/ 'rating' 'resin'

Final Nominal Suffix /yyah/:

- accademia (Italian) /akademeia (Greek) - /akadimiyyah/ 'academy'
- kathedra (Greek) - /katidrayyah/ 'cathedral' (notice the addition of the همزة in line with 2 above regarding final addition to show inflection).
- strategy (English) - /istikratidyyah/ (notice the prefixation of ج in line with 1 above)

2.4.4 Relative/adjectival ج /yy/:

- artois (French) - /irtiwaziy/ 'artesian'
- amaranatées (French) - /mārantiyah/

2.4.5 In some loanwords from Syriac, as well as other languages, some segments are doubled, probably in accord with existing morphological patterns:

- /sid3d3il/ 'lump of clay' (modeled after the pattern /ifājil/, to indicate large quantities)
- /durraq/ 'peach' (according to the pattern /fūsal/)
- /saqqalh/ 'scaffold' (according to the pattern /fājilah/)

2.4.6 Miscellaneous

- زراب /zārab/ (Persian) - /zārabīyy/ (singular: /zurbīy/) 'mat. carpet' (the ج /y/ was suffixed to the Persian loanword to form the plural, from which the singular was derived by back-formation).
- kastāna2/ 'chestnut' (suffixing 'alif and همزة 'hamza' after deleting the final 'on')
zemerek (Turkish) - زمريك /zungbûruk/'spring' (by way of coalescent assimilation)

2.5 Deletion (elision)

Deletion is yet another morphophonemic process applied to loanwords. To begin with, Sibawayh (Bakalla 1984:41) remarks that, in Arabic, when two t's, i.e. تت come in succession, one of them may optionally be deleted (Sibawayh 1317 A.H.:425-6). In other words, to cite Bakalla's notational formula:

\[ \text{ت} \rightarrow \text{ٰ} / \text{t}(\text{opt}) \]

e. g.

تت/تتكلمون - تتكلمون /تتكلمون
تت/تذكرون - تذكرون /تذكرون

Further, in his discussion of Arabicized loanwords, Sibawayh (1317 A.H.:342) employs the word حذف /hâdîf/ 'deletion' to describe one of the changes applied to borrowed lexical items. Al-Jawaliqi (Bakalla 1984:41), on the other hand, uses the expression نقصان حرف /nuqṣan hârf/, i.e., 'the omission of a letter' to describe more or less the same process of deleting one or more segments from the original source form. Such changes, according to al-Karmali (1938:82), are attributed to the Arabs' keenness to maintain unstrained and easy pronunciation of loanwords by omitting some of their sounds/letters.

In the course of our study, we have noticed that deletion may involve initial, medial, or final segments or syllables, and may even include the clipping of a part of a word or one member of a compound. In addition, some cases of deletion are language-specific and in effect are more regular than others.

(1) Initial segment/syllable deletion

historia (Greek) - سطورة /?usurûh/'myth'
musandira (Turkish) - سندرة /sândûrah/'loft'

(2) Medial segment/syllable deletion

chabbat (Hebrew) - سبت /sâbt/ 'Saturday'
ounguiya (Greek) - أوقية /uqîyyûh/ 'ounce'
/ʃrhumûnd/ (persian) - فردود /ʃrhuð/ 'stout boy'

(3) Final segment/syllable deletion

Fallopian (English) / Fallopio (Italian) - فالوب /falûb/
/ʃrdʃir/ (Persian) - نرد /ʃrd/ 'backgammon'

(4) Language-specific deletion

(a) Syriac

Generally speaking, final و /u/ in loanwords of a Syriac origin is omitted upon their assimilation into Arabic, e.g.,

/ʃkîlû/ - إكليلو /ʃkîlû/ 'crown, diadem'
/ʃrûmû/ - نرد /ʃrûmû/ 'canal'
The morphophonemics of loanwords in Arabic

(b) Greek and Latin

In like manner, the syllables of final segments in loanwords of Greek or Latin origin are deleted upon being Arabicised, e.g.,

**WORDS OF GREEK ORIGIN**

- fanarion → /fānar/ ‘lighthouse’
- patrikios → /bātriq/ ‘penguin’

Deletion of medial and final syllable:

- episcopos → /ʾsqulf/ ‘bishop’

**WORDS OF LATIN ORIGIN**

- canalis → /qāna/ or /qānal/ ‘canal’
- centenarium → /qintar/ ‘kantar’
- denarius → /dinar/ ‘dinar’

2.6 Clipping of a part of a word or a member of a compound

- /bārid/ (Persian) → /bārid/ ‘mail’
- /dādam/ (Persian) → /dādam/ ‘chain, track for a tank, caterpillar, etc’

Sometimes, clipping can take the form of assimilation (usually in syllable-final position across word boundaries), e.g.,

- baking powder → [bekīnbaudār]

2.7 Dissimilation

When two adjacent sounds are similar, one is altered by changing its feature value in order to preserve the contrast between otherwise homorganic or semi-homorganic segments. Sometimes, this takes the form of addition ‘epenthesis’ or deletion, e.g.,

- /dādāban/ (Persian) → /dāyādan/ ‘centurian’ (Deletion of /dādāban/ ‘centurian’ (Deletion of /dāyādan/ ‘centurian’
- /bāzdāhar/ (Persian) → /bāzāhār/ ‘bezoar’ (Deletion of /bāzdāhar/ ‘bezoar’

2.8 Metathesis

Arabicization may also involve metathesis, i.e., transposing phonemes or segments from one place to another:

**FROM PERSIAN:**
- /dar 2Afzin/ → /dārabzin/ ‘hand-rail’
- /zand3jir/ → /dāzarzin/ ‘chain, track for a tank, caterpillar, etc.’
FROM HEBREW:
- סלע /šaluṭa/ - סלע /šaluṭat/ ‘prayers’
- גַּלִּיָּת /dʒalut/ - גַּלִּיָּת /dʒalut/ ‘proper name’

FROM SYRIAC:
- ספְּלָא / sûlā/ - ספְּלָא / sûlā/ ‘flavored juice’

FROM GREEK:
- επάρχια - ἐπάρχια /e巴菲a/ ‘parish, bishopric’
- λίτρα - λίτρα /litrə/ ‘a unit of weight of variant equivalence: in Egypt 449.28g’.

FROM TURKISH:
- еретсане - еретсанне /t̪aɾasAštə/ ‘arsenal’
- френлемек - френлемек /f̪AɾmaλAʃ/ ‘brake’

2.9 Compounding

Examples of compounding are few (see under 2.1). Most such words are the result of transliterating the pronunciation of two SL components in fast speech, e.g.,
- کهرباء /kahruba/ (Persian) - کهرباء /kahrubaʔ/ ‘electricity’
- روبایکیا /rubabikya/ (Persian) - روبایکیا /rubabikya/ ‘antiques’
- زهر مهرب /z̪Aɾ m haɾir/ (Persian) - زهر مهرب /z̪Aɾ m haɾir/ ‘bitter cold’

But we may notice a multitude of partial translations of compounds, usually in scientific register, e.g.,
- acide hydro ferrique - حمض الألدو تحده /hɪmᵊh 2Al2AydruhAḍidik/ ‘tetrabromide’
- tetrabromide - ربايي بروميد /rubabíYi bruMid/

and the awkward
- ideology - فكرولوجيا /fIkruludʒya/

2.10 Remodeling in accordance with Arabic morphological paradigms

The earliest reference made to remodeling loanwords to conform with Arabic word patterns comes from Sibawayh’s al-Kitab (1317 A.H.: 342).

The Arabs change those foreign words that are absolutely incongruous with their own, sometimes assimilating them into the structure of their words, and sometimes not. As for that which they assimilate into their forms (i.e., morphological patterns), there is درهم /dɪɾəm/ according to ضرب /šəɾµ/ ‘dungeon’, بحرج /b̪AɾrAʃ/ ‘ornament’ according to ضرب /šəɾµ/ ‘a tall horse’, دينار /dinar/ ‘dinar’ according to ضرب /šəɾµ/ ‘a line of people’ according to قرطاس /qirtas/ ‘paper’.12

Thus, according to Sibawayh (1317 A.H.), remodeling loanwords is not mandatory, though they may be subject to other phonological or morphological modifications,
Often they leave a noun unchanged when its letters are like theirs, be its
structure Arabic or not, as in the cases of /χύραςαν/ ‘turmeric’.
خُرْمَاء and /κόρκομ/ ‘korkum’. They may change a letter that does not
exist in Arabic leaving the original Persian structure of the word intact
as in /θυρινδ/ (from بَرِينَد/ ‘sword’), أَجَر /ثَاذَر/ (from أَكُور
/θακُر/ ‘tile’) and جَرِيز /دَزْرَبُز/ (from كُرْبُز /kurbuz/).

In short, Sibawayhi’s (Ali 1987:99) interest was in describing and analyzing
loanwords rather than prescribing any rules for their incorporation into the patterns
of Arabic. To him، المَعْرِب /؟اَمْعَرِب/ is a term that describes both analogical and
non-analogical Arabicization.

Other philologists who maintained an approach similar to that of Sibawayhi

Al-Karuri remarks that Arabicized loanwords as viewed by Sibawayh and al-
Jawaliqi can be classified into three categories:

(1) those loanwords that were subjected to segmental alterations and
were analogically modified to fit into Arabic word patterns، e.g.,

/دِرَحْام/ ‘drachma’) analogical with /دَدَرْمَز/ ‘naive’
/دَرَنَار/ (Latin ‘denarius’) analogical with /دَماَس/ ‘dungeon’

(2) those loanwords that were subjected to segmental alterations but،
nonetheless، were not modified analogically، e.g،

/ثَيْرِنَد/، أَجَر /ثَاذَر/، جَرِيز /دَزْرَبُز/ (see the quotation
by Sibawayh)

(3) those loanwords that were neither subjected to segmental altera-
tions nor modified analogically، e.g،

/خُرْمَاء/، كُرْكُم/ ‘turmeric’، and إِبْرَاهِيم/ /؟إِبَراْهِيم/ ‘foreign’.

Yet، there is no mention of the criteria for deciding whether a word is to undergo
analogical modifications or be preserved intact according to its origin in the source
language.

Other philologists، such as al-Jawhari (d. 1005 AD) in al-Muzhir and al-
Hariri (d.1122 AD)، stressed that in order to preserve the purity of the language،
borrowings should be made concordant with the phonological and morphological
patterns of Arabic. Otherwise، loanwords will always remain /ثَاذَر مْي/ ‘foreign’.
In a treatise on solecism، al-Hariri (Ali 1987: 98) cites a number of bor-
rowings that contravene the Arabic patterns.
Table 2. Non-analogical loanwords

Generally speaking, loanwords or their derivatives may undergo alterations aimed at making them correspond with existing Arabic patterns.

Table 3: Remodeling of loanwords according to Arabic paradigms.

The process of remodeling loanwords in order to conform with Arabic word paradigms may involve vast changes in the structure of the loanword including segmental and vowel changes, metathesis, addition, elision, and modification of stress-patterns. For example, the word فرملة /fərmələh/ (Italian: freno) was subjected to major changes:

1. Vowel addition: a فحة /d/ was inserted after the ف /f/.
2. Vowel elision: the e after the r in the original word was deleted.
3. Vowel change: the final o in ‘freno’ was replaced by فحة /d/.
4. Syllable addition: ل /l/ was suffixed to the word.
5. Segmental addition: a final ة /d/ was added to the word فرملة /fərmələ/ (verb form) to produce the instrumental noun فرملة /fərmələh/.
It should be pointed out that the first four changes were undertaken in order to remodel the word in accordance with the Arabic quadrilateral paradigm /fəʔal/. Fahmi (1961: 211) remarks that though this particular word could have been Arabicized as فرن /fərips/, the loanword form of فرن /fərips/ with of 'tram', which is similar in pronunciation to جمانز /dʒəməzməz/ 'tram', may be justified by the unpopularity of the word جمانز /dʒəməzməz/ in comparison with its Arabicized loanword /təram/ 'tram'.

Remodeling may carry over to loanwords whose original pronunciations have correspondent paradigms in Arabic. The Persian word كافدژلاز /kafd3alaz/ 'ladle' could have been Arabicized as such in analogy with the word سالبان /səlsəban/ 'sesban', yet, the Arabic form of this word is قافذال /qafzal/. Such changes are warranted on account of the fact that the Arabs may change a paradigm or forfeit another if the sound sequence of the original contravenes the requirements of sound harmony in Arabic Al-Kururi (1986:407). Subsequently, the final /z/ in كافدژلاز /kafd3alaz/ was replaced by /l/ to correspond with the first /l/, (both anterior), while the تاء /a/ (a back vowel) was replaced by a /i/ (front vowel) to effect ease of articulation by avoiding the sudden shift from front to back and front again.

1.11 Derivation and inflection

Some Arabicized loanwords (other than proper names) have been morphologically naturalized and in effect may undergo a process of derivation in line with Arabic derivational patterns and inflectional affixes.

(1) Some loanwords are treated as common nouns and, therefore, may be prefixed with the definite article /ʔaʔ/ as in the following words, which were originally borrowed from Persian:

- /ʔaddidab3/ ‘Silk brocade’
- /ʔlyasəmin/ ‘jasmine’
- /ʔazzand3bil/ ‘ginger’
- /ʔllid3əm/ ‘bridle’

Aside from regular inflection, such words can also be nunnated when they are indefinite, thus /ʔaʔ/ نوروز /nərəz/ ‘Persian New Year’s Day’, پاسمن /yəsəmin/ ‘jasmine’, دیبا /dibasən/ ‘silk brocade’.... etc.

(2) Some loanwords may be pluralized according to جمع التكرر /dʒəməzməz/ ʔtətaksir/ i.e., the irregular plural form plus an optional final /əh/ (Sibawayh 1317 A. H.: 201). e.g.,

- صولجان /səwlədʒən/ or ‘scepter’
- كرحج /kərbədʒə/ ‘store’
- سولجان /səwlədʒə/ or ‘scepter’
- كرحج /kərbədʒə/ or ‘store’

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(3) Aside from the irregular plural patterns، as exemplified by the above plural forms (plus the optional final /أ/،)، loanwords may assume other patterns that may assume some intervocalic changes، as in:

- /كابل/ or /كيبل/ (English/French: cable)
- /كرميل/ (French: baril)
- /شعر/ (Syriac: شهو)

(4) An Arabicized word may be suffixed with /يا؟/، as in:

- amaranthus (Latin) /امارانتي/، ‘amaranth’
- ideology (English)/ideologie (French) /يديولوجى/، ‘ideological’
- tactique (French) /كتيكي/، ‘tactical’.

(5) Sometimes a given loanword or its abstracted root serves as the basis for deriving parts of speech. Ali (1987: 114) notes، for example، that the abstracted root قنون (Greek kanon) has yielded:

- قانون /قانوني/، ‘lawful’
- قانوني /قانوني/، ‘lawful’
- قانوني /قانوني/، ‘lawful’

(6) Finally، from the Turkish manovara (Fanya 1975: 13)، Arabic has the noun /مناوره/ and the verb /مناور/ ‘to manoeuvre’، which is a good example of an ill-conceived Arabicized word. The /م/ in /مناور/ was mistakenly thought to be the nominal ‘م’، as، for example، in /مناورة/، ‘manoeuvre’، /مناورة/، ‘manoeuvre’، /مناورة/، ‘manoeuvre’، /مناورة/، ‘manoeuvre’، /مناورة/، ‘manoeuvre’، /مناورة/، ‘manoeuvre’، /مناورة/، ‘manoeuvre’، /مناورة/، ‘manoeuvre’,

3. Conclusion

The corpus of data analyzed in this study reveals two main types of loanword modifications. The first type concerns those modifications sanctioned by Arabic phonotactics and morphological paradigms. Despite some anomalies، most of the morophophonemic adaptations are fairly regular and consistent. Yet there are other
examples of loanwords that were changed for no reason other than to give a flavour of Arabic sounds and morphological patterns.

While this study has attempted to classify loanwords according to etymology and define the criteria for morphophonemic changes, yet many issues remain unresolved and call for more extensive analysis. For instance, subsequent studies could tackle the status of Arabic words borrowed or assimilated into other languages. A comparison can, therefore, be drawn between types of changes of loanwords in both Arabic as well as foreign languages. Further, a more thorough and precise etymological analysis is needed to account for anomalies. Finally, comparative lexicographers can compile dictionaries that list loanwords with their original SL form and TL assimilated version.

NOTES

1 Note that the original Arabic text includes words like 'may, or, often, frequently' which indicate that such rules admit exceptions and anomalies and are by no means conclusive.


4 Shayr 1980:127 cites the Persian origin as /gafdza liz/. Therefore, the /tʃ/ is not an Arabic sound.

5 The reader may notice that some Syriac, Hebrew, and other loan words may at times appear in Arabic characters and at others in Latin alphabet. Our purpose is to preserve the form and, hence, the pronunciation of words as they are quoted in our sources.

6 Sibawayh cites the Persian loan-word كوسق /kaawsaq/ ‘having incomplete teeth’ and كربق /karbaq/ or دكيرق /qarbaq/ ‘store or tavern’.

7 Adapted from Simpson 1971:71.


9 She acknowledges this fact, but under another section.

10 Peter 1986:448. The parentheses are mine. For more on the subject, see section 4.3. on issues of misspelling and mispronunciation.

11 Persian according to Shayr 1980:65, while according to Fahmi 1968:176 it is Greek dokneion.

12 Sibawayh 1317 A.H.:342. Translated by Stetkevych 1970:59-60. The parenthesis as well as some minor alterations are mine.

14 The examples are mentioned in Sibawayh 1317 A.H.:19, yet without providing any etymological background information as to their source language or original forms.

15 Abdul-Rahim 1975:22 traces its origin back to Spanish: *barril*.

16 It is of questionable etymology. It could be from French *manoeuvre* or Latin *manuopera* yet, being a relatively recent lexical entry and in view of the proximity in pronunciation with *manovara*, it is most likely of Turkish origin.

**REFERENCES**

**a. English references**


HOLDEN, K. T. 1972. Loanwords and phonological systems. The University of Texas at Austin, Ph. D. dissertation.


**b. Dictionaries**

c. Arabic References


Al-Khafaji, Shihab al-Din Ahmad. 1325 AH. Shifa’ al-‘Ghalil fima fi Kalam al-Arab min Dakhil. Cairo.


d. Arabic dictionaries

Al-Fayruzabadi 1913. al-Qamus al-Muhit. Cairo.


Al-Zubaydi. 1306 AH. Taj al-‘Arus min Jawahir al-Qamus. Cairo.


Ibn Manthur. Lisan al-Arab. 1307AH. Bulaq, Egypt.