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Derived Predication and Topic Case in Classical Arabic¹

Abstract: This chapter investigates the derivation of a predicate from a sentence containing a pronoun in the clitic left dislocation construction in Classical Arabic. In this construction, a nominal constituent at the left clause edge (the topic) binds a weak (clitic) pronoun in the constituent that follows. This constituent, though able to stand alone as a sentence, is interpreted in relation to the topic as a predicate abstracted over the weak pronoun. Data from a detailed eighth century descriptive grammar of Arabic by Uthman Sibawayhi show that topics in this construction may bear either nominative or accusative case. While nominative is a default case, the data reported by Sibawayhi reveal that accusative case is assigned to the topic by the matrix verb. In neither case is the relation between the topic and associated pronoun subject to constraints on movement. We claim that nominative topics are base generated at the left clause edge, while accusative topics are base generated at the left edge of the verb phrase, where they are assigned accusative before moving to their surface position at the left clause edge. In both cases, the derivation of a predicate of the topic is a semantic procedure that does not involve syntactic movement. Though the mechanism of the derivation is the same for nominative and accusative topics, the two cases differ in the level of structure at which the predicate is derived – CP for nominative topics and VP for accusative topics.

Key words: Arabic, predication, predicate abstraction, clitic left dislocation, topicalization, case

1. Introduction

In this chapter, we develop an analysis of derived predication in Classical Arabic on the basis of descriptive data reported in the eighth century grammar of the language written by Uthman Sibawayhi (d. 796 CE). A ‘predicate’ for this purpose is an expression that is semantically incomplete; it must combine with one or more

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arguments in order to build a complete sentence, and functions in that sentence as a description of its arguments. In Arabic, it is possible to combine a complete sentence containing a weak pronoun with a topic, which functions as a ‘filler’ for the position marked by the pronoun. In this construction, a complete sentence is *used* as a predicate (description) of the topic, and is a ‘derived’ predicate in the sense that its use as a complete sentence is basic.

The primary issue that we treat in this chapter has to do with the case inflection on the topic and its consequences for the grammatical underpinnings of derived predication. The topic in Classical Arabic may bear either nominative or accusative case. We claim that the choice has to do with where in the sentence the corresponding predicate is derived. We find that Sibawayhi’s description of the contexts in which accusative is possible points to the conclusion that the main verb in the clause to which the topic is appended is the source of accusative case for the topic in those cases. We propose that while nominative topics are base generated at the left clause edge, accusative topics are base generated lower, within the verb phrase, where they receive accusative case from the verb and then move to the left clause edge. In neither case, though, does the topic bear a movement relation to the weak pronoun it binds in the derived predicate. In effect, in Classical Arabic a predicate may be derived over VP (the verb phrase), yielding an accusative topic, or CP (the ‘complementizer phrase’ of generative grammar, which heads a complete sentence), yielding the nominative topic. In neither case is predicate derivation contingent on syntactic movement of the topic from a position within the predicate.

The chapter begins with an overview of the development of the notion of ‘derived predicate’ in the modern linguistic tradition beginning with Frege’s *Begriffsschrift* (1879). Section 3 then shows that Frege’s distinction between ‘function’ (predicate) and argument is optionally syntactically marked in Classical Arabic by the topic-comment structure, but that the case marking optionality on the topic points to there being two different syntactic sites for derived predication in that language. In section 4 we present an analysis of the distinction, and in section 5 review some corroborating evidence mentioned by Sibawayhi as well as the later Arabic grammarian Al-Shatibi (d. 1388 CE).

2. Derived Predication

Grammatical subjects are identified by a variety of properties, including lack of morphological markedness (i.e., bearing null case), controlling agreement on the verb, linearly preceding other grammatical functions, and many others (Keenan 1976). An observation going back to Aristotle is that the subject also tends to bear

a special discourse status. The subject is typically construed as denoting an entity that the sentence is about. The rest of the sentence then constitutes the predicate, which denotes the content of a judgment about the subject.

Gottlob Frege (1879) develops a generalization of this aspect of the subject-predicate relation that he refers to as the ‘function-argument’ relation. The distinction between function and argument is a basic syntactic segmentation in a formal language he develops that is now known as ‘predicate logic’ (his ‘Begriffsschrift’, or ‘conceptual notation’). Frege writes:²

There is no distinction in my notation between *subject* and *predicate*. To justify this, I point out that the content of two judgments can differ in two ways.³ Either the entailments of one in the context of certain other judgments are the same as the entailments of the other in the same context, or they are different. The two sentences ‘The Greeks defeated the Persians at Plataea’ and ‘The Persians were defeated by the Greeks at Plataea’ differ in the first way. Even if we recognize a slight difference in sense, the similarities predominate. I call that aspect of the content that is the same in both the ‘conceptual content’... When one says “The subject is the term that the judgment is about”, this applies just as much to the object. Consequently, one can only say “The subject is the term that the judgment is primarily about”. The position of the subject has the status of a distinguished position, in which one places what one wants to draw the listener’s attention to. This can have the purpose, for example, of implying a relationship between this judgment and others, facilitating the listener’s comprehension of the whole context. (Frege 1879/1971: 3)

Later, Frege continues:

If we take the sentence in our formal language that expresses the fact that hydrogen is lighter than carbon dioxide, we can replace the symbol for hydrogen with the symbol for oxygen or nitrogen. In doing so, the meaning changes in that ‘oxygen’ or ‘nitrogen’ enters into the relations in which hydrogen stood before. In altering an expression in this way, it decomposes into a constant part, which represents the entirety of the relations [the other stands in], and the symbol which is considered replaceable by others, and which denotes the object that stands in these relations. The first part I call the ‘function’, the second its ‘argument’. This distinction has nothing to do with the conceptual content, but rather is only a matter of form. While in the original example ‘oxygen’ is the argument and ‘is lighter than carbon dioxide’ the function, we can formulate the same conceptual content by saying that ‘carbon dioxide’ is the argument and ‘is heavier than oxygen’ is the function. (Frege 1879/1971: 15)

2 Quoted passages from both Frege’s original German and Sibawayhi’s original Arabic have been translated into English by the authors.

3 Frege’s use of the term ‘judgment’ refers to the judgment whether a sentence is true or not.

In these passages, Frege generalizes the notion of ‘predicate’ and ‘subject of predication’ to the notion of function and argument. Any given sentence can be decomposed in many ways into something conceptualized as the argument and the rest, conceptualized as the function. There is no necessary correlation between argument and grammatical subject in this sense and between function and grammatical predicate. Frege in fact emphasizes the inadequacy of natural languages to express the function-argument relation fully generally. He notes in the first passage that passivization serves as a linguistic indicator of the argumenthood (in his sense) of the logical object, by making the object the subject, mapping it into the grammatical subject-predicate relation. Other linguistic features that serve to manipulate the ‘primary’ function-argument relation include inverses such as ‘be heavier than’ in place of ‘be lighter than’. It is easy to see that the linguistic markers of Frege’s function-argument relation are generally constrained by, as Frege puts it, “lack of words” (Frege 1879/1971: 18), or by lack of the appropriate structural permutations.

In this paper, we seek to demonstrate that Classical Arabic has a generalized mechanism for marking the function-argument relation in Frege’s sense, and therefore that Classical Arabic bears a striking resemblance to Frege’s formal language in this respect. The structure in question is a kind of topic-comment structure where the topic binds a weak pronoun in the comment, similar to what is called ‘clitic left dislocation’ in the syntax literature on the Romance languages (see Cinque 1990). The primary significance of this phenomenon for linguistic theory lies in constraints on the case marking of the topic in Classical Arabic. The topic may always bear nominative case. It may also bear accusative case, but only in a restricted repertoire of syntactic environments. The constraints on accusative show that the syntactic origin of topics is not uniform in Classical Arabic: accusative topics originate in a lower position in the clause than nominative topics. In neither case, though, is topic case connected to the case borne by the weak pronoun the topic binds, indicating that the topic does not bear a movement relation to that position.

The primary data the present study draws on comes from a detailed description by Uthman Sibawayhi of the Arabic of his time, the late eighth century. Sibawayhi’s extensive work, known as *Kitab Sibawayhi* ‘Sibawayhi’s book’, treats various topics in the syntax, morphology and phonology of the language.⁴ The discussion of

4 Our text of Sibawayhi’s book is the third edition published by Maktaba Al-Khanji, Cairo, 1988, edited by Abdu Al-Salam Muhammad Harun, under the title *Kitaab Sibawayhi* (‘Sibawayhi’s Book’), in the original Arabic (to our knowledge no translation into English exists). The original text was composed in the eighth century (Sibawayhi

topicalization and topic case is interpolated among discussions of other related issues from roughly pages 80 to 150 of volume one in the edition we draw the examples cited here from. Each example cited from Sibwayhi is referenced below with the page number where it is discussed. We have removed the clause initial interrogative yes/no particle *ʔa-* that occurs in some of these examples in Sibawayhi's original in order to avoid giving the impression that it is relevant to topic case; Sibawayhi himself includes it in some examples only to show that it does not effect the nominative/accusative alternation in the topic. We have also added a few examples to illustrate minimal contrasts. The examples without page number references are due to the authors. The following section lays out the facts that Sibawayhi presents together with a discussion of Sibawayhi's analysis. Subsequently, we present a critique of Sibawayhi's analysis and an alternative explanation.

3. The Function-Argument Relationship in Classical Arabic

Classical Arabic displays canonical VSO word order. Verbs are richly inflected for agreement with the subject. The subject bears nominative case, marked by the suffix *-un*. Arabic is a 'null subject' language, meaning that a subject pronoun is typically not pronounced. The object of the verb is marked by accusative *-an* and the object of a noun or preposition by genitive *-in*. The *n* ending of the case markers disappears under certain morphosyntactic conditions, the most common conditioning factor being definiteness (see Fassi Fehri 1999 and Mohammad 1999 for an overview of these factors). The Classical Arabic translation for *I hit Zayd* (*Zayd* was a common masculine name at the time) looks like (1), where the object *Zayd* has accusative case. On the standard analysis of the null subject property (Rizzi 1986, Cardinaletti and Starke 1999, and others), a hidden nominative first person singular pronoun sits in the subject position between the verb and object and controls agreement on the verb (see Fassi Fehri 1993 and Mohammad 2000 on Arabic specifically).

- (1) ḍarab-tu zayd-an. [p. 80]
 hit-1s zayd-ACC
 'I hit Zayd.'

Sibawayhi points out that the object in (1) can be fronted to a pre-verbal position, as in (2). Here, nothing follows the topicalized *Zaydan* that serves to index it to

died in 796 CE). It is one of the first grammatical treatises on Arabic and is valuable for its careful and extensive (the Harun edition spans five volumes) description of what is now called 'Classical' Arabic, though it was of course contemporary at the time. The page numbers of the cited examples refer to volume 1.

- (6) *ḍarab-tu zayd-an ḍarab-tu-hu.* [p. 81]
 hit-1s zayd-ACC hit-1s-him
 literally: 'I hit Zayd, I hit him'

The verb doubling account is one version of an analysis in which the topic is accusative by virtue of the fact that the weak pronoun that it binds is itself in an accusative case position. Because the topic is interpreted as the logical object of the verb, copying the verb into a position before the topic puts the topic in the object position of that verb, where it is expected to receive accusative case.

An alternative implementation of this view is that the topic inherits its case through its connection to the weak pronoun, which itself sits in an accusative position in these examples. Sibawayhi adopts this explanation for certain examples; see the discussion of (14) below. On this view, (4) is basically the same as (2), except that the gap in (2) is 'spelled out' as the weak pronoun in (4). This view characterizes topicalization in Classical Arabic as essentially like German and other Germanic languages, where a pre-verbal topic may bear a lexical case idiosyncratically assigned by the verb. The topic in German is dislocated from a case position and "takes along its case" (Ross 1973: 133). See Aoun and Benmamoun (1998) for an analysis of modern Lebanese Arabic along these lines, where the topic moves to the left clause edge from the position of the weak pronoun.

For Classical Arabic, both of these analyses are problematic. Sibawayhi himself points to the paradigm in (7), which represents a challenge for the verb doubling account. Example (7a) is a basic sentence with an object introduced by the preposition *bi-*, which, like all prepositions in Classical Arabic, assigns genitive case, marked by *-in*. As shown in (7b-d), a topic indexed to a weak pronoun that occurs as object of the preposition, and that therefore itself receives genitive case, may bear nominative or accusative case, but not genitive. It is odd that the topic may bear accusative case in this context, but yet not the genitive assigned to the position it is thematically related to, namely the object of the preposition.

- (7) a. *marar-tu bi-zayd-in*
 passed-1s by-zayd-GEN
 'I passed by Zayd.'
- b. *zayd-un marar-tu bi-hi* [p. 83]
 zayd-NOM passed-1s by-him
 'Zayd, I passed by him.'
- c. *zayd-an marar-tu bi-hi* [p. 83]
 zayd-ACC passed-1s by-him
 'Zayd, I passed by him.'

- d. *zayd-in marar-tu bi-hi
 zayd-GEN passed-1s by-him
 ('Zayd, I passed by him.')

This observation motivates Sibawayhi to weaken his verb doubling analysis to accommodate insertion of a verb that is not identical to the main verb. Regarding the accusative topic in this context, he says "If you wish, you may say (7c), if you want to imply a elided verb. It is as if you were to say (8), by way of explanation, but you do not pronounce the first part, as I have explained" (p. 83). The verb *zaʕala* 'cause' or 'put' is used here in the sense that I put him on my path indirectly by virtue of crossing paths with him.

- (8) zaʕal-tu zayd-an ʕala: ʕari:q-i: marar-tu bi-hi. [p. 83]
 caused-1s zayd-ACC on way-my passed-1s by-him
 'I crossed paths with Zayd on my way.'

Sibawayhi provides a similar explanation for the occurrence of the accusative topic in (9c), which is also related to a weak pronoun to which genitive is assigned, this time by a noun. The basic sentence is provided in (9a) for comparison. Nominative is also possible, as usual (9b).

- (9) a. laqi:-tu ʕax-a: zayd-in.
 met-1s brother-ACC zayd-GEN
 'I met Zayd's brother.'
 b. zayd-un laqi:-tu ʕax-a:-hu. [p. 83]
 zayd-NOM met-1s brother-ACC-his
 'Zayd, I met his brother.'
 c. zayd-an laqi:-tu ʕax-a:-hu. [p. 83]
 zayd-ACC met-1s brother-ACC-his
 'Zayd, I met his brother.'

About the accusative topic here, Sibawayhi says "If you wish, you may say (9c). It is as if you said (10). This is an example and is not spoken in this way" (p. 83). Here, Sibawayhi acknowledges more explicitly than above that such examples are to be understood as underlying structures, not grammatical surface strings. The verb *la:basa* means to be a close associate of or be on good terms with.

- (10) la:bas-tu zayd-an laqi:-tuʕax-a:-hu. [p. 83]
 associate.with-1s zayd-ACC met-1s brother-ACC-him
 'I am on close terms with Zayd and met his brother.'

Note that the movement analysis does not fare better with these examples. The movement analysis expects the topic to bear the case that the weak pronoun that occurs in its extraction site bears. That case is genitive in (7) and (9). While the occurrence of nominative is expected in light of the possibility of base generating a topic in the clause-initial position, the source of accusative in (7c) and (9c), which cannot be the genitive position the weak pronoun occurs in, is unclear.

Further, theory-internal considerations suggest that movement from the position of the weak pronoun is not possible in these cases, since a chain that has a link in the genitive-marked position in (7c) and (9c) would not be able to receive accusative in the course of the derivation. The ‘Case Filter’ prohibits a situation in which a chain receives more than one case, in addition to its more renowned prohibition on a nominal chain with no case at all (Chomsky 1981, 1986). This conclusion rhymes together with the fact that neither genitive position in (7c) or (9c) allows a gap. Neither preposition stranding nor possessor extraction is allowed in Classical Arabic regardless of what case we try to put on the extracted element (11). That is, obvious cases of displacement of genitive arguments are not found in Classical Arabic as they are for accusative arguments (2).

- (11) a. *zayd-un/an/in marar-tu bi
 zayd-NOM/ACC/GEN passed-1s by
 (‘Zayd, I passed by.’)
- b. *zayd-un/an/in laqi:-tu ?ax-a:
 zayd-NOM/ACC/GEN met-1s brother-ACC
 (*‘Zayd, I met brother.’)

Further, Sibawayhi presents examples in which an accusative topic is related to a weak pronoun that not only bears a different case than the topic, but also occurs in what are cross linguistically robust islands (barriers) for movement. One such context is (12), where accusative *Zaydan* is related to a weak possessive (genitive) pronoun that occurs in a coordinate structure. This example and its nominative counterpart are both grammatical. Movement of a term out of one conjunct in a coordinate structure has been observed to be ungrammatical in English and other languages (Ross 1967). The NP-coordination *ʕamran wa?axa:hu* ‘Amr and his brother’ is expected to be opaque to a movement chain linking the weak pronoun to any term outside the coordinate structure. This observation militates against an analysis that posits that the accusative topic moves from the (genitive) position of the weak pronoun in (12).

- (12) zayd-un/an ɖarab-ta ʕamr-an wa-?ax-a:-hu. [p. 107]
 zayd-NOM/ACC hit-2MS Amr-ACC and-brother-ACC-his
 ‘Zayd, you hit Amr and his [Zayd’s] brother.’

Another case where the accusative topic and the weak pronoun are separated by an island boundary is (13), where the weak pronoun that indexes the topic (this time a covert subject pronoun) occurs in a relative clause. Movement from within a relative clause is again robustly ungrammatical in English and other languages (Ross 1967). In (13a), the accusative topic binds the covert weak subject pronoun of the verb *yuḥibbuhuma*: ‘he loves the two of them’ in the relative clause. The weak object pronoun *-huma*: refers back to the head of the relative clause *za:riyatayni* ‘two neighbors’. Once again, these examples are expected to be ungrammatical if they involve movement of the topic (*Zaydan*) from the position of the associated pronoun (covert subject of *yuḥibbuhuma*:). And here again, the accusative topic does not bear the case that the associated weak pronoun receives. Being the implicit subject of the finite verb *yuḥibbu* ‘love’, the weak pronoun that accusative *Zaydan* binds in (13a) is nominative. As usual, the topic may bear nominative case as well. Binding into a relative clause is not limited to the subject of the relative clause. Sibawayhi also mentions example (13b), which is ambiguous between an interpretation where the topic binds the subject pronoun in the relative clause, on par with (13a), and one in which it binds the object pronoun. The topic may be accusative in either case. Since the relative clause is an island for movement, these examples implicate that neither the nominative nor accusative topic moves from the position of the associated pronoun.

- (13) a. *zayd-un/an* *ḍarab-ta* *za:riyat-ayni* *yu-ḥibb-u-huma*:. [p. 107]
zayd-NOM/ACC *hit-2MS* *girls-ACC.DUAL* *3MS-love-INDIC-them_{DUAL}*
 ‘Zayd, you hit two girls who he loves.’
- b. *zayd-un/an* *ḍarab-ta* *razul-an* *yu-ḥibb-u-hu*. [p. 107]
zayd-NOM/ACC *hit-2MS* *man-ACC* *3M-love-INDIC-him*
 ‘Zayd, you hit a man who he loves.’
 Or: ‘Zayd, you hit a man who loves him.’

A last set of examples bearing on the proper analysis of the origin of accusative case on topics includes a variety of contexts in which a topic *cannot* be accusative, and surfaces obligatorily with nominative case. One such context is when the associated pronoun occurs within a nominative subject of the main verb, that is, the verb that the topic directly precedes. In (14a), the topic *ṣabdu lla:hi* ‘Abdullah’ binds a weak pronoun suffixed to *ṭaxu*: ‘brother’, which functions as subject of the verb *ḍaraba* ‘hit’.⁶ Sibawayhi states that here there is “nothing but nominative, because that which refers back to Abdullah is a subject [actually a pronoun contained

6 The name *Abdullah* means ‘servant of God’ and consists of the parts *ṣabd* ‘servant’ and *lla:h* ‘God’. The relevant case suffix appears on the initial term; the second is invariantly genitive.

in the subject], and that which does not refer back to him is an object, and [the topic] is put in the nominative when what refers back to it is nominative, just as it is put in the accusative when what refers back to it is accusative.” If the topic binds a pronoun contained within the object, then accusative is possible again, as in previous examples. Example (14b), where accusative is possible, contrasts minimally with (14a), where only nominative is possible. The generalization that Sibawayhi states in this quote is, as we have seen, not fully correct. Sibawayhi’s own examples exhibit accusative-marked topics binding pronouns in both nominative and genitive positions. But Sibawayhi’s observation that an accusative topic is blocked when it binds a pronoun in the matrix subject is significant. We refine what we believe is the correct generalization below.

- (14) a. ʕabd-u/*a l-la:h-i ɖarab-a ʔax-u:-hu zayd-an. [p. 102]
 servant-NOM/*ACC the-God-GEN hit-3MS brother-NOM-his zayd-ACC
 ‘Abdullah, his brother hit Zayd.’
- b. ʕabd-u/a l-la:h-i ɖarab-a ʔax-a:-hu zayd-un. [p. 103]
 servant-NOM/ACC the-God-GEN hit-3MS brother-ACC-his zayd-NOM
 ‘Abdallah, Zayd hit his brother.’

Example (15a) makes a similar point; the main verb is intransitive here and the topic binds a weak pronoun in its subject. In this context, only nominative is possible on the topic. Similarly, an accusative topic cannot bind the subject itself in the same context (15b). That is, the accusative topic cannot be interpreted as the subject of *ɖahaba* ‘went’ in (15b).

- (15) a. zayd-un/*an ɖahab-a ʔax-u:-hu. [p. 104]
 zayd-NOM/*ACC went-3MS brother-NOM-his
 ‘Zayd, his brother went away.’
- b. zayd-un/*an ɖahab-a. [p. 104]
 zayd-NOM/*ACC went-3MS
 ‘Zayd, he left.’

Note again that the explanation for the impossibility of accusative here cannot simply be that an accusative pronoun cannot bind a nominative element (or a pronoun in a nominative element), since that is what it does in the grammatical examples in (13). In (13), the accusative topic may bind a nominative subject pronoun in a relative clause. The impossibility of accusative on the topic in the examples above appears to have something to do with the case assigning potential of the matrix verb. The following discussion confirms this suspicion.

Sibawayhi discusses a variety of examples in which a non-verbal predicate fails to license an accusative topic. He describes a distinction between active participles, which have the predicative interpretation of verbs, and agent nominals, which have the same morphological form as verbal participles but do not have a verbal (predicative) interpretation. Rather, they refer to individuals. Sibawayhi cites examples of verbal participles in the same paradigm as his discussion of verbal licensors of accusative topics, with a weak pronoun in object position (16a), in a prepositional phrase (16b), and within an object nominal (16c). Being verbal, these license an accusative topic.

- (16) a. zayd-un/an ʔanta ɖa:rib-u-hu. [p. 108]
 zayd-NOM/ACC you hitting-NOM-him
 ‘Zayd, you are hitting him.’
- b. zayd-un/an ʔanta na:zil-un ʕalay-hi. [p. 108]
 zayd-NOM/ACC you going.down-NOM to-him
 ‘Zayd, you are with him.’
- c. ʔamr-un/an ʔanta mukrim-un ʔaxa:-hu. [p. 108]
 amr-NOM/ACC you respecting-NOM brother-ACC-his
 ‘Amr, you respect his brother.’

However, agent nominals do not license an accusative topic, even when based on the same verb as the verbal participles above (cf. (16a)). The definite article in (17) disambiguates in favor of the agent nominal reading.

- (17) ʕabd-u/*a ɭla:h-i ʔanta ɖ-ɖa:rib-u-hu. [p. 130]
 servant-NOM/*ACC god-GEN you the-hitter-NOM-him
 ‘Abullah, you are the one who hit him.’
 (lit.: ‘Abdullah, you are his hitter’)

In this connection, there is an interesting contrast between (13), where an accusative topic binds a weak pronoun in a relative clause that modifies an object, and (18) below, where a topic binds a weak pronoun in a relative clause that modifies a predicate nominal. As Sibawayhi discusses on p. 128, the latter is ungrammatical. The difference between (13) and (18) is that there is a main verb in (13) that can assign accusative case to the topic, but there is no main verb in (18), but rather only the nominal predicate *rajulun* ‘man’.

- (18) zayd-un/*an ʔanta razul-un ta-ɖrib-u-hu [p. 128]
 zayd-NOM/*ACC you man-nom 2ms-hit-him
 ‘Zayd, you are a man who hits him.’

Sibawayhi also mentions that accusative topics are impossible the sentences below, where the main predicate is a comparative adjective. The examples in (19b) and (19c) contain subject clauses which in turn contain a transitive verb. Sibawayhi uses such examples to demonstrate that the subject clause cannot license an accusative topic in the main clause, even if it contains the licensing environment (e.g. the verb *ḍaraba* ‘hit’ in (19b)). The prefix *ʔa-* introduces a yes/no question in Classical Arabic. This pattern is expected if adjectives do not license accusative case.

- (19) a. ʔa-zayd-un/*an ʔanta la-hu ʔafadd-u ḍarb-an ʔam
 ʔamr-un? [p. 132]
 Q-zayd-NOM/*ACC you to-him stronger-NOM hitting-ACC or
 amr-NOM
 ‘Did you hit Zayd harder or did Amr?’
 Lit.: ‘Zayd, are you harder of hitting to him or Amr?’
- b. ʔa-zayd-un/*an ʔan ya-ḍrib-a-hu ʔamr-un ʔamθal-u
 ʔam biʔr-un? [p. 131]
 Q-zayd-NOM/*ACC that 3FS-hit-SBJV-him amr-NOM better-NOM
 or biʔr-NOM
 ‘Is it better for Amr to hit Zayd or Bishr?’
 Lit.: ‘Zayd, is it better that Amr hits him or Bishr?’
- c. ʔa-ḍakar-un/*an ʔan ta-lid-a na:qat-u-ka
 ʔaḥabb-u la-ka ʔam ʔunθa:? [p. 131]
 Q-male-NOM/*ACC that 3FS-bear-SBJV camel-NOM-your
 preferable-NOM to-you or female?
 ‘Would you rather your camel gave birth to a male or a female?’
 Lit.: ‘A male, is it preferable for you that your camel gives birth to it or a female?’

Another point Sibawayhi makes supporting the conclusion that an accusative topic is licensed by the matrix verb is that even in a clause that has a verbal predicate, an accusative topic is impossible if the verb is passivized. This rhymes together with the standard view that passivization removes the accusative assigning potential of the verb (Jaeggli 1986, Baker, Johnson and Roberts 1989). Specifically, Sibawayhi observes that even if a topic is related to a pronoun in a prepositional phrase, it may nonetheless not be accusative if the matrix verb is passive, as in the examples in (20). In cases such as these, where the active counterpart has no direct object but only a prepositional phrase complement, passivization of the main verb gives rise to an impersonal construction where there is no explicit grammatical subject and the verb bears default third person masculine singular agreement. The object

of the preposition, here a weak pronoun bound by a topic, is itself unaffected by passivization. Such constructions support a nominative topic, but, as Sibawayhi remarks, not an accusative one.

- (20) a. zayd-un/*an ḏuhib-a bi-hi. [p. 104]
 zayd-NOM/*ACC went_{PASS}-3MS with-him
 ‘Zayd, he was taken away.’
- b. zayd-un/*an nṭuliq-a bi-hi. [p. 104]
 zayd-NOM/*ACC departed_{PASS}-3MS with-him
 ‘Zayd, he was taken away.’

In (20) we see that passivizing the main verb creates an environment in which an accusative topic may not appear. This observation supports Sibawayhi’s contention that accusative case on the topic comes from the main verb. On the other hand, it represents a dilemma for Sibawayhi’s ‘hidden verb’ account of accusative topics, in which an implicit verb is inserted before the topic. Sibawayhi claims in connection with the examples in (7c) and (9c) (where the topic binds a pronoun within a prepositional phrase or noun phrase) that the implicit verb need not be an exact copy of the explicit verb. There is therefore no expectation that we cannot insert the implicit verb *zaʕaltu* ‘I put’ or *la:bastu* ‘I am close to’ from (8) and (10) respectively before any of the examples above to license accusative case on the topic here. The fact that this is impossible in turn weakens this explanation for the accusativity of the topic in (7c) and (9c). We propose an alternative explanation in section 4 below, addressing first the easier case of nominative topics.

4. Analysis

In this section, we develop a concrete analysis of topicalization and derived predicate formation in Arabic that derives the data discussed above, beginning with nominative topics and then turning to accusative topics. The general claim advanced here is that derived predicate formation proceeds in the same manner for both nominative and accusative topics, but accusative topics are base generated lower than nominative topics. In the case of accusative topics, we derive a predicate over the verb phrase, while in the case of nominative topics, we derive a predicate over the entire sentence.

4.1. Nominative Topics

The relation between a nominative topic and the weak pronoun it binds is not subject to any restrictions. The nominative topic is grammatical in all the examples

above, including those that exclude an accusative topic. We assume that a finite clause is a syntactic ‘complementizer phrase’ (CP), and that the nominative topic is generated within a projection of this CP that we label CP’. This proposal is compatible with various analyses of the internal structure of CP, which we do not pursue here. Within the remainder of the clause (the constituent labeled CP), the verb is initial (labeled V_1 below), and is followed by the subject (S) in the canonical word order. The verb phrase (VP) consists of the base position of the verb, labeled V_2 and its object (O) and other dependents, if the verb is transitive. The main verb normally moves to the V_1 position in the course of the derivation (Fassi Fehri 1993, Ouhalla 1994, Benmamoun 1999).

(21) [_{CP} TOPIC [_{CP} V₁ S [_{VP} V₂ O]]]

The nominative topic can be related to a weak pronoun within a subject (15a), or to a subject pronoun itself (15b), or to a weak pronoun anywhere else in the sentence. Such topic structures exemplify Frege’s function-argument bifurcation discussed in section 2. They represent a linguistic manifestation of a particular construal of the underlying topic-less sentence. Beginning with the base sentence in (22), we can construe any of the phrases *?axu: zaydin* ‘Zayd’s brother’, *zaydin* ‘Zayd’ or *šamrin* ‘Amr’ as the term (argument) about which the judgment denoted by the remnant (function) obtains. In Arabic, unlike many other languages, we can also linguistically mark these construals by separating the argument out into the left periphery and understanding the remnant (with a weak pronoun in the argument’s thematic position) as the function, as shown in (22b-d) respectively. In each case, the argument corresponds to the topic in CP’ in the schema in (21) and the function to CP.

- (22) a. marr-a ?ax-u: zayd-in bi-šamr-in
 passed-3MS brother-NOM zayd-GEN by-Amr-GEN
 ‘Zayd’s brother passed by Amr.’
- b. ?ax-u: zayd-in marr-a [pro] bi-šamr-in
 brother-NOM zayd-GEN passed-3MS [he] by-Amr-GEN
 ‘Zayd’s brother, he passed by Amr.’
- c. zayd-un marr-a ?ax-u:-hu bi-šamr-in
 zayd-NOM passed-3MS brother-NOM-his by-Amr-GEN
 ‘Zayd, his brother passed by Amr.’
- d. šamr-un marr-a ?ax-u: zayd-in bi-hi
 Amr-NOM passed-3MS brother-NOM zayd-GEN by-him
 ‘Amr, Zayd’s brother passed by him.’

In this construction, the function CP is understood as a description (predicate) that is attributed to the argument in CP' (the 'TOPIC' in (21)). In all the examples where a topic binds a weak pronoun, the sentence containing the pronoun (CP) can stand alone without the topic. What is a complete sentence without the topic functions as a predicate (property/description) with the topic. That is, this predicate is derived from a proposition.

In Frege's conceptual notation, the argument or arguments of a function stand in parentheses to its right. Using this convention, we can translate the basic sentence in (22a) into this conceptual notation as (23), where *pass by* (the translation of Arabic *marra*) is a 'basic' function with two arguments. Here, the symbol ι represents the 'iota operator', which translates the definite article in modern predicate logic (Whitehead and Russell 1910–1913). When the iota operator and a variable are appended to a sentence containing one or more occurrences of the variable, the result denotes the unique entity that makes the underlying sentence true when we take each occurrence of the variable in that sentence to refer to that entity. In (23), it refers to the unique value for x that makes the sentence x is a brother of Zayd true, that is, Zayd's only brother. This is the first argument of the function *pass by* in (23). The second argument is Amr. The sentence in (23) is the translation of CP in (22a) (where no topic occurs).

(23) $\text{pass-by}(\iota x[x \text{ is a brother of Zayd}], \text{Amr})$

In their work *Principia Mathematica* (1910–1913), which draws substantially on Frege's conceptual notation, Whitehead and Russell develop a notation for a 'propositional function', a function derived from a complete sentence ('proposition') containing a variable (a term whose reference is ambiguous). Given a sentence containing a variable, the value of the corresponding propositional function is the proposition formed by replacing the variable with the function's argument. To distinguish propositional functions from complete sentences containing variables, Whitehead and Russell place a circumflex over the variable that anchors the function. "Thus" they write, "' \hat{x} is hurt' is the propositional function and ' x is hurt' is an ambiguous value of that function" (Whitehead and Russell 1910–1913: 15). Church (1932) develops the now standard notation $\lambda x[x \text{ is hurt}]$ to express the same function, where the 'lambda' symbol unambiguously demarcates the syntactic edge of the function, which is important for the present purposes. The derivation of a predicate from a sentence containing a variable is referred to as 'predicate abstraction' (or 'lambda abstraction'). Using this notation, we can translate each of (22b–d) as (24a–c) respectively. The sentences differ in their 'construal' ('*Auffassung*' in Frege's terms) of what the judgment is about. In each case, a different noun phrase is separated out from the remnant and made an argument of it.

Topicalization in Classical Arabic mimics these differences in construal. In each case, the lambda abstract (function or predicate) translates the CP in the linguistic representation and its argument is the topic in CP'. Such a translation of a linguistic structure into a conceptual notation that unambiguously represents its meaning (or at least 'construal' or 'conceptualization' in Frege's sense) is referred to as the linguistic structure's 'logical form' (May 1985).

- (24) a. $[\lambda y [\text{pass}(y, \text{Amr})]] (\iota x [x \text{ is the brother of Zayd}])$
 b. $[\lambda y [\text{pass}(\iota x [x \text{ is the brother of } y], \text{Amr})]] (\text{Zayd})$
 c. $[\lambda y [\text{pass}(\iota x [x \text{ is the brother of Zayd}], y)]] (\text{Amr})$

Thus, Whitehead and Russell's 'propositional functions' have a clear linguistic counterpart in Classical Arabic, where any sentence containing a weak pronoun can be predicated of a topic in the nominative case. In light of the fact that the relationship between the topic and the associated weak pronoun does not respect syntactic islands, the relationship does not appear to involve syntactic displacement of the topic. That is, the derivation of a propositional function in Arabic does not correlate with any syntactic procedure or transformation. Rather, the topic is base generated as an argument of a propositional function derived in situ, and receives nominative case by default.

4.2. Accusative Topics

The data discussed in section 3 shows that the topic may not be accusative when the main verb does not assign accusative case, by virtue of being non-verbal or, if verbal, passive. Even when the predicate is an active verb, the topic may not be accusative if the weak pronoun it binds is itself the subject, or within the subject, of that verb. These observations suggest that accusative topics are base generated within the verb phrase, and move to their surface position at the left clause edge. In the verb phrase, they are able to receive accusative case from the verb, like an object, and are not able to bind a pronoun in subject position, since the latter is external to the verb phrase. Being dependent on the verb for accusative, they lose it when the verb is passivized. Nonetheless, the verb phrase-internal site where accusative topics are assigned accusative from the verb is not the site of the associated weak pronoun itself, since first of all, the latter is not always accusative, and secondly, the latter may occur in a syntactic island without interrupting assignment of accusative to the topic. Consequently, accusative topics are 'low topics', generated within the verb phrase but related to a theta role via predicate abstraction, as described below.

We argued above that nominative topics are base generated at the left edge of the clause in the position labeled TOPIC₁ in (25) below. Again, the surface position of the main verb (V₁) follows, followed in turn by the subject (S) in the canonical word order, the base position of the verb V₂ and the verb's dependents. The reasoning outlined above points to the conclusion that accusative topics are base generated in a verb phase-internal position. This position is clearly syntactically superior to other internal arguments of the verb, since the topic may bind a weak pronoun in them, and the topic is in principle external to the constituent predicated of it. We will not venture to say more about the internal structure of the Classical Arabic verb phrase than that it contains a left-peripheral topic position, labeled TOPIC₂ below, contained within the projection VP' of VP. See Ouhalla (1994) for more on Arabic VP structure. In the TOPIC₂ position, the topic receives accusative case from the verb, either from the verb's base position V₂ or possibly in passing as the verb moves to V₁.

(25) [_{CP} TOPIC₁ [_{CP} V₁ S [_{VP} TOPIC₂ [_{VP} V₂ O]]]]

As in the case of nominative topics, the relationship between the accusative topic and the pronoun it binds is not derived by movement, since it does not respect syntactic islands. Rather, the constituent labeled VP, to which the accusative topic adjoins, is interpreted in the logical form as a predicate, prefixed by a lambda operator, just as CP is for nominative topics. No movement is involved in the derivation of the predicate. In the diagram in (25), there is no representation of the subject in VP. Consequently, predicate abstraction over VP cannot target a variable in the subject, since the subject is not there; the VP is 'unaccusative' (agentless) at the level at which predicate abstraction applies. This fact rules out the possibility of an accusative topic binding a pronoun in the subject of the main verb (though it can in principle target a lower subject, as in (13)).

On this view, the reason why the counterparts of (22b) and (22c) with an accusative topic are ungrammatical, as shown in (26a) and (26b), is because the constituent over which predicate abstraction takes place is the underlying VP *marra bi-šamrin* 'pass by Amr', where *marra* is in the V₂ position and *bi-šamrin* in the O position. There is no pronoun in this constituent over which we can derive a predicate; the subject is not there.

- (26) a. * ?ax-a: zayd-in marr-a [pro] bi-šamr-in
 brother-ACC zayd-GEN passed-3MS [he] by-Amr-GEN
 ('Zayd's brother passed by Amr.')
- b. * zayd-an marr-a ?ax-u:-hu bi-šamr-in
 zayd-ACC passed-3MS brother-NOM-his by-Amr-GEN
 ('Zayd, his brother passed by Amr.')

The case in which an accusative topic binds a pronoun in a prepositional phrase is grammatical, as (27) shows.

- (27) \int amr-an marr-a \int ax-u: zayd-in bi-hi
 Amr-ACC passed-3MS brother-NOM zayd-GEN by-him
 ‘Amr, Zayd’s brother passed by him.’

The derivation of (27) proceeds schematically in the two steps shown in (28). The accusative topic *Amr* is base generated in VP’, while a predicate is abstracted over the VP containing a variable (the weak pronominal suffix of the preposition *bi-‘by’*). Subsequently, the accusative topic moves to the ‘usual’ topic position under CP’, leaving behind a trace (t_i). Similarly, the verb moves from its base position in VP to the V_1 position, also leaving a trace (t_j).

- (28) a. $[_{CP'} \text{---} [_{CP} V_1 \text{Zayd's brother} [_{VP'} \text{Amr-ACC } \lambda x [_{VP} \text{pass by } x]]]$
 b. $[_{CP'} \text{Amr-ACC}_i [_{CP} \text{pass}_j \text{Zayd's brother} [_{VP'} t_i \lambda x [_{VP} t_j \text{by } x]]]$

We emphasize here lastly that the analysis of accusative topics articulated here presupposes that the subject does not occur within the VP at the level of representation at which predicate abstraction takes place. This simple view is complicated by a body of literature that concludes that there *is* a representation of the subject in the verb phrase underlyingly (the so-called VP-internal subject hypothesis of Koopman and Sportiche 1991; see Aoun, Benmamoun and Choueiri 2010 for a survey of views on Arabic in particular). However, even if this is correct, we still would not expect the topic to be able to bind a weak pronoun within the subject. The reason is that even if predicate abstraction over VP could bind a pronoun in the subject or the subject itself, this in turn would block raising of the subject to its case position S, because raising would remove the bound variable from the scope of its binder (the lambda operator). The case-less subject would then stand in violation of the ‘Case Filter’, which requires every nominal constituent to have case (Chomsky 1980, 1981). If a subject or a variable within the subject is bound by the lambda operator at the VP-edge, then the subject would not be able to cross over that VP-edge, as it must do to reach its case position S. Thus, regardless of the details of the explanation, our proposal derives the ungrammaticality of (26a) and (26b) and similar examples from structural contingencies associated with the low position of the accusative topic in the schema in (25).⁷

7 Note that the evidence in favor of a low base position for subjects does not necessarily place it under the base position of the accusative topic, if the VP itself is syntactically complex. For a ‘bifurcated VP’, see Chomsky (1995) on ‘little-vP’ and Kratzer (1996) on ‘VoiceP’. The possibility that the topic has adjoined to the lower VP-shell, while

5. Corroborating Evidence

The analysis described above states that the mechanism of predicate abstraction is the same for nominative and accusative topics. They differ in the level of structure at which predicate abstraction takes place, and accordingly in the position in which nominative and accusative topics are base generated. Nominative topics are base generated at the left edge of the clause and accusative topics are base generated at the left edge of the verb phrase. The accusative topic moves from the VP edge to the CP edge, so that it occurs in the surface structure in the same position as a nominative topic would. This analysis postulates short movement of a topic from a VP-level position to a CP-level position. This movement step leaves a gap in the origin site at the left edge of the verb phrase and is presumably the same operation as the procedure that moves a thematic object to the CP edge, leaving a gap in the VP, shown in (2). The proposal that the accusative topic is base generated lower in the structure than the nominative topic receives corroborating support from several additional observations.

First, Sibawayhi points out that the relation between an accusative topic and its associated weak pronoun cannot cross into a clause coordinated with its own, though a nominative topic is not subject to this restriction. He cites the example in (29), where two complete sentences are coordinated under the topic, and states that the structure does not support the accusative inflection on the topic (p. 108). Compare this with the simple noun phrase coordination in (12).

- (29) zayd-un/*an ḍarab-ta ʕamr-an wa-ḍarab-ta ʔax-a:-hu. [p. 108]
 zayd-NOM/*ACC hit-2MS Amr-ACC and-hit-2MS brother-ACC-his.
 ‘Zayd, you hit Amr and you hit his [Zayd’s] brother.’

This is expected under the assumption that (29) represents a coordination of CPs and the accusative topic is a ‘low’, VP-level topic. The schema in (30a) represents roughly the structure of (29) with a nominative topic, which has the entire coordinate structure in its scope. With accusative (30b), the topic is generated at the VP edge, but the pronoun over which its predicate needs to be abstracted is in a clause coordinated with CP. That pronoun therefore does not fall in the structural scope of the accusative topic in VP’ at the point in the derivation at which predicate abstraction takes place.

the subject occurs in the higher shell (vP or VoiceP), vindicates the first explanation provided above, that the subject is not present in the domain of predicate abstraction, if that domain is the lower VP-shell.

- (30) a. [_{CP} Zayd_i-NOM [_{CP} you hit Amr] and [_{CP} you hit his_i brother]]
 b. [_{CP} — [_{CP} you Zayd_i-ACC hit Amr] and [_{CP} you hit his_i brother]]

Supporting evidence for the present proposal also comes from several additional examples discussed by the later grammarian Abu Ishaq Al-Shatibi (d. 1388 CE). In his grammatical treatise *Al-Maqasid Al-Shafia* (vol. 3),⁸ Al-Shatibi cites examples in which a verbal predicate is in principle available to license accusative case on a topic, but where nonetheless only nominative is allowed, because some other term intervenes between the topic and verb, apparently interrupting the relationship between them. The analysis developed here postulates that accusative topics are generated lower than nominative topics, within the verb phrase. They then move to the left clause edge, appearing in the surface structure in the same position as nominative topics. As Al-Shatibi's data shows, this short movement step is blocked by certain particles that also occur at the left clause edge. Specifically, the examples in (31) show that interrogative particles like *hal*, which introduces a yes/no question, and *mata*: 'when' block an accusative topic.

- (31) a. zayd-un/*an hal raʔay-ta-hu? [Al-Shatibi p. 90]
 zayd-NOM/*ACC Q saw-2MS-him
 'Zayd, did you see him?'
 b. ʔamr-un/*an mata: laqi:-ta-hu? [Al-Shatibi p. 90]
 Amr-NOM/*ACC when meet-2ms-him
 'Amr, when did you meet him?'

Similarly, the negating particle *ma*: 'not' blocks an accusative topic as well as the emphatic particle *la*-.

- (32) a. zayd-un/*an ma: ɖarab-a-hu ʔamr-un. [Al-Shatibi p. 90]
 zayd-NOM/*ACC not hit-3MS-him amr-NOM
 'Zayd, Amr did not hit him.'

8 Our text of Al-Shatibi's book is published by Jamia Umm Al-Qara, Mecca, 2007, edited by Muhammad Ibrahim Al-Banna, under the title *Al-Maqaasid Al-Shaafia fi Sharh Al-Khulasa Al-Kafia* in the original Arabic (to our knowledge no translation into English exists). The enigmatic title of this work translates roughly as 'Clear goals in the explanation of the adequate abridgement'. The abridgement in question is of a grammatical treatise by the earlier scholar Ibn Malik, and the words 'clear' and 'adequate' occur in the title of another of Ibn Malik's works. The title is intended to pay homage to Ibn Malik in this manner. The original text was composed in the fourteenth century (Al-Shatibi died in 1388 CE). The page numbers of the cited examples refer to volume 3 of this 10 volume work.

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