

Predicate

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1. Introduction

The term *predicate* (along with the associated terms \rightarrow *subject* and *predication*) has been used for centuries in the Western logical and grammatical traditions to describe the second portion of a bi-partite division of a sentence into a subject and a predicate.

How *predicate* and *predication* are used in contemporary linguistics varies considerably between users and between theoretical frameworks. The parameters of variation include the following:

- (1)
 - i. The domain of predication: whether predication is defined over sentences, over clauses, or over projections of lexical items;
 - ii. The nature of the predication relation: whether predication is purely grammatical (syntactic), purely semantic (or pragmatic), or some combination of these;
 - iii. The formal devices used to represent the predication relation: whether the relation between a subject and a predicate is defined in terms of phrase-structural position, or in terms of binding or argument application.

To the extent that there is a consensus about predication, it consists of the following:

- (2)
 - i. Predication is primarily a grammatical or structural relationship.
 - ii. Predication requires to a subject to be in a very 'close' or local relationship with a predicate to which it is linked, usually defined in terms of c-command.

This ambiguity in how subject and predicate are used in Western linguistics is reflected in the Arabic terms for which they have been used as translations:

- (3) (i) The *mubtadi* ' ('that which comes first, topic') and *xabar* ('report, comment') in a →nominal clause (*jumla 'ismiyya*);
- (ii) The *musnad* ('attribute') and *musnad 'ilay-hi* ('that which is attributed to') standing in an 'isnād ('attribution') relation to one another (see Levin 1981 for a discussion of the use of *musnad* and *musnad 'ilayhi* by the Arab grammarians);
- (iii) The *fā 'il* ('doer, agent') of an action or eventuality and the *fi 'l* ('event, action') or its like.

A comparison between how *subject*, *predicate*, and *predication* are used to how the Arabic terms in (3i-iii) are used is beyond the scope of this article. Instead, the article focuses on how the different senses of *predicate* and *predication* are applied to Arabic grammar.

2. Predicate as a Fundamental Sentence Division

According to its most traditional meaning, a predicate is the second part of a division of a sentence or clause into a subject and a predicate. This division corresponds, at least partially, to the division of the Arabic →nominal clause ('al-*jumla l-'ismiyya*) into an 'initial NP' ('al-*mubtadi* ' 'that which is begun with') and a 'report' ('al-*xabar* 'report, comment'). The correspondence is imperfect because some nominal clauses are analyzed as topic-comment structures rather than as predications (Bakir 1980, Eisele 1999, Mohammad 2000), although this characterization continues to be debated (see Section 4 and →nominal clause).

In some cases, *predicate* is used specifically in the description of equational or →copular clauses (Bakir 1980), while for others it is a fundamental division applied to all sentence types with subject-initial word order (e.g. Eisele 1999:99-125; Bedawi, et. al

2004:306-307).

In copular clauses, the predicate is a lexical category such as an →adjective phrase (4a), prepositional phrase (4b), →noun phrase (4c), or →verb phrase (4d) in the case of participial verb stems:

- (4) a. *Miḥammad* [_{AP} *‘ayyān*].
Mohammad sick.ms
“Mohammad [is] sick.” (Egyptian Arabic; Eisele 1999:102)
- b. *Omar* [_{PP} *f-d-dar*] *daba*.
Omar in-the-house now
“Omar is in the house now.” (Moroccan Arabic; Benmamoun 2000:40)
- c. *’axū* [_{NP} *hallā* ’], *’asm-o* [_{NP} *ḥasan*]
brother-cl3ms barber name-cl3ms Hasan
“His brother is a barber, his name is Hasan.” (Syrian Arabic; Cowell 1964:403)
- d. *ma-ḥadā-š* [_{VP} *qāyim yidfa* ‘ *an-ne*]
not-one.ms stand.actpart.ms pay.imperf.3ms for-cl3ms
“No one stood up to pay for him.” (Bir Zeit Palestinian Arabic; Schmidt and Kahle 1918:§34.1)

Clauses headed by finite verbs in SV word order have been treated in two ways. Jelinek (1981, 2002), Diesing and Jelinek (1995), and Eisele (1999) subsume them as on par with other copular clauses, differing in terms of the inner structure of the predicate constituent. For example, Eisele (1999:99-109) analyzes the predicate as an ‘extended verb phrase’ (EVP) consisting of a ‘predicator’ (a finite verb or auxiliary) and a complement (a main verb or nominal argument).

- (5) a. *Miḥammad kān biyiktib gawāb*.

Mohammad was.3ms write.imperf.3ms letter

“Mohammad was writing a letter.” (Egyptian Arabic; Eisele 1999:100)

- b. [S [NP Miḥammad] [EVP [V [V kân] [V biyiktib]] [NP gawāb]]].

Proposals within the Principles and Parameters or Minimalist frameworks do not refer to predicate per se, but nonetheless capture the intuition that the clause is split between its subject and a functional projection or a sequence of functional projections such as an IP, Tense Phrase (TP), or Agreement Phrase (AgrP) that roots the clause and which mediates the predication relation between the subject and the lexical head of the clause (Benmamoun 1990, 2000; Mohammad 1990, 2000; Ouhalla 1991, 1994).

The relationship between the subject and the predicate is more complex in Modern Standard Arabic examples in which the predicate is a ‘pseudo-construct’ (*ʿiḍāfa ḡayr ḥaqīqiyya*) adjective phrase or an adjective modified by the specificational accusative (*il-tamyīz*):

- (3) a. *ḥasan-un* [_{AP} *jamīl-u l-wajh-i*].
Hasan beautiful.ms-Nom the-face-Gen
“Hasan is beautiful of face.”
- b. *ḥasan-un* [_{AP} *jamīl-un wajh-an*]
Hasan beautiful.ms-Nom face-Acc
“Hasan is beautiful face-wise.”

In each of (3a-b), the subject does not bind an argument position in the lexical predicate *jamiil* ‘beautiful’ itself but rather an implicit argument position in the possessor or the accusative-marked noun. For example, in (3a), *Hasan* binds a possessor argument in the interpretation of *wajih* ‘face’. This is schematized in (4) with the binding

relation represented as lambda abstraction over the possessor argument in the interpretation of *wajih* 'face':

(4) $\lambda P_{et}. [P(\text{Hasan})] (\lambda x. [x\text{'s face is beautiful}])$

These examples show that, even in simple nominal clauses, the predication relation cannot be reduced simply to application of a noun to a one-place lexical predicate. Instead, a co-indexing or abstraction mechanism is involved that takes a fully saturated syntactic category and returns it as a one-place function (c.f., Williams 1980, 1983; Heycock 1991; Doron and Heycock 1999; Alexopoulou, et. al. 2004; Heycock and Doron 2003). The (as yet) unanswered question is whether this abstraction mechanism is inherent in the predication relation, or is an independent part of the grammar of Arabic.

3. Predication in Verb-First Word Orders

Another sense of predicate has been used that does not describe a partition in the structure of a sentence, but rather describes its semantic head. In this sense, *predicate* is a hypernym for lexical categories such as verbs, adjectives, prepositions, which can be one-place, two-place, or three-place relations, of which the subject is the most salient or *external* argument (see in particular Williams 1980, 1983, 1984, 1994; also reference to Syrian Arabic see Cowell 1964:380).

In practice, although categories of different arity are referred to as predicates, *predication* continues to refer to the relationship between a one-place predicate and its external argument (Rothstein 1983; Heycock 1991). Predication in this sense may

correspond more closely to relationship between the Arabic terms *fā`il* and *fi`l* or to *musnad* and *musnad`ilayhi*.

Talking about predication in this way has allowed some theorists to describe even verb-initial clauses as involving predication. For example, according to the widely influential `predicate-internal subject hypothesis' (Fukui and Speas 1986; Koopman and Sportiche 1991; Plunkett 1993, 1996; Mohammad 1990), \rightarrow verb phrases and other lexical categories take subject arguments (c.f. Stowell 1981), or are dominated by an abstract functional projection such as Bowers' (1993) `Predication Phrase' (PredP) that provides a subject position for a lexical predicate.

Mohammad (2000) argues that the underlying word order in both MSA and PA is SVO rather than VSO (see also \rightarrow nominal clause and \rightarrow verb phrase). This is because the structure of the verb phrase places the subject in a specifier position c-commanding the verbal predicate. For example, the (5a) has the underlying SVO structure in (5b), from which is derived the VSO order in (5c) by movement of the predicate head to the head position of the IP projection:

- (5) a. *kullu`umm-in tuḥibbu`ibna-ha.*
 every-Nom mother-Gen love.imperf.3fs son-cl3fs
 "Every mother loves her son." (MSA; Mohammad 2000: 75)
- b. $[_{IP} PRES [_{VP} [_{NP} kullu`umm-in] [_{V'} tuḥibbu [_{NP} `ibna-ha]]]]$
- c. $[_{IP} [_i PRES tuḥibbu_j] [_{VP} [_{NP} kullu`umm-in] [_{V'} t_j [_{NP} `ibna-ha]]]]$

According to Mohammad's and related analyses, then, predication is established within the VP projection, and the relation is then rendered opaque by the derivation of VS word

order.

3. Secondary Predicates

A distinction is made in the literature between primary and secondary predication (Williams 1983, 1984, 1994; Rothstein 1983; Stowell 1983; Hornstein and Lightfoot 1987; Heim and Kratzer 1998, a.o.), where primary predication results in a full clause, while secondary predication predicates a subordinated constituent of an argument of a matrix or higher clause.

Examples of secondary predicates in Arabic include: circumstantial or \rightarrow *ḥāl* predicates used as complements of verbs of change or causation (6a-b), perception (6c), belief or knowledge (6d), or as adverbial modifiers (6e); and in the dialects, optative predicates (6f) and, according to some analyses, obligatory control complements (6g):

- (6) a. *'ittaxaḏa-ha zawjat-an la-hu.*
take.perf.3ms-cl3fs wife-Acc to-cl3ms
“He took her as his wife.” (MSA: Bedawi, et.al. 2004: 376)
- b. *yaj 'alu-hu yaṭma 'innu 'ila l-mustaqbal-i.*
make.imperf.3ms-cl3ms feel-confident.imperf.3ms to the-future-Gen
“It makes him feel confident about the future.” (MSA: Bedawi, et.al. 2004: 377)
- c. *fa 'arat bi-qalb-i-ha yuḥfiqu bi-fiddat-in.*
feel.perf.3fs with-heart-Gen-cl3fs beat.imperf.3ms with-strength-Gen
“She felt her heart beating strongly.” (MSA: Bedawi, et.al. 2004: 581)
- d. *wajad-na ba 'ḏa l-masājid-l taṭlubu t-tabarru 'a.*
find.perf.1s some-Acc the-mosques-Gen require.imperf.3fs the-charity

“We found some of the mosques in need of charity.” (MSA: Bedawi, et.al. 2004: 378)

e. *fa-yuhuzzu ra 's-a-hu muṭma 'inn-an l-i.*

and-shake.imperf.3ms head-Acc-cl3ms reassure.actpart.ms-Acc to-cl1s

“...and he would shake his head at me reassuringly.” (MSA: Bedawi, et.al. 2004: 580)

f. *?a 'ṭat-e čalb iḥāmi 'an-ne.*

give.perf.3fs-cl3ms dog protect.imperf.3ms for-cl3ms

“She gave him a dog to protect him.” (Bir Zeit Palestinian; Schmidt and Kahle 1918: §42.16)

g. *bidd-u yḥāwil ytafāham ma 'ā.*

want.3ms try.imperf.3ms agree.imperf.3ms with-cl3ms

“He wants to try to reach an understanding with him.” (Jordanian; LDC2005S14: fsa_12424, 434.82-437.57)

The only detailed study to date of secondary predication in Arabic is Mohammad's (1999) examination of asyndetic *ḥāl*-predicates in Modern Standard Arabic and Palestinian Arabic. Mohammad discusses constraints on the potential controller for the *ḥāl*-predicate, noting that, in Modern Standard Arabic, *ḥāl*-predicates headed by an active participle can be controlled either by the subject or object of the matrix clause.

For example, (7) can mean both that Zayd was riding the donkey when Ahmad saw him, or that Ahmad was riding the donkey when he saw Zayd:

(7) *fāhada 'aHmad zayd-an rākib-an ḥimār-an.*

see.perf.3ms Ahmad Zayd-Acc ride.actpart.ms-Acc donkey-Acc

“Ahmad saw Zayd [while Zayd was] riding a donkey.”

“Ahmad saw Zayd [while Ahmad was] riding a donkey.”

In contrast, *ḥāl*-predicates headed by imperfect verbs can only be predicated of the object of the main verb (8a), as shown by the unacceptable feminine agreement form marked on the *ḥāl*-verb in (8b):

- (8) a. *Zaynab-u fāhadat al-walad-a yarkabu ḥimār-an.*
 Zaynab.fs-Acc see.perf.3fs the-boy.ms-Acc ride.imperf.3ms donkey-Acc
 “Zaynab saw the boy [while he was] riding a donkey.”
- b. **Zaynab-u fāhadat al-walad-a tarkabu ḥimār-an.*
 Zaynab.fs-Acc see.perf.3fs the-boy.ms-Acc ride.imperf.3fs donkey-Acc

Mohammad argues that the *ḥāl*-predicate is in a complement position and must be controlled by the nearest c-commanding argument, namely the object in a transitive clause and the subject in an intransitive clause. This is supported by the acceptability of extraction out of it when it is predicated of the direct object of the verb (8a), but not when predicated of the subject (8b):

- (8) a. *mōna, māḍā fāhadat ’aḥmad-an rākib-an?*
 Mona.fs what see.perf.3fs Ahmad.ms-Acc ride.actpart.ms-Acc
 “What did Mona see Ahmad riding?”
- b. **mōna, māḍā fāhadat ’aḥmad-an rākibat-an?*
 Mona.fs what see.perf.3fs Ahmad.ms-Acc ride.actpart.fs-Acc
 “Mona, what did she see Ahmad [while she was] riding?”

Mohammad postulates that a *ḥāl*-predicate consisting of an imperfect verb can only be realized as a complement, while a *ḥāl*-predicate consisting of an accusative-marked participle can be realized either as a complement or an adjunct. Palestinian Arabic, on the other hand, lacks accusative case morphology, so a participial *ḥāl* must be realized

as a complement just as is a verbal *ḥāl*:

- (9) a. *fāf zayd eḥmad rākib iḥmār.*
see.perf.3ms Zayd Ahmad ride.actpart.ms donkey
“Zayd saw Ahmad [while Ahmad was] riding a donkey.”
*“Zayd saw Ahmad [while Zayd was] riding a donkey.”

The restricted interpretation of predicative *ḥāl* contrasts with the more flexible interpretation of a full *ḥāl*-clause introduced by *wa-*, which can be controlled by either the subject or the object because it does not stand in a predication relation with its controller:

- (10) *fāf eḥmad zayd [wa-hu rākib iḥmār].*
see.perf.3ms Ahmad Zayd and-he ride.actpart.ms donkey
“Ahmad saw Zayd while [Zayd was] riding a donkey.”
“Ahmad saw Zayd while [Ahmad was] riding a donkey.”

The implication of Mohammad’s argument is that predication can be established both by lexical specification in the case of complement predicates, and by syntactic specification in the case of adjunct predicates.

4. Predicates and Broad Subjects

As noted above, the term nominal clause (*jumla ’ismiyya*) appears to describe two different kinds of structure: a subject-predicate predication structure when the initial NP corresponds to the subject or agent of the report constituent, and a topic-comment dislocation structure when the initial NP is distinct from the subject or agent of the report constituent.

However, Doron (1997), Doron and Heycock (1999), Alexopoulou, et. al. (2002) and Heycock and Doron (2003) show that a non-subject initial NP can have grammatical properties associated with subjects:

- (11) A non-subject initial NP can be embedded under an ‘exceptional case-marking’ (ECM) verb or *’anna*:

na ’taqīdu ’anna ’amrīka fa ’b-u-ha ḏakīy.

believe.imperf.1p that America folk.ms-Nom-cl3fs clever

“We believe that the American people are clever.” (MSA: <http://maxforums.net/showthread.php?t=96271>)

- (12) In a copular clause with *kāna* ‘to be’, the initial NP (*?ism kāna*) can be predicated of a fully saturated lexical predicate:

kān l-bayt ’alwān-o fātha.

be.perf.3ms the-house.ms colors.fp-cl3ms bright.fs

“The house was brightly colored.” (Lebanese Arabic: Alexopoulou, et. al. 2004:333)

- (13) A clausal *xabar* can be conjoined with a lexical predicate that requires a subject. Hence, by the *Coordinate Structure Constraint* (Ross 1967), the initial NP must be a subject with respect to the clausal *xabar*:

sayyart-l lōn-a fāteḥ u-maftūḥa min fō ’.

car.fs-cl1s color-cl3fs bright.ms and-open.fs from above

“My car is brightly colored and a convertible.” (Lebanese Arabic; Alexopoulou, et. al. 2004: 336)

- (14) The initial NP need not be referentially →specific (as are topics), and can instead be a question word (a) or a quantificational noun phrase (b-c):

a. *mīn fa ’r-ha ’aṭwal min fa ’r il-banāt dī?*

who hair.ms-cl3fs longer.ms from hair the-girls these

“Who’s hair is longer than these girls’ hair?” (Egyptian Arabic; <http://www.adwforums.com/archive/index.php/t-16652.html>)

b. *’iḥna, kull wāḥda fa ’r-ha la-nuṣṣ ḏahr-ha.*

we every one.fs hair-cl3fs to-middle back-cl3fs

“Each one of us has hair to the middle of her back.” (Levantine Arabic;

<http://www.rhalchat.net/vb/showthread.php?t=3858&page=4>)

c. *wala wāhda fa ʿr-ha ḥalu.*

not.even one hair.ms-cl3fs nice.ms

“Not one of them has nice hair.” (Levantine Arabic: <http://alfrasha.maktoob.com/archive/index.php/t-202674.html>)

Doron and Heycock conclude that the initial NPs in examples of this kind are grammatical subjects even though they do not bind external arguments, and, for this reason, they argue that Arabic allows a primary predication to be established between a subject and a ‘derived predicate’.

This recalls the observation in Section 2 that predication of a specified modifier requires a grammatical mechanism that abstracts over a pronoun or implicit argument inside the clause. For example, the primary predication in (13) would have a logical structure like (15c), derived by abstracting over the possessive pronoun in *lōn-a* ‘it’s color’ (15a) and conjoining this abstract with the interpretation of *maftūḥ min fō ʿ* ‘open from above’ (15b):

- (15) a. $[[lōn-a fāteḥ]] = \lambda x.[x's \text{ color is bright}]$
b. $[[maftūḥa min fō ʿ]] = \lambda x.[x \text{ is open-topped}]$
b. $\lambda P.[P(\text{my car})](\lambda x.[x's \text{ color is bright} \ \& \ x \text{ is open-topped}])$

The fact that both primary and secondary predicates in Arabic can be derived via an abstraction mechanism either implies that there is cross linguistic variation in the grammatical properties of predication, or that languages like Arabic are able, for some reason, to use relative-clause-like predicates where languages like English can only use lexical predicates.

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