Book Section:
Watson, J (2021) Arabic morphology inflectional and derivational. In: Ryding, K and Wilmsen, D, (eds.) The Cambridge Handbook of Arabic Linguistics. Cambridge University Press , pp. 405-424. ISBN 9781108277327

https://doi.org/10.1017/9781108277327.018

17

Arabic Morphology

Inflectional and Derivational

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17.1 Introduction

In examining inflectional and derivational morphology in Arabic, this chapter begins by discussing the concept of the morpheme, and then outlining the general distinctions between inflectional and derivational morphology; in Section 17.3, it discusses the basis of derivation in Arabic and examines derivation in terms of change in meaning and in terms of change in morphological category. In Section 17.4, it discusses the key morphological inflectional categories in Arabic. The chapter refers to Classical Arabic where relevant; however, the primary focus is on modern spoken dialects of Arabic, with data taken predominantly from dialects of Yemeni Arabic, Saudi Arabic, and Egyptian Arabic.

17.2 Key Concepts

17.2.1 The Morpheme

Words constitute one or more morphemes, where the term 'morpheme' is defined as a meaningful unit that cannot be further divided. Thus, an English word such as 'house' comprises a single morpheme, and an English word such as 'impossibility' comprises three morphemes: the negative morpheme *im-*, the root *-possible-* and the nominal suffix *-ity*. Languages differ in their exponence of morphemes: English typically exhibits concatenative morphemes, which can be neatly divided, although many common words exhibit umlaut, zero morpheme, or a change in the root in their morphology: thus 'sing' plus past tense is realized as [sang], with the past-tense morpheme expressed as the vowel [a]; the plural of 'sheep' is likewise [sheep] with zero suffix; and the plural of several words ending in /f/ voice /f/ > /v/, as in: 'wolf' > 'wolves', 'hoof' > 'hooves', etc.

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In the neatest case, a single morpheme is expressed wholly and only by a single concrete primitive form, or morph (Spencer 1991; Haspelmath and Sims 2010: 334): thus, in the word 'oxen' *ox* realizes the morpheme OX, and the suffix *-en* realizes the morpheme PLURAL. In other cases, one morph expresses more than one morpheme or a single morpheme is realized in more than one morph. An example of the former is English 'saw' which expresses both the morpheme *see* and PAST. This is referred to as a portmanteau, cumulative, or multiple-exponence morpheme. An example of where a morpheme is realized in more than one morph is 'children' where the PLURAL morpheme is realized both in the suffix *-ren* and in the change of vowel quality in the stem *child*. In other cases, one morph may correspond to more than one morphosyntactic description, such that there is systematic homonymy of words within a paradigm (Haspelmath and Sims 2010: 343). In the Modern South Arabian language Mehri, the form for the third-person masculine singular verb in the perfect aspect is identical to that of the third-person feminine plural, while there is a distinction in the imperfect. Thus, *ktūb* means both 'he wrote' and 'they f. wrote', but 'he writes' is realized as *yəkūtab* and 'they f. write' as *tkətbən*.

Arabic is typically described as a non-concatenative language, where morphemes cannot be linearly divided: thus, the Classical Arabic verb *labisa* 'he wore' expresses the lexical sense of 'wear', through the root consonants *l-b-s*, the active mood, through the vowels *a-i*, the perfect aspect, through the prosodic template CvCvC, and the cumulative exponence of third-person, masculine gender, singular number through *-a*. Many morphemes in Arabic, however, take the form of affixes, as in *-tu* in the verb *labis-tu* 'I wore/put on', *-iyy* in the adjectival suffix in words such as *yaman-iyy* [Yemen-adj] 'Yemeni', and the object pronoun *-kum* in the word *baytu-kum* 'your m.pl. house'.

17.2.2 The Inflectional–Derivational Distinction

Morphology is typically divided into inflectional and derivational morphology. This is not an undisputed division, as we will see in our examination of Arabic; however, we will accept the terms inflectional and derivational in the sense of Aronoff (1994: 126), where inflection is 'the morphological realization of syntax, while derivation is the morphological realization of lexeme formation'. Thus, derivation has lexicosemantic properties, while inflection has morphosyntactic properties with agreement and government phrase-level properties and relations.

17.2.2.1 Derivational Morphology

Derivation refers to the creation of new lexemes from a root or from more basic lexemes. The relationship between the base lexeme or root and the derived lexeme may be one or both of:

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change in morphological category: verb derived from noun; adjective derived from noun; noun derived from verb; adverb derived from noun, etc.
change in meaning: negative derived from positive; causative derived from transitive; intransitive derived from transitive, etc.

In some cases, there is neither a change in category nor a (significant) change in meaning, but we know that the derived lexeme differs from the base. An example from English is 'cyclic' and 'cyclical' – both are adjectives and have the same basic meaning; however, 'cyclic' means to move in circles or happen at regular intervals while 'cyclical' means recurring at regular intervals. The fact that these are different lexemes and both are listed in the lexicon means that *-al* in this case is a derivational morph. We can then follow Beard (2001: 55) and say that 'Derivation refers to any process that results in creation of a new word.'

Derivational morphology is typically less productive than inflectional morphology and may reflect historical stages in a language: in English, certain derivational suffixes have shown periodic rises or drops in popularity; the nominal suffix *-dom*, for example, which affixes to nouns to produce a noun of place, dropped in popularity of use from the twelfth century to a low in the eighteenth century and rose again in the nineteenth century (Lieber 2010: 68). Derivational morphology also tends to exhibit more exceptions than inflectional morphology: in English, the negative suffix depends on the type of word and, in cases, on the phonology: thus, *de-* can only be used in verbs, as in 'debug', 'delouse', *un-* can be used in verbs and adjectives, and *i(N)-* can be used in adjectives and in nouns derived from negated adjectives.

17.2.2.2 Inflectional Morphology

Inflection refers to word-formation that neither changes the category of the word nor creates new lexemes; rather it serves to provide the correct grammatical form of a lexeme within a particular context. Inflectional morphology is also characterized by being typically more productive than derivational morphology and having fewer exceptions. Thus, if we take an English verb such as 'to sew', the form of the lexeme differs according to the tense and aspect, and number and person of the subject required by the syntax, as in: 'he sew-s', 'I sew', 'they are sew-ing', 'you sew-ed'. However, in many languages, common verbs exhibit irregular forms. We see this in English 'to be', for example, and German *sein*. Affixational inflectional morphemes are also affixed to a derived lexeme and thus form edge morphemes in languages that exhibit morpheme concatenation. In English, from the adjective 'responsible' we can derive the noun 'responsibility' and then in a syntactic context such as 'he has many. . .' add the plural inflectional morpheme *-s* to give 'responsibilities'. In Arabic, which exhibits both concatenative and non-concatenative morphology,

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derivational morphology more commonly uses non-concatenative exponence, whereas inflectional morphology more commonly uses concatenative exponence. For a summary of the differences between derivation and inflection, see Plag (2003: 17). For discussions of the problems with applying these categories to inflectional and derivational morphology, see Bauer (2003: 91ff), Stump (2001: 13ff.), and Beard (2001: 44ff.).

Since word-formation essentially occurs before phrase-level inflection, I discuss derivation in Section 17.3 and look at inflection in Section 17.4.[1]

17.3 Derivational Morphology

In this section, I examine the basis of derivation in Arabic. I then examine derivation involving change in meaning within a morphological category, and derivation involving change in morphological category.

17.3.1 The Basis of Derivation in Arabic

In discussing word-formation, we firstly have to determine the basis of derivation. In Arabic, the most basic of content words comprise more than one element of meaning. Thus, Form I verbs in the citation form (perfect, 3 ms) express the lexical information of the verb, the perfect aspect, and person, number, and gender. Nouns of the template CvCC, such as *samn* 'ghee' and *bint* 'girl' express the lexical information of the noun, the nominal template CvCC, and inherent gender. In derived, and some inflectional, forms, the prosodic template is a key feature. What is it, though, that maps onto the template? The templatic nature of Arabic has drawn many researchers to establish the consonantal root as a morpheme that maps onto templates (cf. McCarthy 1981; Watson 2002: 126; Davis and Zawaydeh 1999a, 1999b): according to this view, Cairene and San'ani *libis* 'he wore' comprises three morphemes: the consonantal root /*l-b-s*/, the template CvCvC, and the vocalic melody /*i*/, and the noun *samn* 'ghee' comprises the consonantal root /*s-m-n*/, the template CvCC, and the vocalic melody /*a*/.

More recent work has argued that Arabic word-formation is based either on a fully vocalized stem, or on whole words (e.g., Ussishkin 1999). Importantly, McOmber (1995), Ratcliffe (1997, 1998, 2013), and Benmamoun (1999, 2003) have shown that Form I verb formation is based on a vocalized CCvC stem rather than on a consonantal root. McOmber (1995), reiterated by Ratcliffe (2013), shows that there is an implicational relationship between the vowel of the perfect and the vowel of the imperfect: if the vowel of the imperfect is /*u*/, the rightmost vowel of the perfect will be /*u*/; if the vowel of the imperfect is otherwise

[1] For further details of Arabic derivational and inflectional morphology, see Ryding (2005, 2014).

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[+high], the vowel of the perfect will be [+low], and if the vowel of the imperfect is [+low], the vowel of the perfect will be [+high]. This counters McCarthy's (1981) view, and one that is reflected in Arabic dictionaries and lexicons, that the perfect is primary in the Arabic verb. Ratcliffe (1997) argues further that there is no evidence for the vowel of the CCvC having independent morphological status, such that the basic morpheme behind 'to write' is *ktub*. The imperfect stem is homophonous with the imperative, and in many languages the imperative is identical to the bare verb stem, even in cases of irregular verbs. Thus, the irregular English verb 'to be' has the imperative 'be!', and the German verb *sein* has the imperative forms based on *sei-*, in contrast to all present forms of the verb.

These authors also point to the phonological similarity between the imperfect stem and a variety of derived nominals: the stem of the noun of place frequently shares a vowel with that of the imperative, as in: *(ʔi)jlis* 'sit!' and *ma-jlis* 'council; sitting room', *sbaḥ* 'swim!' and *ma-sbaḥ* 'swimming pool'. There are, however, several counterexamples, where the stem of the derived nominal is not identical to the imperfect stem, as in: *(ʔu)dxul* 'enter!' and *ma-dxal* 'entrance', *(ʔu)xruj* 'go out!' and *ma-xraj* 'exit'.

There is, however, still significant evidence for the primacy of the consonantal root in certain derivations. Watson (2006), Idrissi et al. (2008), Benmamoun (2016), and Davis (2016) argue that either the consonantal root or the stem can be involved in word-formation processes, and that the choice of consonantal root or fully vocalized stem depends on the particular word-formation process. Idrissi et al. (2008) propose the following mappings: root > Word1 > Word2, whereby some processes involve root > Word1, and other processes involve Word1 > Word2. In this chapter, I will accept that the basis of the verb is the imperfect stem, and that this stem is involved in various other word-formation processes; I also accept that the stem is involved in many other derivational processes; however, I also follow Watson (2006), Idrissi et al. (2008), Benmamoun (2016), and Davis (2016) in arguing that certain types of derivation do make reference to the consonantal root.

In the subsections below, I examine examples of derivation in terms of change in meaning and then change in morphological category.

17.3.2 Change in Meaning

Change in meaning in the Arabic verb system includes increase and decrease in valency in relation to the basic verb. Increase in valency gives verbs that express, for example, causative, transitive, conative, intensive, associative, and reciprocal; decrease in valency gives verbs that express, for example, intransitive, passive, medio-passive, and reflexive. Change in meaning in the Arabic nominal system includes the diminutive and the augmentative (in very few dialects).

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17.3.2.1 Verbs

I assume that in the unmarked case, the non-basic verbal forms are derived from the perfect stem of the basic Form I verb. Thus, Forms II, III, and IV, which typically add valency to the basic Form I, can be said to be derived through affixation of a mora to the Form I perfect stem. In the causative/transitive (Form II), the mora associates with the medial consonant; in the conative/reciprocal (Form III), the affixed mora associates with a vowel. If we accept that the perfect stem of the basic Form I verb is derived from the imperfect stem, then the following mapping takes place to derive Form II and Form III stems (modified from Davis 2016):

Imperfect Form I stem > perfect Form I stem > Form II / Form III
Causative/transitive (perfect): xruj > xaraj > /μ_c + xaraj/ > [xarraj] 'to remove'
Conative/associative (perfect): ktub > katab > /μ_v + katab/ > [kātab] 'to correspond'

The Form IV perfect stem is derived by the prefixed mora associating with the initial root consonant, with /*a*/ of the prefix *ʔa-* associating with the original mora, as in:

Causative/transitive (perfect): xruj > xaraj > /μ_{cr} + xaraj/ > [ʔaxraj] 'to dislodge'

The verbal forms which typically show reduction in valency in relation to the base of derivation are Forms V, VI, VII, VIII, and X. These verbs are derived not by mora affixation, but rather by affixation of a prefixal detransitivizing consonant. Forms VII and VIII are derived from the basic Form I, through prefixation of *n-* and *t-* respectively. Examples of Form VII include: *(i)nšaġal* 'to be preoccupied' and *(i)nšall* 'to be paralysed'. In Classical Arabic and dialects such as San'ani, the *t-* of Form VIII was historically subject to metathesis with the initial root consonant, to give (i)CtaCaC, as in: *ištaġal* 'to work', *iḥtabas* 'to be imprisoned'. Forms V, VI, and X are derived from already derived verbs. Thus in Classical Arabic, Forms V and VI are derived from Forms II and III respectively through prefixation of *ta-*. This is realized in the dialects as *it-* or *ti-* ~ *ta-*, as in Cairene *itʕallim* 'to learn' and *itʕāwin* 'to help e.o.' and San'ani *taḥāka* 'to talk' and *talaṯṯam* 'to put on a face veil'. Form X was originally the passive or reflexive of Form IV (McCarthy and Prince 1990: 38), derived through *t-*prefixation and metathesis with the consonant of the causative prefix. This was at a time when Form IV took not initial *hamza* as it does in Classical Arabic and the vast majority of modern Arabic dialects now, but the causative prefix *sa-* (Zaborski 1999). The *safʕal* form is still attested in Hassaniya (Taine-Chaikh 2008), and occurs in the verb *sadʕa* in the Ibbi variety of Yemeni Arabic (Watson 2007). Historically, Form X was derived as follows:

faʕal > *safʕal* > *tsafʕal* > *stafʕal*

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17.3.2.2 Nominals

Change in meaning in the nominal system gives diminutives, and in rare cases, augmentatives. In the non-concatenative literature, diminutives have received much attention mainly because they take the same templatic pattern as broken plurals (cf. Section 17.4.3.1) in the unmarked case. In Classical Arabic and many dialects, a trochaic foot is extracted from the noun or adjective base and mapped onto an iamb (CvCvv). The final element of the base is added, and the vocalic melody is overwritten by the diminutive vocalic melody */u-ay-(i)/*. Consider the following:

kalb 'dog' [kal] > [kalxx] > [kalxxb] > vocalic overwriting [kulayb] 'little dog'
maktab 'office' [mak] > [makxx] > [makxxtab] > vocalic overwriting [mukaytib] 'small office'
miftāḥ 'key' [mif] > [mifxx] > [mxfxxtāḥ] > vocalic overwriting [mufaytīḥ] 'small key'
ṣaġīr 'small' [ṣaġi] > [ṣaġii] > [ṣaġiir] > vocalic overwriting [ṣuġayyir] 'very small'

The dialects vary in the productivity of diminutives. Cairene has several nouns and adjectives formed on the diminutive pattern above, as in *ʔurayyib* < *ʔarīb* 'near', *rufayyiʕ* < *rafiʕ* 'thin', *ʔuṭēṭa* < *ʔiṭṭa* 'cat', but productive diminutives are formed today using the suffix *-āya* (Woidich 2006). San'ani appears to have non-concatenatively formed diminutive nominals only in the case of *zuġayyir*, *zuġayrī*, and *zuġayyirī* 'small', in set children's games, and in a few fixed expressions (Watson 2006). The *-ī* ending in San'ani affixed to a non-count noun of a plural pattern can function as a diminutive to indicate small amount, as in: *saḥāwig* 'spices' > *saḥāwigī* 'small amount of spices' (Naïm 2009: 107).

17.3.3 Change in Category

Nouns derived from verbs include the agentive noun, noun of place, noun of instrument, and noun of profession. For reasons of space, I will restrict the discussion here to the derivation of agentive nouns and nouns of profession.

The agentive noun involves mora prefixation to the perfect stem of the basic Form I verb with overriding of the vocalic melody, or prefixation of *mv-* to the imperfect stem of a derived verb. The derivation of the nouns *dāfiʕ* 'motive; incentive' and *musāfir* 'traveller' are given below:

dafaʕ > /μ_v + dafaʕ/ > /dāfaʕ/ > active vocalic melody > [dāfiʕ] 'motive; incentive'
sāfir > /mu- + sāfir/ > [musāfir] 'traveller'

The noun of profession is derived from the Form I perfect stem through mora prefixation, which induces lengthening of the medial consonant,

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and mora suffixation, which induces lengthening of the rightmost vowel, as mapped below:

xabaz > /μ_c + xabaz + μ_v/ > [xabbāz] 'baker'

The *faʕlān* ~ *fiʕlān* adjective in, for example, Cairene and Omani is an instance of an adjective derived from a Form I intransitive verb. This is derived through mapping of the root consonants of the intransitive verb onto the template CvCC and suffixation of the adjectival ending *-ān*, as in:

kisil > /kasl + ān/ > [kaslān] 'lazy'
nisi > /nisi + ān/ > [nisyān] 'having forgotten'

Adjectives derived from nouns include the relational or *nisba* adjective, which is derived through suffixation of the adjectival ending *-ī* ~*-i* to the nominal stem. Where the base noun ends in the feminine ending *-ah*, or *-ih* or in *ịā*, suffixation ignores the vocalic ending of the base:

maṣr + *i* > *maṣri* 'Egyptian'
yaman + *i* > *yamani* 'Yemeni'
burtagāl + *ī* > *burtagālī* 'orange' (San'ani)
gabīlih > *gabīlī* 'tribesman' (San'ani)

Verbs derived from nominals include denominal verbs which are commonly formed from loanwords, and the derived Form IX. Form IX, which is rare in most dialects of Arabic today, takes the template (ʔ)aCCaCC, with a final geminate. This form expresses involuntarily adopting a colour or a defect and is most probably derived through mora suffixation from the corresponding adjective, which takes the template (ʔ)aCCaC. In the dialects today, the initial *hamza* in both the adjective and the verb is realized only in utterance-initial position. The derivation of Form IX can be mapped as follows:

ʔaswad > /*ʔaswad* + μ_d/ > [(ʔ)aswadd] 'to become black'

Verbs derived from nouns almost invariably take the Form II template, but in some cases take the Form III template, as in *ʕāyad* below. In this case, the root consonants of the noun are mapped onto the template of the Form II or Form III verb:

ṣābūn > *ṣabban* 'to soap'
bawdar > *baddar* [realized as battar] 'to powder' (San'ani, Watson 1993)
šita > *šatta* 'to flower in winter', *ʕīd* > *ʕāyad* 'to go Eid visiting' (Omani, Holes 2008: 488)

In some cases, verbs are derived from prepositional phrases or grammaticalized adverbs, as in San'ani:

ba-ḥīn 'early' > *baḥḥan* 'to be early'
bi-xayr 'well' > *baxxar* 'to cure' (Watson 2006: 194)

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17.4 Inflection

17.4.1 Parts of Speech Affected by Inflection

The parts of speech which exhibit inflectional categories in Arabic are nouns, pronouns, verbs, and adjectives. In Classical Arabic, adverbs also exhibit accusative case explicitly. In spoken Arabic, case is not marked.

17.4.2 Inherent Inflection and Contextual Inflection

In discussing inflection, we have to acknowledge a distinction between inherent inflection and contextual inflection: contextual inflection depends on the syntactic context in which a word finds itself, whereas inherent inflection is not determined by the syntax, but is relevant to syntax and may affect the inflectional categories of agreeing or governed elements. Case is a typical example of contextual inflection, where the case assigned depends on the governing head. In Arabic, gender and number are inherent in pronouns and nouns, but contextual in verbal subject pronouns, in verb-subject-verb phrases, and in adjectives in noun phrases.

17.4.3 Inflectional Morphological Categories

The main inflectional categories for Arabic are number, gender, person, mood, voice, aspect, tense, definiteness, case, and degree. Of these, number, gender, and, in some cases, voice are inherent features of nouns and contextual features of adjectives. Definiteness is an inherent feature in pronouns, including demonstrative pronouns, and in proper nouns, and a contextual feature in adjectives and common nouns. The categories number, gender, and person are inherent in personal pronouns, and are also marked on verbs. The categories mood, voice, aspect, and tense relate to verbs, and voice and aspect relate to participial adjectives. Case in Classical Arabic relates to nouns, adjectives, and adverbs. The category degree relates to adjectives.

17.4.3.1 Number

Number in Arabic has three subcategories applicable to count nouns: singular, dual, and plural, and two categories applicable to collective nouns: collective and singulative. Of these, dual is restricted to nouns in spoken Arabic, and in many dialects occurs only with a small closed set of nouns. In San'ani, for example, the dual is restricted to nouns of measurement and time, as in: *sāʕatayn* 'two hours', *yawmayn* 'two days', *giršayn* 'two riyals' (Watson 2009: 113). Dual nouns in Classical Arabic take dual subject pronouns in verb phrases, and dual adjectival endings in noun phrases. In modern Arabic dialects, agreement with dual animate (human) nouns is through plural subject pronouns in verb phrases and plural adjectival forms in noun phrases. Agreement with dual inanimate nouns is commonly through feminine singular pronouns in verb phrases and feminine singular

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adjectival forms in noun phrases, as in San'ani: *as-sanatayn as-sābigah* 'the last two years'. The singulative is formed from collective nouns through suffixation of the feminine *-ah* ending in Classical Arabic and many dialects, and in San'ani by *-ī*, as in *mawz* 'bananas' > *mawzī* 'a banana', *dūd* 'worms' > *dūdī* 'a worm', *ġurrāb* 'crows' > *ġurrābī* 'a crow' (Naïm 2009: 107).

Plural number in nouns has received much attention in work on Arabic morphology, due to the fact that formation of the unmarked plural involves non-concatenative morphology. Singular nouns take a sound plural ending in a subcategory of nouns, and a broken plural pattern in the default case. Sound masculine plural endings are attached to derived nouns indicating masculine human, and agentive adjectives, as in San'ani:

xabbāz > *xabbāzīn* 'bakers m.'
nāyim > *nāyimīn* 'sleeping m.pl.'
musāfir > *musāfirīn* 'travellers m.'

There is a large number of broken plural patterns, as shown in Ratcliffe (1998) and McCarthy and Prince (1990). Due to space restrictions and to the fact that the broken plural has been researched extensively, I will only mention here the formation of the unmarked broken plural. Here the prosodic template of the broken plural of nouns is identical or similar (depending on the dialect) to the diminutive pattern, seen above. Thus the broken plural is formed from the singular base by extracting the initial trochaic foot, mapping that onto an iamb, adding the rest of the base, and overwriting the vocalic melody of the singular with that of the plural /a-i/, as in:

maktab [mak] > [makā] > [makātab] > vocalic overwriting [makātib] 'offices'
miftāḥ [mif] > [mifā] > [mifātīḥ] > vocalic overwriting [mafātīḥ] 'keys'

Where the initial trochaic foot consists of a long vowel, /w/ is inserted to provide an onset for the second syllable of the iamb, as in:

ṣābūn [sā] > [ṣawā] > [ṣawābūn] > vocalic overwriting [ṣawābīn] 'soaps'

17.4.3.2 Gender

Gender in Arabic has two subcategories: masculine and feminine. Nouns typically show inherent gender, though derived nouns may take an explicit morphological suffix *-ah*, *-eh*, or *-ih*, depending on the dialect, to express feminine, as in San'ani Arabic: *mudīr* 'manager m.', *mudīr-ih* 'manager f.'. With the exception of nouns denoting animate beings of feminine sex, gender in many unmarked nouns is frequently arbitrary across the dialects, and often differs from the gender classification of unmarked noun cognates in Classical Arabic (Procházka 2004; Kherbache 2013). Thus, *bāb* 'door', *malḥ* 'salt', and *xubz* 'bread', grammatically masculine in Classical Arabic, are feminine in the Algerian dialect of Beni Hammou (Kherbache 2013), and many paired body parts, grammatically feminine in Classical Arabic, are masculine in various modern dialects (Procházka 2004).

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Pronouns express gender in all but the first person in most varieties of Arabic. In some Yemeni dialects spoken in the western highlands, however, the independent first-person singular pronoun exhibits a distinction between masculine and feminine: *ana* 'I m.', *anī* 'I f.' (Behnstedt 1985: xxx). Within pronouns and verbal inflections, many urban Arabic dialects restrict gender distinction to the singular second- and third-person pronouns only. Bedouin dialects and Yemeni dialects as a whole show gender distinction for second- and third-person plural pronouns as well.

Demonstratives typically express gender distinction in the singular demonstratives, but less commonly in the plural demonstratives. Najdi Arabic shows masculine/feminine distinction in all demonstratives (examples from Ingham 2008: 329), as in Table 17.1.

In Rijāl Almaʕ, a dialect of Arabic spoken in south-west Saudi Arabia, the gender category includes animacy, which is shown in the plural clausal definite articles (in the literature commonly referred to as the relative pronoun, Vicente 2009; Watson 2011: 860–1). In this dialect, the clausal definite article is *ḍā* for masculine singular, *tā* for feminine singular, *wula* for human plural, and *mā* for non-human plural (Asiri 2007, 2009). Examples from Asiri (2007, 2009) include: *antah rayta m-walad ḍā šarad* 'have you m.s. seen the boy who ran away?', *antah rayta m-brat tā šarad* 'have you f.s. seen the girl who ran away?' *gābalt im-ʕuwāl wulā sarag/u m-maḥall* 'I met the boys who stole from the shop', *im-maḥāll mā bana/ha* 'the houses that he built'.

The gender category is affected by attrition across Arabic dialects (cf. Corbett 1991: 315 for attrition in gender systems). The youth of today in Rijāl Almaʕ are no longer aware of the animacy category in the clausal definite article, and reduce all gender/number clausal definite articles to a pan-Arabic *illi* (Asiri 2007, 2009). In San'ani Arabic, which maintains the feminine–masculine distinction in plural second- and third-person pronouns, a series of verbs with a feminine plural subject often begin with a feminine plural verb form, but take following unmarked masculine plural verb forms (Watson 1993: 124), as in:

an-nisāʔ yudxulayn yitḥammamayn kullahin u-yuxrujayn u-yiksirū bayḍah
'the women all come in and bathe, then they go out and break an egg' (Rossi 1939: 96)

Table 17.1 *Demonstrative pronouns in Najdi Arabic*

	Masculine	Feminine
Near s.	*hāḍa, ḍa*	*ḥāḍi, ḍi*
Near pl.	*hāḍōla, ḍōla, ḍōl*	*hāḍōli*
Far s.	*hāḍāk, ḍāk*	*hāḍīć, ḍīć*
Far pl.	*hāḍōlāk, ḍōlāk*	*hāḍōlīć, ḍōlīć*

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17.4.3.3 Person

Classical Arabic and spoken Arabic dialects show a three-way person distinction: first, second, and third. The person category is relevant in independent and dependent personal pronouns and in verbal inflections. The independent pronoun pattern for San'ani Arabic is given in Table 17.2.

17.4.3.4 Aspect

Arabic shows two aspects in the verb: the perfect and the imperfect. Of these, the perfect is conjugated by pronoun suffixes only, while the imperfect takes person/gender prefixes and plural person(/gender) suffixes for the second and third persons. The perfect is frequently described as the suffix conjugation, and the imperfect as the prefix conjugation. Dialects spoken in north-west Africa, and some western Egyptian dialects, distinguish the first-person plural in the imperfect from the singular through a plural suffix, as in *niktib* 'I write' versus *niktibu* 'we write' (cf. Behnstedt undated).

The inflected verbs provide examples of different types of morphological exponence. I take as example here the perfect and imperfect paradigms of *gambar* 'to sit' in San'ani Arabic.

In the perfect paradigm (Table 17.3), the morpheme PERFECT is expressed across two elements: in the template of the stem, CvCCvC, and in the suffix. In the case of the third-person masculine singular form, 3 ms is expressed by absence of a suffix, thus by a zero morph. The *-t* suffix is an instance of syncretism, expressing both first-person singular and second-person masculine singular. All suffixes are instances of multiple exponence, expressing both person and number. The second- and third-person suffixes express person, number, and gender.

Table 17.2 *Independent pronouns in San'ani Arabic*

Person	Gender	Singular	Plural
1	m/f	*anā*	*iḥna*
2	m	*ant*	*antū*
	f	*antī*	*antayn*
3	m	*hū*	*hum*
	f	*hī*	*hin*

Table 17.3 *Perfect paradigm of* gambar *'to sit' in San'ani Arabic*

Person	Gender	Singular	Plural
1	m/f	*gambar-t*	*gambar-nā*
2	m	*gambar-t*	*gambar-tū*
	f	*gambar-tī*	*gambar-tayn*
3	m	*gambar*	*gambar-ū*
	f	*gambar-at*	*gambar-ayn*

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Table 17.4 *Imperfect paradigm of* gambar *'to sit' in San'ani Arabic*

Person	Gender	Singular	Plural
1	m/f	*a-gambir*	*ni-gambir*
2	m	*ti-gambir*	*ti-gambir-ū*
	f	*ti-gambir-ī*	*ti-gambir-ayn*
3	m	*yi-gambir*	*yi-gambir-ū*
	f	*ti-gambir*	*yi-gambir-ayn*

In the imperfect paradigm (Table 17.4), the prefix *ti-* is an instance of syncretism, expressing both second-person and third-person feminine singular; the suffixes *-ayn* and *-ū* are instances of multiple exponence, expressing the combination of gender (feminine and masculine, respectively) and plural; the prefixes *a-* and *ni-* express both person (first) and number (singular and plural, respectively); *yi-* expresses masculine for the singular, but the gender of the verb depends on the suffix in the plural: *-ū* masculine, *-ayn* feminine.

17.4.3.5 Tense

Tense interplays with aspect in Arabic. The perfect aspect, described by the Arab grammarians as *māḍī* 'past', typically expresses the past, but also expresses the conditional, and can also be used to express the optative. The imperfect aspect in the unmarked case expresses non-past, but when preceded by a perfect matrix verb (Elsadek 2016) or in a phrase involving an adverb relating to the past, it expresses relational past. The only true tense in Arabic is the future, which is expressed by a future particle *sawfa* or a future prefix, *sa-* in Classical Arabic. Arabic dialects express the future through a future prefix: for example, *ḥa-* in Cairene Arabic, *ba-* in Omani Arabic, *ša-* or *ʕad-* for first-person singular and *ʕa-* for all other persons in San'ani Arabic (Watson 2009: 114). Thus, in San'ani Arabic, the morph *ša-* expresses FUTURE and, together with the first singular inflectional form of the imperfect, FIRST-person, SINGULAR number.

17.4.3.6 Mood

Mood is expressed on the imperfect verb. The perfect is not subject to modal inflection. The moods expressed in Classical Arabic are indicative, subjunctive, jussive, imperative, and energetic, with mood expressed through final vowel endings in the unmarked case *-u* indicative, *-a* subjunctive, *-∅* jussive/imperative, *-an(na)* energetic. The indicative is used in declarative clauses to produce statements of fact and is used in questions; the subjunctive is used for non-fact, in clauses of suggestion, exhortation, wish; the imperative expresses commands and prohibitions; and the energetic is used to add force to the indicative, subjunctive, or jussive. The Arabic dialects distinguish the indicative, imperative, and subjunctive, although in some dialects, such as those in the Arabian Gulf, the distinction between indicative

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and subjunctive is not expressed explicitly (El-Hassan 2008: 264). In dialects which do make an explicit morphological distinction, such as non-Bedouin Syrian, Palestinian, Jordanian, and Cairene, the indicative is expressed by a verbal prefix *bi-*, and the subjunctive by absence of *bi-*, as in Palestinian/Jordanian *bilʕab* 'he plays/is playing' versus *il-walad biḥibb yilʕab* 'the boy likes to play' (El-Hassan 2008: 263). Some dialects allow the absence of *bi-* in indicative clauses, as in Cairene *il-milḥ (bi)ydūb fi l-mayya* 'salt dissolves in water' (El-Hassan 2008: 264). San'ani is one dialect in which the *bi-* prefix indicates not indicative, but continuous/habitual: thus, 'he plays' is *yilʕab*, but 'he is playing' is *bi-yilʕab*. The positive imperative in Classical Arabic is expressed through subtraction of the person prefix of the jussive verb, and in the dialects through subtraction of the person prefix from the imperfect. Where loss of the person prefix results in a consonant cluster in a dialect which does not allow initial clusters, a prosthetic vowel and glottal stop is added, as in Cairene *ʔiktib* 'write m.s.!'. The negative imperative is expressed syntactically, through preposing the negator *lā* to an imperfect verb in the second person, as in San'ani *lā tisīr* 'don't go m.s.!'

17.4.3.7 Voice

Verbs and verbal participles express voice: active or passive. In Bedouin dialects, the passive voice is expressed non-concatenatively, through vowel umlaut (cf. Retsö 1983; Ingham 2008: 332 for Najdi Arabic; Eades 2009 for a Bedouin dialect in northern Oman; Watson 2011: 869). Thus, in Najdi Arabic, *samm* 'he poisoned' contrasts with *simm* 'he was poisoned', *ysamm* 'he is poisoned' (Ingham 2008: 332). In conservative sedentary dialects, such as those of northern Oman, verbs belonging to a restricted set of syntactic and lexicosemantic categories may take the internal passive (Holes 1998), while others take a different verbal derivational pattern to express the passive. In San'ani Arabic, the internal passive is used for a few verbs only, as in: *gutil* 'he was killed', *kumil* 'it m. was finished', *wulid* 'he was born', *xulug* 'he was born', *surig* 'he was robbed', *summī* 'he was called' (Watson 1993, 2009; Naïm 2009: 99). In many dialects, particularly those outside the Peninsula, the passive is expressed wholly through a derived verbal form: either a form with prefixed or infixed *t-* or a form with prefixed *n-* (Retsö 1983). The expression of the passive through a different verbal form is an instance where a typically inflectional category may be realized through derivation.

Participles of the Form I verbs take different templates and vocalic melodies to express voice, as in: *rāġib* 'desiring' versus *marġūb* 'desired'. Participles of derived verbs express voice through umlaut of the stem-final vowel: *-i-* expresses active and *-a-* expresses passive, as in: *musāfir* 'travelling; traveller' versus *murakkab* 'mounted, fixed'.

17.4.3.8 Degree

Adjectives show degree in terms of the comparative and the superlative. The typical expression of the comparative is through a distinct templatic pattern,

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Table 17.5 *The comparative in Cairene Arabic*

Adjective	Comparative	Gloss
wiḥiš	*awḥaš*	bad/worse
šāṭir	*ašṭar*	clever/cleverer
kibīr	*akbar*	big/bigger
sahl	*ashal*	easy/easier
munāsib	*ansab*	appropriate/more appropriate
kaslān	*aksal*	lazy/lazier

where the root consonants of a triliteral adjectival base are mapped onto the consonantal slots of the template aCCaC (Davis 2017), as in the examples in Table 17.5 from Cairene Arabic.

Where the consonantal root of the adjective is biliteral, the comparative is formed by mapping onto the template aCaCC, as in: *muhimm* 'important' > *ahamm* 'more important', *qalīl* 'little' > *aqall* 'less, fewer'. Where the last consonant of the consonantal root is /w/ or /y/, the comparative is mapped onto the template aCCa, as in: *ḥilw* 'sweet' > *aḥla* (Davis 2017). In the case of adjectives of colour or defect, which take the same basic templatic pattern as the elative, many dialects, including San'ani Arabic, form the comparative syntactically, by adding *min* 'from; than' to the colour or defect adjective:

al-wald ašgar min al-bint 'the boy is blonder than the girl'

In some dialects, the elative can be derived from certain nouns, as in the following examples from Omani Arabic (Holes 2008: 486):

ragil 'man' > *argal* 'more manly'
ustād 'master; expert' > *astad* 'more expert'

The distinction between the comparative and superlative is realized syntactically (cf. Hallman (undated) for Syrian Arabic). Where the elative takes the definite article or forms the first element of a genitive construction, it functions as a superlative, as in the following examples from Cairene Arabic:

akbar bint 'the oldest girl'
aʔdam madīna 'the oldest city'
hū aṭwal wāḥid 'he is the tallest one'
hū il-aṭwal 'he is the tallest'

The comparative does not inflect for gender or number in any variety of Arabic. The superlative inflects for gender and number in Classical Arabic and some Arabic dialects if it occurs independently, or if it post-modifies a noun, as in the following examples from Wehr (1976):

sūriyā al-kubrā 'Greater Syria'
akābiru l-qawm 'the leaders of the people'

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17.4.3.9 Definiteness

Definiteness is expressed morphologically in Arabic: proper nouns (even though some may be marked with nunation), pronouns, and demonstrative pronouns are inherently definite. Common nouns and adjectives are indefinite in the unmarked case, and defined by prefixation of the definite article, which is most commonly *il-* or *al-* in the dialects, with the allomorph iC- or aC- where the initial C of the noun is a coronal consonant (Watson 2002; cf. Heselwood and Watson 2015). Cairene also has the optional allomorph iC- before a noun or adjective with an initial velar, as in: *ik-kursi ~ il-kursi* 'the chair'. A number of dialects spoken in the Yemeni and Saudi Tihamah, in the far north of Yemen and in Saudi Asir take nasal definite articles: *vn-* or, more commonly, *vm-* (Behnstedt 1985, 1987; Asiri 2009). Several Yemeni dialects, such as Rāziḥīt, realize the definite article by a prosthetic vowel followed by gemination of the initial nominal consonant, irrespective of its quality, e.g., *iʔ-ʔiḏn* 'the ear'.

17.5 Conclusion

There is not always a clear demarcation between inflectional and derivational morphology in Arabic. For example, we have seen that for Omani Arabic the elative, a typically inflectional category for adjectives, can be derived from a noun. Since this creates a change in morphological category, this provides an example of an inflectional category being used to create a newly derived form. In terms of morphological exponence, many derivational categories are realized concatenatively or through a blend of concatenative and non-concatenative morphology, as in nouns of place, time, and instrument, while several typically inflectional categories are expressed purely non-concatenatively, as in the elative and broken plural nominal forms.

Acknowlegements

Thanks are due to Stuart Davis for commenting on a draft of this chapter.

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