On Two Types of Correlation Structures in Egyptian Arabic

Usama Soltan

1. Introduction

Human languages utilize a variety of grammatical devices (e.g., conditional or temporal clauses) to express correlation between two properties or two situations, as in (1), for example.

(1) If/When you read more, you'll understand more.

Significantly notable in this regard is that human languages also have a structure whose specific function is to express correlation. Since Culicover and Jackendoff (1999), the structure has come to be known as the *comparative correlative*, and its two clauses are referred to as C1 and C2, as illustrated by the English example in (2) below.[1]

(2) [$_{C1}$ The more you read], [$_{C2}$ the more you understand].

Often cited for their grammatical idiosyncrasies, comparative correlatives have been argued to provide evidence for the need to posit 'constructions' as syntactic primitives in the grammar (Fillmore 1987, McCawley 1988, Culicover and Jackendoff 1999; see also Borsley 2003, 2004 for a Head-driven Phrase Structure Grammar approach to comparative correlatives). The goal of this paper is to describe and analyze two types of structures that express correlation in Egyptian Arabic (EA): A structure introduced by the quantifier *kull* (= 'every'), and another introduced by the measure PP *ʕalā ʔadd* (literally, = 'on/by amount').[2] More specifically, I show that both types of correlation structures involve subordination, where C1 is the subordinate clause and C2 is the main clause. I then show that a syntactic analysis along the lines proposed by den Dikken (2005) and Taylor (2013) for comparative correlatives can be extended to account for the grammatical properties of the EA structures. The data and analysis

* Usama Soltan, Middlebury College, usoltan@middlebury.edu. For insightful questions and comments, I would like to thank multiple members of the audiences at the *32nd Annual Symposium on Arabic Linguistics* at Arizona State University, the *49th Annual Conference on African Linguistics* at Michigan State University, and the *36th West Coast Conference on Formal Linguistics* at University of California, Los Angeles. I am especially indebted to Middlebury College for supporting my 2017-2018 academic leave, during which I was able to work on the topic of this paper. I am thankful to both Heather Taylor and Sarah Ouwayda for insightful conversations on the topic. Last but not least, I am very grateful to my Egyptian Arabic native speaker consultants for their time and patience in the grammaticality judgement tasks: Fatma Assef, Ahmad Ghazala, Nader Morkus, and Ahmad Soliman. Any errors herein remain solely my responsibility.

[1] The structure has received a variety of names in the linguistic literature, most notably the *comparative conditional* in Fillmore (1987), McCawley (1988), and Beck (1997), among others. The structure has also been always discussed in descriptive grammars of many languages. In the generative literature, it seems that its first mention was in Ross (1967) in the context of his discussion of island constraints on movement.

[2] Al-Qurashi and Borsley (2014) provide an analysis of comparative correlatives in Modern Standard Arabic within the framework of Head-driven Phrase Structure Grammar, challenging the approach advocated in den Dikken (2005). As will be discussed in this paper, the analysis proposed here, which shares the main insights of den Dikken's (2005) and Taylor's (2013) accounts, shows that such structures in Arabic dialects do indeed follow from a theory of grammar where heads are the only atoms in the syntax and where 'constructions' remain strictly epiphenomenal.

 Proceedings of the 36th West Coast Conference on Formal Linguistics, ed. Richard Stockwell et al., 316-325. Somerville, MA: Cascadilla Proceedings Project.

presented in this paper thus add to the body of empirical literature on correlation structures, while showing that their grammatical properties do follow under standard syntactic analysis, and that analyzing such structures as 'constructional' primitives of the grammar is unnecessary (cf. fn. 2).

Before I proceed, an important terminological point is in order. Since a comparative morpheme is not always required in the EA structures discussed in this paper, the term comparative correlative becomes rather inadequate. I, therefore, choose to refer to the structures under study with the more generic term *correlation structures* (CSs), a subtype of which is the standard comparative correlative represented in English by examples such as (2) and in EA by what will be referred to below as Type A.[3]

The paper is organized as follows: In Section 2, I describe two types of CSs in EA and the grammatical properties associated with each. In Section 3, I offer a syntactic analysis of both types of CSs in light of the main insights of den Dikken (2005) and Taylor (2013). Section 4 sums up the conclusions of the paper.

2. Correlation structures in EA

In the relevant literature, CSs are characterized as biclausal structures that typically contain a comparative morpheme and/or a quantificational element, often exhibit a non-canonical word order, and express a correlation between two properties or situations (Taylor 2013). In EA, correlation is expressed by means of two structures, which I will refer to as Type A and Type B in this paper. In this section, I describe the grammatical properties of both types and how they differ from CSs in other languages.

2.1. Type A of CSs in EA

The most commonly used CS in EA is marked at the left periphery by the two elements *kull* and *mā*, where *kull* is the universal quantifier in the language and *mā* is the complementizer typically used in adverbial subordinate clauses.[4] I will refer to such CSs as Type A. An example is given in (3).[5]

(3) [$_{C1}$ kull mā ti-ʔrā ʔaktar] [$_{C2}$ (kull mā) ha-ti-fham ʔaktar]
every COMP IPFV-read.2SGM more every COMP FUT-IPFV-understand.2SGM more
'Every increase in the degree/amount of your reading correlates with a proportional increase in the degree/amount of your understanding.'
'The more you read, the more you will understand.'

There are four grammatical properties of CSs of the type exemplified in (3) that I discuss here.[6] First, the comparative DegP *ʔaktar* surfaces in its in situ position within the lexical domain in both

[3] While the term 'correlative' could have been an appropriate label, it is already used in the literature to refer to structures with a sentence-initial relative clause in languages like Hindi-Urdu, as first discussed by Srivastav (1991). I provide an illustrating example of a Hindi-Urdu correlative structure in Section 3 of this paper.

[4] The following abbreviations are used in the glosses of the EA data in the paper: 1, 2, 3 for first, second, and third person, respectively; SG = singular; PL = plural; M = masculine; F = feminine; NEG = negation marker; FUT = future; COMP = complementizer; IPFV = imperfective; and IMP = imperative. EA emphatic consonants are represented with a dot underneath the symbol (e.g., ṭ) in the transcription of the data. Also, for convenience, I represent the EA definite article as the citation form *ʔil-*, even in contexts where it is not pronounced as such (e.g., due to assimilation). Finally, as noted in the introductory section, I follow Culicover and Jackendoff's (1999) convention of referring to the first clause of a CS as C1 and the second clause as C2.

[5] In this section, I provide English glosses that are closer to the literal meaning of the EA examples, as well as the closest equivalent English structure, on separate lines. For ease of exposition, I do not always provide these semi-literal glosses throughout the paper, but it is important to note that the English CSs in the glosses are approximations of the meanings associated with the EA structures.

[6] I should point out that one property of CSs of Type A that is not discussed here is that they may also occur with non-comparative DegPs and without a DegP altogether, in which case they give rise to a correlation between two events. Due to space constraints, I do not discuss this subtype of Type A in this paper, referring the reader to Soltan (to appear) for illustrating data and a full discussion.

clauses, unlike its fronted position in languages such as English, for example. Displacement of DegP to the left periphery is strictly disallowed, as the ungrammaticality of (4) shows.[7]

(4) *ʔaktar (kull) (mā) ti-ʔrā ʔaktar (kull) (mā) ha-ti-fham
more every COMP IPFV-read.2SGM more every COMP FUT-IPFV-understand.2SGM

Second, as shown in example (3), while the marker *kull mā* is obligatory in C1, it is optional in C2. I will refer to this as the *lexical doubling* property of CSs.[8]

Third, examples such as (3) receive the same interpretation generally assigned to comparative correlatives in languages such as English: They express a proportional correlation in degree between the two scales associated with the properties or situations expressed in the two clauses. I will refer to this property as *scalar correlation*, and to this type of structures as *scalar CSs*.[9]

Fourth, scalar CSs in EA readily allow the occurrence of a standard of comparison (SoC), as in (5), a property that has been reported to be ungrammatical in languages such as English and German, for example (cf. Beck 1997).[10]

(5) kull mā ti-zākir ʔaktar min Ahmad (kull mā) ha-t-gīb
every COMP IPFV-study.2SGM more than Ahmad every COMP FUT-IPFV-get.2SGM
magmūʕ ʔaħsan minn-uh
score better than-him
'Every increase in the degree/amount of your studying more than Ahmad correlates with a proportional increase in the degree/amount of your getting a better score than him.'
'*The more you study than Ahmad, the better score you will get than him.'

In sum, CSs of Type A in EA are characterized by the marker *kull mā* at the left periphery, which is obligatory in C1, but optional in C2. The comparative DegP appears in situ and gives rise to a scalar correlation interpretation. This scalar CS may contain an overt SoC phrase.

2.2. Type B of CSs in EA

Type B of CSs in EA is marked at the left periphery by the marker *ʕalā ʔadd mā*, where *ʕalā ʔadd* is a PP meaning 'on/by amount,' and *mā* is the complementizer used in subordinate clauses. As in Type A, the marker is obligatory in C1 and can optionally be lexically doubled in C2. Unlike Type A, this type of CSs expresses a *non-proportional* (or *non-variable*) correlation between fixed points on two scales: *The degree/amount of X correlates with an equal degree/amount of Y*.[11] Consider the illustrating example in (6).

(6) [C1 ʕalā ʔadd mā ti-ʔrā] [C2 (ʕalā ʔadd mā) ha-ti-fham]
on amount COMP IPFV-read.2SGM on amount COMP FUT-IPFV-understand.2SGM
'The degree/amount of your reading correlates with an equal degree/amount of your understanding.'
Literally (using archaic English): 'By how much you read, by so much you will understand.'

---

[7] This in situ property has been noted for comparative correlatives in other languages as well (e.g., in Mandarin Chinese; cf. McCawley 1988, Lin 2007, and E 2014).

[8] My native speaker consultants and I do not find a clear semantic difference between CSs with a lexically doubled correlation marker and those without, but there seems to be a preference among speakers to use lexical doubling. I should also point out that lexical doubling is sometimes not allowed, an important fact that I return to in Section 3.

[9] Other possible terms that can be used to describe this type of correlation are 'proportional' or 'incremental' correlation.

[10] Bhatt (2009) cites a 2007 handout by E. A. Smith with examples showing that the ban on a SoC in comparative comparatives is not absolute in English (e.g., *The faster the cat is than the dog, the more likely it is to get away*).

[11] A similar non-proportional interpretation of CSs has been reported for Latin in Michaelis (1994) and for Mongolian in Hsiou (2003).

Given its non-proportional correlation interpretation, Type B does not permit the occurrence of a comparative DegP, as shown by the ungrammaticality of (7).

(7) *ʕalā ʔadd mā ti-ʔrā ʔaktar (ʕalā ʔadd mā)
on amount COMP IPFV-read.2SGM more on amount COMP
ha-ti-fham ʔaktar
FUT-IPFV-understand.2SGM more

In sum, CSs of Type B in EA are characterized by the marker *ʕalā ʔadd mā* at the left periphery, which is obligatory in C1, but optional in C2. Type B has a non-proportional/non-variable interpretation, and is incompatible with an overt comparative DegP.

3. A syntactic analysis of CSs in EA

CSs of the two types described in the previous section raise two main questions for syntactic analysis. First, at the macro-syntax level, what is the syntactic relation between C1 and C2 in a CS, e.g., is it a case of subordination or parataxis? Second, at the micro-syntax level, what does the internal syntax of both types look like, such that we are able to account for their grammatical properties? I discuss these two questions and offer answers to them in this section.

3.1. The macro-syntax of CSs: A case of subordination

As in other languages discussed in the literature, both types of CSs in EA exhibit clear properties of subordination.[12] More specifically, C1 exhibits the characteristics of a subordinate clause, whereas C2 behaves as a main clause. This is supported by three pieces of empirical evidence.

First, as noted in Section 2, both types of CSs are marked by the complementizer *mā* (cf. the examples in (3) and (6)), which is a typical grammatical property of subordinate clauses in the language, as the temporal and locative adverbial clauses in (8) show.

(8) a. baʕd mā ʔitʕašē-nā xarag-nā ʔitmašē-nā
after COMP ate.dinner-1PL went.out-1PL walked-1PL
'After we had dinner, we went out for a walk.'
b. fēn mā / maṭraḥ mā trūḥ ha-nrūḥ maʕā-k
where COMP/ location COMP go.2SGM FUT-go.1PL with-you
'Wherever you go, we'll go with you.'

A second argument comes from the behavior of tag questions. In EA, a tag question is expressed via the use of expressions such as *ṣaḥ* (= 'correct') or *miš kida* (= 'not so'), as shown in (9).

(9) a. ʔinti duktōra ṣaḥ?
you.SGF doctor correct
'You are a doctor, correct?'
b. ʔinti duktōra miš kida?
you.SGF doctor NEG so
'You are a doctor, isn't that so?'

What is relevant to our purposes here is that when a tag question is appended to a CS, it can only be understood as a question on the content of C2, and not C1, as shown by the felicity of the responses in (10b) and (11b), as opposed to the infelicity of (10c) and (11c).

[12] Culicover and Jackendoff (1999) argue that the macro-syntax of English comparative correlatives simultaneously exhibits properties of subordination and parataxis, concluding that this paradoxical nature poses a serious challenge to standard syntactic analysis; but see den Dikken (2005) and Taylor (2013) for detailed responses.

(10) a. kull mā Ahmad yi-tʔaxxar kitīr barrah ʔil-bēt (kull mā) mamt-u
every COMP Ahmad IPFV-be.late.3SGM much outside the-house every COMP mother-his
bi-ti-ʔlaʔ ʕalē-h miš kida?
ASP-IPFV-worry.3SGF on-him NEG so
'The more Ahmad is out late, the more worried his mother is about him, isn't she/*isn't he?'

b. ʔaywa bi-ti-ʔlaʔ ʕalē-h ʔawī
yes ASP-IPFV-worry.3SGF on-him very.much
'Yes. She worries about him a lot.'

c. #ʔaywa bi-yi-tʔaxxar kitīr ʔawī
yes ASP-IPFV-be.late.3SGM much very
#'Yes. He is out late a lot.'

(11) a. ʕalā ʔadd mā ʔil-wilād ha-yi-ʔr-ū (ʕalā ʔadd mā)
on amount COMP the-children FUT-IPFV-read-3PL on amount COMP
ha-yi-fham-ū miš kida?
FUT-IPFV-understand-3PL NEG this?
'The amount of reading the children do is equal to the amount of understanding they'll gain; isn't that so?'

b. ʔaywa ha-yi-faham-ū kuwayyis ʔin-šāʔa-llāh
yes FUT-IPFV-understand-3PL well if-wanted.3SG-Allah
'Yes. Hopefully, they will understand well.'

c. #ʔaywa ha-yi-ʔr-ū kuwayyis ʔin-šāʔa-llāh
yes FUT-IPFV-read-3PL well if-wanted.3SG-Allah
#'Yes. Hopefully, they will read well.'

Given that tag questions do not target the content of adverbial subordinate clauses, the felicity contrasts in (10) and (11) follow if we assume that in EA CSs, C2 indeed serves as a main clause, whereas C1 functions as an adverbial subordinate clause.[13]

The third argument in support of the subordinate-clause status of C1 and the main-clause status of C2 comes from imperatives. As (12) below shows, imperatives are possible in main clauses, but not in adverbial subordinate clauses.

(12) a. baʕd mā t-ākl-ū ʔiʕmil-ū ʔil-wāgib
after COMP IPFV-eat-1PL do.IMP-1PL the-homework
'After you eat, do the homework.'

b. *baʕd mā kul-ū ʔiʕmil-ū ʔil-wāgib
after COMP eat.IMP-1PL do.IMP-1PL the-homework

As the data in (13-14) below shows, in both types of CSs in EA, an imperative verb may only occur in C2, but never in C1, which is what we would expect if C2 is indeed a main clause, whereas C1 is a subordinate clause.

(13) a. kull mā ta-kul ʔaktar ʔilʕab riyāḍa ʔaktar
every COMP IPFV-eat-2SGM more play.IMP.2SGM sports more
'The more you eat, exercise more!'

b. *kull mā kull ʔaktar ʔilʕab riyāḍa ʔaktar
every COMP eat.IMP.2SGM more play.IMP.2SGM sports more

[13] Note that the contrast is grammatically visible in languages such as English, where the tag question can only include a pronoun co-referential with the subject of the main clause, but not the subject of the subordinate clause, as the contrast between 'isn't she' and 'isn't he' in the gloss of (10a) shows.

(14) a. ʕalā ʔadd mā b-t-ākul ʔilʕab riyāḍa
on amount COMP ASP-IPFV-eat.2SGM play.IMP.2SGM sports
'Exercise to the degree/amount equal to the degree/amount of your eating.'
b. *ʕalā ʔadd mā kul ʔilʕab riyāḍa
on amount COMP eat.IMP.2SGM play.IMP.2SGM sports

To sum up this section, the occurrence of the complementizer *mā*, the behavior of tag questions, and the occurrence of imperatives, all support the claim made here that C1 of an EA CS is a subordinate clause, whereas C2 is a main clause.[14]

3.2. The micro-syntax of CSs

In their investigations of cross-linguistic variation in comparative correlatives, both den Dikken (2005) and Taylor (2013) argue for a syntactic analysis of such structures whereby C1 is merged as an adjunct of C2, thus accounting for the subordination properties characterizing such structures cross-linguistically. While the two analyses differ in the details, they share the same main assumption regarding the adjunct status of C1, which I adopt here given the evidence in support of C1 being a subordinate clause in EA CSs, as discussed in Section 3.1. For considerations of space, I focus only on den Dikken's proposed structure and show how it can be modified to account for the facts of EA CSs discussed in this paper.

The starting point for den Dikken's (2005) analysis is that comparative correlatives are in essence *correlative* structures of the type attested in languages such as Hindi-Urdu, as discussed in Srivastav (1991). In particular, in such languages, in addition to regular relative clauses, such as the one in (15a), we also find correlative structures such as (15b).

(15) a. [IP [DP *Vo* laRkii [CP *jo* khaRii hai]] [I' lambii hai]]
DEM girl REL standing is tall is
'The girl that is standing is tall.'
b. [IP [CP *Jo* laRkii khaRii hai] [IP *Vo* lambii hai]]
REL girl standing is DEM tall is
'Which girl is standing, that (one) is tall.'

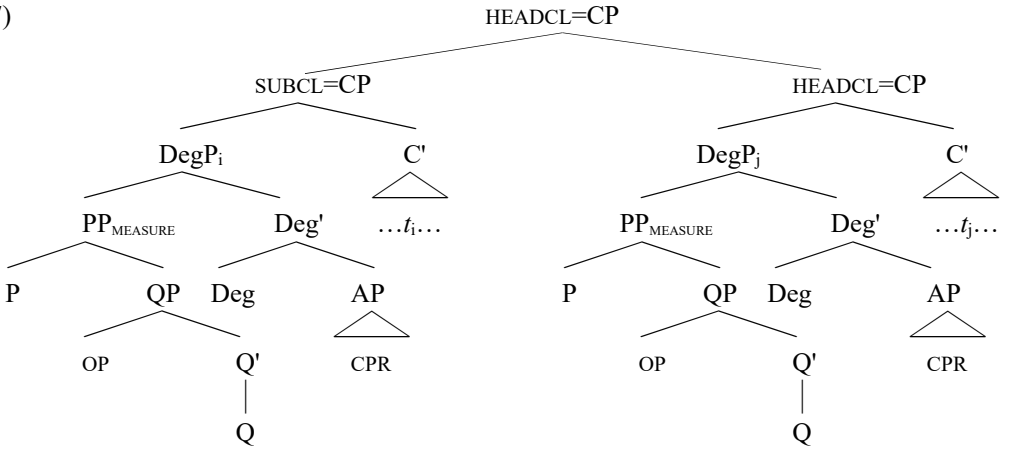
A correlative structure is characterized by the adjunction of a relative clause, which is marked by a relativizing operator (REL in (15b)), to the main clause, which, in turn, is introduced by a demonstrative element (DEM in (15b)). A skeletal structure of correlatives is thus one along the lines of (16).

(16) [main_clause [subordinate_clause Operator . . .] [main_clause Demonstrative . . .]]

This macro-structure in (16) is argued by den Dikken to extend to comparative correlatives cross-linguistically, where an overt comparative DegP appears at the left periphery of both clauses. A tree diagram of his proposed structure is given in (17), where HEADCL = head clause, whereas SUBCL = subordinate clause (C2 and C1, respectively, in the Culicover and Jackendoff's convention adopted in this paper); CPR stands for the 'comparative' morpheme, and OP for 'operator.'

[14] Notice that this leaves us still with the lexical doubling puzzle, since it is uncommon for main clauses to be introduced by a lexically doubled particle. I will get back to this issue later in this section.

(17)



Den Dikken cites the examples in (18) from archaic varieties of English, where the slots of the proposed structure in (17) are all filled with lexical material, schematically represented in (19), as opposed to today's English varieties, where some of these slots appear null instead, as illustrated in (21) for the English example in (20).

(18) a. "*By how much the lesse he looked for this discourse, by so much the more he lyked it*." (Lyly, *Euphues*, 16th century; from Jespersen 1961:5.383)
b. *"By how much the better man you are yourself, by so much the more will you be inclined to believe me*." (Fielding, *Tom Jones*, 18th century)

(19) [$_{C1}$ [$_{DegP}$ [$_{PP}$ by [$_{QP}$ how much]] [$_{Deg'}$ the [$_{AP}$ lesse]]]$_i$ [… t_i …]],
[$_{C2}$ [$_{DegP}$ [$_{PP}$ by [$_{QP}$ so much]] [$_{Deg'}$ the [$_{AP}$ more]]]$_j$ [… t_j …]]

(20) The more you read, the more you understand.

(21) [$_{C1}$ [$_{DegP}$ [$_{QP}$ Ø-OP Ø] [$_{Deg'}$ the [$_{AP}$ more]]]$_i$ [… t_i …]],
[$_{C2}$ [$_{DegP}$ [$_{QP}$ Ø-DEM Ø] [$_{Deg'}$ the [$_{AP}$ more]]]$_j$ [… t_j …]]

Den Dikken further provides cross-linguistic data showing that various languages generally adhere to the skeletal structure in (17) to express correlation, but vary with regard to which syntactic heads are lexically realized.

In this paper, I adopt the core insights of den Dikken's (2005) proposal (cf. also Taylor 2013 for a similar analysis), but modify the analysis in order to account for the grammatical properties of CSs in EA.

First, I assume that C1 is adjoined to C2, thereby accounting for the subordination facts discussed in Section 3.1. Unlike the languages discussed by den Dikken and Taylor, however, EA comparative DegPs in Type A are not displaced to the left periphery. This follows straightforwardly from the fact that the quantifier *kull* is merged in SpecCP, rendering DegP displacement unavailable. Interestingly, in Maltese, which does not mark CSs with *kull*, the comparative DegP *aktar* undergoes overt movement, as the following example from Beck (1997) shows (notice that Beck glosses the complementizer *ma* as PART(ICLE)).[15]

(22) aktar ma jkun kiesah avukat aktar ikollu success
more PART is cold attorney more has success
'The colder an attorney is, the more success he has.'

[15] Thanks to Maris Camilleri for drawing my attention to this fact in Maltese.

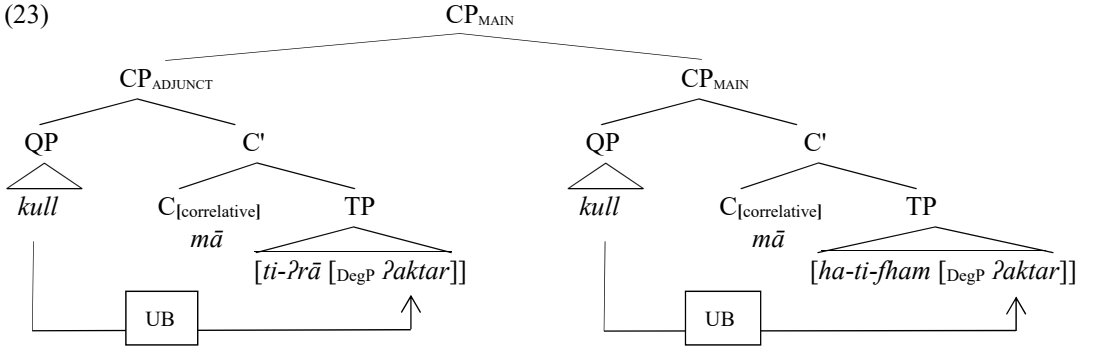
Second, an in situ comparative DegP in a CS is expected to exhibit the same syntactic behavior of DegPs in the language, hence the occurrence of a SoC in CSs is not surprising (cf. the example in (5)). This obviously raises a question regarding comparative CSs in languages like English and German, where a SoC has generally been assumed to be disallowed. Beck (1997) argues that the ban on a SoC in such structures is that their semantics requires the presence of an obligatorily implicit SoC. This proposal clearly cannot be extended to CSs in languages such as EA, among several others, where a SoC readily occurs. In fact, Bhatt (2009) argues that positing a silent SoC in such structures is unnecessary, citing data from Hindi-Urdu and a variety of other languages, including English, where a SoC is shown to be possible in comparative correlatives (see fn. 10). While this does not provide a clear answer why some languages such as English and German do not usually allow SoCs in their comparative correlatives, it is worth pointing out that the EA facts are what we would expect. A ban on a SoC inside a DegP would actually be surprising because it would have to be stipulated as a construction-specific property.

Third, assuming that the complementizer in each clause of a CS carries a [correlative] feature, which is licensed via merge of a QP or a measure PP in SpecCP, we directly account for Type A and Type B, respectively.[16]

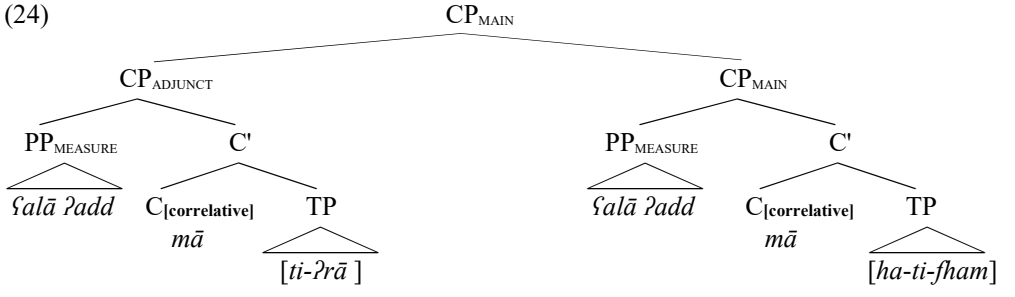
Finally, the scalar correlation interpretation associated with Type A can be assumed to result from the QP at the left periphery binding a degree variable in the DegP via the mechanism of *unselective binding* (UB) (cf. Lewis 1975, Heim 1982, Pesetsky 1987; also see E 2014 for an UB proposal regarding in situ comparative correlatives in Mandarin Chinese). By contrast, the measure PP in Type B does not create a quantifier-variable dependency, therefore giving rise to a non-variable correlation interpretation.

Given the discussion in this section, we are now in a position to represent the internal syntax of Type A and Type B as in (23) and (24), for the CS examples in (3) and (6), respectively.[17]

(23)



(24)



[16] As the reader may notice, the assumption regarding the presence of a [correlative] feature in both clauses is not unproblematic, but it should suffice for our purposes in this paper. A more adequate analysis would probably have the [correlative] feature on the complementizer of the main clause only, which is readily implementable within a cartographic rendition of the trees in (23) and (24). Due to space considerations, I do not pursue this cartographic analysis here, referring the reader to the more elaborate analysis of CSs in EA in Soltan (to appear). For a cartographic approach to CSs in other languages, see Iwasaki and Radford (2009) for English, Borgonovo and Valmala (2010) for Spanish, and E (2014) for Mandarin Chinese.

[17] I use CP_{MAIN} to refer to the main clause and $CP_{ADJUNCT}$ for the subordinate clause (C2 and C1, respectively, in the convention adopted in this paper).

Finally, it remains to account for the optional lexical doubling property of CSs in EA. In this regard, I would like to argue that lexical doubling is the result of an (optional) post-syntactic operation of phonological parallelism. More specifically, while the QP/PP and the complementizer are obligatory subordinators in C1, they are syntactically null in C2, but may undergo lexicalization at PF for phonological parallelism.[18] One piece of evidence in support of this account comes from contexts where lexical doubling is blocked. This is the case when C2 is in the imperative mood, as shown in (25).

(25) a. kull mā ta-kul ʔaktar (*kull mā) ʔilʕab riyāḍa ʔaktar
every COMP IPFV-eat-2SGM more every COMP play.IMP.2SGM sports more
'The more you eat, exercise more!'

b. ʕalā ʔadd mā b-t-ākul (*ʕalā ʔadd mā) ʔilʕab riyāḍa
on amount COMP ASP-IPFV-eat.2SGM on amount COMP play.IMP.2SGM sports
'Exercise to the degree/amount equal to the degree/amount of your eating!'

If lexical doubling is indeed an optional post-syntactic rule, we expect it to be blocked if an obligatory operation targets the complementizer position of C2. This is exactly what happens in imperative contexts, where verbs in Arabic dialects are assumed to raise all the way up to the complementizer position (cf. Soltan 2009). If lexical doubling applies post-syntactically, as proposed here, then its absence in CSs whose C2 is imperative readily follows: In the presence of an imperative verb in C, the lexical doubling rule simply cannot apply.[19]

In this section, I proposed an account of the two types of CSs in EA, whereby their macro-syntax is that of subordination and their micro-syntax follows from two types of XPs that license a correlative feature of the complementizer head (a QP in Type A, or a measure PP in Type B). Since a QP is able to unselectively bind a degree variable, Type A is associated with a scalar correlation interpretation. A measure PP, by contrast, does not give rise to an operator-degree relation, and the interpretation is that of a non-proportional correlation. The presence of an overt QP in SpecCP in Type A explains why DegP displacement is disallowed in this dialect. Finally, the occurrence of a SoC in Type A is what we expect, given the presence of a comparative DegP in this type of CSs.

4. Conclusion

In this paper, I have discussed two types of CSs in EA, referred to as Type A and Type B. On the macro-syntax level, I have provided multiple syntactic facts showing that both types involve subordination, and as such can be readily accounted for under an analysis whereby the first clause is adjoined to the second, along the lines proposed in den Dikken (2005) and Taylor (2013). On the micro-syntax level, I have shown that both types of CSs, while sharing the same syntactic skeleton, differ as a consequence of the XP that marks the structure at the left periphery: A QP in the case of Type A and a measure PP in the case of Type B. Absence of overt displacement of the comparative DegP in Type A follows trivially from SpecCP being occupied by a QP, as does the occurrence of a SoC, an expected property of comparative DegPs in general. Type A involves a quantifier-variable dependency, which gives rise to a scalar correlation in degree. Type B, by contrast, is marked by a measure PP at the left periphery, and is incompatible with a comparative DegP; hence, it gives rise to a non-proportional correlation interpretation. Finally, I have argued that the lexical doubling of the QP/PP and the complementizer in CSs is best understood as the result of a post-syntactic operation of phonological parallelism. If correct, the data and analysis presented here add to a growing body of literature on CSs cross-linguistically, showing that such structures, while peculiar on the surface, do indeed follow from general assumptions of grammatical theory and they do not warrant being posited as primitive 'constructions' in the grammar.

[18] Cross-linguistically, parallelism seems to be a robust feature of CSs, which is probably responsible for their paratactic feel (cf., for example, the use of *the* in English comparative correlatives), a topic worthy of further investigation beyond the narrow scope of this paper.

[19] Whatever the exact formulation of the (optional) lexical doubling rule is, it must require the spell-out of both the complementizer and the XP in its Spec, which is reasonable, if the rule is indeed driven by phonological parallelism.

References

Alqurashi, Abdulrahman. A., and Borsley, Robert D. 2014. The Comparative Correlative Construction in Modern Standard Arabic. In Stefan Müller (ed.) *Proceedings of the 21st International Conference on HPSG*, pp. 6-26. CSLI Publications.

Beck, Sigrid. 1997. On the semantics of comparative conditionals. *Linguistics and Philosophy* 20, 229-271.

Bhatt, Rajesh. 2009. Comments on 'Comparative Correlatives in Greek: The syntax of *oso'*. In Claire Halpert, Jeremy Hartman, and David Hill (eds.) *MIT Working Papers in Linguistics 57: Proceedings of the 2007 Workshop on Greek Syntax and Semantics at MIT*, pp. 107-122. Cambridge, MA: MIT.

Borgonovo, Claudia, and Valmala, Vidal. 2010. The syntax of Spanish comparative correlatives. In Bart Hollebrandse, Brigitte Kampers-Manhe, and Reineke Bok-Bennema (eds.) *Romance Languages and Linguistic Theory 2008: Selected Papers From 'Going Romance' Goningen 2008*, pp. 17-35. Amsterdam: John Benjamins.

Borsley, Robert D. 2003. On the Polish periphery: comparative correlatives in Polish. In Piotr Banski and Adam Przepiórkowski (eds.) *GLIP-5: Proceedings of Fifth Generative Linguistics in Poland Conference*, pp. 15-28. Warsaw: Polish Academy of Science.

Borsley, Robert D. 2004. An Approach to English Comparative Correlatives. In Stefan Müller (ed.) *Proceedings of the 11th International Conference on HPSG*, pp. 70-92. CSLI Publications.

Culicover, Peter W., and Jackendoff, Ray. 1999. The View from the Periphery: The English comparative correlative. *Linguistic Inquiry* 30, 543-571.

den Dikken, Marcel. 2005. Comparative Correlatives Comparatively. *Linguistic Inquiry* 36, 497-532.

E, Chen-chun. 2014. *The Syntax of Comparative Correlatives in Mandarin Chinese*. PhD Dissertation, University of Arizona.

Fillmore, Charles. 1987. Varieties of Conditional Sentences. *ESCOL3*, pp. 163-182.

Heim, Irene. 1982. *The Semantics of Definite and Indefinite Noun Phrases.* PhD Dissertation. University of Massachusetts, Amherst.

Hsiao, Su-ying. 2003. On proportional correlative constructions in Chinese and Mongolian. *Journal of Taiwanese Languages and Literature* 1, 239-267.

Iwasaki, Eiichi, and Radford, Andrew. 2009. Comparative Correlatives in English: A Minimalist-Cartographic Analysis. *Essex Research Reports in Linguistics, Vol. 57.6.* University of Essex, Colchester, UK. http://www.essex.ac.uk/linguistics/errl/errl57-6.pdf

Jespersen, Otto. 1961. *A modern English grammar on historical principles*. London: George Allen and Unwin/Copenhagen: Munksgaard.

Lewis, David. 1975. Adverbs of Quantification. In Edward Keenan (ed.) *Formal Semantics of Natural Language*, pp. 3-15. Cambridge: Cambridge University Press.

Lin, Jo-Wang. 2007. On the semantics of comparative correlatives in Mandarin Chinese. *Journal of Semantics* 24, 169-213.

McCawley, James. D. 1988. The Comparative Conditional Constructions in English, German and Chinese. In *Proceedings of the 14th Annual Meeting of the Berkeley Linguistics Society*, pp. 176-187.

Michaelis, Laura. 1994. A case of constructional polysemy in Latin. *Studies in Language* 18, 45-70.

Pesetsky, David. 1987. Wh-in-situ: Movement and unselective binding. In Eric J. Reuland and Alice G. B. ter Meulen (eds.) *The representation of (in)definiteness*, pp. 98-129. Cambridge, MA: MIT Press.

Ross, John Robert. 1967. *Constraints on Variables in Syntax*. PhD Dissertation, MIT.

Soltan, Usama. 2009. Agree in the Functional Domain: Evidence from the Morphosyntax of Positive and Negative Imperatives in Standard Arabic. In Akinloye Ojo and Lioba Moshi (eds.) *Selected Proceedings of the 39th Annual Conference on African Linguistics*, pp, 86-99. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #2189.

Soltan, Usama. To appear. On the syntax of correlation: Evidence from Egyptian Arabic. In Elly van Gelderen (ed.) *Perspectives on Arabic Linguistics Volume 32*. Amsterdam: John Benjamins.

Srivastav, Veneeta. 1991. The syntax and semantics of correlatives. *Natural Language and Linguistic Theory* 9, 637-686.

Taylor, Heather Lee. 2013. *Grammar Deconstructed: Constructions and the Curious Case of the Comparative Correlative*. PhD Dissertation, University of Maryland, College Park.

Proceedings of the 36th West Coast Conference on Formal Linguistics

edited by Richard Stockwell, Maura O'Leary, Zhongshi Xu, and Z.L. Zhou

Cascadilla Proceedings Project Somerville, MA 2019

Copyright information

ISBN 978-1-57473-474-4 hardback

Ordering information

Orders for the printed edition are handled by Cascadilla Press.
To place an order, go to www.lingref.com or contact:

Cascadilla Press, P.O. Box 440355, Somerville, MA 02144, USA
phone: 1-617-776-2370, fax: 1-617-776-2271, sales@cascadilla.com

Web access and citation information

This entire proceedings can also be viewed on the web at www.lingref.com. Each paper has a unique document # which can be added to citations to facilitate access. The document # should not replace the full citation.

This paper can be cited as:

Soltan, Usama. 2019. On Two Types of Correlation Structures in Egyptian Arabic. In *Proceedings of the 36th West Coast Conference on Formal Linguistics*, ed. Richard Stockwell et al., 316-325. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #3476.