CHAPTER V
SUMMARY & CONCLUSION

5.0 Introduction
Every study has a conclusion. A research work cannot be regarded as successful without comprehensive result. Hence, the present research has conceived its results through extensive investigation and with the help of data collected from different sources of Modern Standard Arabic (MSA), and feedback from the areas concerned.

This chapter is intended for covering the conclusion of the present research work. In the present chapter, we aim to summarize the discussions carried out in earlier chapters and have drawn conclusions from the discussions presented in the different sections of the thesis. This chapter is divided into two sections. The first section comes up with a chapter wise summary of the research work, while the second section presents the conclusions drawn from the current study and end with some implications for further research.

5.1 Summary
In this section, we have made an effort to briefly present the summary of all chapters.

In Chapter One, we have dealt with the 'Introduction' where we have discussed that the present study is an attempt to investigate the morphological processes and mechanisms in Arabic that are responsible for creating new words in the language (i.e. inflectional and derivational processes) with special reference to the word-formation processes in Modern Standard Arabic (MSA). Word-formation is a morphological process of creating new words and expressions. A word-formation is a word, which has lost its status of a nonce-formation but is still the one, which is considered as new by the majority of members of a speech community (Fischer, 1998).

Morphology hands out with the systematic correspondence between the form and meaning of words. Thus, two major frameworks are involved when studying such regularities (i.e. inflection and word formation). Inflection deals with the expression of morphosyntactic properties while word formation concerns the coining of new (complex) words via different morphological processes (i.e. affixation, blending,
compounding, etc.). Morphology is also very relevant for the typology of words which takes different forms (i.e. simple, complex, and compound) according to the morphological mechanisms they undergo.

The newly coined words are continually introduced into a language (Algeo, 1980), often for naming a new concept. Fields, that are culturally prominent contain new words. Concepts, which are swiftly advancing, (for instance, the scientific and technical terms) also take help of the morphological strategies.

Typically words are morphological objects, it is to say that words are formed by combining morphemes to each other according to the rules of morphology. Morphology, the study of the internal structure of words, deals with the forms of lexemes (inflection), and with the ways in which lexemes are formed (word-formation).

The present research focuses on the context of the morphological processes with special reference to the word-formation processes: the representations of words used in Modern Standard Arabic (MSA) (i.e. the scientific and technical terminology and the neologisms) that are mostly composed of more than one morpheme.

In this study the words (i.e. scientific and technical terms) are categorized into three types for the purpose of analysis:

✓ Simple,
✓ Complex,
✓ and compound words.

The word- formations considered in this thesis will—for the most part—satisfy both of these words–formations:

✓ Newly-coined words
✓ New senses of an existing word

In this study, we may take in consideration that Arabic words are generally based on a "root" which uses three consonants to define the underlying meaning of the word. Various vowels, prefixes and suffixes are used with the root letters to create the required inflection or derivation of meaning. Every set of root letters can lead to a large number of words that can be predictable in form and all related to the basic meaning of the three root letters. For instance, the root k-t-b has the basic meaning of writing, marking or
inscribing. The root may be conjugated in simple past tense (perfect) verb forms as the following:

- yaktubu  he writes
- yaktabuna  they write
- taktubu  you write
- naktubu  we write
- ?uktub  write

The vastness truly starts to be seen as additional forms like verbal nouns are created from the same simple root k-t-b to characterize things like:

- katib  writer
- kitaabah  the act of writing
- kitaab  some writing, book
- kutub  books
- kutubii  book dealer
- kutayyib  Booklet …etc,

According to the above set of words, we can observe that the form differences have a syntactic and phonological dimensions, while the meaning difference is quite clear, and have some extra meaning due to the presence of the non-concatinative additions. Since the words are formally and semantically more complex than the root forms. That is to say there is a direction in the relationship between all the above mentioned words.

For example, the noun /alkitaab/ 'the book' consists of two morphemes, /al-/ 'the' and /kitaab/ 'book'. The nominal morpheme /kitaab/ is known as a free or lexical morpheme, because it can occur as a word by itself, whereas /al-/ is an affix (thus a bound morpheme that cannot function as a word on its own). The morphological structure of /alkitaab/ might be represented as follows:

\[ [ \text{[al]} \text{D-affix [kitaab]N} ] = [\text{alkitaab}]N \]

Figure: 5.1 The morphological structure of /alkitaab/

This complex word can be created by the general mechanism that is called concatenation, the combination of elements into a linear sequence. This word is well
formed because the requirement that /al-/ occur before a noun is met, and this combination of morphemes is a noun. However, in spite of the existence of the concatenative system in Arabic morphology (i.e. inflectional Arabic morphology), but the morphology of Arabic is still known as non-concatenative or non-linear. It is common in Semitic languages such as Arabic and Hebrew, the use of non-concatenative word formation (WF) processes. That is to say these processes in which morphemic units are not only linearly strung one after the other but are superimposed upon each other too, such that every surface form is necessarily morphologically complex and its component morphemes are discontinuous. This characteristic, compounded by the richness and the explicit nature of Semitic morphology, makes those languages a favorable field to discuss, authentic morphological effects. Actually, Semitic languages, particularly Hebrew have provided some of the most compelling evidence yet in favor of a morphemic lexicon (e.g. Frost, Forster, & Deutsch, 1997).

The nature of word formation in Arabic covers three notions: root, pattern and form (Moutaouakil, 1987). Word forms, for instance: verbs, verbal nouns, agent nouns, etc., are gained from roots by applying derivational rules to get corresponding patterns.

Marslen-Wilson, Tyler, Waksler, & Older, 1994; Spencer & Zwicky, 1998; Taft, 1994) proposed that Morphology as a study of the internal structure of lexical elements, focusing around the issue of whether the unit underlying lexical access and representation is the morpheme or the phonetic word.

Nida (1948) gives the following definition to Morphology:

*Morphology is the study of morphemes and their arrangement in forming words*"

It is to say that morphology seeks to concentrate on how words are formed. For the parsing of complex word forms, Nida (1949) suggested six principles for identifying the component parts of such words and for formulating the nature of those parts.

Nida(1948) confirmed that:

"*Forms which have a common semantic distinctiveness and an identical phonemic form in all their occurrences constitute a single morpheme*".

We can cite the example of the following sets of words in order to elaborate this point further:
Table: (5.1) Simple, complex and compound word in Arabic

<table>
<thead>
<tr>
<th>(A) Simple</th>
<th>(B) Complex</th>
<th>(C) Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>/radjul/ 'man'</td>
<td>/fatataan/ 'two girls'</td>
<td>/amiiuru-lmuʔminiin/ 'Emir of believers'</td>
</tr>
<tr>
<td>/milh/ 'salt'</td>
<td>/lasilkiy/ 'wireless'</td>
<td>/makkah - almokarramah/ 'mecca'</td>
</tr>
<tr>
<td>/raʔs/ 'head'</td>
<td>/fawqatʕiy/ 'prosodic'</td>
<td>/naʔtihat- sahaab/ 'skyscraper'</td>
</tr>
</tbody>
</table>

The notion 'word grammar' stands in opposition to 'sentence grammar', the grammar which describes the systematic relations between form and meaning at the sentence level. The two basic functions of morphological operations are:

- The creation of new words (i.e. new lexemes), and
- Spelling out the appropriate form of a lexeme in a particular syntactic Context.

In the present study we address the question of morphological representation and processing with reference to Modern Standard Arabic (MSA), a Semitic language common to all literate speakers in the Arab world and used in the media, literature and all formal settings (Ferguson, 1959; Holes, 1995; Versteegh, 1997).

The Morpheme

The store for morphemes and/or words in memory is known as the lexicon. Morphemes serve to capture significant linguistic generalizations and patterns. Each and every word consists of at least one morpheme and many morphemes can be words. Morphemes that can stand alone as a meaningful words, such as in /xubz/ 'bread', /ʔswad/ 'black', are known as free morphemes. Free morphemes are usually content morphemes, and in agreement with concepts denoted by the major lexical categories of nouns, adjectives and verbs. Whereas bound morphemes can be content or function morphemes.

Al-Najjar (2012), state that Arabic bound morphemes, that are used in the derivation and inflection, cover prefixes, suffixes, politics, enclitics, discontinuous morphemes, zero morph, case markers, and mood markers.

Arabic exhibits affixes, such as /laa-/ 'no, not', /laa-filiz/ 'nonmetal', and adjectives such as /laa- ʔaxlaaqiyy/, 'immoral', /laa-ʔinsaaniyy/ inhuman'. Words composed of a single
morpheme, such as in /xubz/ and /ʔswad/, are known as monomorphemic or morphologically simple words. While words composed of more than one morpheme, such as in /laʔaxlaaqiy/ and /mudarris-ii/, are known as polymorphemic or morphologically complex. Usually a polymorphemic word has a single content morpheme, which contributes to the basic meaning of the word, and one or more affixes, which modify the basic meaning. When two words share a (content) morpheme, they are said to be morphologically related. A pattern is a sequence of fixed vowels or vowels and consonant(s) inserted between and sometimes before and after the consonants of the root or the derived word to generate, derive, or inflect a morpheme or a word. (Some morphologists erroneously analyze these patterns as infixes.) The pattern shapes the phonological or morphological rule that can be operated on the root. The following two instances illustrate the relationship between the root and the pattern. The markers at the end of words will be ignored, since they are not part of the patterns:

Input pattern: CaCaC

Root: q-ṭ-ʕ

Output: /qaṭaʕ/ 'cut' (past tense)

There are lots of patterns in Arabic, which can be divided into three classes of patterns: patterns for derivation, patterns for inflection, patterns for morpheme-formation. Some of those patterns are multifunctional.

Related studies

This section reviews some of the most related works of the present research.

El-Khafaifī, in his study (1985), reviews the various methods of lexical enrichment to the Arabic language which are presently employed by the Arabic language academies. El-Khafaifī's work includes a historical background of the Arabic language and early attempts at language reform in the nineteenth and early twentieth centuries. The work deals with three words-formation processes, namely, analogical derivation, naḥt (blending, compounding), and tašriib (Arabicization) that play a significant role in the modernization of Arabic. A significant number of illustrative examples of the terminology coined by the Arabic language academies using the previous word-formation processes are provided in El-Khafaifī's work.
Another study, Al-Qahtani (2000), investigates Arabization as a quasi ideological-linguistic phenomenon in Saudi Arabia. This study reviews the policies used in Arabization on the planning level. His study reveals that the words that are coined by morphological derivation are more frequent than those made by compounding and Arabized words are more frequent in scientific discourse than in religious discourse.

El-Mouloudi (1986) highlights the lexical modernization of Arabic, especially in the area of science and technology. The study investigates two of the most debatable processes of lexical expansion which are: *tasrīb* (assimilation of foreign terminology through direct borrowing or translation) and *naḥt* (blending, compounding). Emery (1983) reviews the lexical reform of Arabic and highlights the role of the Coordination Bureau of Arabization in standardizing scientific terminology. Issues such as methods of word-formation preferred by Arabic language academies in addition to linguistic purism are discussed in the paper.

Redouane (2001) investigates the use of word formation processes in Modern Standard Arabic (MSA) by adult L2 learners of mainly English-speaking background. The main object of the study is to investigate the differences between L2 learners' and native speakers' use of MSA word formation processes. The study includes an account of the word-formation processes in Modern Standard Arabic (MSA) such as derivation, borrowing, compounding, and conversion. Cook's study (2010) investigates Neologisms (newly-coined words). The study attempts to exploit the linguistic knowledge in order to understand the characteristics of neologisms. Alawneh's (2007) investigates neologisms that appeared due to the two Palestinian Intifadas (uprisings) the First (1987-1993) and the Second (2000-2005) to investigate how translators deal with them.

Ahmed H. Y. & Muhammad A. M. (2010) examine neologisms found in textbooks of Mass Media departments of Iraqi universities. The study proposes that the students of Mass Media face many problems in comprehending and translating neologisms that have no equivalences in Arabic. Ilaiyan & Sindawi (2013) provides a discussion about neologisms (linguistic innovations) that are derived from verbs in Arabic. The study concentrates on verbs that derived from nouns referring to the names of places such as countries and cities.
Productivity and Mental Lexicon:

Trying to get an adequate comprehension of productivity, notions such as ‘possible word’ and ‘actual word’ have been discussed under this section of the introduction. Further, it covers a discussion about the way words (complex words) are stored in the human brain.

Coining New Words (Neologisms)

No living lexicon is ever stable. According to (Murray James A.H.; 53):

“It is not today what it was a century ago, still less what it will be a century hence. Its constituent elements are in a state of slow but incessant dissolution and renovation. Old words are ever becoming obsolete and dying out; new words are continually pressing in” (A new English dictionary on historical principles)

To know the frequency of new word formation is something difficult. According to Barnhart (1978) around 500 new words are recorded every year in different English dictionaries. Barnhart (1985) notes that in a vast sample of monthly magazines, around 1000 new words were found; accordingly he supposed that approximately 12,000 words are found as an annual average of new word formation. Metcalf (2001) suggests that every day at least10,000 new words are coined in English; however, he also claims that most of these words never become established forms. The rate at which new words are coined can also be estimated from corpus data. The ratio of new words amongst the hapaxes increases as corpus size increases, and so the rate of vocabulary growth gives an estimate of the rate of new word coinage. However, new words that are also hapaxes may be nonce-formations.According to (Peprník, 2006; 76) a neologism is a new word or sense of a word.” It can come from any type of word formation.

New words are regularly added to the existing bank of words. The knowledge of when words have common parts or when words sound and mean similar things, is used by the speaker to organize his/her knowledge of words. Knowledge of the morphology of a language permits a speaker of a language to create new words, composed of common parts and understand them. Word representations in memory may be organized by sharing morphemes. Moreover, the presentation of one word with a particular morpheme may affect the processing of subsequently presented words if they contain the same morpheme.
**Word-finding processes**

Trying to find out how morphological information is realized in the mental lexicon, Onomasiological theory is reviewed here. Onomasiology is a branch of lexicology that is concerned with the question of how concepts (i.e. ideas, objects, activities, etc.,) are expressed. Jost Trier (the German linguist) in his book (1931) *Der deutsche Wortschatz im Sinnbezirk des Verstandes* presented a new method which is the lexical field theory. Few studies have been carried out on onomasiological theory after World War II. However, according to the Onomasiological theory. If the speaker intends to coin new designation, he/she has to exceed three onomasiological levels of a word-finding process, namely:

- First level is to analyze the distinctive characteristics of the concept;
- The second level includes selecting the semantic components for the naming unit that gives a more abstract sense with the name/word;
- Then, the third level, which includes choosing the concrete morphemes which gives the name/word a more concrete sense.

A speaker resorts to coin a new word if he/she does not shorten an already existing word for the concept. There are different types of processes that a speaker can select from. The following list classifies the formal processes of word-coinning (Koch 2002):

- **Choosing of either:**
  a. **Semantic change**: (a new sense of an already existing word of speaker’s own language).
  b. **Loan word**: borrowing a word from a foreign language, like /kabil/ "English-French: cable".

- **Conversion**: which is also known as zero derivation, it is the coining of a word with new word class from an already existing word (of a different word class) with zero modification (Bauer, 2005). Such as, the Arabic verb /ranaa/ “gazed” becomes the noun /ranaa/ "a beautiful person or thing at whom or at which one gazes" (Al-Najjar, 2012, 618).

- **Composition**: which includes compounding, like /?amiiru-lmu?miniin/ "Emir of the Believers" and derivations. Such processes are very consciously.
Ellipsis: which is the morpheme deletion process, like the noun /alḏazeerarah/ from /qanat alḏazeerarah/ "Al-Jazeera channel".

Clipping: which is also called "truncation" or "shortening." Clipping involves the reduction of a word to one of its constituents (Marchand: 1969), like "net" from "internet".

Acronyms: are words or names formed as an abbreviation from the initial components in a phrase or a word, such as (RADAR) from Radio Detecting And Ranging, and the Arabic instance واس /was/ from /Wikaalat alʔanbaʔ alΣofuudiyah/ "Saudi Press Agency".

Blending: is the process in which words are created by joining parts of two or more other words, like "smog" from (smoke and fog).

Reduplication: is the process that involves repeating a whole or part of a word either exactly or with a slight change. By applying this process new words are coined, like goody-goody.

Other productive processes are included under this list, such as back-derivation, folk-etymologies, morphological alteration, tautological compounds, word playing, stress alteration, graphic alteration, phraseologism, and root creation.

Modern Standard Arabic (MSA)

The notion of MSA is important for the present research examines the morphological processes with special reference to this form of the Arabic language, further it draws its instances from MSA. Modern Standard Arabic (MSA), is the official language for around 320 million people in 22 Arab countries which are represented in the Arab League. MSA is also known as Literary or standard Arabic. MSA can be considered the fourth most-commonly- language in the world. It is listed with other five languages of the United Nations. Modern Standard Arabic is derived from Classical Arabic (CA), that is the language of the Al-Qur’an Al-kareem which is the holy book of Muslim people, it is also the language of pre-Islamic as well as early Islamic literature. Since MSA is the official language of all Arabs around the Arab world. Thus, it is the written language that is used for all Arabic newspapers, magazines, books, street signs, official documents, etc. Most educated Arab speakers, regardless their spoken dialects or nationality, are able to use Modern Standard Arabic as lingua Franca. Still no consensus
regarding the definition of MSA, but most linguists agree that modern Arabic writing, with all its forms, shapes the foundation of the identity of the language. Monteil (1960) defines MSA depending on its function as the language of new media in the Arab world, which is the proper way to identify it since it is not officially codified as a phenomenon separate from CA.

Arabic, like any other language, has two forms which are written and spoken Arabic. Written Arabic is used widely throughout the Arab world because of the reasons mentioned above such as media and religion, etc. While the spoken Arabic may vary according to different variables such as regional dialects, geographical location, context, and usage. MSA does not have native speakers, it can be considered as lingua franca. However, educated Arab people are capable to use it properly in speaking, reading, and writing. Because it is used in different situations over the Arab world. Speakers of Arabic use their own dialect, when conversing casually or informally. This language is scholarly known as Modern Standard Arabic (hereinafter, MSA). All Arab share one idea: Arab countries should not adopt any vernacular as an official language.

**Arabic writing system**

Since this research is about Arabic and includes many examples that are written in Arabic script, hence, this section covers an account about the Arabic alphabet and the Arabic writing system. The Arabic alphabet dates back to old periods (pre-Islamic periods). There are 28 letters in Arabic and furthermore Hamza (glottal stop) and two variants of existing letters (alif and taaʔ) are included under the Arabic alphabet. Arabic letters can be classified into two categories. First one comprises those letters that connect only to the preceding letters (the letters to the right). Which are:

ء ى و ذ ر ذ ا

While the second category comprises the letters that connect to both following and preceding letters, thus, they are called "two-way connectors". The alphabet contains three long vowels {i.e. (ً) Alif /aː/; (ُ) yaaʔ /iː/; (ِ) Waw /uu/} in addition to three short counterparts of these vowels, pronounced about half as long, represented by diacritical marks {i.e.(ٌ) Fatha; (٤) Damma; (ْ) Kasra}. While shadda (ٍ) is placed over a consonant to double its sound.
**Terminology of Arabic**

Terminology is a recent linguistic discipline which pursues to establish a theoretical framework for coining new scientific and technological terms. It is emerged as a result of the need to unify the standards and methodology of term creation, and the large growth of the international language of science. General guidelines to regulate the process of coining terms for new scientific and technological concepts were proposed by Wuster (Al-Qunier 1997). These guidelines are:

1. The term should be derivationally productive as much as possible.
2. The term should express the concept clearly and directly.
3. When coining a new term, we should take in consideration the morphological and phonological structure of the language to which the term is introduced.
4. The term should represent one meaning.
5. Polysemy (more than one term for one concept) should be avoided as much as possible.
6. The term should express the meaning of the concept even out of context.
7. The term should be as short as possible without losing the meaning of the concept (Al-Qunier 1997).

Most efforts, among all aspects of Arabic language modernization, have been focused on terminology, particularly in the area of modern science and technology. However, some challenges for Arabic to encompass scientific and technological terms have been presented as a result of the insistence on following the traditional methods of coinage by the responsible institutions (Al-Qahtani 2000: 49). There are several words that have more than one Arabized form. For instance, the term 'Compressor' has three Arabized forms which are /kabbaas/, /mudgaa/, /daag/. According to Al-Qurashi (1982) "This terminological plurality naturally creates confusion because the time has passed in which the provision of synonyms was sign of the linguistic richness and reflected an inherent quality of the language in question".

**Language Academies: An overview**

In the twentieth century, technology and communications have witnessed rapid advances which have led to make an enormous amount of new knowledge and information exceedingly available to almost every country around the world. Even
those countries which were long isolated from centers of scientific research are now linked to them by media. Many languages face the problem of adaptation to modern needs. Thus, such problem is not unique to Arabic. Some instances can be mentioned here such as Turkish, French and Hebrew that have been confronted the fact of an imprecise and inadequate vocabulary with which to acquire and subsequently disseminate new knowledge from foreign sources (El-Khafaiî, 1985; 36). Undoubtedly, the study of other language academies work is certainly on the advantages that can improve and enrich the experience of Arabic Language Academies. We may now turn our attention to these academies; their establishment, organization and function.

**Arabic Language Academies and their goals**

In discussing the goals of Arabic language Academy Versteegh (1997), states that "From the start, the goal of the Academy was twofold: to guard the integrity of the Arabic language and preserve it from dialectal and foreign influence, on the one hand, and to adapt the Arabic language to the needs of modern times, on the other" (p.178; quoted in Ryding 2005, P.7).

The purpose of such institutions was mainly to revitalize and regenerate Arabic language, thus it would become a viable means of communication in a modern science and technology-oriented world. Another purpose is collecting, editing, recording, and storing manuscripts of all kinds to preserve classical works, and to publish and reprint them for modern use. One another important goal of the academies was the conversion of the curricula, textbooks, and teaching methods of Arab universities and institutions from foreign languages to Arabic, sometimes the process referred as "Arabicization". Arabic language Academies are mentioned below in a historical sequence with brief discussion about each one.

- **Damascus Academy**

The first of twentieth century Arabic language academies was found in Damascus in 1919 with only eight members. There were two major committees in the academy which are: [al-Luajnah al-Lughawiyyah al-Adabiyyah](The Literary and Linguistic Committee), and [al-Lanjnah al-şilmiyyah al-Fanniyyah](The Scientific Committee). In 1921, the academy initiated the publication of a journal that was originally [Mjallat
al-Majmaṣ al-Ṣīlmi al-Ṣarabi]; now [Majallat Majmaṣ al-Lughah al-Ṣarabiyyah], that published quarterly.

- **Baghdad Academy**

The Iraqi Academy of Science or [al-Majmaṣ al-Ṣīlmi al-Ṣiraqi], was found in Baghdad in 1947; it retains its original name to this time. This Academy was established by the Iraqi Ministry of Education and it was patterned on the Damascus Academy. In 1950 a journal called [Majallat al-Majmaṣ al-Ṣīlmi al-Ṣiraqi] (The Journal of the Iraqi Academy of Science) had been published by the Baghdad Academy.

- **Amman Academy**

The Jordanian Academy of the Arabic Language or [Majmaṣ al-Lughah al-Ṣarabiyyah al-Urduni] opened in Amman the capital of Jordan in 1975 (Amman academy, first annual report, 1978). Amman Academy also advocated the Arabization of university-level instruction and proposed an intensified translation project to translate all university teaching materials into Arabic as rapid as possible.

- **Cairo Academy**

The first name of the Academy was [Majmaṣ al-Lughah al-Ṣarabiyyah al-Malaki] or (The Royal Arabic Language Academy), then in 1938, it was renamed [Majmaṣ Fu'ad al-Awwal li-al-Lughah al-Ṣarabiyyah] or (The Academy of Fu'ad I for the Arabic Language). The Academey recieved its current name [Majmaṣ al-Lughah al-Ṣarabiyyah or (The Arabic Language Academy) after the revolution of 1952 (Madkour, 1964). The Council of the Academy or [Majlis al-Majmaṣ] presides over the work of the academy as a whole. A series of committees belong to Cairo Academy which are divided on the basis various tasks; each committee has two regular active members of the academy and any member of associates related fields of expertise. Times and places of meetings are chosen freely by the members of those committees. Such as the Committee of Reviving the Heritage and Legacy of Arabic; the Committee on Arts, Architecture and Antiquities; the Committee of Literature; and many others.

- **The Permanent Bureau of Coordination (Rabat)**

The Permanent Bureau of coordination of Arabization in the Arab world (PBA) or al-[Maktab al-Da'im li-Tansiq al-Taṣriib fi al-Watan al-Ṣarabi], was found in Rabat in
1967. The PBA addresses the needs for transforming Modern Standard Arabic into an adequate vehicle for expressing all aspects of contemporary human knowledge.

- **The Union of the Arab Academies**

Significant differences existed from country to country and within any one country as well, sometimes the differences are existed within one institution or university. A conference held in Damascus from September 29 to October 4, 1956, was one of the first efforts to coordinate the work of the language academies. Several Arab language academies participated in this conference such as the Syrian, Iraqi and Egyptian academies. The idea of the united academy remained an intriguing one, however, proposals for establishing a pan-Arab academy continued.

**In Chapter Two,** we have discussed the 'Theoretical Framework' of the research work. It deals with Arabic morphology.

In modern linguistics, the word morphology is used to refer to the study of the internal structure of words. Other definitions of morphology may be argued by some linguists, they claimed that morphology is the study of meaningful parts of words (Mc Carthy, 1991). Morphology deals with the way users of a language comprehend complex words and how they invent new words. The present chapter takes into account both inflectional and derivational aspects of Arabic morphology. It deals with how morphology of Arabic works to create new words either by combining root morphemes with pattern and vocalism morphemes or by combining more than one morpheme/word to create new complex or compound word. This point is clarified under the discussion about traditional Arabic morphology Šarf.

**Traditional Arabic morphology (Šarf)**

The study of morphology (Šarf, which is the closest term to morphology), begins so far as records go, with Sibawayh's *al-Kitaab* (1974), and continues into the present. This section of the chapter aims to look at the morphology of Arabic from the perspectives of both traditional and modern grammarians and linguists. The work of Sibawayh with a number of other works, such as (*Jurjani Muqtašid*, 1982; zajjaji *juma* 1984; Astrabadhi *Sharhe*t) are devoted to the study of word (šarf; Morphology). Some works were devoted to particular morphological problems, like (*Farraʔ al-muthakkar*
wa al-Mu?annath, 1975), where other works were devoted to morphology in general, like (Mumti?; Sharh al-Muluwkiy). According to Booij et al. "?arf and ta?riif refers to the total range of morphological forms in their constituents, and also to the process by which the various forms are derived" (2000, p. 68). However, views of many other Arab grammarians are included in this section.

Morphology of Arabic in Modern Linguistics

The root-pattern system of Semitic morphology, particularly as discussed in classical Arabic, has been a preferred subject of modern linguists. Three aspects of the culture of the Arabic language are discussed by Massignon, namely: orthography, triliteral roots, and case vowels. In discussing triliteral root that he terms it as "the etymological triliteralism of roots", he focuses on the "semantic value" of roots.

Carl Brockelmann who was a comparative Semiticist views the root and pattern morphology in a very narrow fashion in his study of the comparative grammar of Semitic languages. Anderson's description of Arabic in (Anderson, 1985) explains how linguists view Arabic today. Anderson concentrates on verbal derivation of classical Arabic. Furthermore, Anderson amplifies the degree to which Arabic is root-pattern dependant.

Arabic and Semitic have also attracted Structuralist linguists who showed their interest to study Arabic and Semitic morphology especially following World War II. Greenberg (1950) and Cantineau (1950) influenced the development of later studies toward emphasizing the role of root-pattern system over other processes. Cantineau, unlike Greenberg, deals with root and pattern system as the primary basis of Arabic morphology. It is to explain how Arabic differs from European languages (particularly French). For Fleisch the root and pattern system is the source of all vocabulary in Arabic.

Morphology of Arabic (an overview)

Morphology is related to the Rules, process, and organization regarding meaningful units of language, whether they be parts of words like the various kinds of affixes or words themselves. There are some basic respects which make Arabic morphology differs from English morphology (Ryding, 2005). Inflectional morphology presents
how words inflect or vary in order to exhibit grammatical categories, such as present/past tense or singular/plural, while lexical or derivational morphology is related with principles governing word formation, such as analysis of the English words "faithful" or "unfaithfulness" which are derived from the base word "faith". When talking about morphology of Arabic, there are two main contrary theories. Morpheme-based theory, that is advocated by Cantineau (1950a, 1950b); and McCarthy (1981), they claim that derivations are based on the process of mapping out roots in patterns (Mahfoudhi, 2007). On the other hand, the stem-based theory (Ratcliffe1997; Benmamoun, 1999) that argue that derivations are stem-based. It agrees with the doctrines of the full-listing hypothesis of lexical processing (Butterworth, 1983), which supposes that words are represented and accessed as a whole units.

**Root:** root is a word which is not connected to affixes (both prefixes or suffixes), and cannot be reduced into smaller constituents. A root is a unit of meaning (morpheme) which is the primary lexical unit of a word, that bears the essential aspects of semantic content. The root morpheme is discontinuous that's because vowels are inserted in between the consonants of a root, for instance, درس/d-r-s/. Nevertheless, the consonants of a root must always be presented in the same order: first /d/, then /r/, then /s/.

**Pattern:** Patterns can be defined as the set molds of words that roots can be integrated into. The root فعل/f-١-١/ is usually utilized to model patterns, each radical of the root represents a letter of the word, then, together with vocalism create a meaningful word. Derivational affixes cover the use of consonants which mark grammatical functions, for instance, the prefix [ma-] for a noun of place and the derivational prefix [mu-] for many participle. Arabic pattern-formation includes the following consonants: /s/ (siin), /m/ (miim), /l/ (taaʔ), /n/ (nuun), /w/ (waaw), /y/ (yaaʔ), and /ʔ/ (hamza). All these can be used as affixes (prefixes, infixes, and suffixes).

**Derivational Morphology of Arabic: Root-pattern system**

Derivational morphology of Arabic exhibits an elegant and rigid logic because "it consists of a system of consonant roots interlock with patterns of vowels (and sometimes certain other consonants) to form words, or word stems" (Ryding, 2005). For instance, the letter sequence شهر/ʃhr/ is a root, which can be a series of three or sometimes four radicals that signifies some wide collection of lexical items. This collection of items of a given root may be related, but may also differ broadly.
McCarthy (1981) and other scholars proposed that root, pattern, and vocalism are three different morphemes, a root must be combined with the two other morphemes which are a pattern and a vocalism in order to form a word. Thus, a root itself cannot be considered as a fully-formed word; that is because of two reasons: its meaning is highly ambiguous and it has no part of speech. For example, the word /ʃahara/ "famous, notorious" is realized through combining three morphemes namely: the root شهر /ʃhr/, the pattern فعل /ʃil/ which its letters represent the radicals of the root شهر /ʃhr/, and the vocalism /a-a-a/.

However, morphology seeks to concentrate on how words are formed. For the parsing of complex word forms, that are originally formed via derivational processes. Nida (1949) proposed six principles for identifying the component parts of such words and for formulating the nature of those parts. The following tables are given to explain how Arabic words (simple, complex, and compound) are formed, through the morphological processes:

✓ Simple words

<table>
<thead>
<tr>
<th>Arabic Simple words</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>أسد /asad/</td>
<td>Lion</td>
</tr>
<tr>
<td>خنجر /xandjar/</td>
<td>Dagger</td>
</tr>
</tbody>
</table>

Table: (5.2) Arabic simple word

✓ Compound words

<table>
<thead>
<tr>
<th>Arabic Compounds</th>
<th>Compounds construction</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/minaaʔ-bahriy/</td>
<td>/minaaʔ/(F.M) + /bahriy/(F.M)</td>
<td>Seaport</td>
</tr>
<tr>
<td>/Saabir-sabiil/</td>
<td>/Saabir/(F.M) + /sabiil/(F.M)</td>
<td>Passer-by</td>
</tr>
</tbody>
</table>

Table: (5.3) Arabic compound word
**Complex words**

<table>
<thead>
<tr>
<th>Arabic Complex words</th>
<th>Complex words construction</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/fattaahah/</td>
<td>/f-t-h/ (root) + /faʕalaah/ (pattern)</td>
<td>Opener</td>
</tr>
<tr>
<td>/fawṣawtiyy/</td>
<td>/faw-/ (splinter) + /sawt- nisba (y)/(F.M) From /fawq/ and /sawt/</td>
<td>Ultra sound</td>
</tr>
<tr>
<td>/wadʒṣadah/</td>
<td>/wadʒ-/ (splinter) + /ṣadah/ (splinter) From /wadʒa/ and /maṣidah/</td>
<td>Gastralgia; stomach pain</td>
</tr>
</tbody>
</table>

Table: (5.4) Arabic complex word

**Inflectional Morphology of Arabic**

The word "Inflection" mostly indicates these phonological changes that a word undergoes as it is being used in context (Ryding, 2005). Arabic word has more grammatical categories than English words. Some of these inflectional categories are common to the speakers of English such as number and tense, but others are not, such as gender and case. However, Arabic has eight major grammatical categories which are: number, gender, person, voice, definiteness, tense/aspect, case, mood. In Arabic, the words are inflected through either affixation (linear manner) or by applying some inflectional patterns (non-linear manner).

**Morphology and Lexical Growth**

A large number of Arabic words are created by the combination of derivational morphology, concatenative inflectional morphology, and cliticization using Arabic root-pattern system. This plenitude of creating word forms is especially notable in contrast to the low rate of English word forms. The number of Arabic unique word forms may decrease if variation in word forms is removed via stemming due to concatenative morphology. Other lexical types, such as compounding, blending, abbreviations, and acronyms, that are created via Arabic word formation processes, are considered as a source of Arabic unique word forms.
Concatenative and Non-concatenative: Operations of Arabic

Concatenative or linear morphology, is a term used to denote the morphological system in which the lexical form of a particular word is a sequence of morphemes from the lexicon (Kiraz, G. A. 2001). Arabic shows a notably rich and productive morphology (Beesley, 2001) and (Smrž, 2007). An Arabic word is formed by the use of both concatenative and no-concatenative operations. Concatenative operations take place in inflection while non-concatenative operations take place in derivation. Word formation of Arabic can be used as a premium instance of the root-pattern system. "A combination of root letters are plugged in a variety of morphological pattern with priory fixed letters and particular vowel melody that gives rise to corresponding syntactic and semantic phenomena" (Bhuyan and Ahmed, 2008, p.375).

In Chapter Three we have dealt with 'Morphology of Arabic Terminology'

In this chapter, we attempt to analyze Arabic words according to their internal components. In other words, words can be categorized in various ways, such as nouns, verbs, adjectives, adverbs, etc.,. However, the present chapter aims to classify Arabic words based on their internal structure as simple, complex, and compound words. Moreover, every category is further classified depending on either the morphological processes that operate the words, their internal structure, and the semantic relations among the constituents of the words (i.e. complex words). Most of the data provided in this chapter for the purpose of analysis, is chiefly but not exclusively scientific and technical terms used in Modern Standard Arabic MSA. It is also important to mention that all the instances used in this chapter are Arabic nouns.

Figure: (5.2) Simple, complex and compound word
Simple Word

The basic word form with nothing added to it is known as a simple word. For instance a word like "active" has its own meaning which has not been altered in any way. According to the (Office of the French Language of Quebec), "terminological unit" or "term", in terminology, is the meaning unit that makeup of one single word/term or complex words/terms and represent a concept in an univocal way in a specific semantic field. Arabic nouns can be classified into various categories according to their morphology and their relationship to Arabic lexical roots. Here are three main categories:

a. Nouns derived from verb root (e.g. nouns of instrument, verbal nouns, etc.)

b. Nouns not derived from verb root (e.g. "primitives": triliteral, biliteral, quadriliteral, quinquiliteral)

c. Borrowed nouns.

A large number of simple words fall under (B and C) categories can be found in the Arabic dictionaries of scientific and technical terms, which are considered as simple words.

Non-derived primitives

Biliteral primitives as simple words

These nouns (words) have only two consonants in the root. Such nouns (words) often refer to body parts, basic family relationships, or essential physical or social concepts (Ryding, 2005). A few Bilateral simple words (nouns) can be found in the scientific and technical terminology of Arabic, such as دم /dam/ "blood" (med.) and كم /kam/ "quantum" (phys.).

Triliteral primitives as simple words

Triliterals are those words consist of three root consonants. These nouns (words) form a part of the core lexicon of Arabic, but are not verbal derivatives (Lecomte, 1968), these nouns (words) can also be termed as "inert". These words are meaningful units (free morphemes) that have no bound affixes. Selected instances of (trilateral primitives) as simple words used in Arabic terminology of scientific and technical terms
are provided in a tabular form for the purpose of analysis in chapter three. For instance, حمض/himṣl/ "acid" (Chem.) and فلز/filiz/ "metal" (Chem.).

**Quadriliterals and quinquiliterals as simple words**

Quadriliterals are those nouns (words) that based on (four-consonant) roots while quinquiliterals are based on (five-consonant) roots. These nouns (words) are not derived from verb roots. Such words can be considered as simple word forms because they are not attached to bound affixes. Selected instances are of (quadriliterals and quinquiliterals) as simple words used in Arabic terminology of scientific and technical terms are provided in a tabular form for the purpose of analysis in chapter three. For instance, عنصر/kunšur/ "element" (Chem.) and صندوق/sünduuq/ "box ; case" (Tech.).

**Borrowed nouns as simple words**

These nouns are borrowed words from foreign languages (e.g. English and French) which are considered as solid-stem words.It is important to mention that a number of (simple, compound, and complex) borrowed words can be found in Modern Standard Arabic MSA. Since these words become a part of the language, they may be cited as instances represent word types in Arabic (e.g. Simple words). Selected instances are of (borrowed) as simple words used in Arabic terminology of scientific and technical terms are provided in a tabular form for the purpose of analysis in chapter three. Such as زنک/zink/ "zinc" (Chem.) and فيروس/fayruus/ "virus" (Med./tech.).

All instances cited in this section can be used to represent simple words in Arabic due to their features of being (free forms) which are not connected to other bound morphemes, clitics, or affixes. In short, they have no morphological structure therefore they are "simplex words" as Booij (2012) refer to such type of words.

**Complex Word**

In general, a complex word is defined as a word in which at least two morphemes are combined, such as an affix or a suffix. e.g., the word quick + ly = quickly. Complex word can be constructed of free morpheme + bound morpheme, bound morpheme + free morphemeor may be bound + bound. A large number of complex words occurred in any language may be created through two word formation processes, namely:
3. **Derivation:** which involves creating complex words via adding derivational affixes, e.g. *sing-er*.

4. **Blending:** involves creating complex words from parts (splinters) of other words (these parts are sometimes, but not always, morphemes). e.g. *breathalyzer*.

When words undergo morphological mechanisms, complex words are created by different word formation processes such as derivation and blending. In addition to *inflection* which can also enrich the lexicon of the language with complex words through affixing the words (i.e. with inflectional bound morphemes).

**Derivation**

The investigation about complex words/terms created through derivation, leads to discover "the vastness and richness of Arabic lexicon"(Ferguson 1970, 377). According to Ryding, (2005) "Most Arabic nouns are derived from triliteral or quadriliteral lexical roots, and all nouns derived from a particular root are found in an Arabic or Arabic–English dictionary clustered under that root entry". Arabic nouns are usually derived from lexical roots, through application of morphological patterns. The process of creating complex words through applying the morphological patterns with root radicals (consonants) is called derivation (*Iftiqaaq* as termed in Arabic). The morphological patterns carry certain kinds of meaning, such as "instrument used to carry out action", "doer of action", "name of action", "place where an action is done", etc., (Ryding, 2005). A list of derived (nouns) as complex words, used in coining Arabic terminology of scientific and technical terms is provided in a tabular form for the purpose of analysis in chapter three. For instance, the root */ṣ-n-ṣ/* with the general meaning "making" can be interlocked to either the pattern */mafsal/* to create the place name */maṣnaṣ/* "factory" and to */fiṣaalah/* to create */sināṣah/* "industry". Thus, root bears the essential meaning while pattern restricts/modifies it to be (e.g. name of instrument, name of place, name of profession, name of disease, etc.).

**Inflection**

Inflection is a morphological process involves adding inflectional morphemes which modify a word to express various grammatical categories (i.e. number, gender, person, case, tense, voice, mood, and aspect). Inflection differs from derivation in many ways as discussed earlier in the present research. However, both share the characteristic of
being sourced for complex words in the language. Inflected words are certain complex words, in which they usually have more than one morpheme (i.e. more precise, a free morpheme combined with an inflectional bound morpheme) (Plag, 2003). The Arabic noun قلم/qalam/ "pen" is inflected for person, gender, and number in tabular form for the purpose of analysis and to illustrate how complex words are created through inflection in chapter three.

**Blending**

A large class of complex words is formed through the process of blending. In the morphological literature, blends are defined in different ways. However, there is a convergence on a definition of a blend as a word that combine two (rarely three or more) words into one, omitting parts from both or one of the source words (Plag, 2003: 155).

Plag (2003) also proposed classifying blends into two groups based on their formation in addition to the semantic and syntactic relations between the constituents of the blends. He referred to a group of blends as "shortened or abbreviated compounds" such as:

- breath + analyzer = breathalyzer
- motor + hotel = motel

Blends can be classified depending on their internal elements Danks (2003), as mentioned below:

3. Blends are created in the form: initial splinter + word, or word + terminal splinter. Accordingly a list of blends containing initial splinter and a word as a complex word used in scientific and technical terminology of Arabic is provided in a tabular form in chapter three. For instance, the blend شبغراء /ʃibḡiraaʔ/ "Semi-colloid" is a blended form of two elements where the initial splinter /ʃib-/ is a part of /ʃibh/ "like; semi" and /ḡiraaʔ/ "colloid" which is a complete word.

4. Blends are created in the form: splinter + splinter. Accordingly, a list of blends containing two splinters as complex words used in scientific and technical terminology of Arabic is provided in a tabular form in chapter three for the purpose of analysis. For instance, the first blend حيثومة /hay0uumah/
"Sporozoon" is formed through combining the two splinters /hay-/ (a part of /hayawaan/ "animal") and /θuumah/ (a part of /durθuumah/ "bacterium").

**Compound Word**

Compounding is a word-formation process in which two or more elements are treated as a single unit. Compounding takes place when two or more words are joined together to create one lexical unit. In modern linguistics, the term compound refers to a word (more precisely, a lexeme) which consists of more than one stem. Compounds can be classified according to the semantic relations between their constituents.

- The semantic classification of noun compounds (NCs) deals with the semantic relations between compound constituents. In other words, it is based on the semantic 'headedness'. A common semantic categorization of compounds generates four types as mentioned below:
  - **Endocentric Compounds**: An endocentric compound involves a 'head' (i.e. the most important component of the structure that bears the essential meaning of the whole compound), plus the 'modifier' (i.e. a modifying element which restricts this meaning). Endocentric compounds belong to the same lexical category (word class) of their heads.
    - Endocentric compound: Morpheme (A) + Morpheme (B) = a special kind of (A)
  - **Exocentric Compounds**: An exocentric compound comprises two elements in which both of them have the same grammatical function as the compound. Thus, "exocentric compounds have no head at all" (Selkirk: 1983).
    - Exocentric compound: Morpheme (A) + Morpheme (B) = (C)
  - **Copulative Compounds**: A copulative compound involves two constituents in which the semantic relation between both of them is that of coordination. In short, both components of the compound characterize one entity.
    - Copulative compound: word (A) + word (B) = the sum of what (A+B) denote
  - **Appositional Compounds**: An appositional compound is a compound in which its constituents have the same referent, in this type of compound constituent (A) and constituent (B) provides different description for the same referent. In other words, appositional compound refers to an entity with two facets.
• Appositional compound: constituent (A) + constituent (B) = different
descriptions for the same referent

- Hybridized Compounds: Hybridized compounds are constructed from two
elements from different origins. Thus, in the case of the Arabic one of the
elements is an Arabic word and the second is foreign or vice versa.

- IDAFAH Compounds: Iďafah compound is a type of Arabic compounds that
involves a syntactic relation between its constituents.

**The frequency of each type of compound formation found at MSA**

Based on the above semantic classification of compounds we analyzed the data,
collected from the scientific and technical terminology of MSA. After analyzing the
data, we found the productivity of each type of compound formation in MSA.
Following graph represents the productivity of each type of compound formation in
MSA.

![Graph 5.1 Frequency of each type of compound formation found in
the scientific and technical terminology of MSA](image)

The findings based on the data collected from the scientific and technical terminology
of MSA suggest that Endocentric compound formation is most commonly used to coin
scientific and technical terms. Most of the scientific and technical terms are coined
under the category of endocentric compounds, which means the combination of two words or elements is arranged in such a way that one element or word denotes a special kind of another word.

Idafah compound formation is the second common process, which is used to coin scientific and technical terms. Exocentric compound is the third common process in the formation of the scientific and technical terms. Whereas Copulative is the fourth common process. Appositional compound formation is not much common in the scientific and technical terminology of MSA.

Many terms of the scientific and technical terminology of MSA are coined by combining a word from Arabic and a word from another language (English).

Thus, we can conclude that on the basis of result shown in graph 5.1, the productivity of endocentric compounds is the highest, whereas Idafah is second productive, and exocentric is the third common process in the formation of the scientific and technical terms. Whereas Copulative compound in the fourth. Appositional is not much productive in the formation of the scientific and technical terms. Hybridized compounds are also used in the formation of the scientific and technical terminology of MSA, thus they are productive too.

**In Chapter Four** we have dealt with 'Morphology of Arabic Neologisms'

In this chapter we have aimed to examine neologisms created through different morphological processes with the purpose of finding out how newly coined words are created. Another aim is to highlight these morphological processes that are responsible for creating neologisms in Modern Standard Arabic, which also play a major role in enhancing the lexicon of the language. However, the term neologisms may cover all those words that are newly created through various morphological processes (precisely, word-formation processes). Moreover, they may found in all domains of the life. In the present chapter, the discussion about the neologisms is divided into two major sections, namely:

1. Generation of neologisms with resources of Arabic, including derivation, acronyms & abbreviations, blending, semantic change (i.e. narrowing, widening), and analogy;
2. Generation of neologisms with resources of other languages, including borrowing (Arabization; Arabicization), hybridization, and loan translation.

1. Generation of Neologisms with Resources of Arabic

Derivation (ʔɪtiqaaq): The system of consonantal roots and derived patterns is one of the most distinguishing features of Arabic derivational morphology and other Semitic languages. By drawing on existing Arabic verbal roots, an immense array of new words are formed through ʔɪtiqaaq. This process is considered the most natural method for lexical innovation and expansion of the lexicon, and is central to Arabic grammatical structure (Stetkevych, 1970, p.7; Badry, 1983).

According to Arabic grammarians there are three types of ʔɪtiqaaq which are:

(i) /ʔal-ʔɪtiqaaq al-kabîr/ (the big), that known also as /ʔal-qalb/ (metathesis), it involves switching the order of the consonantal root.

(ii) /ʔal-ʔɪtiqaaq al-ʔakbar/ (the biggest), or /ʔal-ʔibdal/, (root modification), that involves changing one consonant of the root.

(iii) /ʔal-ʔɪtiqaaq al-ʃaam/ (the general) which is the third type, is debated to be the most productive and widespread process, and "remains the characteristic method of word-creation in Arabic" (El-Khafalfl, 1985, p.70). The third type of al-ʔɪtiqaaq is discussed broadly in this chapter.

Nominal derivation: A large number of simple nominal patterns in MSA are formed through the association of specific consonantal roots with a range of vowel infixes. Fuck (1951) proposed that MSA nominal patterns range from the simplest forms CvCC, increased to CvCvCv, and further augmented to other patterns formed by doubling of the second consonant.

Verbal Derivation: Verbs in Arabic are usually constructed out of a trilateral consonantal verbal root, similar to nouns. Through the interposing of short vowels (a, i and u) between its consonants, the verb root pattern {CCC} becomes the first basic verbal form. Some derived verbs as neologisms are included under this discussion.

Acronyms & Abbreviations: Abbreviations are one of the most noteworthy linguistic features of a language that would take place of any super dictionary. The term 'Acronym', became in use in 1943, is derived from Greek akros, 'tip' and Onyma, 'name'. The use of abbreviations is often considered to be a modern habit which can be
traced back to over 150 years ago. Historically, the fashionable use of acronyms comes and goes in waves. However, we can observe the great increase in the use of acronyms in the present century (Crystal, 2004: 120). In Arabic language abbreviations and acronyms can be found as follow:

ii. First one which is termed as [Ifras] in Arabic, that is used to refer to the abbreviations that are pronounced letter by letter.

iii. While the Arabic term [allafZah alawa'ilyyah] is used to refer to the acronyms that are pronounced as a single word. The most recent acronyms found in MSA are included under this section.

Accordingly this section includes other classification for abbreviations and acronyms found in MSA as neologisms in different fields such as:

i. Arabic Abbreviations and acronyms are used as scientific and mathematical symbols.

ii. Borrowed abbreviations and acronyms. Again there are two types of borrowed abbreviations and acronyms in Arabic language which are:

➢ First one "Untranslated Borrowed Acronyms"

➢ Second type is "Translated Abbreviations and Acronyms"

It can be said that acronyms and abbreviations of Arabic are coined according to the need of language. Thus, they can be considered as neologisms, simply because speakers of MSA coin them coinciding with the events to cover their linguistic needs. This is clearly shown through all the instance mentioned above in this section of chapter four, especially in case of those acronyms that were created coinciding with the political events.

**Blending:** Blending is a word formation process characterized by combining two or rarely more words into one (Plag 2005). Lexical blending is a process of combining two or more separate forms in order to coin a single new term. The result of this process is known as blend. It is a very frequent process, and it is similar to the process of compounding, but the major difference between them, that "blending is typically accomplished by taking only the beginning of one word and joining it to the end of the
other word” (Yule, 2006: 66). However, blending is discussed here, is discussed broadly for the purpose of finding neologisms created through the process of blending.

A simple blending rule $AB + CD \rightarrow AD$ has been suggested by Plag (2005:123).

In Arabic there are three main types of blending namely:

- "Relational Blending" /naht nasabiya/;
- "Verbal Blending" /naht fišliya/;
- "The Nominal and Adjectival Blending" /annaht alʔismiy wa-l wašfiya/ which is rare in the ancient Arabic sources.

Loan blends are also discussed in this section of chapter four.

The discussion exhibits how the process of blending employs other morphological processes such as clipping, shortening, or omitting to create new blends. However, lists of blends as neologisms found in MSA are provided in this section of chapter four for the purpose of analysis. Concerning the use of blending in modern standard Arabic (MSA), the discussion shows that the influence of the western languages especially English is very obvious.

**Semantic Neologisms:** Words are like a living organism, they are capable of growing, changing, spreading, and influencing the world in many ways, directly and indirectly through others. We should think about words being ‘alive’. In the post-world war era, the need to develop new technical term has grown tremendously in the world (Sager & Johnson, 1978). This need emerges out of the fast development and discoveries in the socio-cultural, educational, scientific, and industrial fields. There are different ways of semantic change that words behave whenever the linguistic, historical, socio-cultural, and psychological reasons occur, such reasons are responsible of the semantic change that happens to words. The most important ones are:

- **Narrowing of meaning (specialization):** which is a Change from super ordinate level to subordinate level, when the word can name fewer objects, i.e. have fewer referents, in that case the content of the new notion is being enriched by a number of relevant features.

- **Widening of meaning (generalization):** It is the process reverse to specialize, simply it's the transition from the specific meaning to the general meaning, in that case the
scope of the new notion is wider than that of the original one, whereas the content of the notion is poorer.

Lists of semantic neologisms in MSA produced by means of semantic narrowing and semantic widening are provided in tabular form in this section of chapter four for the purpose of analysis. However, the discussion exhibits how the political events in the Arab world have played a major role in the emergence of semantic neologisms, especially those via narrowing of meaning.

**Metaphor:** Metaphors are truly pervasive in everyday language, although they are believed to be a vital component of particularly poetic language. A metaphor is a figure of speech that identifies something as being the same as some unrelated thing for rhetorical effect, thus highlighting the similarities between the two. In this section of chapter four, we deal with metaphor as a prolific source of new words in a language. A list of metaphors (as neologisms) found in MSA is provided in tabular form in this section of chapter four for the purpose of analysis. The included instances illustrate how metaphor provides the language with new words and expressions by the transfer of meaning.

**Analogy:** Analogy is a phenomenon, relating existing surface forms to potential new ones. These relations were considered to be the basis of derivational productivity, syntactic formation, and paradigm membership. Arabic the concept Analogy, which is known as /alqiyaas/ is an integral part of the process of derivation. However, many examples of Analogy in Arabic can be found above in the present research, under the long discussion of Arabic derivation and inflection where the morphological patterns represent the way analogy works in Arabic. We can conclude that analogy is a continuous, living process and it is a characteristic of any language system.

2. **Generation of neologisms with resources of other languages**

**Borrowing:** Borrowing includes copying a word that initially had a place in one language into another language. The borrowed word never keep a flawless copy of its original, it is changed to fit the morphological, syntactic and phonological patterns of the new language (Palmer, 2008: 231-264). In Arabic (al-ʔiqtiraḍ) is the equivalent of the borrowing process, which refers to the process of integrating loanwords into the Arabic lexicon.
**Reasons for the phenomenon of borrowing:** There are numerous explanations behind the phenomenon of borrowing, among them are: lexical gaps for concepts, thoughts, and inventions, and additionally prestigious and modernity issues.

**Borrowing and Arabic Lexicon:** In Arabic, borrowing is a phenomenon that comes about as a consequence of the close contacts with other individuals and the pressing requirement for extending the Arabic vocabulary to meet the exigencies in different fields of present day life. These words that are borrowed and presented from different languages have experienced a process that is called 'Arabization'. As per *The American Heritage Dictionary of English Language* (2009).

**Loan words:** In the context of borrowing the term *loan words* should be discussed. Loan words (borrowed words) are considered as a source of unique word forms in Arabic. They are borrowed directly from other languages into MSA, especially from Western languages such as English and French. In discussing the derivational and inflectional processes that loan words underwent, this section includes some loan words in MSA underwent morphological remodeling and modification.

**Arabization (Arabicization):** refers to the extensive use of Arabic as the official means of oral and written communication of all Arabs. However, Arabization in most limited sense refers to the process of integration and assimilation of foreign technical and scientific terminology by means of borrowing or translation. Some instances are included under this discussion to exhibit how words are Arabized through a series of linguistic modifications (i.e. phonological and morphological modifications).

**Hybridization:** The interaction among languages results many phenomena, and hybridization is one of them. Stockhammer C. (2011), defined hybridization "as a process whereby separate or disparate entities or processes generate another entity or process (hybrid), which shares certain features with each of its sources but which is not purely compositional". Hybrids involve an Arabic word or stem that is attached with the foreign ending (suffix). Such as the words صوت-يم /ṣuṭ-īm/ "phoneme" and صرف-يم /ṣarf-īm/ "morpheme" which are suffixed with the English ending [-eme]. When we discuss hybridization, as a productive process under the umbrella of borrowing, we should mention that hybrids in Arabic like the example above are derivationally unproductive. It is to say that we cannot derive any further words from those hybrids,
but in case of other types of Arabization words like /tilfaaz/ "television", we can derive the verb /talfaza/ "to televise".

**Loan Translation:** Loan translation is the adoption by one language of a phrase or compound word whose components are literal translations of the components of a corresponding phrase or compound in a foreign language, as given in (Collins English dictionary). In loan translation, the target language employs some of its lexical items to create new signifiers that correspond to the foreign ones; rather, transferring the terms of the Source language into the target language (Al-Asal & Smadi, 2012). Loan translations can be found in different fields (i.e. science, technology, law, economics, politics, etc.,). However, the discussion exhibits that MSA resorts to translate such expressions literally due to the lexical gap and the global impact. A list of loan translations as neologisms found in MSA are given in tabular form in this section of chapter four for the purpose of analysis.

5.2 Conclusion

The aim of this research has been to investigate the morphological processes and mechanisms in Arabic that are responsible for creating new words in the language (i.e. inflectional and derivational processes) with special reference to the word-formation processes in Modern Standard Arabic (MSA). Precisely, the representations of words used either in the scientific and technical terminology of MSA as discussed in chapter three and those neologisms used in different sources, chiefly in the Arabic mass media, as discussed in chapter four.

The huge development of science and technology in the past century has led to emerge a large number of scientific and technical terms. Terminology formation is closely linked with linguistics. Each specialization and domain usually utilize a lexicon that relays a variety of specialized concepts by means of its language. These special term transfers concentrated meanings that have been built up over significant periods of study of a field. However, the significance beyond these terms refers to the way each term involves a mass of information into a single word.

The investigation about the morphology of Arabic words leads to discover the vastness and richness of the Arabic lexicon which are created through various morphological processes and mechanisms. These processes take words (simplex or complex) as their inputs and create more complex words. Complex words in Arabic are created through
affixation, blending, and compounding. In addition to the Arabic derivational processes that usually involve creating complex worlds through combining roots and patterns in non-linear manner.

The results drawn from data analysis in chapter three show the productivity of the morphological processes (derivation, inflection, blending, and compounding). Since derivation is debated to be the most productive and widespread process, we find that a large rate of complex words used in scientific and technical terminology in MSA, is created through the process of derivation unlike inflection, simply because a large number of words can be created from a single Arabic root by applying different patterns. The internal structure of scientific and technical terms used in MSA (complex, compound words), involves different relations between their constituents (i.e. semantic and syntactic relations). In case of blending, a few instances were found in the scientific and technical terminology of MSA, in the two possibilities (i.e. blends contain initial splinter + one word and blends contain two splinters). Whereas, compounding shows a high level of productivity in coining scientific and technical terminology of MSA.

In compounding itself, the productivity of endocentric compounds is the highest whereas I’dafah is second productive, and exocentric is the third common process in the formation of the scientific and technical terms. Whereas copulative compound is the fourth. Appositional is not much productive in the formation of the scientific and technical terms. Hybridized compounds are also used in the formation of the scientific and technical terminology of MSA, thus they are productive too.

Coining new words is an essential part of all language specific domains. A neologism is a new word or sense of a word. Thus, the term neologisms may cover all those words that are newly created through various morphological processes (precisely, word-formation processes). Neologisms take place when a speaker of language attempts to coin a new word for a new entity or object. However, these neologisms are regularly added to the existing bank of words (mental lexicon).

Neologisms can be generated either with the resources of the language itself through derivation, acronyms & abbreviations, blending, semantic change (i.e. narrowing, widening), and analogy; or with the resources of other languages, including borrowing, (Arabization; Arabicization), hybridization, and loan translation. However, various
factors may influence the emergence of neologisms, namely: historical, socio-cultural, psychological, and political factors, etc., which can be considered as extra-linguistic sources. The discussion in chapter four has lead to find that the political factor is the most influential one in coining neologisms across most word-formation processes. This may be due to the explosive political events that take place in the Arab world recently, notably the Arab spring uprisings. Moreover, it is revealed that the impact of foreign languages, especially English, is notable in case of coining new words in MSA, notably those are added to the lexicon throughout borrowing (i.e Arabization, loan words, and loan translation).

The present study lies in the fact that it is expected to be a good source of valuable information to the teachers, linguists and translators who have Arabic as a Native language or second or even as a foreign language in general because this information is necessary to provide a better understanding of Arabic morphology in general, more precise, the morphology and formation of words in MSA. The findings of this study are beneficial for educators and scholars in the field of morphology as well as in the field of translation.