Vocatives: correlating the syntax and discourse at the interface

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Abstract: Vocative expressions have been neglected in linguistic inquiry until very recently. This article provides a novel approach to the study of vocatives based on correlating the syntax and discourse at the interface. Syntactically, we provide empirical evidence that vocatives are visible to syntactic computation, belong to the C-domain, and discoursally perform a performative “at-issue” content/meaning exactly like aboutness topics (A-topics), based on a common selective property of both constituents. They select from a set of available things/people an entity the sentence is about, and are linked to the T-domain via coreferentiality between the vocativized A-topic and the thematic subject of imperatives, i.e., pro, thus correlating both components of the grammar at the interface.

Subjects: Language & Linguistics; Grammar, Syntax & Linguistic Structure; Syntax

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PUBLIC INTEREST STATEMENT

Vocatives are very important expressions used in human language. Despite this importance, they have been neglected in linguistic investigation. Traditionally, vocatives were thought of as a pragmatic aspect of language. Syntactically, the main reason for this neglect seems to be the assumption that vocatives are not parts of sentence structure, thus not worth of syntactic study. However, this article argues and defends the idea that vocatives are a syntactic phenomenon. It provides a scientific modern analysis for vocatives based on minimalism and cartography approaches. The article is interesting for both specialists and nonspecialists. As for specialists, it develops a novel theory arguing that the ultimate interpretation of vocatives requires correlating syntax and discourse at the interface, a theory capable of accounting not only for the ultimate interpretation of these expressions, but also the properties left untouched by previous approaches. For nonspecialists, however, the article enriches and enhances the understanding of vocatives by involving data from Yemeni Arabic, in addition to data from a cross languages.
1. Introduction

Vocatives have been defined as a means for calling “the attention of an addressee, in order to establish or maintain a relationship between this addressee and some proposition” (Lambrecht, 1996, p. 267). They were considered part of the pragmatic component of the grammar, and hence neglected in linguistic research until very recently. This article aims to provide an interface approach to the analysis of vocatives based on correlating the syntax and discourse at the interface. In particular, it will be concerned with vocative expressions of the type in (1).

(1) Hey Ali, come here!

The vocative expression in (1) consists of two parts: the vocative Hey Ali and the imperative come here! The analysis developed in this article argues for coincidence between the two constructions.

Since imperatives are not the only clause type that cooccurs with vocatives, we will argue that vocatives like (2) below have a reading akin to (1). Our argument is based on interpretive expressive requirements of vocativization: vocatives are deemed to perform performative expressive act/meaning, which cannot be fulfilled unless imperatives coincide with vocatives.

(2)
   a. Hey Ali! Where are you?
   b. Hey Ali! Where is Alia?
   c. Hey Ali! I am looking for you.

The interrogative Where are you? and the declarative I am looking for you in (2a) and (2c), respectively, are argued to mean “come here” in vocatives. In (2b), the interrogative Where is Alia? is argued to mean “call Alia,” “look for Alia,” etc. depending on the context. The present analysis argues that the vocative part represents the informational/discourse coda, and the imperative part the propositional/syntactic structure, that is, the C-domain and T-domain, respectively. The analysis provides independent evidence that the vocativized nominal is the logical subject of the imperative sentence, and the thematic subject is argued to be a 2 person pro. The ultimate interpretation of the whole structure is obtained via coreferentiality between the two constituents, thus correlating the syntax and discourse at the interface.

In fact, an in-depth analysis that covers all aspects of vocatives needs several books. This article will be limited, and mainly seek answers, to the following three questions:

I. What is the internal structure of vocatives?
II. What is the external structure of vocatives?
III. Can these two structures be correlated?

Approaching these questions, we adopt a formal characterization based on syntax-cartography approaches to clause architecture, where informational coda and features have privative statuses.
and project their own categories (cf. Cinque, 2006; Cinque & Rizzi, 2010; Rizzi, 2004). The article employs the phase theoretic notions of Feature Inheritance, Feature Matching, and (long-distance) Agree.

Internally, vocatives are argued to be nominal-like constituents. Syntactic evidence provided in this article indicates that syntax should highly be considered when studying vocatives. Evidence includes distribution uniformity, agreement, ordering restrictions, syntactic relations, etc. manifested by the vocative constituents.

Externally, however, vocatives are argued to be C-domain elements, but not D-domain ones; they belong to information structure; reduced to vocative particles, perform a performatific “at-issue” content/meaning, exactly like aboutness topics, based on a common selective property of both constituents, thus providing strong evidence that discourse is crucial to the study of vocatives.

Vocatives select from a set of available things/people an entity the sentence is about, and are linked to T-domain via coreferentiality between the vocativized A-topic and the thematic subject of imperative pro, thus correlating the syntax and discourse at the interface.

We propose that vocatives are reduced to the vocative particles, and project to VocP, the head of which encodes vocativization. Voc° selects as its complement an aboutness topic (A-topic) “sitting” in the C-domain, specifically in Spec,TopP. The syntactic role is manifested via the Agr between the A-topic and pro; the latter is taken as the thematic subject of imperative and the former the logical subject of it. The discourse role is manifested through: i) the referentiality between pro in Spec,vP, and the A-topic in Spec,TopP, and ii) Top° is endowed with an [Abn] feature, criterial in nature, which yields an at-issue meaning (cf. Pesetsky & Torrego, 2007, p. 265; Shormani, 2017). We also argue that vocativization comes to play only when the head Voc° enters the derivation, and is spelled out as a (null) vocative particle. Everything being equal, the ultimate interpretation of the whole vocativized structure comes as a result of correlating both components, viz., syntax and discourse, at the interface.

The analysis pursued in this article will be based on data from Yemeni Arabic, but we will also provide cross-linguistic evidence, wherever possible, in support of the validity and reliability of the proposal.1

The rest of this article goes as follows. In Section 2, we discuss the internal structure of vocative expressions, and attempt an answer to question (I). Here, we present a number of empirical syntactic evidence that, internally, syntax is crucial to the study of vocatives. In Section 3, we discuss the external structure of vocatives, and attempt an answer to question (II), arguing that discourse is substantial to the study of vocatives, too, and that vocatives are reduced to vocative particles, and project to VocP. Voc°s complements are deemed to be A-topics. We show that vocatives are externally linked to imperative constructions, and that the vocativized nominal is an A-topic. The A-topic functions as the logical subject of, and is the antecedent of, the imperative thematic subject pro. In Section 4, we attempt an answer to question (III), proposing that the ultimate/full interpretation of a vocative expression is obtained as a result of the correlation between the syntax and discourse at the interface. Section 5 concludes the article and presents implications and issues for future research.

2. Internal structure of vocatives
In this section, we address vocative formation, examining the existing literature on vocatives cross-linguistically, and providing empirical evidence that, internally, vocatives should be handled in a syntactic approach. Based on such evidence, we propose an internal structure of vocatives.

2.1. Vocatives in the literature
It was held that vocatives only pragmatically contribute to the interpretation; they bring a referential noun phrase to focus (cf. Shormani, to appear). Some authors hold that vocatives are,
in one way or another, similar to parentheticals, appositions and topics, simply because they involve pragmatic contribution to the meaning of an utterance. They were analyzed as “separate performatives” and that like parentheticals or appositions, vocatives “do not contribute to the semantic content proper, but rather give explicit instructions as to how this content has to be processed.” It has also been held that a “vocative encodes the information to whom the sentence is addressed” in a face-to-face interaction (Sonnenhauser & Hanna, 2013, p. 15).

Vocatives have long been considered to be social-interaction elements, and perform several speech acts like threat, praise, command, complaint, request, order, etc. (cf. Shormani, to appear). They also show speaker–addressee relations like respect, formality, endearment, salience, intimacy, power, solidarity, etc. One of the earliest works in this regard is Brown & Gilman’s (1960) which tackles address in French, Italian, German and Spanish (see also Apridonidze, 1991, for Georgian). This study shows that social factors like power and solidarity dominate using 2 pronoun in address, for instance. As for power, it “refers to authority or the superiority of one person over another […] the speaker may have power over the addressee or vice versa. This is fostered by social factors like age, caste, race, and occupation” (Oyetade, 1995, p. 516). Power relations can be manifested between a teacher and student, a parent and a child, employer and employee, etc. Solidarity is viewed as inherent in nature and reciprocal in function (cf. also Shormani, to appear).

2.2. Vocative formation
Vocatives have been taken as noun phrases separated from other elements accompanying them in the sentence, due to the pragmatics/discourse functions they perform. Vocative particles are taken as discourse markers; they show solidarity and power, pseudo-intimacy, equality or condescension. They form with a noun phrase a unit of “conversation initiators and topic change contextualization cues, or redressive action for face-threatening acts” (Stavrou, 2013, p. 299, see also Shormani, to appear). The use of vocative particles has been seen as bringing a referential noun phrase to focus, to nominate, to identify an individual from a group of individuals (Shormani, to appear).

In YA, vocatives are formed by an (optional) vocative particle and a constituent of various grammatical categories like nouns, adjectives, clauses, pronouns, etc. Consider the following examples (see also Shormani, to appear).

(3) a. yaa ṣali, taʃaal haana!
   voc Ali, come here
   “Hey Ali come here!”

   b. yaa tullaab, ḩaakruu bi-jidd!
   voc students, study with-hard
   “You students, study hard!”

   c. yaa rahim, irham-nnaa!
   voc merciful, have.mercy.on-us
   “O merciful, have mercy on us!”

   d. yaa sawwaaq l-baas, ʔimši dala!2
   voc driver the-bus, walk slowly
   “Hey, bus-driver, drive slowly!”

   e. yaa faaʃiil l-xayr!
   voc doer the-good
   “You, who are doing good!”
f. yaā-lii ʕaamīl ɗajah, ʔiskut!
   voc-who doing noise, shut.up!
   “Hey! Who is doing noise, shut up!”

g. yaā-lii ʔiʕilam bi-ʔaat-il
   voc-who knows with-situation-my
   “O who knows my situation!”

h. yaā-lii maa-ʔindaŋ ᵃmīr!
   voc-who not-have conscience
   “You who have no conscience!”

i. yaa ʔant, yaa man ʔant laa ʔusammi!
   voc you, voc who you not I.name
   “You, who I do not name!”

The vocativized constituents are ʕāli, tūlaab, ᵃrahiim, sawwaaq i-baarq, ʔilī ʔiʕilam, ʔilī maa-ʔindaŋ ᵃmīr and ʔant yaā man ʔant laa ʔusammi in (3a-i), respectively. They are of different grammatical categories, viz., a proper noun, common noun, noun phrase, adjective, nonfinite clause, finite clause, negative clause and pronoun in (3a-i), respectively.⁴

To conclude this section, it should be pointed out that vocatives have received relatively little attention in linguistic research, compared to other syntactic phenomena. The neglect is attributed to the assumption that vocative expressions are not instances of predication, and that they are not arguments of a predicate, say, a verb (see, e.g., Zwicky, 1974, Shormanī, to appear). Zwicky (1974, p. 787), for instance, views the vocative in English as a noun phrase “set off from the sentence it occurs in by special intonation [...] and it doesn’t serve as an argument of a verb in this sentence.” Vocatives have been seen as “noun phrases [...] not syntactically or semantically incorporated as the arguments of a predicate; they are rather set apart prosodically from the body of the sentence that may accompany them” (Levinson, 1983, p. 71).

It turns out, then, that the main reason of neglecting vocatives in linguistic investigation is the assumption that they have no syntactic status. However, we argue in the following section that syntax plays a role in the study of vocatives in YA and cross-linguistically. We also provide evidence from YA, and some other languages, in support of our views. This is addressed in the following section.⁵

2.3. Syntactic evidence

As noted earlier, vocatives have been considered nonarguments, and not instances of predication. Hence, they have no syntactic status; they have rather been seen as “less worthy of syntactic theorizing than constituents whose presence is obligatory” (Lambrecht, 1996; p. 267, cf. also Stavrou, 2013). Some authors (e.g., Levinson, 1983) argue that vocatives are “a traditional means of marking nominal forms of address” or as discourse/pragmatic markers. Some others (e.g., Kottum, 1983), however, argue in favor of morphology as an approach to studying vocatives.

In morphological approaches, the vocative was seen as Case (see also Schaden, 2010).⁶ Some others (see, e.g., Ladd, 2008; Varga, 2008; and the references therein) hold that vocatives should be tackled within phonology, specifically prosody and/or intonation. In this approach, the vocative was seen as a noun phrase separated prosodically from the rest of the sentence, and “does not carry any information about grammatical relationships, its purpose being entirely pragmatically conditioned” (Stavrou, 2013, p. 299).
Very recently, however, some studies have proposed that vocatives should be studied within syntax (see, e.g., Haegeman, 2014; Hill, 2007, 2014; Portner, 2004; Stavrou, 2013). In the following section, we will provide empirical evidence from YA in support of this mainstream of thought. The syntactic evidence will be based on syntactic phenomena like distribution uniformity, agreement, ordering restrictions, etc. (cf. e.g., Haegeman, 2014; Moro, 2003; Stavrou, 2013).

Perhaps it is Ross (1970) who first drew the attention that vocatives should be handled within a syntactic approach. He argues that vocatives lie within the C-domain, proposing that vocatives “relate to the performative analysis somehow” (p. 238). Consider (4) (cf. Ross, 1970, p. 237, example (59)).

(4) Hoboken is a fine city, my/*her/*his dear friend.

Ross argues that the fact that my, but not her or his, is required in (4) lies in that there might be a speech act encoded in a higher projection, say, above TP. He thus seems to move from a pragmatic analysis of vocatives to a syntactic one.

2.3.1. Distribution uniformity
Vocatives occur either to the left or to the right of the clausal periphery cross-linguistically, which means that vocatives have the same distribution (see also Hill, 2007; Stavrou, 2013). Consider (5a) and (5b) from YA. The former illustrates sentence-final vocatives and the latter sentence-initial ones.7

(5) a. qa qul-k lak, yaa ʔustaað-i
   ASP said-I to.you, VOC teacher-my
   “I have told you, O my teacher!”

b. yaa ʔustaað-i, qa qul-k lac
   VOC teacher-my, ASP said-I to.you.
   “O my teacher, I have told you!”

2.3.2. Agreement
In addition to vocatives formed by a vocative particle and a constituent, a vocative in Arabic can also be formed by a common noun of profession, religion, kinship, etc., where these nouns replace the vocative particles. These vocatives are called “grammaticalized terms,” and show Agr between the common noun and the vocative proper noun as illustrated in (6) (cf. Shormani, in press: a).

(6) a. ʔustaað ʕali, tɑɑaɑl!
   teacher.VOC.MS ʕali.VOC.MS, come.MS
   “Teacher Ali, come!”

b. ʔustaaðɑh ʕalia, tɑɑal-i!
   Teacher.VOC.FS ʕalia.VOC.FS, come-FS
   “Teacher (f) Alia, come!”

The noun ʔustaað in (6a) agrees with the proper noun ʕali in all φ-features (i.e., person, number, and gender), viz., both of them are masculine, singular and vocative. Likewise, ʔustaaðɑh in (6b) agrees with the proper noun ʕalia in all features, that is, both are feminine, singular and vocative. The agreement manifested in these structures adds strong evidence in support of a syntactic analysis of vocatives.
Strong empirical evidence of agreement comes from complex vocatives (i.e., vocatives modified by one or more vocative constituents). Consider (7).

(7) a. yaa taalib, yaa ġabi,
   VOC student.MS, VOC stupid.MS
   “You! Stupid student!”

b. *yaa taalib, yaa ġabiyyah,
   VOC student.MS, VOC stupid.FS

As can be observed, in complex vocatives the adjectival vocative (i.e., the modifier) must agree with the nominal vocative it modifies in all $\phi$-features. Else, the structure is ungrammatical as shown in (7b), where the nominal vocative is masculine singular while the modifying vocative (i.e., the adjectival vocative) is feminine singular.

2.3.3. Ordering restrictions

Ordering restrictions have been seen as a diagnostic for syntactic evidence (see, e.g., Corver, 2008; Haegeman, 2014; Hill, 2007; Moro, 2003). What this diagnostic indicates is that vocative elements should occur in certain order. In this section, we will provide empirical evidence that there are ordering restrictions manifested not only by the vocativized elements, but also by vocative particles.

We first examine ordering restrictions manifested by vocative particles. In YA, two particles may cooccur in a vocative expression. However, they must be in a certain order as shown in (8) (cf. also Hill, 2007; Moro, 2003; Shormani, in press: a).10

(8) a. yeeh yaa ġali!
   VOC VOC Ali
   “Hey! You Ali!!”

b. *yaa yeeh ġali!
   VOC VOC Ali

c. waa yaa ġali!
   VOC VOC Ali
   “Hey, you Ali!!”

d. *yaa waa ġali!
   VOC VOC Ali

In (8a & b), the vocative particle yeeh cooccurs with yaa, and in (8c & d) waa cooccurs with yaa. In (a & c) examples, the structure is grammatical in both, but it is not the case in (b & d) examples. This points out to the fact that both yeeh and waa must precede yaa in YA vocatives.

A strong piece of evidence of ordering restrictions comes from structures where vocative particles cooccur with exclamation particles as shown in (9) (cf. also Hill, 2007).

(9) a. yuuh, yaa ġali!
   EXL VOC Ali
   “Oh! Hey, Ali!!”

b. *yaa, yuuh ġali!
   VOC EXL Ali
Further empirical evidence of ordering restrictions in vocatives comes from modified/complex vocatives, as illustrated in (10).

(10)  a. yaa taalib yaa yabi!
      voc student  voc stupid
      “You stupid student!”

    b. *yaa yabi yaa taalib,
       voc stupid  voc student

In (10a), the nominal vocative yaa taalib occurs before the adjectival vocative yaa yabi. When this ordering is reversed, the result is an ungrammatical structure as in (10b). This ungrammaticality of (10b) indicates that ordering is very much respected in YA vocativization. One way to account for the ungrammaticality of (10b) is that the nominal vocative is the head and the adjectival vocative is the modifier. In Arabic, in general, and YA in particular, a modifier must follow the head it modifies.

Another modified complex vocative structure that provides strong evidence for ordering restrictions is given in (11).

(11)  a. yaa taalib yaa yabi yaa-lli sarḥaan!
      voc student  voc stupid  VOC-who absent-minded
      “You absent-minded, stupid student!”

    b. *yaa taalib yaa-lli sarḥaan yaa yabi
       voc student  VOC-who absent-minded  voc stupid

In (11), there are three vocative types: nominal, adjectival and clausal, viz., yaa taalib, yaa yabi, yaa-lli sarḥaan, respectively. When this ordering changes as in (11b), the result is an ungrammatical vocative structure.

2.3.4. Syntactic relations
In YA vocatives, we find syntactic relations between a vocative noun and another constituent. These relations are syntactic in nature. They include V-object, passivization, modification, etc. Considering deverbal vocatives in YA, there is a clear V-object relation in these vocatives. Consider the vocative structures in (12).

(12)  a. yaa ʕaṣi waaliday-k!
      voc disobeying parents-your
      “You, disobeying your parents!”

    b. yaa faaṣil l-xayr!
       voc doer the-good
       ‘You, doing good!

V-object relation is purely syntactic in nature. In (12a), for example, the noun waaliday-k functions as an object to the deverbal vocative ʕaṣi, which is in turn derived from the V yiḥși. The same thing can be said about (12b), where l-xayr functions as an object to the deverbal vocative faaṣil. This property indicates that vocatives behave like construct state, a Semitic construction that manifests possessivization/association of a head N with its genitive DP complement (see, e.g., Benmamoun, 2000; Shormani, 2014, 2016).
As for passivization, we can notice it in past participle vocatives in YA examples like (13).

(13) a.  yaa maksuur n-namuus!
    voc broken the-honor
    “You nonhonorable!”

    b.  yaa majnuun!
    voc mad
    “You idiot!”

The term maksuur in (13a) is an adjectival passive; it is vocatively used to express abuse. It is formed from the V yiksir “to break,” and the term n-namuus can be thought of as a passivized subject of a personal passive structure. The adjectival passive majnuun in (13b) could be viewed as a passivized subject of an impersonal passive structure, due to the fact that the V it derives from, that is, yijnan “to become mad” is intransitive. This property makes vocatives similar to adjectival passive.

Another syntactic relation that can be observed in YA vocatives is that of modification, as has been discussed in connection with the examples in (11), where a vocative modifies another vocative. YA also provides strong evidence for modification within the same vocative. For example, later in (14) the adjectives ?atwal and ?afdal “taller than” and “better than,” respectively, modify the vocatives, that is, the numeral waahid and the common noun duktuur, respectively.

(14) a.  yaa ʔatwal waahid!
    voc taller one
    “Hey! Taller one!”

    b.  yaa ʔafdal duktuur!
    voc better doctor
    “You best doctor!”

    c. *yaa ʔatwal
    voc taller

The fact that the adjectives ʔatwal and ʔafdal are modifiers, but not vocativized adjectives, lies in that they cannot be vocativized as clearly manifested by the ungrammaticality of (14c).12

A final piece of syntactic evidence comes from the repetition of the vocative particle yaa in modified vocatives. Considering again the vocatives in (11), it is clear that yaa is repeated in every vocative. If it happens that yaa is not mentioned in one of these constituents, the result is an ungrammatical vocative structure as shown in (14d).13

(14) d. *yaa taalib ɣabi yaa-lii sarhaan!
    voc student stupid voc-who absent-minded

It turns out, then, that vocative expressions seem to have internal-structure properties similar to those of noun phrases. The syntactic evidence provided in this section strongly suggests that vocatives are visible to the syntactic computation. They are merged like any nominal constituent; they exhibit strict ordering, agreement, modification, etc. (see also Ashdowne, 2002).14 In fact, no single piece of evidence can be accounted for without an appeal to the syntactcization of the vocative phrases, where the (narrow) syntax is very much involved (cf. Hill, 2014).
However, we would like to emphasize that vocative particles are not article/determiner-like elements. It is true that articles/determiners select for nouns, but as the examples discussed so far indicate, it is clear that nouns are only one ingredient of the set of the constituents vocative particles can select for. There are, in fact, several properties that make vocative particles different from, and contrasted with, articles/determiners. The most important of these properties are: i) vocative particles select for nouns, adjectives, relative clauses, and even pronouns as their complements, which is not the case with articles/determiners, ii) they cannot be iterated like articles/determiners in coordinated vocatives (cf. Moro, 2003; we return to this point in Section 3), iii) they have discourse/pragmatic functions, in that they encode/perform speech acts, iv) they are almost optional (we discuss these two issues in Section 3.1), v) lexical items (LIs) can be grammaticalized, and when so, they function as vocative particles (and in that case they lose their lexical identity, as examples in (5)) show, vi) there is good evidence that vocative particles belong to C-domain (we return to this issue in Section 3.2), vii) they introduce an “at-issue” content, and link this “at-issue content” with the propositional domain (we return to this issue in Section 3.3), viii) their complements are extremely similar to topics (cf. Portner, 2004; Lambrecht, 1996; we return to this issue in Section 3.1), and ix) more importantly, they correlate the syntax with discourse (Section 4 is devoted to this issue).15

Based on all this, we propose that vocatives are reduced to the vocative particles, and project to VocP, whose head is (optionally) occupied by the vocative particles/grammaticalized elements. Their complements, we will argue, are topics, specifically aboutness topics. Thus, (15) is hypothesized as the internal structure of vocatives. We will discuss the feature specifications of Voc° and Top° in Sections 3.2.1 and 3.2.2., respectively.

\[
(VocP) \\
\text{Voc}^+ \text{Voc} \text{Top}^+ \text{... VocP}
\]

In our system, the vocative particle yaa (and its variants) is merged in Voc° whose complement is the A-topic in Spec,TopP. The lower VocP is a modifier to the first VocP. It exhibits recursiveness of vocative structures.

The system proposed in (15) differs from those in previous studies such as SpeakerP, RoleP, AdresseeP, etc. (see, e.g., Corver, 2008; Espinal, 2013; Haegeman, 2014; Hill, 2007, 2014). Almost all these studies propose that the vocative particle is merged in the specifiers of these projections. In (15), the vocative particle is merged in Voc°, but not in its Spec. One piece of evidence supporting (15) is given by examples like (16), where discourse-based adverbs like tayyab and xalaq and discourse markers like tamaam are used in vocative expressions.16

\[
(16) \quad \text{a. tayyab yaa \text{\textit{Ali}}, ta\text{\textit{aal}}!} \\
\quad \quad \text{well voc Ali, come} \\
\quad \quad \text{“Well Ali, come!”}
\]

\[
\text{b. xalaq} \quad \text{yaa \text{\textit{Ali}}, ta\text{\textit{aal}}!} \\
\quad \quad \text{enough voc Ali, come} \\
\quad \quad \text{“Enough Ali, come!”}
\]
c. tamam yaa ṣali,  taṣāal!
ok, voc Ali, come
“Ok Ali, come!”

The most likely position, where the discourse-based adverbs ṭayyb and xalaṣṣ and the discourse marker tamaam in (16) are merged, seems to be Spec,VocP. If VocP is the topmost discourse-based projection, as hypothesized in this article (as we shall see later on (see (36))), then the problem imposed by such discourse-based adverbs and markers is substantially solved (see also Fischer, 2006).¹⁷

To conclude this section, and for expository purposes, we will just limit the discussion to nominal complements, leaving other types of complements, that is, adjectival, clausal, etc. for future research. We would like also to stress that although syntax is crucial to the study of vocatives, this cruciality seems to work only for the internal structure of these constructions. There are a number of studies that have employed syntax in the study of vocatives, and which propose different systems. For example, Hill (2007, p. 2079) proposes RoleP, assuming that “[t]he vocative phrase is a functional domain” that must be projected to RoleP. Some others propose other projections like SpeakerP, SAP (= Speech Act Phrase), AddresseeP, etc. (see, e.g., Corver, 2008; Espinal, 2013; Haegeman, 2014; Hill, 2007, 2014; Mora, 2003; Stavrou, 2013). However, as will be thoroughly discussed in the remaining part of this article, syntax alone seems to be not “sufficient” to handle all aspects of vocatives. It will also be shown that we need to involve another component of the grammar, namely discourse, whose role in the study of vocatives cannot be dispensed with. It will be demonstrated that the ultimate interpretation of vocative constructions requires a correlation of both components, viz., syntax and discourse, at the interface. This correlation gives us enough room not only to fully understand the nature of vocatives, but also to account for all the properties of such constructions.

3. External structure
A well-known fact of the vocative particles like hey/you in English, O in French, Italian, Greek, ei in Catalan, yaa in Arabic, măi in Romanian, etc. is that they are discourse markers (see, e.g., Espinal, 2013; Haegeman, 2014; Hill, 2007; Kasher, 2013; Lyons, 1999; Sonnenhauser & Hanna, 2013; Stavrou, 2013). We will take this fact to argue that vocatives are part of the discourse setup; they belong to the C-domain, but not to the D-domain (cf. Moro, 2003; Portner, 2004).¹⁸ A strong piece of evidence in support of this comes from coordination, taking place between two distinct vocative constituents as illustrated in (17).

(17) a. yaa ṣali wa ṣalīa, ʔiktubuu!
   voc Ali and Alia, write
   “Hey, Ali and Alia, write!”

b. *yaa ṣali wa yaa ṣalīa, ʔiktubuu
   voc Ali and voc Alia, write

The fact that yaa is not iterated in (17b) is the only reason the ungrammaticality of (17b) is ascribed to. If the vocative particles belong to the DP layer, then they would be able to iterate in the same way articles do as in (17c), for instance.

(17) c. al-mudarris wa t-taalib
   the-teacher and the-student
   “The teacher and the student”
The fact that vocative particles are not iterated is supported cross-linguistically. Examples in (18a & b) and (18 c & d), from Italian and Catalan, respectively, provide strong evidence for this claim (slightly modified from Moro, 2003; p. 259, and Espinal, 2013; p. 116, respectively).

(18) a. O Maria e Pietro, Gianni è arrivato.  
   "O" Maria and Pietro, Gianni arrived.  

b. *O Maria e o Pietro, Gianni è arrivato.  
   "O" Maria and Pietro, Gianni is arrived  

c. Ei, Joan i Maria, acosteu-vos.  
   "Hey, Joan and Maria, come closer to me."  

d. *Ei Joan i ei Maria acosteu-vos.  
   "Hey, Joan and Maria, come closer you."

If this is true, then, vocative is expected to “sit” in C-domain, and since the C-domain represents the information structure (i.e., discourse, see, e.g., Benincà, 2001; Erteschik-Shir, 2007; Lambrecht, 1996; Rizzi, 1997, 2004, 2006; Vallduví, 1992), it follows that vocatives must perform a discourse function, that is, to address, to call an interlocutor. We discuss this in Section 3.2. If we assume that the vocative constituent is the logical subject of imperatives, it follows that vocatives are also linked to the propositional component, that is, the T-domain, of the grammar. In this sense, the relation between a speaker and an addressee is reflected via the imperative structure, which, in turn, performs a performative expressive meaning (or simply a speech act). We tackle this in Section 3.3.

In this sense, vocatives identify, nominate, pick up an entity from a group of people and bring it to focus. In this behavior, vocatives are extremely similar to topics (see, e.g., Shormani, to appear).

The idea that vocatives are similar constituents to, and contrasted with, topics has in fact been suggested in the literature (see, e.g., Lambrecht, 1996; for French, Espinal, 2013; for Catalan, Portner, 2004; for English). For example, Portner (2004) argues that vocatives are extremely similar to a particular syntactically distinct variety of topics, and concludes that vocatives are to be distinguished from hanging topics, familiarity topics, etc. Lambrecht (1996, p. 277), in addition, considers vocatives to be a subvariety of topics. He describes vocative and topic constituents as “coding a referent.” This referent is connected to the speech act and accessible from the discourse through “a pragmatic link of relevance.” However, although the relevance assumption is correct, Lambrecht leaves it open as to what the nature of the pragmatic link is. And more importantly, all these studies (except Portner, 2004) leave it open as to which topic is exactly similar to the vocative. Portner (2004) alludes to this similarity and suggests that vocativized nominals are similar to aboutness topics, but he left it open there, as well.

However, the question is: which topics are similar to vocatives, as there are several types of topics? We will argue that the topics that are extremely similar to the vocativized nominals are the aboutness topics. In the following section, we compare and contrast topics, aboutness topics and vocatives.

3.1. Topics, aboutness topics and vocatives

The notion “topic” has been defined based on linguistic components, specifically in terms of either phonology or syntax (see, e.g., Erteschik-Shir, 2007; Reinhart, 1981). Phonologically, stress and
intonation have been employed in defining a topic as an unstressed expression. Syntactically, parti-
cularly in terms of linear ordering, it has been defined as the first element in the sentence. Topics have
also been classified into two types, namely sentence topics and discourse/pragmatic topics. These two
types of topics are illustrated in (19) (modified from Reinhart, 1981, p. 54, cf. also Shormani, 2017).

(19)  
a. Mr. Morgan is a careful researcher and a knowledgeable Semiticist, but his originality
leaves something to be desired.
b. Sentence topic: (19a) is about Mr. Morgan
c. Discourse topic: (19a) is about Mr. Morgan’s scholarly ability

Reinhart (1981, p. 54) holds that sentence topics and discourse/pragmatic topics are contrasted
with each other as the difference between (19b) and (19c) suggests. The difference lies in that
while “sentence topics must correspond to an expression in the sentence, discourse topics are
topics of larger units and can be more abstract,” According to Reinhart, it is (19b) (but not (19c))
that the notion “aboutness the technical term sentence-topic is intended to capture in linguistic
theory.” As for (19c), she refers to it as a discourse topic (see also Shormani, 2017).19

Reinhart (1981) also argues that the topic is not necessarily the first element in the sentence as shown
in (20c), where Jane, but not John, is the topic (but see Bianchi & Frascarelli, 2010; Krifka, 2001; for
different conceptions).

(20)  
a. John saw Jane yesterday. John is the topic
b. Did anybody see Jane yesterday?
c. John saw Jane yesterday. Jane is the topic

Reinhart argues that though Jane is not the subject, nor is it the first element in the sentence, it is
the topic in (20c) because it is what the sentence is about (i.e., as an answer to the question
in (20b)).

However, according to Bayer (1980, p. 7) subjects are more discourse topics than objects are.
Bayer takes the assumption “old vs. new information” as a criterion to distinguish subject topics
from object ones. The former, according to him, express “old information” and “coincide more
often with the intuitively felt topics than ‘new information’ and so on.” Another view favoring
discourse criterion is advocated by Krifka (2001). Krifka argues that speech act itself plays a role in
selecting topics, “an initiating speech act that requires a subsequent speech act like an assertion,
question, command, or curse about the entity that was selected” (Krifka, 2001, p. 25), which is
performed by the imperative structure. Bayer’s and Krifka’s position that the subject is an A-topic is
in fact at the heart of this proposal, in that the A-topic will be the logical subject of the
imperatives.20 We are also following Shormani (2017) in that the notion “aboutness” is related
(basically) to the discourse of the sentence, rather than to the sentence itself, and consequently,
A-topics are discourse topics.

The notion “aboutness” has indeed been tackled in terms of discourse vs. semantic aboutness.
Discourse/pragmatic aboutness is seen as what an interpreted sentence is about in a given context
or discourse environment (Reinhart, 1981, p. 58). According to Reinhart, a sentence in a particular
context may not be topically marked in a specific way, that is, either by intonation or dislocation.
Given this, Reinhart suggests, an overt aboutness topic may not be there, or one salient referent
denoted by some DP in a given sentence. In this sense, pragmatic aboutness seems to have a
discourse connotation. The semantic notion of aboutness, on the other hand, could be viewed as
not very much adequate, compared to discourse aboutness. According to Reinhart (1981), semantic
aboutness is what a contextually isolated sentence may potentially be about, but discourse
aboutness specifies the sentence in a given discourse. What concerns us here is, in fact, the
discourse aboutness, and hence discourse topics (cf. Shormani, 2017):
(21) a. tayyb, wa ūali?
    Well, and Ali
    “Well, what about Ali?”

    b. ūali jizīq qabl qaliil
    Ali went before little
    “Ali has just gone.”

The constructions in (21) are part of a discourse in a question-answer conversation. In (21b), ūali is the aboutness topic the sentence is about due to the fact that it answers the question in (21a). Interestingly, the same thing can also be said about English, as clear from the English gloss (cf. Portner & Yabushita, 1998; Shormani, 2017).

Let us now turn to the vocatives and their relation to topics. Taking the aforementioned properties of topics into account, consider (22) from English.

(22) a. Ali, come here!
    b. Ali, he will come tomorrow morning.

The mere difference between (22a) and (22b) is that while in (22a) the addressee is Ali, it is someone else in (22b). However, this is not very much important once the speaker tries to activate the addressee’s mental representation of Ali, he be Ali or anyone else.

If Ali in (22b) is an aboutness topic, and given the similarity between both (22a) and (22b), it is expected that Ali in (22a) is also an aboutness topic. In this sense, it seems that aboutness is a relation between discourse referent(s) and syntax. As noted so far, the assumption that vocatives are similar to aboutness topics has been suggested in the literature, but no researcher has studied them, and applied these ideas. Vocatives and topics are said to be similar in scope and function. For example, Lambrecht (1996) has pointed out that vocatives and topics are very similar drawing on data from French and some other languages. Furthermore, Portner (2004) draws a parallelism between topics and vocatives on the basis of their encoding of “expressive content/meaning.” Thus, we assume, following Portner (2004), that vocatives and topics encode “expressive content/meaning” and activate the addressee’s mental representation of someone/thing. Consider (23) from English.

(23) Ali, I like his t-shirt.

The first thing to come to mind is that Ali in (23) has a performative expressive function. By introducing it in the initial position in (23), the speaker is requesting the addressee(s)/hearer(s) to activate their mental representation of a person named Ali. The proper noun Ali introduces a new information in the discourse. In this sense, the addressee’s understanding of (23) is conditioned by activating his or her mental representation of Ali. It is also held that “[t]he vocative encodes the information to whom the sentence is addressed” (Sonnenhauser & Hanna, 2013, p. 15).

In terms of aboutness expressive proposition (or performative expressive meaning), (23) has a meaning (produced by the speaker telling the addressee) akin to (24) (cf. Portner, 2004, p. 9).

(24) “I hereby request that you activate your mental representation of Ali.”

I extend this notion of aboutness to vocatives. Consider the English vocative expression in (25).

(25) Hey Ali! I like your t-shirt!

In terms of aboutness expressive proposition, the speaker in (25) is requesting the addressee to activate his or her mental representation of Ali, but the addressee in (25) is Ali himself. By way of
attention-directing/attracting, that is, the addressee will turn to the speaker, pay attention to him, listen to him, become an interlocutor with him, respond to him, etc. saying, for instance, “yes,” the speaker in (25) will understand that Ali, the addressed person, is saying (26).

(26) “(I inform you) that my mental representation is active.”

This also seems to hold true of vocatives cross-linguistically. Consider (27–29) from French, Italian and YA, respectively.

(27) a. Le Seigneur est mon esperance.
    the Lord is my hope
    The Lord is my hope.

    b. Seigneur, vous êtes mon esperance.
    Lord you are my hope
    O, Lord you are my hope!

(28) a. Leo viene a trovarmi.
    Leo come to visit.me
    “Leo comes to visit me.”

    b. Caro Leo, vieni a trovarmi.
    dear Leo come to visit.me
    “Dear Leo, come to visit me!”

(29) a. Ŧali ʕa yizuurni ɣudwah
    Ali will visit me tomorrow
    “Ali will visit me tomorrow.”

    b. Ŧali toŋaal wa zuurani ɣudwah!
    Ali come and visit.me tomorrow
    “Ali, come and visit me tomorrow.”

If the role played by a discourse constituent is activating the mental representation of an addressee, it is then tempting to postulate that vocatives and topics do the same task. The addressee’s mental representation is activated in the same way in both the vocative and the aboutness topic constructions, just by introducing a NP (the person) we intend to talk about (in topic constructions), or address (in vocative constructions) in the initial position of the sentence. The first-introduced elements in (27–29) are the proper names, in each pair, but the (a) examples are topics while the (b) ones are vocatives.

Furthermore, Espinal (2013, p. 128, fn. 6) argues that when the nominal occurs as the rightmost element, while the vocative particle is in the initial position, the nominal must be taken as a topic. In this sense, she considers that the postsentential nominal is encoded in the informational coda as a topic, though it has a vocative sense. The vocative sense the topics nois and tio have in (30) seems to be the result of being encoded as addressees, but this “encoding” is not driven by the use of the vocative particles.

(30) a. Ei! M’agrada la samarreta que portes, tío.
    me.likes the T-shirt that wears pal
    “Hey! I like your T-shirt, man!”
Another crucial piece of evidence is that when vocatives are coordinated as shown by the examples in (18), reproduced here as (31) and (32), for convenience, the vocative particles are not iterated.

(31)  a. O Maria e Pietro, Gianni è arrivato.
     voc Maria and Pietro, Gianni is arrived
  b. *O Maria e o Pietro, Gianni è arrivato.
     voc Maria and voc Pietro, Gianni is arrived

(32)  a. Ei, Joan i Maria, acosteu-vos.
     voc Joan and Maria come.closer.you
     “Hey, Joan and Maria, come closer to me.”
  b. *Ei Joan i ei Maria acosteu-vos.
     voc Joan and voc Maria come.closer.you

The (a) examples are suggestive of our claim, in that Pietro and Maria behave exactly similarly like A-topics. We assume that the A-topichood of these vocativized nominals stems from being discourse referents or contextualized elements in the discourse setup, exactly like A-topics.

If one adopts the standard assumption that vocative particles are optional across languages (see, e.g., Espinal, 2013, p. 112; Haegeman, 2014; Hill, 2014; Janson, 2013; Kasher, 2013; Kleinknecht, 2013; Lambrecht, 1996; Stavrou, 2013; Sonnenhauser & Hanna, 2013; Zwicky, 1974), this optionality supports the “referring” feature of vocativized nominals. The fact that a nominal constituent can be vocativized without the need of a vocative particle is indicative evidence that vocativized nominals are similar to aboutness topics. Compare and contrast (33) with (34).

(33)  yaa ʕali, jiʔ haana!
     voc Ali, come here
     “Hey Ali, come here!”

(34)  ʕali, jiʔ haana!
     Ali, come here
     “Ali, come here!”

The proper noun ʕali is the vocative in both (33) and (34), though the vocative particle in the latter is absent. In fact, (34) is more an A-topic than a vocative. To see how this similarity is manifested, compare and contrast (34) with (35) below, where ʕali is an A-topic.

(35)  ʕali jaaʔ haana (ʔams).
     Ali came here (yesterday)
     “Ali came here (yesterday).”

If we take “address” to be a feature of Voc°, as we will see in Section 3.2.1, it seems that the mere difference between (34) and (35) turns out to be that while the former is formed in the imperative, the latter in the past tense.
It turns out that our prediction that vocatives are reduced to the vocative particles is borne out. The overtness/covertness of the vocative particle may well be argued to be a matter of Spell-Out. That is, for instance, in (33) the vocative particle is overt, that is, spelled out, while it is covert in (34), that is, unspelled out.

### 3.2. Informational structure

It has long been argued that informational coda has a structure; this structure is C-domain (see, e.g., Benincà, 2001; Erteschik-Shir, 2007; Lambrecht, 1994; Rizzi, 1997, 2004, 2006; Valduvi, 1992). The C-domain has been seen as representing root-clause properties like interrogativeness, declarativeness, imperativeness, and as encoding discourse features like topichood, force, focus, etc. It is the layer(s) where discourse/pragmatic function is expressed. This view has been parallel to the incorporation of cartography in syntactic analysis. Cartography-based approaches to projection assume that features and information coding factors have structural representation and project their own projections.

The C-domain is “the interface between a propositional content (expressed by IP) and the superordinate structure (a higher clause or, possibly, the articulation of discourse, if we consider a root clause)” (Rizzi, 1997, p. 283, see also Benincà, 1983, 2001; Benincà, 2006). Thus, given (15), we propose (36) as the external structure of vocatives (cf. Benincà, 1983, 2001, 2006; Shormani, 2017).

\[ (36) \text{VocP} \ldots \text{TopP} \ldots \text{(ForcP)} \ldots \text{(FocP)} \ldots \text{TP} \]

In (36), VocP is the topmost projection, followed by TopP, which is in turn followed by ForcP, FocP and TP. The proposal in (36) gains support from vocative structures in YA as illustrated in (37). Surprisingly, it also gains support from English as shown by the translation of these examples.

\[ (37)\]

- **a.** yaa ʕali, ʔayna ʔantah? taʕaal!
  \begin{verbatim}
  voc  Ali, where you?   come
  \end{verbatim}
  “Hey Ali, where are you? Come!”

- **b.** yaa ʕali, ʔinna ʔallah maʕak!
  \begin{verbatim}
  voc  Ali, C   Allah with.you
  ‘O Ali, Allah be with you!
  \end{verbatim}

- **c.** yaa ʕali, muh l-kitaab maʕak, taʕaal!
  \begin{verbatim}
  voc  Ali, is   the-book with.you, come!
  “Hey Ali, is the book with you, come!”
  \end{verbatim}

- **d.** *yaa ʕali, muh ʔinna l-kitaab maʕak, taʕaal!
  \begin{verbatim}
  voc  Ali, is   C   the-book with.you, come!
  \end{verbatim}

- **e.** *yaa ʔayna ʔantah? ʕali, taʕaal!
  \begin{verbatim}
  voc  where you   Ali, come
  \end{verbatim}

These examples illustrate that VocP is the topmost projection, and that TopP is higher than ForcP. In (37b), the complementizer, that is, ʔinna, is base-generated in Forc°.22

What remains for us to explain is the feature specifications of the heads Voc° and Top° in our system, and we tackle these in the following sections.
3.2.1. Voc’s specifications

Recall that vocatives are reduced to vocative particles. It follows that Voc° may not be a phase head in the C-domain, hence not the locus of C’s features. Bearing in mind (15) and (36), let us examine the feature specifications of Voc°.

To begin with, vocative particles, overt or covert, are transitive in some way, in that they select for some elements as complements, as illustrated in (38).

(38) a. *yaa VOC
    voc
b. *yaa l-bint VOC the-girl!
c. yaa bint!
    voc girl!
    “Hey, girl!”

The ungrammaticality of (38a) indicates that the vocative particle must have a complement. This indicates that Voc° has a c-selectional (constituent selection) feature. Since the vocativized constituents we are dealing with in this study are only nominals, we call this c-selectional feature [N].

The contrast between (38b) and (38c) suggests that the complement cannot be definite. In all the examples discussed so far, the use of the vocative particle yaa, for instance, indicates that it specifies, identifies or picks up a person or a group of people as addressee(s). It thus makes its NP-complement specific. This implies that the head Voc° has a specificity [Spcty] feature. Further, since Voc°’s complement always represents the addressee, then, Voc° has an addressee [Adrs] feature. Finally, since the “addressee” is (always) characterized as a 2 person entity, then Voc has a 2 person [2Pers] feature.

In what follows, we discuss and account for the obligatory presence of these features on the head Voc°. As for the [Spcty] feature the head Voc° has, consider (39).

(39) a. yaa ūali, taʕaad!
    voc Ali, come
    “Hey Ali, come!”

In this example, it is clear that the vocative particle yaa specifies Ali and no one else from among a group of people. The situation may also involve several people named, for instance, Ali, Ahmed, Khalid, and even feminine entities such as Alia, Fatima, Zaynab, etc., but the speaker (with the help of the vocative particle yaa) calls/addresses only Ali out of all these people. This specificity can also be taken as a distinguishing feature of vocative particles, in that the vocative particle renders an indefinite constituent specific (cf. also Hill, 2014; Shorman, 2015, 2017; Stavrout, 2013). Thus, this obligatory presence of the [Spcty] feature on the head Voc° comes from the interpretation, being a discourse requirement. Regarding the [Adrs] feature, it is also clear that the use of vocative particles is intended to address an interlocutor, an addressee, in other words. As illustrated in (39) earlier, what makes ūali the entity that is addressed is yaa. 23

It is widely held that vocatives are always 2 person entities. (40) demonstrates that only 2, but not 1 or 3, pronoun is possible.

(40) a. heeh ūant-i
    voc you-fs
    “Hey you!”
b. *heeh ?ana/nahnu
   voc  I/we

c. *heeh hua/hiya!
   voc  he/she

It turns out, then, that the head Voc° is the locus of [Spcty], [Adrs] and [2Pers] features in vocative constructions. Thus, given (15), and bearing in mind what we have discussed so far, (41) is hypothesized.

(41) Voc° is a discourse-based position in the C-domain; it is endowed with [Adrs], [Spcty], and [2Pers] features, and yields a performative expressive meaning.

(41) states that the head Voc° is a discourse-based position, and it is this head that specifies, identifies or picks up a person from among a group of people as the addressee. Due to being endowed with [Adrs], [Spcty], and [2Pers] features, it yields a performative expressive meaning that vocativizes this identified person/entity.

3.2.2. Top's specifications

If VocP is not a phase, as assumed before, then TopP, headed by Top°, can be taken as a phase in the C-domain. If so, it must exhibit the characteristics of phase heads in general, that is, it must have the feature composition of C: φ-features and Tense (cf. Chomsky, 2001, et seq). As for the former, Arabic provides strong empirical evidence that C has φ-features as shown in (42), where the C (i.e., the relative pronoun) agrees with the constituent it introduces in all φ-features (from Shormani, 2017).

(42) a. t-taalibu llaði jaa?-a pro ?ams-i
   the student.3MS who.3MS came-3MS yesterday-GEN
   “The student who came yesterday.”

b. t-tuallaabu llað-iina jaa?-uu pro ?ams-i
   the-student.3MPL who-3MPL came-3MPL yesterday-GEN
   “The students who came yesterday.”

c. qabal-tu t-ta-libata llati jaa?-at pro ?ams-i
   met-I the student.3FS who.3FS came-3FS yesterday-GEN
   “I met the (female) student who came yesterday.”

In examples (42a-c), C (i.e., llaði, llað-iina and llati, respectively) agrees with the constituent it introduces, namely t-taalibu, t-tuallaabu and t-ta-libata, respectively, in all φ-features. (T’s inheritance of φ-features and tense from C, we will return to in Section 3.3.3).

The assumption that C has a tense feature is advocated cross-linguistically. For example, Adger (2007, p. 34) argues that C in Irish exhibits a past and nonpast tense contrast, as illustrated in (43).

(43) a. Deir sé go dtógfaidh sé an peann.
   say.PRS he that take.FUT he the pen
   “He says that he will take the pen.”

b. Deir sé gur thóg sé an peann.
   say.PRS he that take.PST he the pen
   “He says that he took the pen.”

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As can be observed, C exhibits tense contrast; it is go in (43a), but gur in (43b). The former is present and the latter past. Given this, it is possible to assume that T (even in imperatives) inherits C’s T feature (we return to this issue in Section 3.3.3).

Given that the vocativized nominals are aboutness topics, it is tempting to postulate that the head Top° is endowed with an [Abn] feature. It follows that (44) holds true of Top° (cf. Frascarelli, 2007; Rizzi, 2006; Shormani, 2017).

(44) Top° is a criterial position in the C-domain, endowed with an [Abn] feature which yields an “at-issue” content, and links the A-topic with pro in T-domain.

In terms of (44), the feature [Abn] the head Top° is endowed with cartographically constitutes an “information structure primitive” in the left periphery, solely needed as an information/discourse requirement (cf. Shormani, 2017). If we take the “at-issue content” as an interpretative import, that is, also an information/discourse requirement, the feature [Abn] turns to be an Edge Feature (cf. Chomsky, 2005, 2008; Shormani, 2017), which is valued by merging an A-topic in Spec,Topp.26 If this “at-issue content” entails performing a speech act, which is performed by an imperative structure, as assumed so far, then, it is reasonable to postulate that the feature [Abn] links/ correlates the discourse with the syntax, that is, the informational coda and the propositional structure. We discuss the latter in the following section.

To conclude this section, we would like to stress that the at-issue content expressed by the vocative expression can also be linked to that of the imperatives, as they, too, have such proposition or performative force. Along these lines, Kaufmann (2012) holds that the at-issue content of a simple imperative sentence is “a modalized proposition” (see also Stegovec & Kaufmann, 2014). Following Kaufmann’s lines, Stegovec and Kaufmann (2014) argue that the at-issue content of an imperative sentence could be “paraphrased as ‘you should’… [and] can also be used to give orders, advice, permissions, or the like (performative modals) rather than describe the state of affairs with respect to what is permissible (descriptive modals)” (Stegovec & Kaufmann, 2014, p. 629, emphasis in the original).

3.3. Propositional structure

We are now in a position to tackle the propositional structure in vocatives and how it relates to the informational structure. It is well-known that T-domain represents the propositional structure in other clause-type constructions, declarative clauses, for instance (see, e.g., Rizzi, 1997, et seq). As for imperative structures, the standard assumption is that imperatives lack tense, hence T altogether. Contra this, we will briefly show in this section that imperatives have a TP structure akin to that of other clause types. A priori, since the core (computational) operations take place in the (narrow) syntax, we would like to first sketch these operations.

3.3.1. Core operations

If, as assumed by minimalism, the computation procedure “arranges and rearranges items taken from the lexicon according to their properties with a view to meeting the requirements of Full Interpretation” (Boeckx, 2003, p. 2), these “arranges and rearranges” can be taken as Merge and Move, respectively, as two core operations (cf. Chomsky, 1995; et seq, Boeckx, 2003; Shormani, 2017). The former merges LIs and forms linguistic objects, and the latter moves them if necessary in the derivation, based on the intrinsic features of these LIs. Merge is basically related to immediate containment, sisterhood and c-command (see Boeckx, 2003, p. 2; Chomsky, 2001, p. 3), and Move is necessitated by a feature satisfaction. We will take Move as Copy. We will also assume, following (Boeckx, 2003; Chomsky, 2000, 2001; Shormani, 2017), that the intrinsic features are encoded in LIs if they are in relations, and these relations are defined over the most core operation, that is, Merge. Within that space lies another core operation, that is, Agree, which
“systematizes/regulates” the interaction between a probe (usually functional) and a goal (usually lexical), and this interaction may take the following three mechanisms (cf. Chomsky, 2000, p. 122, Boeckx, 2003, pp. 2–3, Shormani, 2017, p. 151).

(45) a. Features trigger Match (e.g., there is a valued and interpretable [Abn] feature on the A-topic that matches the unvalued/uninterpretable [Abn] on Top° and pro).

b. Features trigger Move (e.g., i) the value(s) of the A-topic’s features are copied onto pro, and ii) V raises to T°).

c. Features trigger Agree (e.g., the value(s) of the features of the goal match those of the probe).

3.3.2. Imperatives in vocative structures
Imperatives are taken as a clause type; they have been studied thoroughly cross-linguistically (see, e.g., Bennis, 2006; Beukema & Coopmans, 1989; Downing, 1969; Han, 1998; Jensen, 2003, Platzack & Rosengren, 1997; Zanuttini, 2008; Zanuttini, Pak, & Portner, 2012; Zhang, 1990). However, we will just focus on the properties presented in (46).

(46) Properties of imperatives

(i) their subject may (rarely) be an overt pronoun

(ii) their subject is always controlled by an overt/covert N/DP

(iii) they have performative function

(iv) they have no tense

Property (i) is instantiated in the following examples.

(47) a. ʔantah ʔiftah l-baab!
you open the-door
“You open the door!”

b. ʔiftah l-baab
open the-door
“Open the door!”

A closer look at (47) makes explicit that the subject of imperatives may be overt as illustrated by (47a). It can also be covert as illustrated in (47b), which is the normal/common status of the subjects of these structures. In fact, the general assumption is that imperatives are “subjectless” constructions. The subject is understood as a silent (unpronounced) “you.” If the subject of imperatives is a null pronoun, then, it should be controlled/bound by an overt/covert NP in the C-domain, conforming to property (ii) (we also return to this property in Section 4). As for property (iii), it is held cross-linguistically that imperatives are structures that perform speech acts like order, request, advice, threat, praise, etc. This property will be referred to throughout the remaining part of this article. Property (iv) will be discussed in the following section.

3.3.3. T’s specifications
The standard assumption is that imperatives lack tense, and hence T altogether (see, e.g., Platzack & Rosengren, 1997). However, there are some recent studies (see, e.g., Jensen, 2003; Shormani, in press: b) which propose that imperatives do have tense. We show here that imperatives in Yemeni Arabic have tense, and hence T, thus supporting these recent studies. We also argue that T in imperatives has ϕ-features characteristic of T, in general.
As for tense, imperatives may be said to have a tense of some sort. This tense might be present or future, but not past, as illustrated in (48).

(48) a. jiʔ baʕd saʕah, qa tjah?
    come after hour, will you.come
    “Come after an hour, won’t you?”

b. * jiʔ baʕd saʕah, qa jiʔk?
    come after hour, ASP come.you

As can be observed, in (48a) the structure consists of an imperative and a question tag. In YA, qa is a future particle, but qa is a perfect/past one. The ungrammaticality of (48b) obviously indicates that past tense is excluded in imperatives. But, the fact that (48b) is not possible suggests that there is a tense feature associated with T in imperative that prevents such a structure. Based on this, we propose that T has present/future tense. This present/future tense feature that T in imperative might be associated with is supported by the grammaticality of structures like (48a).

YA provides empirical evidence that T has φ-features. Consider the following examples.

(49) a. ʔiktub!
    write.2MS

b. ʔiktub-i
    write-2FS!

c. ʔiktub-uu
    write-2MPL!

d. ʔiktub-ayn
    write-2FPL!

As shown by the gloss, it is clear that T in imperative is φ-complete in the sense of Chomsky (2000, 2001). However, a crucial difference between T of imperative and that of other clause types is that T in imperatives seems to always have a 2 person feature. This is also indicated by the-you-subject pronoun, overt or covert.

As for Case, we argue here that T enters the derivation with a Nom Case feature. Unlike English, YA, like many other languages, distinguishes a Nom Case from an Acc one in (2 person) pronouns. ʔantah “you” is the Nom form, while the clitic—(a)k is the Acc form of it. However, being a clitic in nature, it is difficult to use -(a)k as an example to illustrate this phenomenon, though languages like French can be used to illustrate this point.

It turns out that imperative T has φ-features, tense and Case features similar (but not identical) to those of T in general. However, the question is: where do these features come from? Recall that C in Arabic has φ-features, tense (and Case) features, as evidenced earlier, and given also the notion “Feature Inheritance,” we are adapting here, it is expected that T inherits these features from C (cf. Chomsky, 2005, 2008). YA provides empirical evidence that T inherits these features from C, as illustrated in the following examples.

(50) a. daari ʔinna-k ʔiʔ-k
    I.know that-2MS came-2MS
    “I know that you have come.”
b. daari ʔinni-ʃ jiʔ-ʃ
I know that-2FS came-2FS
“I know that you have come.”

c. daari ʔinna-kum jiʔ-kum
I know that-2MPL came-2MPL
“I know that you have come.”

d. daari ʔinni-kin jiʔ-kin
I know that-2FPL came-2FPL
“I know that you have come.”

These examples very clearly show that T inherits φ-features from C, or C-features are transmitted onto T. As is very clear from the glosses, in (50a–d) C, that is, ʔinna, manifests agreement with the verb in all φ-features. If we assume that the agreement marking is a clitic, then according to the Unselective Attract Principle, “only a head endowed with φ-features can attract a clitic, [where] cliticization is a case of ‘unselective attraction’” (Rouveret, 2008, p. 190, see also, 2002; Shormani, 2017).

We also assume that T has a (strong) EPP feature. This assumption is minimalist in nature, simply because it makes dealing with imperatives like dealing with other clause-type structures, which leads to non-construction-specific postulations, one of the core minimalist assumptions.

As it turns out, T in our system inherits Agree Feature from C in the (narrow) syntax, because as a phase head, C “may be the locus of agreement, selecting T and assigning it (unvalued) φ-features” (Chomsky, 2005, p. 18, see also Shormani, 2017). And based on antecedent reasons, “T, φ-features and Tense appear to be derivative, not inherent: basic tense and also tenselike properties (e.g., irrealis) are determined by C (in which they are inherent)” (Chomsky, 2008, p. 143). This antecedent factor is at the heart of the proposal pursued here. In other words, assuming for the moment that the notion “antecedent” implied in Chomsky (2008) refers to a constituent in the A’-dependency domain, it is possible to argue that this antecedent is the A-topic as intended in our story. This antecedent is also clear in the examples presented in (42), where the A-topic, the relative pronoun and the verb agree in all features.

It is also reasonable to assume that Voc’s features are transmitted onto Top*, which, in turn, may be transmitted onto T. There is a piece of evidence in support of this. Reconsidering examples like (47), the fact that the pronoun ?antah is the subject of imperatives makes explicit that T in these structures enters the derivation with all Voc’s features, namely [Spcty], [Adrs], and [2Pers]. These features (among others), are the only “licenser” of ?antah, or pro, in imperative structures, as we shall see shortly.

3.3.4. Pro’s specifications
Recall that property (i) implies that the subject of imperatives is a null category, but which null category? There are, in fact, two types of null pronouns in human languages, viz., PRO and pro. As for the subject of imperatives, there are actually two proposals in the literature: it is PRO (see, e.g., Han, 1998) or pro (see, e.g., Beukema & Coopmans, 1989). We assume that the subject of imperatives is pro, specifically 2 pro (cf. Bennis, 2006; Beukema & Coopmans, 1989; Jensen, 2003).

The Null Subject Parameter (NSP) has received much research in the syntactic theory (see, e.g., Ackema, Brandt, Schoorlemmer, & Weermann, 2006; Biberauer, Holmberg, Roberts, & Sheehan, 2010; N. Hasegawa, 1985; Holmberg, 2005, 2010; Huang, 1984, 1989; Joeggli & Safir, 1989; Koeneman & Zeijlstra, 2014; Neeleman & Kriszta, 2007; Rizzi, 1982, 1986; Shormani, 2015, 2017). The standard assumption is that pro is licensed by the rich agreement inflection in Null Subject
Languages (NSLs). There are three types of (referential) pro in natural languages, viz., 1, 2 and 3 pros. What concerns us here is the 2 person pro, the one characteristic of the subject of imperatives. Consider the following examples.

\[(51)\]
\[
\begin{align*}
\text{a. } & \text{ʔiktub } \text{pro}! \\
& \text{write.2MS} \\
\text{b. } & \text{ʔiktub-i } \text{pro}! \\
& \text{write-2FS} \\
\text{c. } & \text{ʔiktub-uu } \text{pro}! \\
& \text{write-2MPL} \\
\text{d. } & \text{ʔiktub-ayn } \text{pro}! \\
& \text{write-2FPL}
\end{align*}
\]

Based on the rich inflection Arabic exhibits, pro in YA, as shown by the data in (51), can be interpreted as a singular masculine “you,” a singular feminine “you,” a plural masculine “you” and a plural feminine “you” in (51a–d), respectively. However, it seems that this “interpretation” is only partial; it is difficult to identify the referent(s), that is, the people, this “you” refers to. Put differently, suppose these examples are said out of context/discourse, it will be impossible to identify the one/person “functioning” as the addressee in all these examples (cf. Shormani, 2017). For instance, in (51a) it is not clear whether the addressee is a “student,” “audience,” “clerk in an office,” etc. That said, if (51a–d) are said without taking the vocativized nominal as the referent of pro, the interpretation of pro will be “vague.” This “vagueness” seems to have cross-linguistic evidence. Take languages like French and English as an example; compare and contrast the examples in (51) with (52) (cf. Kayne, 2002).

\[(52)\]
\[
\begin{align*}
\text{a. } & \text{pro } \text{écris}! \\
& \text{write}! \\
\text{b. } & \text{pro } \text{write this}!
\end{align*}
\]

The fact that pro may exhibit “vagueness” in languages like English and French, more than in Arabic, ensues from the fact that they are “very poor” in agreement inflection, specifically in imperative constructions. However, this “vagueness” disappears if the vocative is mentioned in the sentence, as shown in (53).

\[(53)\]
\[
\begin{align*}
\text{a. } & \text{Hey Ali, pro write!} \\
& \text{VOC Ali, write.2MS} \\
\text{b. } & \text{Hey students, pro open your books!} \\
& \text{VOC students, write-2MPL}
\end{align*}
\]

pro in these examples refers to Ali in (53a) and students in (53b); and therefore, the interpretation of pro is clear. As far as Arabic is concerned, consider the vocative structures in (54).

\[(54)\]
\[
\begin{align*}
\text{a. } & \text{yaalla, ʔiktub } \text{pro}! \\
& \text{VOC Ali, write.2MS} \\
\text{b. } & \text{yaalla, ʔiktub-i } \text{pro}! \\
& \text{VOC Ali, write-2FS} \\
\text{c. } & \text{yaallab, ʔiktub-uu } \text{pro}! \\
& \text{VOC students, write-2MPL} \\
\text{d. } & \text{yaallabaat, ʔiktub-ayn } \text{pro}!
\end{align*}
\]
The clear interpretation of pros in (54) is solely due to the presence of the A-topics in the C-domain, namely ʕali, ʕalia, tullaab and taalibaat in (54a–d), respectively.

Thus, based on these facts we propose that pro in imperative structures enters the derivation with valued, but uninterpretable features. In the (narrow) syntax, pro’s valued features value T’s unvalued corresponding ones. This valuation of T’s features in the syntax, we claim, is not sufficient for pro’s Full Interpretation (because pro’s referent is not stated in the world/discourse). However, when the discourse (represented by the vocative expression in CP) comes to play, pro obtains its ultimate interpretation. Differently put, when an A-topic is merged in Spec,TopP, pro in Spec,vP is ultimately interpreted via the coreferentiality with this A-topic, after/in the Spell-Out operation.

Note also that this coreferentiality between the A-topic and pro not only clarifies the interpretation of pro, but also the interpretation of the whole vocative expression. That is to say, if vocatives are designed to perform an expressive meaning/speech act, which, in turn, is fulfilled by the imperative verb, then, even the interpretation of the vocative part is obtained if and only if this coreferentiality comes to play. And since this coreferentiality takes place between CP and TP domains, it follows that the interpretation of vocatives requires correlating the syntax and discourse at the interface. Still, however, this gives rise to two important questions: i) how does this coreferentiality take place (cf. property (ii)), and more importantly, ii) how is it licensed in a language L? These among other related issues are discussed in details in the following section.

4. Correlating the syntax and discourse at the interface

In this section, we extend the claims put forth in Shormani (2017) and apply them to the analysis of vocatives. In particular, we show that the syntax is correlated with the discourse in vocative constructions, a correlation that accounts for the ultimate interpretation of these structures. An essential property of vocatives, specifically address type, is that they may not be said on their own, that is, they may not stand alone, as shown in (55) below. In other words, if, as argued for so far, vocatives are designed to perform a performative expressive meaning, then there is some sort of action and this action must be performed by a verb (performing a speech act). This verb, we assume, is the imperative form of the verb.

(55) ??*yaa ʕali!
    VOC Ali

The idea that (55) may not be acceptable ensues from the fact that if (55) is said without the imperative part, the addressee/hearer will immediately respond by saying one of the expressions in (56):

(56)    a. “Yes?”
    b. “What?”
    c. “Can I help you?”

And the speaker would say, for instance, “come!”, “do this!”, “open the door!”, “write this!”, among others. What we would like to suggest here is that vocative expressions consist of two parts, namely the vocative and the imperative, and that both should cooccur.

However, imperatives are not the only type of sentence that can cooccur with vocatives. The fact that interrogative and declarative structures cooccur with vocatives is clearly manifested in examples like (57). Our task then is to understand the interpretation of these structures.

(57)    a. yaa ʕali! muh l-kitaab maʕak?
VOC Ali is the-book with.you?
“Hey, Ali! Is the book with you?”

b. yaa ūali! ūali tiḥib t-tuffaah!
VOC Ali Alia likes the-apples
Hey, Ali! Alia likes apples!

Although the vocative expression yaa ūali cooccurs with interrogative and declarative structures in (57a) and (57b), respectively, the underlying interpretation of these structures involves some sort of a performative act. Differently put, the interrogative phrase muh l-kitaab ma′ak in (57a) can be said to perform a speech act, which can be a request to give the speaker the book. That is, the speaker in (57a) simply means: give me the book (if it is with you). Imagine a situation in which a teacher is looking for a book, and he or she thinks that that book is with a student, named Ali, then the speaker may be said to have a choice to either articulate a question: is the book with you? Or an imperative: give me the book. In (57b), which is a declarative sentence, the speaker is telling the addressee, that is, Ali, that a person named Alia likes “apples,” but not, say, “banana,” and that he or she wants “Ali to bring Alia an apple.” Again, here too, the speaker perhaps paraphrases or simply implies, that is, indirectly asks, that the addressee bring apples for Alia, but not any other type of fruit.

All this suggests that in vocative constructions, there is some sort of “coincidence” between the vocative part and the imperative one (cf. Abuladze & Ludden, 2013). We take this coincidence to be a correlation, which links the syntax with the discourse at the interface, or the C-domain projections, viz., VocP and TopP, and the T-domain projections, viz., TP and VP. TopP and VP are phases, while VocP and TP are not. We will take this correlation as coreferentiality between the A-topic and pro; the former occupies Spec,TopP and the latter Spec,VP. Along these lines, Benincà (2001, pp. 41–42), for example, argues that TP links VP/VP “with the syntactic subject and the other arguments; CP encode [s] the relation between the propositional content of the sentence and what gives a sentence its actual meaning in relation with the discourse.”

Bearing this in mind, we are now in a position to address the two questions imposed in Section 3.3.4. These questions are restated here as follows: i) how does the coreferentiality between A-topic and pro take place in vocative constructions, and ii) how is this coreferentiality licensed in a L?

Let us start with question (ii). Recall property (ii) of imperatives: the null subject of imperatives is always controlled by a lexical N/DP in the (higher) root clause. In the Principles and Parameters (P&P) framework, this “control” was handled in terms of Binding Theory, specifically in terms of Principle B (see, e.g., Chomsky, 1982, 1986; Jaeggli & Safir, 1989; Rizzi, 1982, 1986). Nevertheless, this account is actually not unproblematic in minimalism (see, e.g., Antonenko, 2012; H. Hasegawa, 2005; Hicks, 2009; Kayne, 2002; Reinhart & Reuland, 1993; Shormani, 2017; Zwart, 2002). These authors try to modify the P&P “Binding Principles,” and propose various mechanisms. However, the problem with these proposals is that there are certain cases which they fail to account for (see Antonenko, 2012, for details).

Therefore, following Shormani (2017), we propose that binding/coreferentiality should be handled in terms of Agree as Match. Bearing the properties of Features (45) in mind, the Agree (matching) mechanism takes the form outlined in (58).

(58) Agree is a long-distance matching operation whereby the values of the valued features of α (or the goal) are copied onto the unvalued feature counterparts of β (the probe), whereby the attribute-value pair ([Att: val], [Att: blank]) represents the valuation
mechanism (cf. Chomsky, 2001, p. 5, Roberts, 2010, p. 61, Shormani, 2017, p. 151). This is further formulized in (59).

(59) For an Agree whose α and β are the terms for some feature F:
   a. α contains the feature matrix [Att;_.__]; β contains [Att; val_j]
   b. [Att; (val_{..k..})], copy val_k into __ in α’s feature matrix.

For the purpose of a unified account of formal characterization of features, (59) can be exemplified as follows: let α/T have the Case feature [Case: _nom_] and β/pro [Case:___], then the result of the valuation mechanism is pro => [Case: _nom_].

Given (45) and (59), and following Shormani (2017), in a vocative structure after pro and T merge, there will result a variable matching construed between T and pro. If T has the value [Att_α_] for a feature F, then, pro will get that value, as a result of Agree. It follows that when the A-topic is merged, it matches (and interprets) T’s and pro’s features. And given the antecedent nature of [Abn] feature, it is likely that pro obtains the feature specifications of the A-topic before/when the C-phase is spelled out. This story seems to result in local A’-chains. In other words, given that the A-topic is hosted in the C-domain, and that pro is in the T-domain, coreferentiality between (Voc°), the A-topic, (T°) and pro results in a local A’-chain (the head of this chain is the A-topic and the tail is pro).

Let us now turn to question (ii) stated previously, that is, how is coreferentiality licensed in vocative structures? If coreferentiality between the A-topic and pro takes the form in (59), then, there must be a condition/principle of Universal Grammar (UG) that licenses such coreferentiality in a L. If this is on the right track, and given (45) and (59), then (60) would be hypothesized, holding of vocativization in Arabic (and possibly cross-linguistically) (cf. Shormani, 2017, p. 158).

(60) A-topic-pro Coreferentiality Principle (ACP)
In a vocative structure,
   (i) Let XP be a phase whose edge “houses” the A-topic as an instance of pro:
   (ii) pro in Spec,vP, i.e., a phase edge, obtains the feature specification(s) of the features on X°
   (iii) Coreferentiality takes place via a matching (Agree) relation between (Y°), A-topic (X°) and pro [where Y° = Voc°; X° = Top°].

If vocatives (and imperatives) behave similarly across languages, which we presuppose, then (60) could be generalized and extended to all human languages, and parameterization, if any, would then be assumed.

Note that our prediction in terms of (59) regarding the construal of local A’-chains between the A-topic in Spec,TopP (a phase edge) and pro in Spec,vP (a phase edge) is also explicitly suggested in (60). This A’-chain is a “matching chain” which defines the Agree relation established between pro in Spec,vP, T°, Top°, the A-topic in Spec,TopP and Voc°. Given the assumption that Agree takes place between phases (Chomsky, 2008), then, the matching relation between these elements is an instance of a long-distance Agree. Given also the assumption that a constituent in the vP-edge is visible for Agree in long-distance (see Rouveret, 2008, p. 171), pro in Spec,vP will be “seen” by C/Top° for Agree (Match). It follows, then, that pro is interpreted by being coreferentially linked with the A-topic in Spec,TopP.

Formally, let an unvalued feature F have the value ua, then, v/α is its valued/interpretable counterpart. Also let ua be the φ-features (and aboutness) of Voc°, Top°, T°, and pro, then, when the A-topic with va is merged, a matching A’-chain is formed between these five elements via Agree as Match, and hence all unvalued/uninterpretable features get valued/interpreted and deleted at LF. Given (45) and (59), each of these element will get the value [Att: va]. This is further schematized in (61).
Recall that the interpretation of vocatives involves discourse/pragmatic information “such as the degree of familiarity between the speaker and the addressee, the type of interaction between them, the speaker’s designs on the addressee, and so on” (Hill, 2013, p. 133). Given the discourse nature of (60), it is much expected that the analysis proposed here accounts for this interpretation. In what follows, we will argue that it really elegantly does so.

Recall that vocatives involve various speaker–addressee relations, but it is difficult to exemplify them all here. We will just focus on some of these relations. Consider the following examples.

(62) a. yaa tullaab, diakruu pro, bi-jidd!
   VOC students-my study with-hard
   “O’ my students, study hard!”

b. yaa tullaab, diakruu pro, bi-jidd!
   VOC students study with-hard
   “Hey students, study hard!”

In (62b), there is some sort of “care” expressed by a “teacher” who advises “his students” to “study hard.” This “care” is not found in (62b). (62b) may be stated by a principal/dean, but not by a teacher; (62b) can be understood as “threat” (teachers are known to be more caring than deans, for instance). Note that the only difference between (62a) and (62b) is that the 1 person clitic—i is attached to tullaab in (62a), but not in (62b). Hence, the care/threat contrast can be ascribed to this clitic (cf. also Corver, 2008; Stavrou, 2013). Given this, it is possible to assume that this interpretation is obtained only when Voc° enters the derivation, and consequently Voc° be part of the coreferentiality, hence conforming to (46iii). Put simply, given our postulation so far that vocatives are reduced to VocP, it is expected that vocativization, and hence vocative interpretation, takes place only when Voc° is merged.

Furthermore, if vocative particles are discourse markers, signaling endearment, respect “politeness, formality, status, intimacy, or a role relationship, [etc., … and they] mark the speaker characterizing him or her to the addressee” (Zwicky, 1974, p. 796), it follows that these meanings are expressed by the vocative particles (see also Kasher, 2013). In other words, if vocativization underlies these interaction/communication meanings, and if the head Voc° is “responsible” for making an A-topic a vocative, then, these performative meanings must be encoded in Voc°. And this seems to probably be the case. The following examples illustrate this point.

(63) a. ðustaað-i l-habiib, tafaaddal ðijlis pro!
   teacher.VOC-my the-beloved, please sit
   “My respected teacher, please have a seat!”
In (63), there are no vocative particles. Vocativization is expressed by the grammaticalized terms ʔustaað, ʔabiib and ʕamm in (63a-c), respectively. These terms carry emotive performative/expressive meaning each. For example, the term ʔustaað signals respect between the speaker and addressee, a “student” and a “teacher,” respectively, as in (63a). In this situation, it also shows politeness between both interlocutors. The term ʔabiib expresses endearment between a wife and a husband, and ʕamm expresses compassion between an uncle and a niece. The fact that the speaker is characterized to the addressee is also signaled. The 1 person clitics, -i, -i, and —u, signaling the speaker, and which are attached to the grammaticalized terms, can be taken as indicative evidence of these speaker–addressee relations. Thus, because these grammaticalized terms lose their lexical identity and function as vocative particles, they are base-generated in Voc°, which means that it is Voc° which expresses the meaning of respect, endearment and compassion, so far so good.

In addition, YA provides strong evidence that Voc° encodes discourse features like formality, superiority, unfriendliness, etc. For example, the vocative particle yaa is formal, while yeeh shows superiority of the speaker, and heeh indicates informality and unfriendliness (for an explanation see fn. 4). As it turns out, then, our prediction that vocativized nominals are A-topics, and that vocativization is encoded in the head Voc° is borne out. The latter has been shown to encode not only [Spcty], [Adrs], and [2Pers], but also the speaker–addressee relations, which are the core functional properties of vocativization cross-linguistically.

Note that the coreferentiality between the A-topic and pro in these structures seems to suggest that vocatives are arguments (contra the widely spread assumptions in the literature, but see Moro, 2003, for similar conceptions). Given that pro in imperatives is characterized as a 2 person pro, and is referential in nature (i.e., different from generic/indefinite pro), we argue along the lines put forth by Downing (1969) and Ross (1970) that in terms of the performative analysis the A-topic/vocativized nominal is an argument of a performative predicate located in the C-domain, which controls/binds pro. Note also that the 2 person reading a vocativized nominal/A-topic has can be ascribed to the coreferentiality between the A-topic and pro. That is to say, given the fact that pro is a 2 person pronoun, and by being in one A’-chain with the A-topic, and given (45 & 59), pro’s features including [2Pers] are copied/percolated onto the A-topic. This account enables us to account not only for [2Pers] feature percolation, but also for the percolation of other features, namely [Spcty] and [Adrs].

5. Conclusions, implications and further issues
In conclusion, we have proposed a novel approach to the analysis of vocative expressions, based on data from YA. We have concerned ourselves only with three questions: the first concerns the internal structure of vocatives. The answer to this question is provided in Section 2, where we concluded that vocative particles are discourse markers, transitive in nature, and their complements are nominal-like elements, the second question concerns the external structure. The answer to this question is attempted in Section 3, where we demonstrated that vocatives are reduced to the vocative particles, projecting to VocP, and their complements turn to be aboutness topics. VocP is a discourse-based projection posited in the C-domain. The head Voc° is argued to be endowed with discourse-based features, namely [Adrs], [Spcty] and [2Pers], and yields an expressive meaning. We have also argued
that nominal vocativized constituents are A-topics, projecting to TopP, whose head, that is, Top° is endowed with [Abn] an EF, and yields an at-issue content. The third question concerns the correlation between the internal and external structures of vocatives. The answer to this question is provided in Section 4. In this section, we have argued that both structures are correlated at the interface via coreferentiality between the informational and propositional structures of vocatives.

The analysis presented in this article seems to have several implications. We will just mention the most important ones. The first implication is that tackling vocatives in terms of aboutness topics seems to be minimalist in nature; it reduces the complexities and the machinery apparatus of the computational system of the language faculty (cf. Chomsky, 2001, et seq). For example, we do not need more projections like SpeakerP, RoleP, AddresseeP, and so forth, as assumed in some of the recent literature (see, e.g., Corver, 2008; Haegeman, 2014; Hill, 2007). These projections impose extra complications for the computational system. But they disappear if we just postulate that the vocative is reduced to the particle and that its complement is an A-topic.

Another implication has to do with extending this approach to vocatives cross-linguistically. Given the fact that vocatives and topics, specifically A-topics, perform expressive meaning/speech act of referring cross-linguistically, it is possible to apply the analysis developed here to vocatives across languages. Take (41) as an example, it seems to be applicable to the cross-linguistic data (though not enough) presented in this article. (60) may well be thought to have the same status cross-linguistically.

One more implication is that the analysis can also be extended and applied to imperatives as a separate clause type. If we take the assumption made in this article that the thematic subject of imperatives is pro, and that the logical subject is a NP referent positioned in Spec,TopP, in the absence of vocatives/A-topics a silent pronoun (pro) can be assumed to (re)merge in Spec,TopP. Only further research determines whether “this suggestion is on the right track,” and we leave this for future studies.

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Notes
1. Yemeni Arabic is a variety of Arabic, a Semitic language, spoken in Yemen, and a very under-investigated language variety. This study shows that this dialect provides interesting vocative data, supporting the current mainstream of thought in vocative investigation, and evidencing the correlation of syntax and discourse at the interface, as an approach to the study of vocatives.
2. Note that we follow the wide spread convention in spelling the definite article ʔal- “the” as l- in words occurring in the middle of the sentence as in l-baːʃ “the bus” in (3d). We also apply the assimilation process, in which ʔal- is assimilated into the first consonant of the word it is attached to as in ʔ-taːlaːb “the student,” in what is known as allaam alharnsyya.
3. This example is taken from a Yemeni song entitled “ma`la hashaw” “how much sweet your love is,” sung by Ayoub Tarish Absi, a famous Yemeni singer (cf. also Shormani, to appear, Shormani, in press: a).
4. Note that YA has several vocative particles, not just yaa. These are yaa, waa, yeeh and heeh, each of which has somehow a different function from the other. As Shormani (to appear) holds, yaa is used with calling and addressing, and functions to bring someone’s attention. It is formal, and shows honorifics of the addressee and addressee(s); waa is used only for calling, calling for people, and reflects the caller’s anger, fear for the called one. It is also less formal than yaa. yeeh can be used for calling and addressing like yaa, but it is informal and used with high intonation. heeh is also similar to yeeh, but it reflects the speaker’s superiority and unfriendliness. It could be used, by, say, a boss addressing his/her worker(s), for example. If yaa is to be compared with waa, the former could be used for calling the near, waa, the far (see also Shormani, to appear, in press: a).
5. To the best of our knowledge, vocatives in Arabic, be it standard or modern, have never been studied, specifically in modern linguistics. This is due perhaps to the cross-linguistic assumption that vocatives are a pragmatic aspect of the grammar, which is not the case as supported by this article. Thus, this study is considered to be the first of its type in Arabic.

6. Several studies point out that Case approach to the analysis of vocatives is not reliable, not only in languages with no overt Case-marking system such as Yemeni Arabic, but also in those having it. For instance, Schaden (2010) points out that even languages which have morphological Case-marking systems do not differentiate between a vocative Case and a nominative one. Consider the Latin example in (i) from (Schaden, 2010, p. 177).

(i) Tu quoque, Anna filiomea?
you too, Anna.VOC NOM daughter.VOC NOM

7. It should be noted here that vocatives can also occur in the middle as shown in (i).

(i) maalak?
yaa Safi, taafaal!
What is wrong with you? VOC Ali, come.
“What is wrong with you? Hey Ali, come!”

However, we assume, following Stavrou (2013), that the sentence-initial position is the normal and common position of vocatives.

8. Examples like (5a), in addition, show that vocatives can be embedded in -clauses “say-clauses.” A number of authors argue that vocatives may be embedded (see, e.g., Stavrou, 2013), some others hold that vocatives have limited capacity of embedding (e.g., Hill, 2007), and some others (see, e.g., Sonnenhauser & Hanna, 2013) hold that vocatives may be embedded, but they should be prosodically signaled. Note, however, that while theYA yaa can freely be embedded, vocative particles like heeh and yeeh cannot as shown in (i), for which we have no explanation at the moment (cf. also Shormani, in press: a).

(i) *qul-k lak, yeeh Safi!
said-I to.you, VOC Ali.
“My dear girl…”

9. These vocative terms are known as grammaticalized, in the sense that they lose their lexical identity, and become vocative particle-like elements. Note that these grammaticalized vocative terms are not in complementary distribution with the vocative particle yaa, for instance.

(i) yaa ustaað Safi, taafaal!
VOC teacher.VOC NOM Ali.VOC NOM, come.MS
“Hey teacher Ali, come!”

10. Haegeman (2014, p. 125) shows that discourse markers in West Flemish follow certain order when they cooccur. When Ne’ and We’ cooccur, their distribution is as shown in (i).

(i) a. Ne’ men artikel is gedoan we’.
b. ‘We’, men artikel is gedoan ne’.
c. Men artikel is gedoan we’ ne’.
d. ‘Men artikel is gedoan ne’ we’.
e. ‘Ne’ we’ / ‘we’ ne’ men artikel is gedoan.

She argues that ne’ precedes the clause and we’ follows it as in (ia), and that the opposite split order is ungrammatical as in (ib). When both follow the clause, ne’ must be to the right of we’ as in (ic,d). Since we’ must follow the clause, any alternatives with we’ in initial position are excluded as in (ie).

Word order restriction concerning vocative particles is also manifested in English vocatives. When heh and the grammaticalized you cooccur, heh must precede you as illustrated in (ii).

(ii) a. Hey, you bastard! Get out of my house!
b. ‘You, hey bastard! Get out of my house!”

The only reason behind the ungrammaticality of (ib) is the fact that you precedes heh, which is not the natural word order in English vocatives as can be seen in (iia).

11. Hill (2007, p. 2089) notes similar word order restrictions applying in vocative constructions among the vocative particle, vocativized nominal, and some grammaticalized adjectives, “adjectives, used as generic forms of address...” whose location is restricted as follows:

(i) a. mā fištī,ā fetit,o dragā!
you girl-DEF/girl-VOC dear
“My dear girl…”

b. * mā dragā fištī,ā fetit,o
you dear girl-DEF/girl-VOC dear
“My dear girl…”

c. māl!
you-VOC

d. (draga`) fetit,o / fetit,o (dragā!)!
dear girl-girl-VOC dear
“My dear girl…”

She ascribes this restriction to “the presence of a grammaticalized adjective, [where] the word order may be either adjective noun or noun-adjective ([jj]d). However, when vocative particle māl is present, the order is obligatorily noun-adjective ([j]a versus [jj]).”

12. The adjectives ḍawqal and ḍafqal are the comparative forms derived from the adjectives tawīl and faddīl, respectively. We are not sure whether these forms are allowed in vocatives cross-linguistically. In YA, almost all comparative forms of adjectives can be used as modifiers of nominal vocatives like (14).

13. This patterns with the behavior of noun phrases in Arabic, in that the modifier has to agree with the noun it modifies in all features. If we take vocative particles as specificity “indicators,” as we will see in the remainder of this article, then the (vocative) modifier has to be specific like the (vocative) head it modifies.

14. Ashdowne (2002) provides strong empirical evidence from Latin that vocatives are best handled within a syntactic approach. He also distinguishes between vocatives and adjectives, as form and function, respectively, taking the form “to refer to case forms and ‘address’ to refer to a pragmatic/syntactic function” (p. 145).

15. Predelli (2008, p. 98, fn. 3) argues that there are some noun phrases in English that cannot be vocativized as in (ib):
Comparing (16a) to (i), there seems to be no reason behind the ungrammaticality of (i) except the absence of the vocative particle, which indicates that these discourse-based elements modify the vocative particles.

17. From a projection point of view, what projects is the head. If the main force behind VocP is the vocative particle, then the latter must be the head. This is also captured by the analogy with DP, NP, VP, CP where the determiner, noun, verb and complementizer are argued to merge in D°, N°, V° and C° respectively (see also Chomsky, 2013). And we are not sure how the projections such as SpeakerP, RoleP, etc. noted earlier can account for all these aspects.

18. Portner (2006a, p. 1) argues that vocatives belong to the information structure because: i) there are indexical, involving reference to the addressee. In this sense, vocatives could be assumed to be referents of some sort, as we will see shortly, ii) their contribution to the meaning of the sentence does not seem to be truth-conditional in nature, and iii) they are very similar to topics both syntactically and pragmatically.

19. In addition to aboutness topics, there are several types of topics that can be noted here like familiarity, givenness, contrast, etc., coming up with such terminologies as A-topic, F-topic, G-topic, C-topic, respectively. However, these will not be our concern in this article, because they are different from aboutness topics in several and various aspects (cf. e.g., Bianchi & Frascarelli, 2010; Frascarelli & Hinterhölzl 2007; Givón, 1983; Reinhart, 1981).

20. The notion aboutness has also been defined in psychological terms of speakers’ intentions and interests. For example, following Strawson (1964, pp. 87–88), Erteschik-Shir (2007) argues that the aboutness expressed by the topic provides “new information... ‘about’ the referent” mainly for the hearer’s sake. Given this, Erteschik-Shir argues that the topic has three central properties as illustrated in (i).

21. The French and Italian examples in (27) and (28) are adopted and modified from (Longobardi, 1994, p. 612; Sonnenhauser & Hanna, 2013, p. 117, respectively, also gloss is mine in (27)).

22. Shormani (2017) provides empirical evidence from Standard Arabic that inna is base-generated in Foc which gains support from the declarative nature of the clause type. Following Shormani (2017), we take inna to be a marker of declarativeness (cf. Chomsky, 1995; Ross, 1970).

23. It should be noted that in cases where the vocative particle is absent, it is expected that, although the head Voc is null, it is still what specifies an entity as the addressee, and hence vocativizing the A-topic.

24. These examples are from standard Arabic.

25. See also (Aoun & Li, 2003; Boeckx & Hornstein, 2008; Barsel, 1997; Kayne, 1983, 1994; Rouveret, 2008; Shormani, 2017) and the work cited therein.

26. This amounts to the fact that TopP will have two probes, namely Agree feature and EF. The former concerns φ-features, in that TopP probes for valuing its unvalued φ-features via Agree with pro in Spec, VP. The latter, however, is satisfied by merging an A-topic in Spec,TopP. The fact that [Abn] feature counts as an EF is motivated by LF interpretation purposes, which is at the heart of the proposal developed here (cf. Chomsky, 2008, pp. 139–141).

27. Platzack and Rosengren (1997) claim that imperative structures lack not only T, but also MoodP and FinP.

28. It should be noted here that this T’s tense feature in imperative is unchangeable unlike the declarative/interrogative T (see also Zhang, 1990, for details).

29. This proposal is in line with Jensen’s (2003). Jensen proposes that imperatives have some sort of tense feature different from that of declaratives. She argues that the cross-linguistic absence of imperative tense morphology is “due to the presence of an imperative-flavoured-T° that competes with prototypical-declarative-T° for this functional position” (p. 158).

30. However, there are some proposals in the literature, seeing 3 person subjects a possibility in imperatives, as illustrated in

(i) from English.

a. Boys get out, girls stay!

b. The tallest one sit at the back!

However, as we will see in this article, under the proposed analysis these examples turn to be vocative structures. The 3 person nouns like Boys, girls, etc. are argued to be A-topics, “sitting” in the C-domain, and not checking/valuing T’s tense feature. What values T’s tense feature is pro.

31. Examples can be provided from languages like French. For instance, French distinguishes Tu from Te, the former is nominative and the latter accusative, as illustrated in (i).

a. Tu écris!

you.NOM write

“You write!”

b. *Te écris!

you.ACC write

The ungrammaticality of (ib) clearly indicates that T has a nominative Case feature that must be valued in before Spell-Out.

32. Arabic provides independent evidence that C has a Case feature. This is illustrated in (i), from standard Arabic.

(i) a. ʔallah-u ʔallamu l-ħaal-a

God-NOM knows the-situation-ACC

“God knows the situation.”

b. ʔinna ʔallah-a ʔallamu l-ħaal-a

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C. God-ACC knows the-situation-ACC

“Indeed, God knows the situation.”

In (ia), the topic ʔalalah appears with a default nominative Case; however, in (ib) it appears with an accusative Case assigned by the C ʔinn.

33. The change of the final vowel—a of the complemen-
tizer ʔinn in ʔinn, ʔinnu and ʔinn into ——, — and —, respectively, can be best described as vowel harmony.

34. There is also good evidence cross-linguistically that T is φ-complete. For example, Rouveret (2008, p. 190, fn. 10) provides the examples in (i) from Welsh, as evidence that C has φ-features.

(i) a. y dyn y i rhiodais (ef) iddo

the man C CL-I gave him/it to-him

“The man to whom I gave it.”

b. yramser y c'hwełelais

the time that you I-saw

“The time when I saw you.”

In (ia), the clitic ‘i is attached to the C y and in (ib) the clitic ‘ch is attached to it.

35. If we take YA as an SVO language, then the analy-
is pursued here elegantly accounts for examples like (i).

(i) a. ʔanah ʔiftah l-baab!

“You open the door!”

b. ʔiftah l-baab!

“Open the door!”

If, however, we take it as a VSO language (which we adopt in this article), then, while pro is in Spec, V, it could be assumed along the lines put forth by Alexiadou and Anagnostopoulou (1998), that in pro-drop languages, EPP of T is valued by V-raising to T (see also Shormani, 2015, for a discussion). Alexiadou & Anagnostopoulou point out that one substantial property of VSO languages including Arabic is that in such languages EPP can be satisfied “via verb raising [to T] because they have verbal agreement morphology with the categorical status of a pronominal element” (p. 494). They add that no overt expletive subjects are used, which means that topics are base-generated somewhere outside the thematic domain (i.e., external to VnP, possibly in Spec-TP). In fact, the idea that T has an EPP feature makes our proposal have a cross-linguistic appeal, in that it can be applied to VSO languages like Arabic, Irish, etc., and SVO languages like English, French, etc.

36. While PRO could be assumed to be the null subject of imperatives (see, e.g., Han, 1998; Radford, 2009), pro is more likely to be so. There is still a difference between both constituents, however. While PRO occurs in nonfinite clauses, pro occurs in finite clauses. And since finiteness is related to φ-features, it is reasonable to assume the adequacy of pro more than PRO as a subject of imperatives. Along the same lines, Kratzer (2009, p. 189, fn. 2) argues that PRO differs from pro in that while the former can be a “minimal pronoun,” the latter “does not have to be. Like its overt counterparts, pro can be born with all its features in place, in which case it is referential.”

37. Note, however, that rich argument inflection hypothesis is challenged and sometimes even refuted as the sole licensor of pro, especially when considering languages like Hebrew, Marathi, Finnish which are not that rich (so called partial NSLs, see, e.g., Biberauer et al., 2010). It also loses its strength in languages like Chinese, Japanese, which have no argument inflection, but allow pro-drop property. In these languages, it has widely been held that discourse is the main licensor of pro (see, e.g., Hasegawa, 1986; Huang, 1984, 1985; Neeleman & Kriszta, 2007; Shormani, 2017).

38. The idea that the interpretation of pro is discourse/context-bound has also been emphasized by several authors. For instance, Kayne (2002) stresses that contextualization is a crucial factor in the interpret-
tation of a 3 pro. Corver (2008, p. 71) also ascertains that null pronoun may not be adequately nor fully interpreted out of “the situational context.”

39. Kayne (2002, p. 137) considers examples like (i) ungrammatical if they are said out of context/dis-
course, because they have no referents in the conversation world.

(i) a. He is a genius.

b. Watch out! He’s got a knife.

Kayne takes (i) to be grammatical only when “an unpronounced demonstrative” functions as an ante-
cedent. As for cases like (ia), Kayne assumes the exis-
tence of a silent topic in the discourse as an antecedent of the pronoun “He,” which is in line with the present analysis, as we shall see in the next sec-
tion. He considers (ib) to have a reading akin to (ii).

(ii) Watch out! That man, he’s got a knife.

40. We will also assume that the originally uninterpre-
table/unvalued features delete at the end of the relevant phase (which phase is relevant depends on the precise formulation of the Phase Impenetrability Condition (PIC) (see Chomsky, 2008, p. 108, 2001, p. 13). Note also that we are following Chomsky (2008) in that PIC “holds only for the mappings to the interface, with the effects for narrow syntax auto-
matic.” (Chomsky, 2008:143, see also Boeckx, 2003; Bošković, 2005; Shormani, 2017).

41. Along these lines, Sigurdsson and Maling (2010, pp. 66-67) argue that “pronouns, overt or silent, are not input to the syntactic computation but its out-
put, that is, syntax computes or ‘produces’ pro-
nouns by matching and bundling up features.” Focusing on person, they argue that a pronoun has a person value and this value results from match-
ing process of twofold: “First, an argument or event participant (i.e., 8) is matched against an interpre-
table clausal P(erso)n head or feature, as being either +P or—Pn. Second, +Pn arguments are matched against the above mentioned silent logophoric agent (“speaker”) and the logophoric patient (“hearer”) features in the CP domain.”

42. Note that the Dim(inutive) -u is vocatively used in (63c). When it is used in this sense, it also signals a 1 person “marker.” The function it performs is to express compassion and closeness the speaker shows towards the addressee. Note also that the sense in which—u is used in (63c) is always to address children. The clitic—i is used here to express a sense of closeness, which is different form its normal use as a possessive marker.
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