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Adjectives and Adverbs in Arabic

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Abstract

This paper discusses parts of speech in Classical and Modern Standard Arabic ('Arabic' for short), with a particular focus on the categories of Adjective and Adverb. Throughout the paper, we argue that there seems to be no distributional criteria that set adjectives or adverbs from substantives. In particular, neither morphological nor syntactic criteria can be used successfully to isolate a class of items used exclusively for noun or verb modification. The words used for these two functions seem to be part of the class of nouns and only semantic constraints determine which can be used as noun modifiers or as verb modifiers. Therefore, a theory that uses gross distribution only to identify syntactic categories must lump these together in a single class of substantives, as traditional Arab grammarians do.

Adjectives and adverbs in Arabic¹

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1. Introduction

In describing languages outside the Indo-European family, Western linguists sometimes make unjustified assumptions. A good example of such frequently made assumptions is the imposition of the lexical categories of the major European languages on other "exotic" languages. As Gil (2000) notes, many available theories about the structure of language turn out to be "an exercise in Euro-centricity, involving the unwarranted imposition of categories and structures that are simply irrelevant." Local linguists often follow the lead of their Western colleagues. Whether some of the traditional parts of

speech are universal or whether all of them are language-specific is an issue that has been tackled at some serious depth only for the last few decades, and the findings already point to the flaws in analyses assuming the universality of the traditional categories as provided by the grammar books of European languages, both modern and classical.

The present paper will reconsider the assumption, often made by Western and Arab linguists, according to which the Arabic language has the categories of adjectives and adverbs. The major claim behind this enterprise is that conclusive evidence in favour of the postulation of such word classes is unfortunately lacking, and the results of morphological and syntactic tests all indicate that these categories are non-existent in Arabic. But before any investigation of the morphology and syntax of the lexical items that allegedly behave as adjectives or adverbs in Arabic, a brief section will be devoted to the review of the traditional Arabic grammatical theory and its conception of parts of speech, in general, and adjectives and adverbs in particular.

2. Adjectives and adverbs in traditional Arabic grammar

The first Arab grammarians identified three major parts of speech: nouns, verbs and particles, and the Arabic grammatical tradition has remained faithful to this tripartite division up to this day. The criteria on the basis of which the word classes are defined are various and belong to different levels of language, but the focus in this section will be exclusively on the morphological and the syntactic criteria. Besides, while considerable effort was deployed to identify the necessary and sufficient characteristics defining the categories of noun and verb, the class of particles was treated as a mere waste basket in which everything that is neither a noun or a verb is thrown. Consequently, no particular features worthy of mention here have been singled out as common to all members of this class. Moreover, since most, if not all, equivalents of English adjectives and adverbs fall within the category of nouns, the class of verbs is simply irrelevant to the present discussion and will be discarded accordingly.

The class of nouns itself is heterogeneous. It includes nouns denoting concrete and abstract entities, nouns denoting properties, locatives, demonstratives, independent pronouns, pronominal clitics, and a few others. Semantically, all these types of nouns are claimed by Arab lexicographers (*lughawiyyūn*) to have the potential to refer by themselves (i.e. without the need for another word, as a verb needs arguments) and do not express the notion of time. Grammarians, on the other hand, have produced a relatively long list of morphological and syntactic traits which distinguish nouns from the other parts of speech. The length of the list reflects the diversity of the noun types, but the prototypical elements of the class are generally defined by a set of five criteria which need not be satisfied all by every eligible noun. As summed up by Ibn Mālik in his mnemonic *Alfiyya*, these are (a) the genitive case, (b) nunation, (c) the vocative, (d) the definite article, and (e) topicality. Some of these criteria are morpho-syntactic in that they involve some morphological process that is triggered by the syntactic function of the noun, but the others are either morphological or syntactic only. Some illustration of the five criteria is in order.

Among the criteria which refer to the form of the noun in a syntactic position are the genitive and the vocative. Genitive marking is characterised essentially by the suffixation of an 'i' vowel to a noun when the latter is a complement of a

preposition or of another noun, as in the construct state. As to the vocative, it is in fact not a morphological case, but is rather used by grammarians to refer to particles of address such as $y\bar{a}$ ' \ddot{O} ' whose complement is usually in the pausal case. The following examples illustrate both criteria²:



In both (1a) and (1b), the definite noun *l-kitāb-i* 'the book' is in the genitive form, whether it is a preposition complement, as in (1a), or a noun complement, as in (1b). As to the noun *ražul* 'man' in (2), it is the complement of the vocative particle and is in the pausal case form which is marked by the null morpheme \emptyset . It is claimed that only members of the noun class can take the genitive case marker and/or co-occur with the vocative particle.

Similarly, the definite article and the 'n' of nunation are claimed to be exclusive affixes of nouns. As the previous examples show, a definite noun takes an 'l-' prefix, generally analysed as the definite article (viz. *l-kitāb* 'the book'), while an indefinite noun is characterised by the absence of the article (viz. *ražul* 'man') since Arabic lacks indefinite articles. By contrast to definite nouns, indefinites usually take a suffixal '-n', as in the following example:



In writing, the suffixal '-n' is omitted in singular nouns and broken plurals and replaced by the doubling of the preceding vowel (i.e. the case marker), but it is written in duals and sound plurals (e.g. *mūminān*, *mūminūn* 'believers'). It should be pointed out that verbs in the imperfective aspect and the indicative mood with a plural pronoun as a subject also exhibit the suffixal '-n' (e.g. *yaqūlūn* 'they say'), but traditional grammarians do not consider that this suffix is an instance of

nunation. Whether they are right or wrong is a point that is irrelevant to the primary concern of this paper, and discussing it would only take us too far astray. Suffice it to observe that nunation's syntactic and semantic behaviour is multifarious, and its functions with nouns and verbs are distinct enough for nominal '-n' and verbal '-n' to be considered as two distinct but homonymous forms.

Finally comes the liability to function as a topic as a distinctive feature of nouns. The term*musnad ?ilayh* (literally: that which can be leant upon) translated here as 'topic' is not a purely pragmatic notion. It refers to the function of the argument of a predicate. It was on the basis of this criterion that pronouns (both affixal and independent), for example, were classified as nouns. These are exemplified by (4) and (5):



The pronominal clitic '-tu' in the verbal sentence in (4) as well as the pronoun?anā in the so-called nominal sentence in (5) are both nouns according to the grammatical tradition on the ground that they are the arguments of the predicates *Darab* 'hit' and *marīD* 'sick', respectively. Yet, neither the clitic nor the independent pronoun is topicalized in these examples. This fact indicates that the *?isnād* is more of a syntactic than a pragmatic criterion. Obviously, it is not a sufficient criterion since phrases and whole clauses may also function as arguments, but it seems that the tradition was concerned more with individual lexical items than with phrases or clauses when parts of speech are discussed.

Perhaps the best example to show that the Arab grammarians' criteria of nounhood are formal rather than notional (i.e. semantic) is the case of locatives. This subclass of nouns (called *Đurūf*) express meanings that are usually expressed by prepositions, namely, temporal and spatial relations between events and entities (cf. subsection 2.2.1 below). Yet, locatives are classified by the grammatical tradition as nouns, along those denoting entities, places, properties, etc. The following pairs of examples illustrate the difference, as well as the similarity, between locatives and prepositions:

(6)	a- I-kitāb-u fawq-a I-maktab-i			
	Def-book-Nom top-Acc Def-desk-Gen			
	(The book is on top of the desk)			
	b- I-kitāb-u ɛalā I-maktab-i			
	Def-book-Nom on Def-desk-Gen			
	(The book is on the desk)			
(7)	a- I-?ustāđ-u dāxil-a I-qism-i			
	Def-teacher-Nom inside-Acc Def-classroom- Gen			
	(The teacher is inside the classroom)			
	b I-?ustđ-u fī I-qism-i			
	Def-teacher-Nom in Def-classroom-Gen			
	(The teacher is in the classroom)			

The locatives *fawq* 'top' and *dāxil* 'inside' express more or less the same meaning as the corresponding particles $\hbar ur\bar{u}f$) *calā* 'on' and *fī* 'in'. But unlike particles, locatives can inflect for case: the former are said to be*mabniyyah* (uninflected) and the latter *mucrabah* (inflected). In the above examples, *fawq* and *dāxil* are marked for the accusative case. But more crucially, locatives can be marked for the genitive, a feature which, as pointed out earlier, was held by Arab grammarians to be criterial for nouns. Thus, *fawq* and *dāxil*, for example, in (8) and (9) below function as objects of prepositions and are, consequently, marked for the genitive case:

		nazal-a	min fa	awq-i	l-dār-i
	(8)	Alight-3ms	s from t	op-Gen	Def-house-Gen
		(He came house)	down f	rom the T	top of the
		kān-a f	ī dāxil-i	l-ba	ayt-i
	(9)	Was-3ms in inside-Gen Def-room-Gen			
		(He was ir	nside th	e room)	

This feature sets these locatives apart from the corresponding particles; and although there are other features that locatives share with nouns, the satisfaction of the genitive criterion is by itself sufficient to make them fall under the class

of nouns. Therefore, phrases like *fawqa Imaktabi* 'on top of the desk' are analysed within traditional grammar not as a preposition and its complement, but rather as a noun phrase in which the head noun and its complement are in the construct state relation (*PiDāfah*). (For more on the noun status of locatives, see Owens (1989)).

Beside distinguishing nouns from verbs and particles, traditional grammarians also identified a set of subclasses of nouns. As is the case with the tripartite division of word classes, the sub-categorization of nouns is based on both formal and notional criteria. Mubarrad, a grammarian of the 10th century, identified five subcategories, which can be schematised as follows (Cf. Achour (2004:73)):



As was pointed out earlier, pronouns (called *muDmarāt*) are considered within the grammatical tradition to be nouns, and so are demonstratives, also called *mubhamāt* 'vague' because they have no semantic content by means of which their referent can be identified. Since these two subcategories, together with proper names, have no relevance to adjectives or adverbs, they will be ignored in the rest of this paper.

In comparison, the two subcategories of common nouns *(Pasmā? I-?ažnās)* lie at the heart of our interest, and our mission is to search for any formal feature, if there are any, on the basis of which a subset of common nouns could be singled out as forming a class of adjectives or a class of adverbs. Non-derived common nouns, which we will call 'primitives', following Holes (1995), can be exemplified by such nouns as *žabal* 'mountain' and *?asad* 'lion': they denote classes of entities by convention and their meaning can be defined extensively as the class of members denoted by a noun. On the other hand, derived common nouns (or derivatives, for short) such as *qātil* 'killer' or *miħrāθ* 'plough' have denotation not only by mere convention, but also by virtue of denoting a property that any entity must have in order for it to be called a killer or a plough. *Qātil* is a description of any individual who committed a murder, and the description is a function of the association of the root QTL 'kill' and the pattern CāCiC by means of which the active participle is formed. Similarly, the root HRO 'plough' and the pattern miCCāC combine to form the noun of the instrument which serves to plough. In this sense, it could be claimed that derivatives are better defined intensionally as those denoting properties.

Derivatives are often referred to in the literature as waSf or Sifah, both of which can be translated as 'description'. There

are at least seven types of derivatives for which separate chapters are usually reserved in traditional grammar books. These are: (a) active participles, (b) passive participles, (c) qualifiers, (d) the comparative/superlative, (e) nouns of time, (f) nouns of place, and (g) nouns of instrument (Cf. Hassan (n.d: 182; vol. 3)). But not all these can be used to modify other nouns. Noun modification (*nact* or *Sifah*) is a function restricted to a subset of these which includes active and passive participles and qualifiers (*Sifah mušabbahah*), while nouns of time, place and instrument function as heads of noun phrases. As to verb modification, no separate word category was identified as specifically expressing this function. Whether this traditional classification is tenable or not remains to be investigated, using mainly morphological and syntactic arguments³.

3. Morphology

Radford (1988:63) defines a word-level category as "a set of words which share a common set of linguistic (especially morphological and syntactic) properties". We have seen how Arab grammarians classify words into nouns, verbs and particles on the basis of some inflectional and distributional criteria. What we will do now is reconsider their category of nouns to see whether any further categorization is possible on the basis of other morphological criteria which may not have been given due attention by the grammatical tradition. The focus will be first on possible candidates to the category of adjectives, and in a later subsection, on possible candidates to the category of adverbs.

3.1. Adjectives

In Arabic, a subset of words of the traditional category of nouns do function as modifiers of other head nouns, whereas others do not, as was explained in the preceding section. In a noun phrase, the head and the modifier generally agree in gender and number, but there remains the question as to whether heads and modifiers inflect for these morphological categories in the same way or differently. In addition, modifiers are derived through the process of root and pattern association for which Semitic languages are well-known. Whether they can be distinguished from non-modifiers by their patterns is another question that needs to be investigated. Another issue to be raised in connection with adjectives is that comparison and superiority can be expressed in Arabic by means of a morphological process operating on members of the traditional category of nouns. Whether this derivational process is applicable to all sorts of nouns or is restricted to modifiers will be discussed in the last subsection, while the preceding ones will be devoted to gender, number and patterns, respectively.

3.1.1. Gender

Arabic nouns are either masculine or feminine, but only feminine nouns are marked for gender. The feminine marker is usually the suffix '-t', as in *fatāt* 'girl' or *Safħat* 'page', which are realized as *fatāh* and *Safħah* in the pausal case as a result of a '-t/-h' alternation specific to singular feminine nouns. A few others, however, have 'ā' or 'ā?', such as *daɛwā* 'claim' and *Saħrā*? 'desert'; but these endings are not productive and remain restricted to the cases recorded from native speakers (*samāɛiyyah*).

What is of importance to our present purposes is that gender marking seems to be restricted to derivatives. Primitives, on the other hand, generally do not take the '-t' suffix. Their feminine character is determined either by the sex of the referent (e.g. *faras* 'mare') or by mere convention (e.g. *dār* 'house'). The few cases of primitives recorded with the feminine marker are rather exceptional. Al-Sabbān, a medieval grammarian, for example, states that "the marking of primitive nouns *(?asmā? žāmidah)* for feminine gender is rare and unproductive" (Quoted by Hassan (n.d: 590; vol.4)). Unmarked feminine primitives are also noted to allow some variation as far as verb agreement is concerned. As preverbal subjects, they require the verb to take feminine agreement only (e.g. *l-dāru ttasaɛat* the house was large'), but when they are post-verbal, the verb can take either feminine or masculine concord (e.g. *ttasaɛat l-dāru*) (cf. Hassan (n.d: 587; vol.4)). Apparently, when the Arabic language was codified in the 8th century, there was a lot of internal and dialectal variation in the gender of primitives: a great number of them behaved sometimes as masculine and sometimes as feminine.

Can the difference in gender marking serve as a clue for the language learner to postulate the existence of the category of adjectives? Unfortunately, the answer is negative. Apart from the exceptional cases of primitives which are marked for the feminine, noun modifiers are not the only derivatives that take the same gender suffix. It should be recalled from the preceding section that nouns of place, nouns of time and nouns of instrument are also derived, and as far as gender marking is concerned, they do not behave like primitives in that the suffixation of '-t' to feminine nouns is productive for them, though feminine nouns may be rare among some of them such as nouns of time. Thus, examples like *madrasat* 'school' or *minžarat* 'pencil-sharpener' are derived through the association of the roots DRS 'learn' and NŽR 'work wood' together with the patterns *maCCaC*, specific for place nouns, and *miCCaC*, specific for nouns of instrument. But although they are derived, they cannot function as noun modifiers. Similarly, even instance nouns (e.g. *qafzat* 'a jump') and nouns of manner (e.g. *mišyat* 'gait'), which are not included by the grammatical tradition under the class of "description" nouns (*Sifah*), are also derived, and those among them which are feminine take the '-t' suffix; yet, they cannot function as modifiers in a noun phrase. Therefore, the feminine suffix cannot serve as a criterion which would distinguish modifiers from non-modifiers.

Besides, not all noun modifiers require an overt feminine marker. Those of them which have a set of specific patterns are usually neutral as to gender agreement with the noun they modify. Among these patterns are *CaCūC* of active participles (e.g. *Sabūr* 'patient'), and *miCCāC* of intensive forms (e.g. *miclām* 'erudite'). Thus, it is natural to say, for example, *?imra?ah Sabūr* 'a patient woman' and *bint miclām* 'an erudite girl'. In fact, according to a grammarian of the 12th century, the feminine marker is dispensed with whenever the head noun is mentioned, but inserted otherwise in order to avoid ambiguity (e.g. *?aɛrifu Sabūrah* 'I know a patient woman') (cf. Ibn Yaɛīš n.d: 102, Vol.5).

In brief, although there is a significant difference between primitives and derivatives concerning gender marking, this feature cannot be used as a criterion on the basis of which modifiers can be set apart from non-modifiers. Besides the fact that some derivatives do not function as noun modifiers, there are cases of modifiers which behave like primitives in that they usually do not inflect for gender. The issue to be tackled next is whether inflection for number will fare better than gender inflection.

3.1.2. Number

Arabic nouns inflect for three categories of number: the singular, the dual and the plural. Of the three categories, the singular is unmarked, and dual marking is the same for both primitives and derivatives. Dual nouns have a '*ān*' suffix when they are in the nominative case, and '*ayn*' when in the accusative or the genitive cases. In comparison, there are two types of plurals: sound plurals and broken plurals. The first consists in the suffixation of a plural morpheme, while the second involves various changes on internal vowels and/or consonants. Therefore, if a category of adjectives can be identified in Arabic on the basis of number inflection, it is among the plural forms that one should look; and to this we shall turn immediately.

Sound plurals can take a number of plural suffixes, depending on the gender and the case of the noun. In particular, masculine sound plurals have the '*ūn*' suffix when in the nominative, and '*īn*' when in the accusative or the genitive (viz. *mūminūn* vs. *mūminīn* 'believers'). Feminine sound plurals, on the other hand, take the suffix *āt* invariably, case being marked in the regular way by vowel suffixation. The question to be addressed now concerns the type of nouns which favour sound pluralisation, and here some difference between masculine and feminine nouns has been recorded by traditional grammarians.

According to the tradition, masculine sound plurals are either proper names or derivatives (cf. Hassan (n.d: 139, Vol.1)). But this observation does not imply that non-modifiers do not undergo sound pluralisation or that modifiers must undergo this type of plural formation. Although it is true that most primitives tend to have broken plural forms rather than sound plural forms, it is not the case that all those which have sound plural forms can function as modifiers. Apart from proper names and a few exceptional cases of primitives, a large number of derivatives which have sound plurals never function as modifiers. As was pointed out earlier, the class of derivatives include a set of subcategories only a few of which can function as modifiers. Besides, it is certainly not the case that all noun modifiers have a preference for sound pluralisation. For instance, modifiers which have the pattern ?aCCaC for the masculine and CaCCa? for the feminine (e.g. ?abyaD / bayDa? 'white') have broken rather than sound plural forms. And so do modifiers that generally do not require gender agreement with the head noun, as was explained in the preceding subsection. Therefore, masculine sound pluralisation does not distinguish modifiers from non-modifiers.

Feminine sound pluralisation is even less helpful. It applies to all singular nouns with a final '-t', whether they are proper names or derivatives. Even masculine proper names such as *ɛaTiyyat* or *ħamzat* undergo this type of pluralisation. It also applies to the diminutive of primitive nouns such as *nuhayrāt* 'small rivers', *durayhimāt* 'a few dirhams' and others, a fact that indicates that this inflection is characteristic of neither modifiers alone nor non-modifiers alone. This conclusion is further corroborated by some phonologically long primitives such as *ħammām* 'bath', *kattān* 'cloth' and *ʔiSTabl* 'a stable' for which no broken plural form is attested. These are submitted to sound pluralisation, just like modifiers.

Finally, broken plurals exhibit a wide variety of patterns which are scarcely of any significant help to the language learner to isolate a category of modifiers from that of non-modifiers. The number of patterns by means of which broken plurals are formed exceeds thirty, and some nouns may have more than one plural form. But for our purposes, they can be grouped into three classes: (a) those specific to primitives, (b) those specific to derivatives, and (c) those shared by both primitives

and derivatives. These can only be exemplified here, for a detailed discussion of their morpho-phonological processes and their semantic characteristics would only take us too far astray. An example of a plural pattern specific to primitives is ?aCCuC, which applies to singular nouns having the form CVCC such as *rižl/?aržul* 'foot/feet', *ɛayn/?aɛyun* 'eye/eyes', etc. Singular derivatives with a similar form do not yield to the same plural pattern (viz. *šahm/*?ašhum* 'brave'). Broken plurals specific to derivatives can be exemplified by the pattern CuCC, which concerns modifiers with the singular masculine form ?aCCaC and the feminine form CaCCā? Such as *?axDar/xadrā?* 'green', *?aħmar/ħamrā?* 'red', etc. (viz. *xuDr*, ħumr). Similar modifiers with a penultimate semi-vowel (e.g. *?abyaD* 'white', *?aswad* 'black') have the plural pattern CīC or CūC, depending on the nature of the semi-vowel (viz. bīD, sūd). As to plural patterns shared by primitives and derivatives, they can be best illustrated by the pattern CawāCiC, as in *žawāmiɛ* 'mosques', *Sawāmiɛ* 'minarets', *xawātim* 'rings' or *Tawāliq* 'divorcees', *ɛažā?iz* 'old women', *šawāhiq* 'high things'. The first three are examples of non-derived nouns whereas the others are derived and can function as noun modifiers. Thus, even if the patterns of class (b) all involve modifiers only, the fact that patterns of class (c) concern both modifiers and non-modifiers renders the classification opaque for the language learner.

Morpho-phonological processes render the difference between the pluralization of noun modifiers and non-modifiers even more opaque. More specifically, nouns constituted of four or more consonants, whether the consonants are all radical or some of them are affixal, have similar plural patterns, irrespective of their formal or notional classification. For example, the participles *mudaħraž* 'rolled' and *mutadaħriž* 'that can be rolled' both have the plural form *daħāriž*, which conforms to the pattern CaCāCiC. This very pattern is required also for the plurals of phonologically long primitives such as *safaržal* '', whose plural form is *safāriž*. Besides the CaCāCiC pattern, there are a few others and they all necessitate consonant elision. But what is important for us about them is that they take into consideration mainly the phonological form of the input; whether the input is a modifier or a non-modifier is immaterial to them.

All in all, nominal inflection for number in Arabic, though significant for a set of primitive nouns and a set of noun modifiers, is generally unhelpful for a neat classification of nominals into a category of nouns and another category of adjectives. By this brief subsection on number we end the discussion of inflection. Our next step is to consider derivational morphology to search for any evidence favouring the postulation of adjectives in Arabic.

3.1.3. Patterns

The discussion in the preceding section involved both primitives and derivatives, and the aim was to find some formal feature on the basis of which the two categories may be set apart. The aim, however, proved to be beyond reach. The next objective is to consider the class of derivatives in search for a criterion on the ground of which noun modifiers can be separated from non-modifiers. It should be recalled from section 1 above that primitives like *žabal* 'mountain' and *?asad* 'lion' are constituted of root segments only (i.e. consonants and vowels), whereas derivatives like *qātil* 'killer' and *miħrāθ* 'plough' are constituted of the roots QTL 'kill' and ĦRΘ 'plough', which are mapped onto the patterns CāCiC and miCCāC, respectively. As was already pointed out, the class of derivatives includesf nouns and another category of adjectives. iers, is seven morphological subclasses according to the grammatical tradition: (a) active participles, (b) passive participles, (c)

qualifiers, (d) the comparative/superlative, (e) nouns of time, (f) nouns of place, and (g) nouns of instrument. Though this traditional classification may be debatable, we will follow it as long as it is not harmful to the argumentation. The only proviso to be put forward is that the comparative/ superlative is a form required by a specific syntactic structure, and for that reason, it will be discussed in a separate subsection.

Of all the derivatives, those which can function as noun modifiers are the active and the passive participles and qualifiers. In comparison with qualifiers, active and passive participles are derived in a fairly predictable way. Active participles of triliteral roots are mapped onto the pattern CāCiC, as in the case of *qātil* 'killer' cited in the preceding paragraph. Other examples include *kātib* 'writer', *nāqid* 'critic', *qādim* 'coming', etc. When roots are more than three consonants long, or when affixes are added, other patterns are required. For example, the active participle corresponding to SDDQ 'believe' is *muSaddiq* 'believer', that corresponding to the augmented pattern stSLM 'surrender' is*mustaslim* 'surrendering'; *munsaħib* 'withdrawing' is derived from nSHB 'withdraw', and so on and so forth. The total number of patterns forming the active participle is as large as twelve, but they are all predictable from the verb pattern, which serves as the base of derivation, together with some morpho-phonological rules.

The derivation of the passive participle is equally predictable. Tri-literal roots like QTL 'kill', KTB 'write' and FHM 'understand' give the passive participles *maqtūl* 'killed', *maktūb* 'written' and *mafhūm* 'understood', respectively. All the passive participles derived from tri-literal roots are mapped onto the pattern CaCCūC. But as in the case of the active participle, there are other patterns by means of which passive participles are derived, and they all depend on the nature of the base of derivation: the verb pattern. For example, from stΣML 'use', HMMŠ 'marginalize' and KtSB 'earn' the following passive participles are derived, respectively: *mustacmal* 'used', *muhammaš* 'marginalized' and *muktasab* 'earned, acquired'. For further details, see Holes (1995).

By contrast, the category we have dubbed "qualifiers" (*Sifah mušabbahah*) is less amenable to strict derivation. In addition to the great number of patterns involved (more than a dozen), the derivation of qualifiers does not depend only on the verb pattern, but also on some semantic properties specific to each pattern, though these properties often turn out to be hard to define. For instance, the pattern ?aCCaC usually denotes colour (e.g. ?aħmar 'red', ?abyaD 'white', ?azraq 'blue') or a physical or mental defect (e.g. ?aɛraž 'lame', ?abkam 'mute', ?aħmaq 'fool'). Similarly, qualifiers with the pattern CaCiC are all claimed to denote emotions which last for short periods (e.g. fariħ 'happy', ħađir 'cautious', taɛib 'tired').

In fact, for a large number of qualifiers, it could as well do to consider their common patterns as mere coincidence of the lexicon rather than regularities of derivation. One may wonder, for example, what colours and physical or mental defects have in common in order for them to be derived in the same way. Besides, many of the semantic categories identified by the traditional grammarians are associated with more than one pattern, and some patterns are shared by two or more semantic categories. For example, personal characteristics (of both body and character) can be expressed by the patterns CaCC (e.g. *šahm* 'brave'), CaCaC (e.g. *ħasan* 'handsome'), CaCāC (e.g. *žabān* 'coward'), CuCāC (e.g. *šužāɛ* 'brave'), CāCiC (e.g. *Tāhir* 'pure'), CaCīC (e.g. *baxīl* 'miserly'), and probably others. On the other hand, the pattern CaCīC, for example, which is claimed to express permanent properties, such as *žamīl* 'beautiful' and *Tawīl* 'tall', underlies also some qualifiers that express transient properties, as in the case of *marīD* 'sick', *žarīħ* 'injured', etc. Therefore, it can be argued

that at least a subset of the traditional category of *Sifah mušabbahah* is not derived and that the vocalic patterns of its members, just like those of primitives, are part and parcel of their roots. If the argument is tenable, this subset would represent the class of adjectives in Arabic by the very fact that they are morphological primitives in the same way that primitive nouns are. If, however, proven to be derivative, qualifiers would not be clearly distinguishable from other derivatives, either by markers of inflection or by patterns of derivation.

Apparently, the traditional grammarians relied on one major piece of evidence to argue that qualifiers are derived, which is the semantic difference between these and active participles. According to them, active participles designate contingent properties ($\hbar u d \bar{u} \theta$) whereas qualifiers designate permanent properties ($\theta u b \bar{u} t$). The difference is particularly clear when participle/qualifier doublets are compared. For example, in the following pairs: $k\bar{a}rim/kar\bar{n}m$ 'generous', $s\bar{a}lim/sal\bar{n}m$ 'safe', $b\bar{a}xil/bax\bar{n}l$ 'miserly' and $\hbar\bar{a}sin/\hbarasan$ 'handsome', the first element (i.e. active participle) indicates that the property in question is contingent in the referent whereas the second element (i.e. qualifier) indicates that it is an inherent characteristic. Thus, while it is possible to modify the clause in (8a) by the time locative $\gamma adan$ 'tomorrow', it is not possible to do so in (8b):



It seems that the reasoning of the grammarians runs as follows: if contingency is expressed by the participial patterns, there must also be some morphological structure that gives rise to the property of permanence characteristic of qualifiers. That structure has to be the vocalic pattern since the consonants remain constant in the corresponding forms. (Compare *kārim* (active participle), *karīm* (qualifier), and *karum* (verb)). However, between this view and the view that vowels of qualifiers are not affixal but radical, there is an intermediate escape hatch. Working within the Generative framework, Fassi-Fehri (1992:197) suggests that affixation occurs at the level of the lexicon in the case of qualifiers, but only at the level of syntax in the case of participles. The details of Fassi-Fehri's argumentation need not concern us here; what should be retained from them is that qualifiers (which he calls 'substantive adjectives') are distinct from the other noun modifiers, namely participles, both morphologically and semantically. Some of their syntactic differences will be discussed in the third section of this paper.

Another category of noun modifiers is constituted by relational nominals (*nisbah*). These are not grouped by traditional grammar with *Sifah* for reasons that are irrelevant for our purposes, but there is no doubt that they behave like participles

and qualifiers vis-à-vis noun modification. What sets relational nominals apart from the other noun modifiers is that they are not derived by the more frequent root and pattern mapping (i.e. infixation), but rather by the suffixation of the morpheme '-*iyy*'. Thus, from *mayrib* 'Morocco' we get *mayribiyy* 'Moroccan', from *salaf* 'ancient' we get *salafiyy* 'Classicist', from *dahab* 'gold' comes *dahabiyy* 'golden', and *saql* 'mind' gives *saqliyy* 'mental', etc. The suffixation triggers a host of morpho-phonological processes the discussion of which usually occupies a separate chapter in grammar books. What is of interest to us, however, is not these processes, but rather the base of the derivation as well as the range of meanings expressed by the output. In principle, any noun can serve as the input to the suffixation of the relational morpheme '-*iyy*' provided that it is masculine and singular. Primitives and proper names are the best candidates and, indeed, they constitute the base of the bulk of the relational nominals currently in use. In addition to the already mentioned examples, one can add *muħammadiyy* 'Mohammedan' from the proper name *Mohammed*, *žāmisiyy* 'of universities' from *žāmisah* 'university', *bankiyy* 'of banks' from the loan word *bank*, etc.

The suffix *'-iyy'* expresses a wide range of meanings, depending on the meaning of the noun to which it is suffixed. When it is suffixed to the name of a country, the result is a nominal expressing nationality. Similarly, suffixation to the name of a town, region, continent or ethnic group designates belonging to those places or groups. But when suffixed to the name of a prophet, a thinker, or any other religious or political leader, the relational morpheme means that the referent is a follower of the person in question or his beliefs. Generally, the noun serving as the base of suffixation will provide the necessary clues for the inference of the relation expressed by *'-iyy'*.

However, suffixation of '-*iyy*' to noun modifiers seems to be restricted. For example, instead of the qualifiers*žamīl* 'beautiful', *Tawīl* 'tall', *ħārr* 'hot', *marīD* 'sick' or *yāʔib* 'absent', the relational morpheme is affixed to the corresponding verbal nouns (viz. *žamāliyy* 'of beauty, artistic', *Tūliyy* 'of length', *ħarāriyy* 'thermal', *maraDiyy* 'morbid', and *γiyābiyy* 'of absence'). Similarly, '-*iyy*' is not affixed to the following participles:*mustašār* 'advisor', *mužrim* 'criminal', *muslim* 'Muslim', *rāžie* 'returning', but rather to their verbal nouns to form the respective relational nominals:*?istišāriyy* 'consultative', *?ižrāmiyy* 'criminal', *?islāmiyy* 'Islamic' and *rižeiyy* 'reactionary'. On the other hand, the other derivatives seem to behave more like proper names and primitives than like noun modifiers as far as '-*iyy*' suffixation is concerned. For instance, from the place and time nouns *manzil* 'house', *mašriq* 'of sunrise, east', *maxbar* 'laboratory' and *marħalah* 'period', the following are derived: *manziliyy* 'of the house', *mašriqiyy* 'eastern', *maxbariyy* 'of the laboratory' and *marħalah* 'period', transient', respectively. And so is the case with the nouns of instrument *midfae* 'cannon', *mižhar* 'microscopic', *misTarah* 'ruler' and *mirwaħah* 'fan', from which are derived *midfasiyy* 'of cannons, artillery', *mižhariyy* 'microscopic', *misTariyy* 'procedural' and *mirwaħiyy* 'of/with fans', respectively. So what kind of conclusions can be made from this difference?

It may be claimed that the suffix '-*iyy*' can serve as a criterion on the basis of which noun modifiers would be distinguished from non-modifiers, with the latter, but not the former, functioning as the base of the suffixation of the relational morpheme. But, unfortunately, the claim cannot be tenable. For one thing, noun modifiers can exceptionally form relational nominals. More specifically, qualifiers and participles, when used as proper names, do serve as the base for '-iyy' suffixation, as in these examples: *ħasan* 'handsome'/*ħasaniyy* 'of Hassan', *ɛazīz* 'dear'/*ɛazīziyy* 'of Aziz', *mutawassiT* 'middle'/*mutawassiTiyy* 'Mideterranean' and *qāhirah* 'ruthless'/*qāhiriyy* 'Cairene'. In addition, a few cases of qualifier and participial forms do have corresponding relational nominals, though the conditions under which these nominals are formed

remain vague (viz. *mustaqbaliyy* 'of the future', *Đāhiriyy* 'superficial, literal', *bāTiniyy* 'internal', *mafhūmiyy* 'conceptual', etc.). In fact, it is not clear whether the resistance of qualifiers and participles to take the relational suffix is due to grammatical or to semantic factors. For another thing, not all non-modifiers can affix *'-iyy'* as regularly as primitives and proper names. In particular, nouns of profession exhibit a similar resistance to *'-iyy'* suffixation. Thus, *filāħiyy* 'agricultural' is not derived from the noun *fallāħ* 'farmer', but rather from the verbal noun *filāħah* 'agriculture'; so is *baħriyy* 'maritime', which derives from *baħr* 'sea' and not from *baħħār* 'sailor'; and so on and so forth. Therefore, it cannot be claimed that all non-modifiers behave in the same way in connection with the relational suffix *'-iyy'*.

To recapitulate some of the main points made in this subsection, each type of derivatives has its own set of patterns that distinguish it from the other types. Noun modifiers do not form a single uniform class apart from the other derivatives; rather, their patterns have nothing in common that would isolate them from non-modifiers. Active participles are morphologically distinct from passive participles, and both types are distinct from qualifiers and relational nominals. Similarly, each type of non-modifiers has its own pattern or set of patterns which distinguish it from the other derivatives, be they modifiers or non-modifiers. There is some overlap between patterns, and some of it concerns types which can modify nouns and types which cannot. For example, the pattern miCCāC underlies both nouns of instrument (e.g. *mismār* 'nail', *miftāħ* 'key') and the intensive form of some active participles (e.g.*miħdār* 'very cautious', *mixwāf* 'frequently frightened'). In short, noun modifiers do not behave as one morphological class, though each type of them can be identified quite reliably by means of its pattern(s) or its affix. In the next subsection, we will consider the comparative/superlative forms in search for any morphological feature that would separate noun modifiers from non-modifiers.

3.1.4. The comparative/superlative forms

The word types we have considered so far are all cases of words which can occur in the slot 'noun _____'; i.e. they are noun modifiers. The comparative, however, is a different syntactic slot that does not involve noun modification. Like the English 'more ______er than', the Arabic '?aCCaC min' expresses comparison between two entities sharing a common property but with one exceeding the other in degree. The superlative, on the other hand, involves an implicit comparison of more than two entities sharing a property but one exceeds the others. The comparative and the superlative in Arabic have the same form (viz. ?aCCaC) except that the latter must be definite either by the affixation of the article '*al-'* or by the annexation of another noun (i.e. construct state). The following examples illustrate the comparative and the superlative, respectively:

(9)	hādā I-fatā ?aħsan-u min ?ax-ī-hi This.m Def-boy better than brother-Gen-his (This boy is better than his brother)
(10)	a- ?ab-ū-ka ?akram-u I-rižāl-i Father-Nom generous-Nom Def-men-Gen (Your father is the most generous of all men) b- hāđā huwa I-?ibn-u I-?akbar-u this.m he Def-son-Nom Def-big-Nom (This is the eldest son)

The examples under (10) show that, unlike the comparative, the superlative does not require the comparative preposition *min* 'from/than' and that it can modify a noun, in which case it must agree with the head in definiteness, case and probably other features (viz. 10b). Apart from these syntactic differences, the comparative and the superlative exhibit no particularly significant morphological differences. Therefore, for the sake of convenience, we will refer to the comparative only. What we need to consider now is the base from which the comparative form is derived and whether only noun modifiers can be used to express comparison.

The derivation of the comparative is submitted to semantic as well as phonological constraints. Semantically, a word that is liable to have a comparative form must express a property on the basis of which entities can be compared. As to phonology, the fact that the comparative template ?aCCaC has a limited number of consonant slots indicates that some words, mainly those which have more than three consonants, will not have a corresponding comparative form. Of all the noun modifiers, those which comply most with these constraints are qualifiers: most of them are tri-literal and can serve as a basis for comparison. Thus, corresponding to *kabīr* 'big' is ?*akbar* 'bigger', to *hasan* 'handsome, good' is ?*aħsan* 'more handsome, better', to *šužāɛ* 'brave' is ?*ašžaɛ* 'braver', and so on. By contrast, participles and relational nominals are less liable to have a corresponding comparative form either because of their phonological form or because of their meaning. For example, *mustaqill* 'independent', *maɛqūl* 'reasonable', and ?*insāniyy* 'human' are too long to be mapped onto the ?aCCaC template. On the other hand, *kātib* 'writer', *nāsix* 'scribe' and *qatīl* 'dead', though being tri-literal, cannot be submitted to the formation of the comparative because the concepts they express are not comparable. In comparison, *nāfiɛ* 'useful', *fāSiħ* 'eloquent' and *nāžiħ* 'successful' do have the respective comparative forms ?*anfaɛ* 'more useful', ?*afSaħ* 'more eloquent' and ?*anžaħ* 'more successful' because they satisfy both the phonological and the semantic constraints.

If phonologically long modifiers do not have a comparative form, that does not mean that they cannot be used to express comparison. Beside the simple comparative form, comparison can equally be expressed by means of a complex structure involving a comparative form and a verbal noun complement. For instance, the participles *muhtamm* 'interested' and *mustabidd* 'despotic' can be transformed in comparative structures as *?akθar ihtimāman* 'lit. more / plenty interest' and *?ašadd istibdādan* 'lit. stronger despotism', respectively. Obviously, *?akθar* and *?ašadd* are not the only forms which can be used with long words to express comparison, though they are among the most frequently used ones; nor is it the case that each candidate is used with one and only one of these comparative forms. In the two preceding examples, *?akθar* and *?ašadd* can be interchanged without any significant impact on the meaning of the comparative phrase. These forms are not required only with long words, but also with qualifiers which have the pattern *?aCCaC*, namely, those denoting colours and defects. Thus, *?aħmar* 'red' and *?ašadd xuDratan* 'lit. stronger greenness'. The reason is obviously because both these qualifiers and the comparative have the same pattern. In brief, any word that can serve as a basis for comparison will have a comparative form, either the simple or the complex one.

It seems that this conclusion concerns not only noun modifiers, but also non-modifiers, including primitives. To take only a few examples, the primitives *ražul* 'man', *ħayawān* 'animal' and *falsafah* 'philosophy' can be used for comparison, as in *?aqwā ružūlatan* 'more manly', *?ašadd ħayawāniyyatan* 'more savage' and *?akθar falsafatan* 'more philosophical', respectively. Indeed, it seems that the complex comparative can be construed for almost any verbal or abstract noun. Thus, although the following participles *nā?im* 'sleeper', *kātib* 'writer' and *muršid* 'guide' are not good candidates for comparison, at least when compared with their English counterparts, their verbal nouns can combine with some comparative form to form complex comparative structures like *?asmaq nawman* 'deeper sleep', *?ayzar kitābatan* 'a more prolific author' and *?aħsan ?iršādan* 'better guidance', etc. Primitives like *?asad* 'lion', *ħažar* 'stone', etc. are excluded from such constructions because they lack corresponding verbal nouns; there are no such words as **?asadiyyah* 'lionhood' or **ħažariyyah* '*stonehood'.

Therefore, the comparative form cannot serve as a criterion for distinguishing noun modifiers from non-modifiers. In fact, it is not at all clear whether the pattern applies to qualifiers or participles to derive the comparative form. According to the grammatical tradition, these are also derived and, consequently, they cannot serve as input for the derivation of other forms. Instead, some grammarians (of the Kufian school) postulate that the verb is the base of all derivations, while others (mainly of the Basrian school) argue that it is rather the verbal noun (*maSdar*) which underlies every grammatical form. The debate between the two schools of grammar was partly guided by philosophical tenets and, therefore, need not concern us here. But their claim that the comparative form is not based on noun modifiers, which one may be tempted to treat as adjectives, cannot be dismissed lightly. If participles, and to a certain extent qualifiers, are derived by means of the mapping of roots (and affixes) onto patterns specific to each of them, there is no reason why the derivation of the comparative form should be conceived in a different way. If such is the case, the comparative in Arabic, unlike its English counterpart, is simply inadequate for the identification of an adjectival category in the language.

In short, after having considered every morphological feature that is likely to indicate the existence of an adjectival category, we are unable to decide with certainty that such a category can be postulated for Arabic. It is true that gender and number marking may serve as indicators that a certain lexical item is likely to function as a noun modifier or not, but the amount of overlap between the different types of marking is really too big for them to be of any use either to the

language learner or to the analyst. Only patterns can to a certain extent distinguish the different categories of modifiers and non-modifiers. There is very little overlap between the derivation of the active and the passive participles, between these and qualifiers, and still less with relational nominals. Similarly, these types, which can function as noun modifiers, can rarely be confounded with those which always function as heads of noun phrases. Faced with these facts, should we classify participles, qualifiers and relational nominals together in a major word category, which may be called the category of adjectives, or should they be treated as subcategories of the noun? Nothing about their morphology suggests that they behave as a single class, and any decision to set them apart from the other derivatives will only be ad hoc. We shall wait until their syntax is considered before any decision is to be made. But before that, we need to treat the morphology of

3.2. Adverbs

adverbs.

The class of adverbs is a very heterogeneous one with regard to the number of functions they can carry out and the meanings they can express. They can modify verbs, adjectives, other adverbs and sentences, and their modification serves to express degree, time, place, manner and other notions. On the basis of such remarks, Ramat & Ricca (1994) argue that no semantic prototype for adverbs can be identified. Generally, the following subclasses are distinguished: setting adverbs, manner adverbs, degree adverbs, linking adverbs and sentence adverbs (cf. Haspelmath (2001)). Since the last ones do not seem to have counterparts in Arabic, they will simply be ignored. (According to Ramat & Ricca (1998), these are probably specific to the written languages of Europe). The other subcategories will be discussed below in that order.

3.2.1. Setting adverbs

These include time and place locatives (*Đurūf*). We have already provided some of the traditional grammarians' arguments favouring the classification of these among substantives (cf. Section 1). The main arguments refer to the liability of locatives to take the definite article, nunation, the genitive marker and to function as topic (*musnad ?ilayh*). Here, we shall focus mainly, but not exclusively, on their morphology in quest for similarities and differences between them and nouns.

Place and time locatives form a heterogeneous class in Arabic. Traditional grammarians proposed a number of classifications which cut across each other in both morphological and distributional terms. In terms of morphology, locatives subdivide into primitives and derivatives. The first include such time locatives as *yawm* 'day', *sāɛah* 'hour', *ɛām* 'year', *Sayf* 'summer', *ħīn* 'moment', etc. and place locatives such as *fawq* 'top', *taħt* 'bottom', *wasT* 'middle', *mīl* 'a linear measure', *kīlūmitr* 'kilometre', etc. The second include mainly time and place nouns, which, as was pointed out earlier, have the patterns maCCaC and maCCiC. Generally, these must be lexically related to their predicate in the clause; for otherwise, they may be interpreted as complements. The following examples would clarify the point:



The verb *žalas* 'sit' and the place noun *mažlis* 'sitting-room' in (11) are of the same root ŽLS 'sit'; likewise, the verbħaDar 'arrive' and the time noun *maħDar* 'arrival time' in (12) share the root ĦDR 'arrive'. If the verb*žalas* in (11) is substituted by another one such as *qaSad* 'head' or ħaDar 'arrive, be present', the noun *mažlis* would be a verb complement rather than a locative (cf. Hassan (n.d: 255, vol. 2)). The same remark holds for *maħDar* in (12). It should be born in mind that both verb complements and locatives are marked for the accusative case.

Traditional grammarians also remarked that locatives had different distributional (i.e. whether they could assume different grammatical functions) as well as morpho-syntactic behaviour (i.e. whether they can be marked for case (*muerabah*) or not (*mabniyah*)). Since the syntactic aspects of locatives are interwoven with their morphological features, for the sake of exposition, we simply cannot afford leaving their discussion completely until the next section. In this respect, it should be pointed out that locatives which enjoy a wide syntactic distribution tend to behave morphologically as typical nouns. For example, the time locatives *yawm* 'day', *layl* 'night', *cām* 'year', *daqīqah* 'minute', etc. can function as subject of verbal and nominal sentences, as verb complements, as preposition complements as well as others; and so do the place locatives *yamīn* 'right', *šimāl* 'left', *wasaT* 'centre', *farsax* 'a linear measure', etc. Unsurprisingly, most of these and similar examples have gender (masculine or feminine) and number (singular, dual and plural). The time locatives are particularly regular as far as these morphological features are concerned. In comparison, some place locatives, especially those indicating direction, are defective in that they are always singular or plural but never dual. Evidently, the lack of the dual forms of these locatives could be argued to originate in semantics rather than in morphology or syntax.

By contrast to the above examples, some locatives are very restricted in their syntactic distribution. Some of them can function only as locatives or as prepositional complements. Among these are *sind* 'at', *fawq* 'top', *taħt* 'bottom', *bayn* 'between', $\hbar ay\theta$ 'where', *wasT* 'middle', etc. Others still can function only as locatives, and these seem to form a closed class. Examples of such locatives are *qaTTu* 'never', *badal* 'instead', *makān* 'instead', *ladā* 'at', *masa* 'with' and a few others. It is no surprise if most of these items occur only in the singular form. Those which happen to have a plural form are generally used metaphorically to denote something other than place or time. For example, a plural form *tuħūt* (of *taħt* 'bottom') was recorded but as meaning 'plebeians' rather than the literal 'bottoms'. Apparently, their morphological defectiveness and their distributional restriction have conspired to weaken their nominal character to the extent of forming a class of their own or reducing to the status of particles.

Indeed, there are further aspects of morphology and syntax which characterize the distributionally restricted locatives. One of these aspects concerns case marking. More specifically, while most locatives are marked for case (*musrabah*), most of those belonging to the defective class are not (*mabniyah*). For instance, *qaTTu* 'never' and *ħayθu* 'where' always take a final 'u' vowel, whereas *maea* 'with' and *ladā* 'at' always have a final 'a', irrespective of the grammatical function they are assuming. Another aspect relates to compounding that expresses deixis. Unlike the prototypical cases of locatives, which require pre-nominal demonstratives (e.g. *I-yawm* 'today', *dāka I-yawm* 'that day', *I-sācah* 'this hour', *tilka I-sācah* 'that hour'), the defective cases either do not take demonstratives (e.g.*fawq* 'top', **dāka I-fawq* 'that top') or combine with demonstratives to form compounds. For instance, while *hunā* 'here' and *I-ʔān* 'now' indicate the place and the time of speaking, *hunāk* 'there' and *ʔānadāk* 'that time' refer to a point in place and time which are distant from the speaker and the speech event. The post-positional *dāk* is attested in a number of compounds which are all based on defective locatives. To cite just a few, *ʔiddāk* 'that moment', *fawqadāk* 'in addition', *bacdadāk* 'afterward', *muddāk* 'since then' are among the frequently used ones. Beside *dāk*, other compounds are formed with *ʔidin*, a time locative according to the grammatical tradition, though its exact meaning eludes any strict definition and its use is multifarious. Examples involving this item are *ħīnaʔidin* 'then', *ʔānaʔidin* 'at that moment', *waqtaʔidin* 'at that time', *bacdaʔidin* 'afterward', *qablaʔidin* 'before that', among others.

The term 'locative' (*Darf*) as used in the preceding paragraphs and by the grammatical tradition seems to be ambiguous in certain respects. On the one hand, it refers to a grammatical function performed mainly by nouns indicating the place or the time of an event, just like subjecthood and objecthood are grammatical functions. In this sense, a locative is also called *mafɛūl fīh* (lit. happened in it). Nouns performing this function are marked for the accusative case, and it is usually impossible to tell whether a noun is a locative or not outside the context of a sentence. But on the other hand, as was mentioned earlier, there is a subclass of locatives which are distributionally restricted and morphologically defective. When applied to this subclass, the term 'locative' seems to be used in such a way as if it referred to a word class rather than to a grammatical function. For example, in his *hamɛ l-hawāmiɛ* (vol. 1: 204), Al-Suyūtī, claims to have invested a lot of effort in providing a list of uninflected locatives as exhaustive as was never attempted by his predecessors. Can locatives in this second sense be considered as setting adverbs?

Generally, the class of adverbs, unlike that of prepositions or pronouns, for example, is assumed to be an open class. That is to say, its members, though limited in number, are likely to grow more numerous whenever there is expressive need for new candidates. Now, considering the defective locatives discussed in the few preceding paragraphs as adverbs would obviously go against this assumption since these seem to form a closed class. But it may be objected that the assumption is unjustified and that any set of words behaving formally in a similar way can form a word class (for an argument in this vein, see Gil (2000)). This objection is clearly not without its merits, but because of the lack of a general theory of parts of speech that enjoys some consensus, we will avoid making any decision as to the status of these locatives. Suffice it to say that they have been classified with the other noun locatives mainly because of their meaning, just like 'here', 'there' or 'now' in English are classified along the regular adverbs although they do not take the '-ly' suffix so characteristic of regular adverbs. Discussion of the other types of adverbs will shed more light on the issue.

3.2.2. Manner adverbs

The manner in which events happen is expressed, among other means, by what traditional Arab grammarians callħāl. According to the tradition, the ħāl is basically a grammatical function performed mainly by nouns marked for the accusative, but also by phrases and clauses. The following examples illustrate how manner is expressed in the three different ways:



The word which expresses the fact that the action of going in (13a) was fast is the active participle*musric* 'speeding'; its intensive form *sarīc* could as well express a similar meaning. In (13b), the nominal sentence*huwa musricun* 'he is quick' replaces the active participle without much change in propositional content; and so does the prepositional phrase *bi surcatin* 'with speed' in (13c). In what follows, we will not be interested in clauses or phrases but will, instead, focus on the morphology of the lexical items which express manner.

In terms of morphology, manner words subdivide into primitives and derivatives. Traditional grammarians point out that although it is rare for primitives to function as $\hbar \bar{a}l$, their use for such a function is productive (*qiyāsī*). Perhaps most prominent among primitives functioning as $\hbar \bar{a}l$ are those exemplified by these three examples:

	hažam-a	l-qiTT-u	?asad-an
(14)	Charged-3	ns Def-cat-N	om lion-Acc
	(The cat ch	arged like a l	ion)
(15)	an Agreed-3m	s Def-party-D	mušāfahat- Dual.Nom oral.Rec-Acc oral agreement)
(16)		až?at-an p sudden-Aco ed suddenly)	9

The primitive *?asad* 'lion' in (14) functions as a 'noun of manner' indicating that the way the cat charged is similar to the way lions do. This notion of resemblance, however, is not relevant to the other two examples. *mušāfahatan* is the reciprocal form of the noun *šafāhah* 'orality' indicating that the action is carried out by both (or all the) participants. As to *faž?ah* 'sudden, surprise', it is a *maSdar* 'verbal noun' corresponding to the root FŽ? 'surprise'. It should be pointed out that neither the verbal noun nor the reciprocal nominal form is considered to be derivative (*Sifah*) by the grammatical tradition.

It is derivative nouns, however, which function as $\hbar \bar{a}l$ most of the time. Among these, participles and qualifiers are perhaps the most appropriate for the function and the most frequently used as such. The active participle was already exemplified by (13a) above, and further examples are provided below to illustrate the three types of nouns:



muxtabi? 'hiding' in (17) is another example of the active participle used asħāl, whereas *muryam* 'unwilling' in (18) is an example of a passive participle performing the same grammatical function. (19), on the other hand, provides two examples of the qualifier, namely, *Sayīrat* 'young.fem' and *kabīrat* 'old.fem' used as 'manner words'. It follows from these examples that manner in Arabic is not expressed by a separate word class, as is the case in English and other languages, but rather by nouns marked morpho-syntactically for the accusative case.

There are other respects in which the $\hbar \bar{a}$ in Arabic is different from adverbs of manner in English, for example. First, as may be noted from the above examples, the $\hbar \bar{a}$ covers a much wider range of meanings than that usually expressed by adverbs. The example in (17), for instance, corresponds to a gerund in English, while those in (19) are rendered by adjectives. Second, unlike adverbs of manner, the $\hbar \bar{a}$ is basically a noun modifier rather than a verb modifier. The reader may have already noted that the cases in (17)-(19) above do not specify the manner in which the actions were carried, but rather the state in which the participants were during the time of the action. Thus, *muxtabi*? 'hiding' in (17) specifies how the prisoner was when he was found and not how the act of finding was performed. Even the example in (18), which was translated as 'unwillingly', is in fact a noun modifier. The fact that the $\hbar \bar{a}$ must agree with the head noun in gender and number clearly testifies to this. When it modifies both the subject and the object, as in (20) below, the $\hbar \bar{a}$ must reflect the fact in concord:

faħaS-a I-Tabīb-u I-marīD-a žālis-ayni

(20) Examine-3ms Def-doctor-Nom Def-patient-Acc sitting-Dual.Acc

(The doctor examined the patient while they were sitting)

The dual number of the $\hbar \bar{a}l$ in this example is a clear indication that it refers to both the doctor and the patient. The lack of a gender marker also indicates that the antecedents are masculine; were they feminine, the $\hbar \bar{a}l$ would have this form: $\check{z}\bar{a}lisatayni$ 'sitting-fem-Dual.Acc'. The only cases in which the $\hbar \bar{a}l$ seems to modify the verb are those exemplified by (15) and (16) above. The verbal noun $fa\check{z}rah$ 'sudden, surprise' in (16), for example, does not modify the subject, namely, the plural nominal clitic \bar{u} '3mp'. For that reason, the $\hbar \bar{a}l$ does not exhibit any kind of agreement with the subject. Rather, the $\hbar \bar{a}l$ specifies the manner in which the action expressed by the verb occurred. Therefore, the $\hbar \bar{a}l$ overlaps only partially with adverbs of manner in English and similar languages.

In brief, there seems to be nothing universal about adverbs of manner. For one thing, there is no corresponding word category in Arabic. We have seen that manner is expressed in this language by different types of nouns (viz. primitives and derivatives, noun modifiers and non-modifiers) all of which are marked for the accusative case. Thus, what is expressed by derivational morphology in English is expressed by morpho-syntactic means in Arabic. For another, the notional category of manner itself seems to vary cross-linguistically. Unlike the case of English, for example, where adverbs of manner are basically verb modifiers, the $\hbar \bar{a}/i$ in Arabic includes both noun modification and verb modification⁴.

3.2.3. Degree adverbs

Like manner, the notion of degree is expressed in Arabic in different ways and by different means from those used in English and other languages. In English, adverbs of degree are used essentially to modify adjectives and other adverbs, and most of them are intensifiers. In Arabic, by comparison, words expressing degree can modify nouns or verbs, since the existence of adjectives and adverbs has not been proven so far. Morphologically, these words do not seem to differ in any significant respect from those which can function as substantives or as attributives.

Like the notions of manner and place or time location, degree is expressed mainly by means of the accusative case. The following examples are reminiscent of the cases discussed in the preceding subsections:

	l-kitāb-u mufīd-un židd-an
(21)	Def-book interesting-Nom seriousness-Acc
	(The book is very interesting)
	?aħabb-a-hā kaθīr-an / qalīl-an židd-an
(22)	Loved-3ms-her a lot-Acc / a little-Acc seriousness- Acc
	(He loved her very much / little)

The degree word *židd* 'seriousness' modifies the predicate *mufīd* 'interesting' in (2) but the verb modifiers *kaθīr* 'a lot' and *qalīl* 'a little' in (22). *židd* is the verbal noun of the root ŽDD 'hard work' whereas *kaθīr* and *qalīl* are qualifiers corresponding to the roots KOR 'be numerous' and QLL 'be scanty', respectively. The other types of nouns, rarely, if ever, express degree, but it is unlikely that this fact has anything to do with morphology or syntax. After all, derivational patterns have meanings which may be incompatible with the notion of degree. For example, active participles designate the agent of the action; therefore, they are not expected to function as words of degree.

4. Syntax

In addition to morphological criteria, word classes can also be identified on the basis of distributional criteria. Whether the traditional category of nouns can be subdivided into different lexical classes with respect to the distinct syntactic behavior of their elements is a question that will be considered in some detail in the rest of this paper. A possible class of adjectives will be dealt with first and adverbs later.

4.1. Adjectives

In the first section of this paper, it was pointed out that the traditional category of nouns in Arabic is a heterogeneous one both from a morphological and a syntactic point of view. Concerning syntax, it was particularly noted that some subcategories can function as noun modifiers while others cannot. Those which usually and easily assume the function of 'naet' are the active and the passive participles, relational nouns, qualifiers, and the superlative. On the other hand, those which tend to resist this function are primitives (i.e. non-derived nouns), nouns of time and space, nouns of instrument, and others. In what follows, the focus will be primarily on the subclasses which can modify other nouns.

It should be made clear at the outset that all types of nouns in Arabic do stand by themselves as heads of noun phrases, irrespective of whether or not they are liable to function as noun modifiers. Thus, both a primitive noun like *ražul* 'man' and a qualifier like *Tawīl* 'tall' can be construed as heads of the subject phrases in the following examples:



These examples illustrate clearly that the two types of nouns can have similar syntactic distributions, though the first

denotes an individual whereas the second designates a property. More specifically, both of them are marked for definiteness and case, features which were considered criteria of noun-hood by Medieval Arab grammarians. If the qualifier *Tawil* 'tall' is to be denied the category of a noun, a lot of abstraction must go into the syntactic analysis of sentences like (23b). For example, it could be postulated that the qualifier is an adjective modifying an elliptical head noun the content of which is recoverable from the speech situation. Granting that such an analysis cannot be dismissed merely because of its abstract character, it must be motivated by independent arguments relating to other language-internal phenomena before it can claim tenability.

In this respect, it may be claimed that the mere fact that Arabic nouns are sub-classified into those which can function as '*nact*' and those which cannot is sufficient to postulate two distinct lexical categories, with the first forming adjectives and the second nouns. Nevertheless, attractive though this argument might seem, the evidence on which it is based is far from being conclusive. In particular, the fact that some classes of nouns resist the modifying function may be due, not to formal constraints, but rather to semantic constraints. Primitives, for instance, generally do not modify other nouns, not because the resultant phrases would be ungrammatical, but probably because such phrases would not make sense. Indeed, primitives which have developed some connotations do function as noun modifiers, as is illustrated by these examples:



The noun phrases in these three examples all have the structure [NP – NP], with the second NP always interpreted as modifying the first. Given the well-formedness of such examples, it would be incoherent to dismiss (25) and similar cases on formal grounds:



Because the second NP in this example does not have any meaning which can possibly be construed as modifying the head of the phrase (*lā yadullu dilālat I-Sifa Imušabbaha*; cf. Hassan (n.d: Vol.3, p.463), the result is uninterpretable under normal conditions. But it is generally possible to imagine extraordinary situations in which any [NP – NP] phrase would make sense. It follows from this argument that primitives and similar noun types are not precluded from the function of *nast* on formal grounds, but that they can perform such a function whenever the resultant phrase is meaningful.

That 'meaningfulness' is the decisive criterion for noun modification in Arabic can be supported by other sorts of evidence. A case in point is the interaction of primitives with noun modifiers (*Sifah*). In phrases combining a primitive and a noun modifier, the first is most likely to function as head, but cases in which the order is reversed are not unusual. The following pairs of examples are illustrative of this fact:

a. I-fatā I-sā?iq a'. I-sā?iq I-fatā
Def-boy Def-driver Def-driver Def-boy
(The driver boy) (The young driver)
b. I- fatā I-miSrī b'. I-miSrī I-fatā
Def-boy Def-Egyptian Def-Egyptian Def-boy
(The Egyptian boy) (The young Egyptian)

In the first example, the primitive *fatā* 'boy' combines with the active participle *sā?iq* 'driver' while in the second, it combines with the relational noun *miSrī* 'Egyptian'. In both (26a) and (26b), the modification can be construed either as appositive or as restrictive. That is to say, the active participle and the relational noun can be interpreted as providing extra information about a referent already known to all parties of a conversation, or as conveying information necessary for the identification of the right referent among other (non-driver or non-Egyptian) boys. By contrast, (26a'-b') are generally construed as restrictive only. But this pattern does carry over to all instances of similar combinations. In the following pairs of noun phrases, only the first is acceptable:



The first example is similar to (26b) in that they both involve the combination of a primitive and a relational noun. But unlike (26b'), (27a') is uninterpretatble. Similarly, the combination of a qualifier and a primitive in (27b') does not yield an acceptable construction. In both (27a') and (27b'), the unacceptability is so strong that they deserved an asterisk. But since similar combinations of a primitive and a noun modifier are widely attested, as (26a'-b') testify, it would be more convincing to argue that such unacceptability rises from semantic incongruence rather than from syntactic ill-formedness. To use Arab grammarians' wording, primitives like *film* 'film' and *wažh* 'face' "*lā tadullu dilālat l-Sifa l-mušabbaha*" (do not have a qualifier's meanings).

Noun modifiers themselves do not seem to have identical distributions. In particular, the order of the head and the modifier is not insensitive to their morphological classification, and some orders may not be permissible. Although the grammatical tradition does not say much about these issues, competent speakers of Arabic today can make fairly reliable judgments about the (un) acceptability of noun phrases combining different classes of noun modifiers as well as their possible interpretations. By way of illustration, the superlative is notorious for its rejection of modifiers. Thus, unlike the examples on the left-hand side, those on the right-hand side are, to varying degrees, unacceptable:



The superlative is yoked with an active participle in the first example and with a passive participle in the second. While the phrases in which the superlative comes second receive natural interpretations, those in which it is first are hard to be interpreted in a similarly straightforward way. By contrast, the active participle, for instance, does not exhibit such

distributional restrictions, as the following examples indicate:

a. I-ɛālim I-mašhūr a'. I-mašhūr I-ɛālim
Def-scholar Def-famous Def-famous Def-scholar
(The famous scholar) (The scholarly famous 'one')
b. I-ɛālim I-Đarīf b'. I-Đarīf I-ɛālim
Def-scholar Def-kind Def-kind Def-scholar
(The kind scholar) (The scholarly kind 'one')

In (29a-a'), the active participle exchanges position with a passive participle, and in (29b-b'), with a qualifier. Unlike (28a'-b'), (29a'-b') are strikingly less marginal, a fact which indicates that the superlative and the active participle do not have the same potential to function as head of a noun phrase. In other words, the active participle is more *nominal* than the superlative.

The semantics of noun phrases also suggest that some orderings are less restricted than others. For instance, phrases in which a passive participle or a qualifier modifies an active participle, as in (29a) and (29b) respectively, modification can be interpreted either as appositive or as restrictive. In this sense, these two orderings are identical to that in which a primitive is modified by a *Sifah*. In comparison, when an active participle modifies a passive participle or a qualifier, as in (29a') and (29b'), the modification is more naturally construed as restrictive only, much like the cases in (26a'-b') in which a primitive functions as a modifier. By contrast, when a Sifah is combined with a nominal of the same type, as in the following example, the result is a phrase that does not exhibit these semantic restrictions:

	a. I-šužāc I-karīm a'. I-karīm I-šužāc
(30)	Def-brave Def-generous Def-generous Def-brave
	(The generouys brave 'one') (The brave generous 'one')
	b. I-mašhūr I-maħbūb b'. I-maħbūb I-mašhūr
	Def-famous Def-loved Def-loved Def-famous
	(The loved famous 'one') (The famous loved 'one')

Both orderings in each of these pairs of examples are equally natural, and the modifier in each of them can be interpreted as appositive or restrictive. This remark is fairly general, whether the nominal in question is a qualifier, as in (30a-a'), or a passive participle, as in (30b-b'), or others.

How can the facts just discussed be accounted for? Since all the nominal subclasses share a lot of distributional similarities and none of them can be categorically set apart from the others, it would be legitimate to follow the tradition which treats them all as substantives. But there remains to be explained the different distributional and semantic peculiarities exhibited by each subclass. Although this issue is too complicated to be elucidated in this paper, it is tempting to argue, in line with Hopper and Thompson (1984) and Langacker (1987), that nouns in Arabic form a graded category. Such an analysis would consider the nominal subcategories as being distributed along a scale one end of which is occupied by primitives and the other end by the superlative since the first usually functions as head whereas the second is often a modifier. On the basis of their semantics, the other subcategories can also be positioned on the scale. Thus, if some simplification is made, the following implicational hierarchy can be advanced:

(31) PN > AP > PP > Q; R > S

(PN: primitive noun; AP: active participle; PP: passive participle; Q: qualifier; R: relational noun; S: superlative.) In this hierarchy, the subcategory on the left of > is most naturally assigned the function of head of a noun phrase, while those on the right of > function preferably as its modifiers. When the order is reversed, the result is either an unacceptable phrase (viz. 27a'-b') or a semantically restricted one (viz. 26a'-b'). In the case of qualifiers (Q) and relational nouns (R), no distributional or semantic restrictions have been noted between the two morphological classes, as the following cases suggest:

 a. I-šužāε I-maγribī a'- I-maγribī I-šužāε
(32) Def-brave Def- Moroccan Def-Moroccan Def-brave (The Moroccan brave 'one') (The brave Moroccan)

Neither of the two phrases seems more preferable than the other, and in both of them, the modifier can be interpreted either as restrictive or as appositive. On the basis of these facts, a semi-colon was inserted between Q and R instead of > in (31) above to indicate that the order between the two categories is not crucial.

But the order in (31) cannot account for all the distributional and the semantic phenomena that arise from a combination of the different nominal subcategories in a noun phrase. This is so because the (un) acceptability of the resultant phrases as well as their interpretation do not depend on the combined nominal subcategories only, but also on the semantic content of the words in question. For instance, although the yoking of a PP and an R often result in acceptable phrases, (33a') is not, to say the least of it:

	a. I-mantūž I-waTanī ???a'- I-waTanī I-mantūž
33)	Def-product Def-national Def-national Def- product
	(The national product)

The meaning of (33a') is very difficult to construe apparently because there seems to be no natural situation which this phrase can be held to describe. Therefore, there is good reason to mark it as deviant. But the order of R + PP is certainly not responsible for this deviance, as is strongly suggested by the acceptability of (34) below:

(34) I-waTanī I-manfī Def-patriot Def-exiled (The exiled patriot)

As in (33a'), *waTanī* in (34) is an R modified by the PP*manfī*. But unlike the former case, modification in the latter does make sense. More specifically, the PP can be construed as designating a property, thus making possible the interpretation of the R as referring to an individual (i.e. equivalent to 'patriot' instead of 'national'). By contrast, the PP *mantūž* 'product' in (33a') can only be conceptualized as denoting a 'thing', a fact which hinders the construal of the head R other than designating a property; hence, the difficulty of interpreting the resultant phrase.

To summarize, there appears to be no categorical syntactic distinction between the different classes of substantives in Arabic since they can all function as heads or as modifiers in a noun phrase. Although some of them have a preference for one or the other of the two functions, especially when in combination with other morphological classes, the preference is of a semantic nature. More precisely, substantives which denote 'individuals' tend to function as heads whereas those which denote 'properties' tend to function as modifiers. This finding is clearly in line with the grammatical tradition, which recognizes no category of adjectives distinct from substantives. In what follows, expressions functioning as adverbials will be scrutinized in search for a syntactic evidence in favour of postulating a class of adverbs in Arabic.

4.2. Adverbs

In section (2.2), we considered the morphology of a group of words which express place, time, manner or degree and found that, apart from a small number of defective locatives, all of them behave basically like other substantives. We also concluded that the adverbial function, which is associated in English and similar languages with a special grammatical category, is expressed in Arabic by means of the accusative case. Here, more classes of nominals expressing adverbial meanings will be considered which are also marked for the accusative.

In addition to the $\hbar \bar{a}l$, which was discussed previously in (2.2.2), traditional Arab grammarians also identify a function they call *mafcul muTlaq* 'absolute complement' or *maSdar* 'verbal noun'. While the $\hbar \bar{a}l$ is conceived basically as modifying a noun phrase (*Sāħib I-ħāl*), the *mafcul muTlaq* seems to refer essentially to verb modification. This is why the latter is defined as a function performed by a verbal noun whereas the former is expressed by a *Sifah* 'noun modifier'.

It seems that verbs in Arabic can be modified by a variety of nouns marked for the accusative. The following examples illustrate this fact:



Similar examples can readily be multiplied. But if the nouns in these examples are all verbal nouns, the verbal noun is by no means the only type that can perform this adverbial function, as the cases below testify:



In the first example, the adverbial is a numeral; in the second, it is a noun of instance; and in the third, it is a primitive noun. Therefore, it appears that any type of noun can be used as an adverbial provided that its use makes sense.

Nouns marked for the accusative do not express manner only, but also the time and the place of an action. In the subsection on setting adverbs (2.4.3), it was pointed out that the traditional category of locatives includes a number of nouns which designate the time or the place of an event when they are marked for the accusative. Examples of these are *yawm* 'day', *šahr* 'month', *Subħ* 'morning', *layl* 'night', etc. and *šarq* 'east', *žanūb* 'south', *yamīn* 'right', f*arsax* 'a unit of distance', etc. These are not limited to the adverbial function, but can perform all the functions that substantives generally do, a fact which contributed to their classification by the grammatical tradition as nouns. Their adverbial function is determined partly on distributional grounds and partly on semantic grounds. Here are some illustrative examples:

 sāfar-tu Subħ-an wa makaθ-tu šahr-an
Traveled-1ps morning-Acc and stayed-1ps month-Acc (I traveled in the morning and stayed (there) for a month)
γittažah-tu šarq-an wa mašay-tu yamīn-an
Headed-1ps east-Acc and walked-1ps right-Acc (I headed eastward, and then walked to the right)

The nouns of time in (37) and those of place in (38) are interpreted as locatives partly because they are marked for the accusative; but as complements also take the same case, traditional grammarians considered that the nouns in the above examples have an adverbial function mainly because the verbs therein characteristically do not take complements (i.e. they are intransitive).

Locatives are also distribuationally restricted in that they generally do not take a definite article. Thus, the following examples are somewhat deviant:



The fact that locatives are generally indefinite will probably be used by the language learner to distinguish locatives from verb complements.

To be sure, not all nouns that express some temporal or spatial concept can function as locatives. Arab grammarians consider that locatives are general (*mubhamah*) and that nouns with specific meanings (*muxtaSSah*) require a preposition or, otherwise, function as verb complements. Although this distinction is formulated in rather vague words, the idea behind it is quite clear and can be illustrated by these sentences:



These sentences are flagrantly deviant because the nouns marked for the accusative are used as locatives; if the preposition *ilā* 'to' is inserted before the noun in the first case, and*fī* 'in' in the second case, the two examples would become natural. Obviously, locatives may be classified in a subcategory of their own distinct from the other substantives on the basis of this single distributional characteristic. But this subcategory cannot be construed as the equivalent of setting adverbs in languages like English; for that would be in complete disregard for the many other characteristics that locatives share with substantives and for which they were classified as nouns by the grammatical tradition. Therefore, as long as the major word categories are maintained by linguistic theory, it would be much safer to treat locatives in Arabic as a subclass of nouns rather than as a distinct category in its own right.

On the basis of this discussion, it can be concluded that the syntactic data are not in favour of postulating a category of adverbs in Arabic. Although there are distributional and semantic restrictions on the use of some nominals to express adverbial meanings, these restrictions are not sufficient to set the nominals in question apart from the other substantives.

5. Conclusion

In this paper, the issue of whether there are adjectives or adverbs in Arabic was raised. After a review of word categories in traditional Arabic grammar, an examination of the morphological and the syntactic data was carried out to argue that what some modern scholars treat as adjectives or adverbs are in fact substantives, thus aligning ourselves with the

tradition, which posits only nouns, verbs and particles for the Arabic language. The morphological features considered are gender, number, and patterns, in addition to the comparative/superlative forms, but none of them is found to distinguish adjectives or adverbs from the category of nouns. Distributionally, nominals denoting properties and those denoting things can function both as heads and as modifiers, although there is a tendency for the former to function typically as modifiers of the latter. As to the adverbial function, it is not specific to a word category, but is performed by nouns marked for the accusative case. The different morphological classes of the noun are found to exhibit varying degrees of nounhood, though.

Footnotes

¹ An initial version of this paper has been in circulation for a decade now. I would like to thank all the readers who shared their opinions with me.

² The transliteration of the Arabic examples follows the usual transcription symbols except for the following: \dot{z} : x, \dot{z} : \dot{z} , \dot{z} : \dot{z} :

³ The tripartite division of word classes adopted by Arab grammarians clearly support Hengeveld et al. (2004)'s analysis and confirm their typology of parts-of-speech systems. Since Arabic lacks adjectives and adverbs, it would be classified as a flexible language of type 2, having only verbs and non-verbs, the latter being capable of functioning as heads of noun phrases and as noun and verb modifiers

⁴ But see the difference between $\hbar \bar{a}l$ and mafeul muTlaq in (3.2) below.

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