ARABIC SEMANTICS

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1 Introduction

Semantics, the study of meaning, is as multifaceted a discipline as its subject matter itself. Contemporary theoretical linguistic semantics concerns itself primarily with the relatively narrow but consequential goal of identifying the regularities in the relation between form and meaning in human languages. The fact that it is possible for speakers of a language to comprehend sentences they have never heard before means that comprehension is procedural; speakers analyze an unfamiliar sentence into its familiar component parts and then derive the meaning of the whole with reference to the manner in which those parts are combined. They do this by virtue of rules that connect the syntactic juxtaposition of the parts to the way their meanings are integrated in the whole. These rules, and the meanings of the terms they combine, are the subject matter of contemporary linguistic semantics. This chapter discusses some phenomena in Arabic and its varieties that have attracted the attention of semanticists, and makes some suggestions for future directions in this area.

2 Historical background and perspective

The Arabic grammatical tradition is quite old, with the first written grammatical treatises originating in the eighth century. This tradition was primarily concerned with documenting the form of the language spoken at that time, but also identified grammatical regularities in it, that, together with the emergence of a technical vocabulary for grammatical description, has hallmarks of a theory of grammar (Owens 1990). Research in Europe in the 19th century on the foundations of mathematics led to the development of model-theoretic semantics for human language in the 1960s and 70s (see particularly the work of Montague 1970, 1973). In this theory, the derivation of the meaning of a sentence from the meanings of its parts is modelled using mathematical tools, particularly set theory. The formal descriptive precision that these tools make possible has led to striking progress in our understanding of the manner in which human language utterances are interpreted. Since the development of this framework, Arabic has not been subjected to substantial formal semantic analysis, meaning that Arabic still stands to make significant new empirical and theoretical contributions to the development of the field of semantics. Some issues that have received attention are described in sections 3 and 4, while section 5 describes some aspects of Arabic that appear to represent fertile territory for future semantic inquiry.

3 Critical issues and topics

The most significant issues in contemporary semantic theory have to do with the interpretation of 'variable binding operators'. These are words or phrases that talk about the value of a place-holding variable somewhere else in the sentence they occur in. For example, Every dog barked asserts that every value of the variable x that is a dog validates the assertion x barked, when substituted for x. Similarly, Only Fido barked asserts that no value of x validates x barked other than Fido. Likewise, Fido ate many biscuits than Spots asserts that the value of z in Fido ate many biscuits exceeds the value of y in Spots ate many biscuits. A sentence like Fido ate three biscuits asserts that 'three' validates Fido ate many biscuits when substituted for x. Less obviously, terms expressing tense fall into this category, since they talk about values for time variables. A sentence like Fido ate biscuits asserts that there is a value for the time variable x that temporally precedes 'now' and that validates Fido eats biscuits at time x. Still less obviously, many terms control the value of variables for hypothetical situations or 'possible worlds'. When we say If Fido barks, the baby will cry, we are saying that in every possible situation x that validates Fido barks in x (whether he actually ever does bark or not) also validates The baby will cry in x. We will see in section 4 that, as with other languages, semantic research on Arabic has concerned itself primarily with the function and meaning of variable binding operators in their full variety. A few issues in Arabic semantics arguably fall outside of this general trend, such as dervishal verb morphology, discussed in section 4.7, and pragmatics, not treated here but discussed by Haddad in Chapter 8 (this volume).

4 Current contributions and research

This section describes significant current research on Arabic in the areas of the interpretation of number, degree, quantification, quantifier interactions, definiteness, tense and aspect, and derivational verb morphology. Each of these terms is defined in its respective discussion.

4.1 Numerical constructions and number

'Numerical constructions' involve noun phrases containing numerals, such as three dogs, twenty children, etc., while 'number' refers to the singular/plural distinction marked in English on nouns as the suffix -s for plural and absence of -s for singular. A long-standing cross-linguistic issue in these related constructions concerns the collective/distributive opposition. A predicate distributes over a plural argument if the predicate is understood as holding of each member of the group the plural denotes. It is collective otherwise. On one hand, the collective example The children gathered describes a situation that no individual child can make true (cf. *The child gathered). Only the children as a group can gather. On the other hand, the children smiled is true only if the individual children in the group that the children refers to smile individually. The distributivity of the individuating predicate smile over members of the plurality the children has been argued to be a property of the predicate itself, not its plural subject, since the same plural subject may be interpreted collectively and distributively in a single sentence, as in The children gathered and smiled. This sentence means something like 'There is a group of children C such that C gathered and each member of C smiled'.
However, Ouwayda (2011, 2014, 2017) discusses facts from Lebanese Arabic that show that the collective/distributive distinction may be specified by the noun phrase itself, whether or not it may also be specified by the predicate. In Lebanese Arabic, numeral modifiers up to ten are accompanied by a plural noun (e.g. ttleit unluz ‘three children’) but those over ten are accompanied by a singular (e.g. ttleit unwad, lit. ‘thirty child’). While the former systematically controls plural agreement on agreeing adjectives, verbs, and pronouns, the latter optionally controls either singular or plural agreement. It turns out that the choice has a semantic effect. A singular predicate in this context may only be interpreted distributively, while a plural predicate may be interpreted either distributively or collectively. Consequently, example (1a), where the verb bears the plural suffix -u, may either describe a situation in which 30 children each ate a cake of his or her own, or one in which the 30 children shared a single cake among themselves. Example (1b), with the verb in the unmarked singular form, may only describe the ‘distributive’ situation where the children each eat an entire cake.

(1a) a. ttleit unwad ?aial-u ?aaleb gao to keemel [Lebanese]
    thirty child ate-pl. pie cake whole
    (i) Thirty children each ate a cake. (distributive)
    (ii) Thirty children shared one cake. (collective)

b. ttleit unwad ?aial-Ø ?aaleb gao to keemel
    thirty child ate-sg. pie cake whole
    (i) Thirty children each ate a cake. (distributive)
    (ii) Thirty children shared one cake. (collective)

Ouwayda proposes that a noun is pluralized by a functional head labeled ‘#’ projecting a #-Phrase (#P), which maps a basic singular Noun Phrase (NP) (a predicate of individuals) into a function from a number n to a predicate of plural individuals of size n whose every atom has the NP property (the property ‘child’ in [1]). In combination with a numeral, the head # derives a plurality with that cardinality. An NP pluralized in this way triggers plural agreement on its dependents, but only above the #P level. This analysis predicts that an adjective that modifies NP directly below #P will fail to show plural morphology, since it modifies a singular (the underlying NP), but an adjective above #P will show plural morphology, since it modifies a plural (#P itself). As Ouwayda shows, (2) bears out this prediction, where the adjective lifts the mod from lowest to highest after the noun. Since the presence of a plural adjective reveals the presence of #P, a verb in that case must show plural agreement.

(2) [(ttleit unw telmiz-Ø mnaazam-Ø)] kesel-nei-Ø haa2*-Ø(u). [Lebanese]
    thirty student-sg. organized-sg. lazy-pl. complained-(pl.)
    ‘Thirty lazy organized students complained’.

In the absence of #P, adjectives, verbs, and associated pronouns do not show plural agreement, and only a distributive reading is available. Ouwayda analyses this reading as the entailment of a special existential quantifier that, like #, combines with an NP and a numeral, but which derives a predicate of singularities, rather than pluralities as in the case of #. Since no plurality is introduced at any level in this case, no collective reading is available.

4.2 Degree constructions

Degree constructions are a class of constructions that talk about the degree to which some property or quantity holds, such as superlative (3) and comparative constructions. Example (3) asserts that Mary climbed a mountain that has a greater degree of height than any other relevant mountain. A long-standing issue in the semantics of superlatives has to do with apparent differences between the construction’s superficial form and its semantic composition. In English, the superlative morpheme -st occurs on the adjective that provides its scale of comparison (or adjacent to it in the form of most if the adjective does not accept the -st suffix for morphophonemic reasons). Heim (1985, 1999, 2001), Szabolcsi (1986), and others claim that -st is replaced from its surface position and adjoins either to NP (3a) or the Verb Phrase (VP) (3b) at the level of grammatical representation at which the interpretation of the sentence is fixed.

(3) a. Mary climbed the highest mountain.
   b. Mary [est, [na 6-high mountain]]
   c. Mary [est, [na climbed a 6-high mountain]]

According to this view, -st describes an entity as having the property that its complement denoted by NP in (3a) and VP in (3b) to a greater degree than any other entity under consideration, where the surface host of -st provides the scale. The placement in (3a) yields what is called the ‘absolute’ reading of (3), where we compare the mountain that Mary climbed to other mountains in terms of height and assert that she climbed the absolute highest mountain there. The placement in (3b) yields the ‘relative’ or ‘comparative’ reading, where we compare Mary to other mountain climbers in terms of the height of the mountains they climbed, and assert that she climbed a higher mountain than any of these other mountain climbers did. Other strategies have sought to derive these two readings from the single representation in (3a) or even with the superlative in situ on the host adjective, as in the base structure in (3) (Coppock and Bender 2014; Farkas and Kiss 2000; Sharvit and Stateva 2002).

In Hallman (2016a), I show that superlative constructions in Syrian Arabic lend support to the displacement analysis of the two readings sketched in (3), because in Syrian, the superlative morpheme can be overtly separated from its scalar associate by some distance. The superlative morpheme is realized as the prosodic template /C.C/C.C/C/, where each C represents one of the constituents in the root adjective. This morpheme canonically occurs pre-nominally in Syrian and other varieties of Arabic. Normally, the associated adjective fills in the consonantal tier of the template, yielding structures like (4a). Alternatively, though, the adjective may remain in its canonical post-nominal position (4b), in which case the superlative template is filled in by the adjective kuir ‘much/many’ by default, deriving aktar. In fact, subject to some configurational constraints, aktar may bind a degree argument anywhere within its scope, such as a gradable adjective (4c) or a plural noun (4d) in a relative clause. In each example, aktar and its scalar associate are boldface.

(4a) a. nuha jla-*it 6ala 6la 6abal. [Syrian]
   b. (nuha jla-*it 6ala aktar 6abal 6aafi.)
   ‘Nuha climbed the highest mountain’.

(4b) a. nuha jla-*it 6ala aktar 6abal. [Syrian]
   b. (nuha jla-*it 6ala aktar 6abal 6aafi.)
   ‘Nuha climbed the highest mountain’.
of the mountains that is 'greatest' in some respect. The standard analysis of English most in this usage retains the superlative semantics of -st (Hackl 2009). This meaning is stated informally in (7), where x is an individual and R is a property that can manifest itself to different degrees, in this case being a group of mountains whose degree of numerosity (cardinality) is at issue.

(7) '\(\frac{x}{\text{akhar} (x, R)}\)' asserts that x is a part of R that has greater cardinality than any part of R that does not overlap with x.

On this view, (6b) refers to a subpart of the mountains that is greater in numerosity than any part it does not overlap with. If this part comprised less than half of the mountains, then another part would exist (the rest) that is greater than it in numerosity. As a result, (6b) can refer only to a subpart of the mountains that comprise more than half of them, which is the correct interpretation. I suggest in this work that kAll, which shows substantial distributional similarities with \(\frac{x}{\text{akhar}}\), can also be analysed as a superlative. By changing the non-overlap condition in (7) to a non-identity condition in (8), the individual x must now comprise not just more than half of the mountains (in this case), but all of them.

(8) '\(\text{kAll} (x, R)\)' asserts that x is a part of R that has greater cardinality than any part of R that is not identical with x.

If it did not comprise all of the mountains in question, there would inevitably be a larger subpart containing all of the mountains that is not identical to x, since it contains some mountains not in x, since x does not contain all the mountains. So x must comprise all the mountains. This analysis of the meaning of kAll derives an interpretation for kAll parallel to the interpretation of \(\frac{x}{\text{akhar}}\) in (6b), which itself contains the superlative morpheme found in (6a). This analysis maintains that the superlative semantics in (7) is the unifying thread in the three constructions in (6).

### 4.4 Quantifier interactions

Another issue related to quantification is the manner in which quantifiers interact with other operators in their syntactic environment and general syntactic rules, an area of grammar that is often referred to as the 'syntax-semantics interface'. An example of such an interaction is observed in Lebanese Arabic by Aoun and Benmamnoun (1998). The quantifier kAll mAllE 'every teacher' may 'distribute' over the topic phrase talmizit hidEaan 'her naughty student' in (9a) but not in (9b). That is, (9a) may be interpreted as asserting that you know that every teacher punished the respective naughty student of that teacher. That is, each teacher has her own naughty student whom she punished. In (9b), however, there is only one naughty student (the pronoun suffix -a'a 'her' refers to this case to some specific previously mentioned individual), and every teacher punished that student (after you left).

(9a) talmizit-a 5-titaam bt-a'rf-o [\(\text{Zoaan} \text{kAll} mAllE\) student-her the-naughty 2-know-pl. that every teacher.f. punished-f.sg.-him 'Her naughty student, you know that every teacher punished him'.

(9b) talmizit-a 5-titaam bt-a'rf-o [\(\text{Zoaan} mAllE\) student-her the-naughty 2-know-pl. that every teacher.f. punished-f.sg.-him 'Her naughty student, you know that every teacher punished him'.

In Hallman (2016b) I explore the possibility that just as (6a) refers to a subpart of the mountains in question that contains the highest ones, both (6b) and (6c) refer to a subpart of the mountains that is 'highest' in some respect.
systematically requires the definite article (11b), an interpretation for the definite that is not available in English. The Italian definite plural then, may either refer directly to a specific plurality like English the dogs – the ‘referential’ reading – or be interpreted as a kind like English dogs – the generic reading.

(11) a. *Cani amano giocare / stanno giocando fuori. [Italian]
    dogs love play / are playing outside
    (‘Dogs love to play/are playing outside’.)

b. I cani amano giocare. [referential or generic]
    the dogs love play
    ‘(The) dogs love to play’.

Fassi Fehri (2012) points out that Classical Arabic falls roughly within the Romance pattern, except that Arabic lacks an overt indefinite article. As a result, bare singulars are possible on an existential reading made possible by a covert indefinite article in (12a)–(12b). However, no generic reading is available to the bare plural in (12b). As in Italian (10b), the generic reading requires the definite article (12c). The indicative verb in Arabic may have either a progressive (~ be barking) or a habitual (~ bark habitually or be capable of barking) interpretation.

(12) a. kalb-un / ja-nbah-u. [Standard]
  dog-nom. 3-bark-ind.
  ‘A dog is barking’.

b. kilaab-un / ta-nbah-u.
  dog-nom. 3-bark-ind.
  ‘Dogs are barking’.

c. al-kilaab-u / ta-nbah-u.
  the-dogs-nom. 3-pl-bark-ind.
  (i) ‘The dogs are barking’.
  [referential]
  (ii) ‘Dogs bark’.
  [generic]

In Hallman (2016b), I point out that this fact explains another contrast between English and Arabic, namely the ungrammaticality of the literal equivalent of all/most dogs in Arabic (13a), as opposed to the definite counterpart (13b).

(13) a. *kull-u / ?aklhar-u. [Standard]
  all-nom. / most-nom.
  kilaa-in [‘most dogs’]

b. kull-u / ?aklhar-u.
  all-nom. / most-nom.
  al-kilaab-i [‘most of the dogs’]

Longobardi (1994), Chierchia (1998), and others point out that in Romance languages, the distribution of the bare plurals is more restricted than in English (11a), and the generic reading...
they may combine with all and most. But in Arabic, like in Romance languages, indefinite nouns have only a predicative, existential interpretation, which precludes direct combination with kall or ʔakhtar. As usual, the definite nominal in (13b) has a generic interpretation available to it analogous to the English bare plural. I also show (Hallman 2016b) that at least in the case of ʔakhtar al-kitaab 'most (of) the books' it is clear that the expression as a whole is indefinite. It refers to a subgroup of the books in question (or dogs in general, depending on the interpretation of the definite) that constitutes more than half of the totality, but there is no unique such subgroup. Many distinct subgroups meet this criterion, meaning that the presupposition of uniqueness that typically accompanies definiteness is not present in (13b) (at least with ʔakhtar). This fact supports Ouwayda's (2012) claim that construct state constructions like that in (13b) are semantically predicative, not referential, as described in the remainder of this section.

The construct state is a construction in which a bare noun is juxtaposed with a noun phrase that may vary in definiteness freely, as in Ouwayda's Lebanese Arabic example in (14). The construction typically expresses possession. Note that this example is a noun phrase, not a complete sentence.

(14) kteeb marjam [Lebanese]  
book Maryam  
'Maryam's book'

The definiteness of the construction as a whole is usually said to be inherited from the second term, as in (14), which presupposes that Maryam only has one (relevant) book. If this is the case, it means the construction in (14) as a whole denotes an individual - the unique book belonging to Maryam. But Ouwayda points out that an adjectival modifier cannot modify the first term directly, it must modify the construction as a whole (15). What shows this is that the adjective nuzum 'old' in (15) must be interpreted relative to Maryam's books, not relative to books in general. As a result, (15) may only assert that the book of Maryam's was here, and if it was old relative to other books Maryam has, not relative to books in general. Example (15) is not appropriate if the book is a medieval manuscript, though that is a possible interpretation of the English translation equivalent, which is not a construct state.

(15) kteeb marjam l-nuzum keen boon. [Lebanese]  
book Maryam the-old was here  
'Maryam's old book was here'.

This means that the expression in (14) can be modified by an adjective, which is characteristic of predicative expressions such as common nouns and not individual-denoting expressions like names or definite. Further, although the construct as a whole cannot be preceded by the definite article, the expression can be preceded by a numeral preserving the restrictive interpretation of the possession relation. That is, (16) may refer to three of Maryam's potentially many books. Like (14), (16) is a noun phrase, not a complete sentence.

(16) tleeb kitub marjam [Lebanese]  
three books Maryam  
'three of Maryam's books'

Once again, this is a property of predicate-denoting noun phrases, not individual-denoting ones. Ouwayda's semantic analysis of the construct state makes the first term a relational noun that maps an individual-denoting second term to a predicate, i.e., an indefinite common-noun denotation. She claims that the definite article is excluded on the first term for morphosyntactic reasons.

4.6 Tense and aspect

Another area in which semantic inquiry has touched on Arabic relates to the interpretation of temporal and aspectual verb morphology. 'Tense' refers to the simple three-way distinction between past, present, and future. 'Aspect' refers to a class of constructions that, loosely speaking, talk about the 'shape' of an event. Vendler (1957) proposes a four-way typology of aspectual types, illustrated in more detail in (21)-(24). Above and beyond this classification, predicates may be morphologically marked in Arabic and other languages as either 'perfective' (signifying a completed event) or imperfective (signifying an ongoing event). Typically, whether an event is complete or ongoing is itself understood with respect to a reference time whose relation to the time of utterance is determined by tense. In the case of Arabic, though, the distinction between tense and the perfective/imperfective opposition has been controversial. Though the early Arabic grammarians characterize what are traditionally called perfective (17a) and imperfective (17b) verb forms in Arabic as specifying the past and present tense respectively (Sibawayhi 796, vol 1, p. 69), some contemporary authors have characterized the distinction as a purely aspectual 'complete vs. ongoing' opposition (Cantoine 1953; Cohen 1924; Wright 1858, and others).

(17) a. qaraʔ-u l-walad-u l-kitaab-u. [Standard]  
read.perf.-3.m.sg. the-boy.nom. the-book.acc.  
'The boy read the book'.

b. ja-qraʔ-u l-walad-u l-kitaab-u.  
3-read.imp.-ind. the-boy.nom. the-book.acc.  
'The boy is reading the book'.

The aspectual view receives some preliminary support from the fact that the perfective morphology occurs in contexts other than past tense, and the imperfective in contexts other than present. The perfective may occur, for example, in the context of a future copular auxiliary, expressing the future perfect, as in (18). If tense relates the time of the eventuality described directly to the speech time, this fact is unexpected.

(18) ja-kum-u qaraʔ-u l-walad-u l-kitaab-u. [Standard]  
3-be.imp.-ind. read.perf.-3.m.sg. the-boy.nom. the-book.acc.  
'The boy will have read the book'.

However, Comrie (1976) and Fassi Fehri (2003a, 2004) argue that examples such as (18) demonstrate instead that tense interpretation is locally relative in Arabic, meaning that each verb form locates its eventuality time with respect to a reference time established by its local
syntactic context, rather than to the speech time directly. The auxiliary *jakunus (will be) shifts the reference time into the future. The perfective verb *garadu (read) is interpreted as past with respect to this future reference time. Consequently, perfective morphology systematically signifies past with respect to a reference time. This reference time is the speech time only in the default case.

The relative tense view is supported by the fact that a perfective verb cannot express that the event it describes is simultaneous with a reference time, even when the reference time is itself in the past. The hypothetical simultaneous reading in such contexts is called the 'present under past', or 'sequence of tense' reading in languages where it is available such as English (Dowty 1982; Enç 1987; Ladusaw 1977; Oghihara 1995; Prior 1967; many others). In Arabic, simultaneity is expressed by the imperfective. For example, the perfective verb *jakunu in (19a) (the imperfective indicative form of write) describes an event that is in progress at the past time established by the perfective matrix verb *qada (had) (Fassi Fehri 2004). It asserts that he said to me at a past time: "I am writing the letter". The English translation expresses this temporal relation with the past tense progressive verb was writing. The past tense progressive in English is not interpreted in English. It is a morphological reflex of the temporal subordination of be writing to the matrix past tense verb said. As expected in light of (19a), the perfective subordinate verb in (19b) has only a reading in which it describes a time that is in the past with respect to the reference time established by the past tense matrix verb, which is itself in the past with respect to the utterance time. It can only mean that he said to me at a past time: "I wrote the letter". Thus, the past/present distinction expressed by the perfective/imperfective morphological distinction is relative to a reference time in Arabic, which is the utterance time by default but may be shifted forward or backward with respect to the utterance time by a suprasegmental.

(19)

a. qaal-a 1-ii ʔinna-hu ja-khbi-ʕu
   said.perf.-3.m.sg. to-me that-him 3-write.imp.-ind.
   r-risaalat-a.
   the-letter-acc.
   'He said to me that he was writing the letter'.

b. qaal-a 1-ii ʔinna-hu katab-a
   said.perf.-3.m.sg. to-me that-him wrote.perf.-3.m.sg.
   r-risaalat-a.
   the-letter-acc.
   'He said to me that he wrote the letter'.

It should be noted that the possibility of a 'present under past' reading of the past tense in English is limited to stative verbs. Consequently, English actually patterns like Arabic in (19b), whose English translation also asserts that the letter was finished at the time he told me that he wrote the letter. Crucially, the 'present under past' interpretation of the past tense in English is not available in Arabic for stative predicates, which include the progressive interpretation of the imperfective seen in (19a), as well as basic stative predicates like marid in (20) (Fassi Fehri 2004; see Vlach 1981 on the stativity of the progressive). Without the past tense copula, (20) asserts that he said to me at a past time that he was sick at that time. With the past tense copula *kaan (was), (20) can only assert that he said to me at a past time that he had been sick prior to that time.

(20) qaal-a 1-ii ʔinna-hu marid-un / kaan-a
   said.perf.-3.m.sg. to-me that-him sick-nom. / was.perf.-3.m.sg. sick-acc.
   [Standard]
   'He said to me that he was sick/had been sick'.

The tense analysis of the perfective/imperfective contrast maintains that tense in Arabic functions largely as in other languages, except for the absence of sequence of tense effects. One point in which certain modern dialects of Arabic are clearly unlike European languages, and in which Arabic stands to make a novel empirical contribution to semantic theory, concerns the interpretation of active partciples. The pattern in question is well documented in Syrian Arabic (Bened 2010; Cowell 1964), Palestinian (Wild 1964), Egyptian (Eisele 1990; Mughzzy 2005; Wodich 1975), Libyan (Mitchell 1952), Kuwaiti (Al-Najjar 1984; Brustad 2000), and Najdi (Ingam 1994), and probably occurs in other dialects. In these dialects, the active participles show a durative or perfect reading depending on the lexical aspectual type of the underlying verb. Vendler (1957) identifies four basic aspectual types in English: 'states' are compatible with for-phrase duration adverbials (e.g. for an hour) but not compatible with the progressive (21); 'activities' are compatible with for-phrases and the progressive (22); 'accomplishments' are compatible with in-phrase duration adverbials (e.g. in an hour) and the progressive (23); 'achievements' are compatible with in-phrases but not the progressive (24).

(21) a. Mary saw the star for an hour.
   [State]
   *Mary was seeing the star.
   b. Mary drew an hour.
   [Activity]
   *Mary was drawing.
   b. Mary was drawing a circle.
   [Accomplishment]
   *Mary was reaching the top.
   [Achievement]

The predicates that are compatible with in-phrases (the accomplishments and achievements) have in common that they attribute a logical endpoint to the event they describe (the circle being complete in (23) and Mary being at the top in (24)). These are referred to as 'telic' predicates (having a goal, or 'telos'). The predicates compatible with for-phrases are 'atelic', lacking a logical endpoint.

Brustad (2000) proposes that in the dialects in question, if the underlying verb is atelic, the corresponding active participle describes an ongoing situation of the type described by the underlying verb (the 'durative' reading), illustrated in (25) for Syrian Arabic. If the underlying verb is telic, the corresponding active participle describes a post-state of the underlying event (the 'perfect' reading, so-called because it resembles the English perfect in interpretation), illustrated in (26). These examples are from Cowell (1964).

(25) a. lassa-ni
   matraddad.
   [Syrian]
   still-1sg. vacillating
   'I am still vacillating [undecided]'.
The resemblance between structures like those in (26) and the English perfect is reinforced by the fact that the state resulting from the event the underlying verb describes must still hold at the reference time, a semantic connotation the English perfect has (McCawley 1971; McCoard 1978). Example (26a) entails that the speaker is still present at the utterance time and (26b) that the sun is still out. As Corvall (1964) notes, while the perfect verb labas means to put on, said of clothing (27a), its active participle labis means to wear (27b). That is, it asserts that whoever put on the clothes still has them on.

In contrast to Brustad’s assessment that the difference between (25) and (26) can be traced to telicity, Boneh (2010) develops an analysis of the basic pattern in (25) and (26) that posits a fundamental similarity between activities and accomplishments. She claims that the participle holds of a (post)-stated involved in the underlying verb denotation. If the underlying verb is an accomplishment, the participle describes the post-state of the transition the verb describes, whence the perfect reading in examples like (26). Activities, on the other hand, are like accomplishments, describing a complex event with a development portion and post-state portion. She supports this view with the observation that some verbs that function as activity verbs in English, such as sleep, have counterparts in Arabic that describe a transition, and whose participial derivatives describe a post-state. Hence, the participle naqim appears at first glance to be synonymous with English sleeping (28a). However, the underlying verb naam in (28b) does not have an activity reading, but only an accomplishment reading analogous to fall asleep, which the progressive construction in (28c) clarifies. The progressive in (28c) does not entail that Sami is asleep yet, unlike the English progressive counterpart of (28b) Sami is sleeping. Hence, naam means not sleep but fall asleep and the participle naqim means not be sleeping but have fallen asleep, the usual perfect reading of the participle.

This analysis captures the fact that most verbs whose English counterparts are active predicates have the perfect reading in the participial form in Arabic. If, as Boneh’s analysis requires, a verb like maššat (comb) in (29a) describes a transition of the state of Sami’s hair, then, as expected, the progressive form in (29) locates the listener within that transition (as in (28c)), and the participle in (29c) describes the post-state of that transition.

However, some activity verbs do not display the pattern in (29). Verbs of directed motion such as mata (30a) (walk, go) have a durative interpretation in the participial form (30b) (in some dialects in addition to a perfect interpretation, as Brustad 2000 notes) that is synonymous with the corresponding progressive form (30c).
description to an otherwise atelic verb does not effect the interpretation of the corresponding active participle. Example (31a) asserts without the parenthesized material that Ali is walking - the durative reading typical of participles of atelic verbs like maša (walk). The parenthesized prepositional phrase contributes an endpoint to the spatial path associated with the walking event, making the underlying event description telo. The participial phrase māši li-de-dar (walking to the house), however, remains durative in interpretation. It does not receive the perfect interpretation typical of telic predicates (cf. (26)). This observation carries over to Syrian, as example (31b) shows (cf. (30c)).

(31) a. Saλi māši (li-de-dar). [Tunisian]  
Ali walking (to-the-house)  
‘Ali is walking (to the house).’

b. saami mašši (Sa-l-šaṭṭ). [Syrian]  
sami walking (to-the-beach)  
‘Samu is walking (to the beach).’

This means that such predicates do not receive the perfect interpretation in the participial form even when they are augmented with material that makes them telic. On one hand, this observation reinforces Bunich’s point that activities and accomplishments pattern the same, activity verbs generally have the perfect reading of accomplishments in the participial form and activity verbs that for some reason have a durative reading in the participial form also have a durative reading when they are made into accomplishments by the addition of a telos. On the other hand, it remains unclear what is exceptional about verbs like maša (walk). For more on tense and aspect, see Ouali (Chapter 5 in this volume).

4.7 Derivational verb morphology

Another issue that has attracted attention in the semantics of Arabic and other Semitic languages concerns how meaningful the verb templates, or ‘forms’, are. There are ten pronominal templates in modern Arabic from which a verb may be derived by placing the consomants of a root into the consonant positions in the template. The templates tend to contribute meaning of their own to the derived form, but the generalizations in Arabic appear to be riddled with exceptions. One clear generalization, articulated by Wright (1858, vol. 1, pp. 31ff) and analyzed by Fassi Fehri (2003b) and (in connection with the cognate Hebrew verb forms) Doron (2003), concerns the two causative templates CeC, CeC, CeC (form I) and CeC, CeC (form IV), where C, represents the three consonants of the root. Both (32b) and (32c) are causative derivatives of the intransitive verb in (32a). The external argument of the form II causative represents the immediate source of the action described by the verb, for which reason example (32b) implies that the captain acted with the intention to sink the ship. The form IV causative does not carry this connotation, and so is more readily compatible with the inanimate subject it has in (32c).

(32) a. yaρqa’t  
sankan,3.f.sg.  
s-safinat-u.  
‘The ship sank’.  
[Standard]

b. yaraqa  
sankan,3.m.sg.  
l-qubtun-u.  
‘The captain sank the ship’.  
[Arabic semantics]

c. ʔayraqa  
sankan,3.f.sg.  
l-safinat-u.  
‘The storm sank the ship’.  
[Arabic semantics]

Doron claims that the form II template characterizes the external argument of the underlying verb as what she calls an ‘actor’, while form IV is genuinly causative. Form II may, but need not, actually add an external argument. This accommodates the fact that form II does not always add an argument to the corresponding form I verb, unlike form IV. A purely intensifying use of the second form of a transitive verb, that does not introduce an additional argument, is illustrated by verbs like daraba (hit), which in the second form (dar-raiba) is still transitive but means ‘beat severely’. Yet, it is not clear that the intensifying function of form II can be reduced to the thematic status of the subject. Fassi Fehri (2003b) describes the intensifying function of Arabic form II as pronomination, i.e., pluralization of the event argument. While (33a) means that the (implicit singular) subject injured the man once, (33b) asserts that he inflicted many wounds on him. This pronomination may distribute over a plural object, so that (33c) asserts that he injured many soldiers, inflicting one wound on each (Fassi Fehri 2003b:155).

(33) a. ʔaraḥ-a  
wounded-3.m.sg.  
r-nažul-a.  
‘He wounded the man’.  
[Standard]

b. ṣarrāḥ-a  
wounded-3.m.sg.  
r-nažul-a.  
‘He inflicted many wounds on the man’.  
[Standard]

c. ʔarrāḥ-a  
wounded-3.m.sg.  
l-zumud-a.  
‘He wounded the soldiers’.  
[Standard]

It is therefore unclear whether Doron’s characterization of the meaning of form II exclusively in terms of the relation of the subject to the event is adequate for Arabic. Doron makes another claim, however, that holds some promise, in connection with apparent exceptions to the pattern in (32). She claims that exceptions occur only for ‘singleton’ roots - roots that occur in only one form. Here, the form does not do any ‘work’ distinguishing lexical items in causativity and actionality and therefore carries no significance. Testing this hypothesis for Arabic requires further research, but it seems promising that there do not appear to be any verbs in Arabic that show the opposite pattern as that seen in (32), that is verbs whose form II is compatible with an indirect cause but whose form IV requires a direct ‘actor’.
5 Future directions

Arabic is underrepresented in the theoretical semantic literature, and therefore carries substantial potential to offer new empirical discoveries and novel theoretical contributions. I describe two areas in Arabic grammar that represent potentially fruitful areas of semantic inquiry and have gone largely unexplored, but many others are in need of documentation and analysis.

5.1 Modality and tense

Cornrie (1976) cites the example in (34), from Wright (1858, vol. 2: 9), in support of the notion that perfective signifies relative past tense. The perfective subordinate verb ِئَسَرَ (became ripe) describes a time that is in the past with respect to a reference time established by the future interpretation of the imperfective verb ِئُقِلِ. Although the relative tense view of Arabic has independent support, it is unexpected that the English translation to (34) contains a present tense verb, rather than a past tense verb on analogy to the parallelism in the interpretation of (19b), where both English and Arabic past tense is interpreted as locally relative, because the verb in question is evocative.

(34) ِئَسَرَ-ِعَا ِئَبَرَ ِبَـسُرُ. [Standard]
1.sg.-come-ind.-you when reddening-3.m.sg. the-dates-nom.
I will come to you when the dates become red.

This observation suggests that the particle ِئَبَرَ (if, when) makes a semantic contribution of its own that interacts with the verb tense in Arabic. No compositional semantic account of this interaction has been articulated at the time of this writing. One thing such an account must accommodate is the fact, as Wright notes, that ِئَبَرَ may optionally be followed by a verb in the imperfective form, as in (35). He does not mention any difference in interpretation contingent on the morphological form of the verb. The particle ِقَدَ in (35) reinforces the perfect interpretation of the following perfective verb.

(35) ِئَبَرَا ِتاَيَا ِخَالِيجِهِم ِئَجَبَتِ-ِعَا [Standard]
and-when 3.f.sg-read.imp.pass. to-them verses-nom.-our qad-perf.-3.pl. QAD heard-1.pl.
And when our verses are read to them, they said we have heard.

The occurrence of the perfect with ِئَبَرَا is presumably related to its occurrence with related particles such as the counterfactual conditional complementizer ِلَوَ (counterfactual if) and ِمَا (as long as). Counterfactual ِلَوَ differs from conditional ِئَبَرَا in that it presupposes the falsity of the underlying proposition. (36b) presupposes that God did not wish to make mankind one nation. The examples that follow are from Wright (1858, vol. 2: 6-17).

(36) a. ِلَوَ ِلَا-ِعَا ِرَبَبُ-ِعَا ِلَا-ِزَفَلِ-ِعَا [Standard]
if wished-perf.-3.m.sg. lord-nom.-your la-made perf.-3.m.sg.
n-naas-∗a َمَنَامُ-اَتِ َباشر-اَتِ
the-people-acc. nation-acc. one-acc.
‘If your lord had wished, he would have made mankind one nation’.

b. ِمَا ِذَوَ-ِعَا ِذَا-ِعَا ِذَا-ِعَا [Standard]
the-people-nom. as long as remained perf.-3.m.pl. in
l-hajaat-i d-dunawijat-i yaafil-una.
the-life-gen. the-temporal-gen. careless-3.m.pl.
‘People are careless as long as they remain in the life of this world’.

Wright mentions that as with ِئَبَرَا, the verb following ِلَوَ may occur in the imperfect, but here notes a difference in meaning. In this case, ِلَوَ has the meaning of the non-counterfactual conditional often expressed by ِمَا, one that does not presuppose the falsity of the underlying proposition.

(37) ِلَوَ ِلَا-ِعَا ِقَلَب-ِعَا ِلَا-ِفَح-ِيَ-ِهِم. [Standard]
if l.pl-wish.imp.-ind. injured perf.-1.pl.-them for-sins-gen.-their
‘If we wished, we could injure them for their sin’.

The interactions between these modal and temporal particles and tense deserve careful investigation in connection with a thorough survey of native speaker judgments of entailment and contradiction in such cases independently of what the historical written record appears to show, which does not provide us with robust evidence of interpretational subtleties. This investigation promises to be fruitful both for the development of a rigorous theory of tense interpretation in Arabic and for the understanding of the semantic similarities between the particles in question, by virtue of which they all allow or require the perfect.

5.2 Focus particles and scalar semantics

The suggestion that the distinct particles discussed earlier share a component of meaning is similar to the case of particles that seem to show a semantic uniformity in superficially distinct usages. One example of such a particle is ِلَمَّا, meaning either ِلَمْ-َعِنَّ or ِلَمْ-َعِنَّ. In its ِلَمْ-َعِنَّ use, it combines either a finite clause or a noun phrase, both illustrated in (38a). Its use meaning even is illustrated in (38b–c). These examples are from contemporary Syrian Arabic.
(38) a. dill-u ji-ma-u hatta taša'-it š-lam PAY [Syrian]
kheet-3.m.pl. 3.m.-walk-pl. until rose-3.f.sg. the-sun / until
rison the-sun
'They kept walking until the sun rose / until the rising of the sun'.

b. hatta kariim najaz bi-faḥš l-rijadaḍjaat.

kareem succeeded even in-test the-math
'Even Karim passed the math test'.

c. kariim najaz hatta bi-faḥš l-rijadaḍjaat.

kareem succeeded even in-test the-math
'Karim passed even the math test'.

In hatta's use parallel to until, the following proposition or nominal describes what is the case at the endpoint of a scale associated with the verb, the path of the journey in (38a) (see Karttunen 1974; Mittwoch 1977; Smith 1974; also see de Swart 1992 on English until). In its use parallel to even it triggers 'focal' stress on another constituent in the sentence. Focus serves to factor the sentence into two parts: the focused constituent on one hand and the rest of the sentence on the other, with a variable in the place of the focused constituent. The particle hatta presumably makes Karim rank with other students in terms of how surprising they are as a value for in the passed the test, and Karim is the most surprising value. It then asserts that the 'endpoint' of this scale of surprise was reached, that is, everyone passed the test including Karim, the last person we expected to do so. Like even, then, hatta makes reference to a scale of likelihood (see Karttunen and Peters 1979; Rooth 1985; and Wilkinson 1991 on English even and its interaction with focus in general).

Both usages of hatta therefore make reference to a scale and occur in a context that specifies the endpoint of that scale. A formal semantic analysis is called for that demonstrates what these two clearly related usages of hatta have in common and in what respect they differ semantically. Such an analysis should also account for the connection evident in (38b-c) between the placement of hatta and the scale of comparison. In combination with a pre-verbal noun phrase in (38b), hatta ranks Karim with others in terms of the description passed the test, while in (38c) it ranks the math test with other things in terms of the description Karim passed x. An analysis of this phenomenon should not only relate the meaning of hatta here to its use meaning until, but also account for restrictions on its distribution that distinguish Arabic from English, where the meaning of is better studied. In particular, although hatta may combine with a topic noun phrase, as seen in (38b), it may not combine with a noun phrase inside a prepositional phrase (39a), nor may it occur by itself preceding a verb-initial clause (39b). It is also marginal with a post-verbal subject (39c).

(39) a. *kariim nažah bi-hatta faḥš l-rijadaḍjaat. [Syrian]
kareem succeeded in-even test the-math

b. *hatta nažah kariim bi-faḥš l-rijadaḍjaat.
even succeeded kareem in-test the-math

c. *?nažah hatta kariim bi-faḥš l-rijadaḍjaat.
succeeded even kareem in-test the-math

Another focus particle in Syrian Arabic is bas (only) (faṣṣ in standard Arabic), illustrated below. Possible positions for hatta are also possible positions for bas, and like hatta, the position of bas is linked to the interpretation of the sentence. Example (40a) says that no value for x other than Karim makes the sentence x passed the test true. Example (40b) says that nothing other than the math test makes the sentence Karim passed x true.

(40) a. bas kariim nažah bi-faḥš r-rijadaḍjaat. [Syrian]

kareem succeeded only in-test the-math

'Only Karim passed the math test'.

b. kariim nažah bas bi-faḥš r-rijadaḍjaat.

kareem succeeded only in-test the-math

'Karim passed only the math test'.

Restrictions on the distribution of bas are similar, but not identical, to restrictions on hatta. Like hatta, bas may not occur within a prepositional phrase (41a), and strongly prefers to be adjacent to the focused constituent (41b). Unlike hatta, though, it may occur with a post-verbal subject (41c).

(41) a. * kariim nažah bi-bas faḥš r-rijadaḍjaat. [Syrian]
kareem succeeded in-only test the-math

b. *bas nažah kariim bi-faḥš-rijadaḍjaat.

only succeeded kareem in-test the-math

c. nažah bas kariim bi-faḥš r-rijadaḍjaat

succeeded only kareem in-test the-math

'Only Karim passed the math test'.

Another focus particle in Syrian Arabic is bas (only) (faṣṣ in standard Arabic), illustrated below. Possible positions for hatta are also possible positions for bas, and like hatta, the position of bas is linked to the interpretation of the sentence. Example (40a) says that no value for x other than Karim makes the sentence x passed the test true. Example (40b) says that nothing other than the math test makes the sentence Karim passed x true.
6 Conclusion

We have seen that substantive and fruitful research has been conducted in Arabic Semantics in the areas of number, superlative degree constructions, quantification, definiteness, the syntax-semantics interface, tense and aspect, and derivational morphology. There appears to be a fertile basis for future work in the areas of modality and its relation to tense, focus particles, and scalar semantics, including degree constructions other than the superlative such as comparatives and how many questions. But these categories by no means exhaust the range of issues suitable for semantic analysis in Arabic. Since the development of the theory of semantics, like much of modern grammatical theory, has been primarily informed by Indo-European languages, research into Arabic semantics is significant in its potential to add new insights and rectify the underrepresentation of non-Indo-European languages in contemporary grammatical theory.

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References


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An analysis of these and other focus particles is called for that considers the full repertoire of possible positions for bas and kattaka and the meanings associated with them in cross linguistic perspective.

The notion expressed by bas/fagat ‘only’ can also be expressed in Arabic by the combination of negation with the particle *illa ‘except’.

(42) ma nažah *illa kariin bi-faμ̄s r-rijaađijjaat. [Syrian]
not succeeded except karim in-test the-math
‘No one but Karim passed the math test’.

However, Soltan (2016) shows that the exception particle differs from focus particles in a significant way. For example, while kattaka and fagat/bas may occur sentence-initially, *illa ‘except’ may not (43). The examples cited by Soltan are from Egyptian Arabic.

(43) *illa ahmad?anâa su̱f-t kull 3l-talaba fi [Egyptian]
except ahmad I saw 1.sg. all the-students in
3l-muhaadra.
the-lect-ur
(‘Except for Ahmad, I saw all the students in the lecture.’)

(44) a. anâa su̱f-t kull 3l-talaba <illa ahm ad> <[Egyptian]>
I saw 1.sg. all the students <except ahmad>
fiï 3l-muhaadra <illa ahmad> in the-lect-ur this <except ahmad>
‘I saw all the students except Ahmad at the lecture today’.

b. anân 3ṯkalam-t mēa kull 3l-talaba <illa mēa> I talked 1.sg. with every student <except with
ahmad> <illa mēa ahmad>
ahmad > three hours <except with ahmad>
‘I talked to every student for three hours except with Ahmad’.

Soltan shows that otherwise, *illa may precede a nominal phrase (44a) or a prepositional phrase (44b), but in the latter case the prepositional phrase must occur sentence-finally.

Soltan concludes from this and the other evidence that *illa is a kind of coordinators that may coordinate either two noun phrases, and then has the distribution of a noun phrase, as in (44a), or two sentences, where the repeated material in the second is elided, deriving (44b). The *illa phrase occurs after its first conjunct in both cases. As a coordinators, *illa has an entirely different distribution and meaning from the focus particles illustrated in
(38–41).


Ladusaw, W., 1977. Some problems with tense in PTQ. In: S. Schmerling and S. Carloti, eds. Texas linguistic forum 6 Austin: University of Texas.


Further reading


This article discusses the connection between the choice of preposition used to express possession in Palestinian Arabic and the antinomy and definiteness of the subject and the allonimit of the possessive relation.


This article treats the superlative construction in Standard Arabic and demonstrates parallels to quantifier constructions.


This article treats syntactic constraints on ellipsis in comparative constructions in Palestinian Arabic.


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