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CHAPTER 8

The Merge Condition on Adjuncts

Evidence from circumstantial clauses in Lebanese Arabic

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Discussion of merge as a feature-driven operation has predominantly focused on the restrictions on Set Merge, or substitution. This paper addresses the topic of Pair Merge, or adjunction. It suggests that Pair Merge is subject to a restriction called the Merge Condition on Adjuncts. While Set Merge is contingent on the feature specifications of the heads of the two merging elements, the Merge Condition on Adjuncts states that an adjunct must merge in accordance with the feature specifications of its own head. Two edge features are available: [+ Predicational] and [– Predicational]. Only the former forces the adjunct to function as an open predicate and to establish a predication dependency – or a subject-predicate relation – with an element in the matrix clause. This requirement is syntactic, and it overrides the semantic specifications of adjuncts. Support comes from adjunct control into circumstantial clauses in Lebanese Arabic.

Keywords: adjunction, Arabic, control, movement, structural theory of predication

1. Introduction

In Minimalist syntax (Chomsky 1995), MERGE is a structure-building operation that comes in two forms: SET MERGE and PAIR MERGE. Under standard assumptions, Set Merge is an instance of a probe-goal relation between two syntactic objects determined by the features on the heads of the probe and the goal. Pesetsky and Torrego (2006) formalize this requirement as the Vehicle Requirement on Merge, which states that "[i]f α and β merge, some feature F of α must probe F on β" (see also Chomsky 2000, pp. 132–135; Hornstein 2001, p. 56; Adger 2003, p. 91). Wurmbrand (2014) calls this the Merge Condition.

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Set Merge readily applies to complements and to elements in an 'argument of' relation. Adjuncts, on the other hand, merge without meeting the Merge Condition (see, for example, Haddad 2010b; Wurmbrand 2014). Adjuncts are not selected, and thus they do not enter a probe-goal relation. They do not value features on probes, receive theta-roles, or check case. Additionally, the element they adjoin to behaves as if the adjunct is not there and "retains all its properties," including its category and its selection requirements (Chomsky 2004, 2008; Hornstein et al. 2005).[1]

Despite all their idiosyncrasies, however, adjuncts still need to merge, and adjunction is still a type of merge. The question is: Does adjunction "just happen" or is it subject to a merge condition on a par with Set Merge? Chomsky takes this latter view, suggesting that adjectives merge in a different dimension or a separate plane from arguments (see also Uriagereka 2003); he also posits that adjuncts undergo a different type of merge, which he calls Pair Merge.[2]

An important property of Pair Merge is its reliance on *edge features*. When properties of a syntactic object cannot be determined by selection, the behavior of that object may be dictated by the properties of its own head (see, for example, Webelhuth 1992, p. 86). Chomsky (2007, p. 11) maintains that for an element Z to merge, "its label W must have a feature indicating that Z can be merged." Chomsky (2008, p. 139) refers to this feature as an edge feature.

Applying Webelhuth's and Chomsky's generalizations about merge to adjuncts, we conclude that adjuncts do not "just" merge. Although the fact that they are not subcategorized for gives them a significant amount of freedom (as to where they can merge, how many of them can merge at the same time, and whether they will merge at all), they are still restricted by a merge condition. This merge condition, however, is different from the one posited for Set Merge, whereby merge is contingent on the feature specifications of the two elements involved. Drawing on work by Haddad (2010b, 2011) on Telugu and Assamese, I suggest that adjuncts are subject to a unilateral condition I call the Merge Condition on Adjuncts:

(1) The Merge Condition on Adjuncts
Adjuncts merge in accordance with their own edge features.
   a. If an adjunct has a non-predicational edge feature [– PRED], it may merge as a syntactically saturated element with no need to establish a predication relation (subject-predicate relation) with an element in the matrix clause.

1. Some exceptions exist; e.g., *badly* in *Tom behaved badly* seems to be selected by the verb. This, however, does not necessarily mean that *badly* enters a probe-goal relation with the predicate. Often, however, the obligatoriness of such adjuncts is required by conversational pragmatics and not subject to subcategorization requirements. See Goldberg and Ackerman 2001.

2. Hornstein and Nunes (2008) reanalyze merge as concatenation + labelling. To them, adjuncts undergo concatenation without labelling, or they dangle.

b. If an adjunct has a predicational edge feature [+ PRED], it must merge as a syntactically unsaturated element and must establish a predication relation with an element in the matrix clause.

I adopt the structural theory of predication proposed by Rothstein (2001), according to which predication relations may be determined on purely syntactic grounds. Thus, although mapping between semantic and syntactic predicates is possible, "the syntactic predication relation can be defined without reference to semantic or thematic concepts" (Rothstein 2001, pp. 60–61). For example, a pleonastic expression may appear in the subject position of a predicate for the sole purpose of satisfying the (purely syntactic) Predicate Licensing Condition in (2).

(2) Predicate Licensing Condition
Every syntactic predicate must be syntactically saturated … by being linked to a non-predicate constituent, its subject. (Rothstein 2001, p. 47)

Similarly, certain heads, such as D and C, render syntactic objects structurally non-predicational, allowing them to merge as arguments (see, for example, Szabolcsi 1994).

The main claim of the present paper is that adjuncts have edge features that determine how they can merge. Two options are available to adjuncts: (i) they may project a non-predicational head that allows them to merge as syntactically saturated elements without a predication dependency on the matrix clause;[3] or (ii) they may project a predicational head, in which case they must merge as predicational elements linked to the matrix clause via a predication or control dependency. I will show that the restrictions stated in the Merge Condition on Adjuncts, especially (1b), are purely syntactic and override the semantic specifications of expressions.

The reasoning behind the establishment of the Merge Condition on Adjuncts is as follows. Adjuncts have a paradoxical relationship with the matrix clause. They are related to the matrix clause semantically, but they behave as stand-alone units syntactically. Johnson (2003) maintains that, syntactically, "[a]n adjunct is a phrase whose sister is also a phrase and whose mother is not its projection" (187). Adjuncts do not alter the category of the element they merge with, nor is their category altered by the element they adjoin to. In other words, adjuncts are limited by their edge features, with no chance to project beyond that feature or alter it upon merge with the matrix clause. If an adjunct's edge feature qualifies it to be syntactically non-predicational, it merges as such. If, on the other hand, an adjunct's edge feature

3. The claim is that the edge feature of an adjunct may trigger the movement of the subject and lead to a predication or control relation with the adjunct. The claim is *not* that all adjunct control relations are driven by the edge feature of the adjunct. A control relation may be driven by other feature-checking requirements. For example, the subject of an adjunct may move to the matrix clause because it needs to check its case feature.

renders it syntactically predicational, the matrix clause (the "primary plane," in Chomsky's words) is forced to comply with its edge feature specifications.

Support for the Merge Condition on Adjuncts comes from adjunct control into circumstantial clauses in Lebanese Arabic. Section 2 provides an overview of the clauses under investigation. These clauses come in two minimally different forms, only one of which enforces a control interpretation. Section 3 shows that control into circumstantial clauses is best analyzed as the outcome of movement. This section also shows that movement is not triggered by the feature checking needs of the moving element or its target, as is standardly assumed. Rather, movement takes place in order for the circumstantial clause to satisfy the Merge Condition on Adjuncts. Section 4 presents data from other structures in Lebanese Arabic to show that the Merge Condition on Adjuncts applies beyond the data in Section 3. Section 5 presents my conclusion.

2. Circumstantial clauses: An overview

A circumstantial clause, known in Arabic as *ʒumlat ħa:l*, is an adjunct that describes the circumstances under which a matrix event occurs. Circumstantial clauses may be structurally divided into two broad categories:

i. COMP-less Circumstantial Clauses: These are circumstantial clauses without an overt complementizer.
ii. COMP Circumstantial Clauses: These are circumstantial clauses with an overt complementizer.

The sentences in (3) are examples of the former, while those in (4) are examples of the latter.

(3) COMP-less Circumstantial Clauses

a. *l-wle:d fe:to: ʕa-l-be:t [ʕam-biɣanno:*
the-children enter.PERF.3.PL to-the-house [PROG-sing.IMPERF.3.PL
ɣinniyye la-Na:nsi ʕaʒram]
song by-Nancy Ajram
'The children walked into the house singing a song by Nancy Ajram.'

b. *l-tle:mi:z$_i$ dˤaharo: min*
the-students$_i$ come.out.PERF.3.PL from
l-ʔimtiħa:n [ʕam-byidˤħako:]
the-exam [PROG-laugh.IMPERF.3.PL]
'The students came out of the exam laughing.'

c. *[Kari:m w-Na:dya:]*$_i$ *bine:mo: [ʕam-byitxe:naʔo:]*
[Karim and-Nadia]$_i$ sleep.IMPERF.3.PL [PROG-argue.IMPERF.3.PL]
w-byu:ʕo: [ʕam-byitxe:naʔo:]
and-rise.IMPERF.3.PL [PROG-argue.IMPERF.3.PL]
'Karim and Nadia go to bed arguing and wake up arguing.'
'Karim and Nadia argue all the time.'

d. *l-wle:d*$_i$ *ʔadˁdˁo: kil laylit l-ʒumʕa*
the-children$_i$ spend.PERF.3.PL all night the-Friday
[ʕam-byiħko: ʕan l-riħle yo:m l-sabit]
[PROG-talk.IMPERF.3.PL about the-excursion day the-Saturday]
'The children spent all night Friday talking about the excursion on Saturday.'

(4) COMP Circumstantial Clauses

a. *l-wle:d fe:to: ʕa-l-be:t [w-hinne*
the-children enter.PERF.3.PL to-the-house [COMP-they
ʕam-biɣanno: ɣinniyye la-Na:nsi ʕaʒram]
PROG-sing.IMPERF.3.PL song by-Nancy Ajram
'The children walked into the house singing a song by Nancy Ajram.'

b. *l-tle:mi:z dˁaharo: min l-ʔimtiħa:n*
the-students come.out.PERF.3.PL from the-exam
[w-hinne ʕam-byiḍˁħako:]
[COMP-they PROG-laugh.IMPERF.3.PL]
'The students came out of the exam laughing.'

c. *Kari:m w-Na:dya: bine:mo: [w-hinne*
Karim and-Nadia sleep.IMPERF.3.PL [COMP-they
ʕam-byitxe:naʔo:] w-byu:ʕo:
PROG-argue.IMPERF.3.PL] and-rise.IMPERF.3.PL
[w-hinne ʕam-byitxe:naʔo:]
[COMP-they PROG-argue.IMPERF.3.PL]
'Karim and Nadia go to bed arguing and wake up arguing.'
'Karim and Nadia argue all the time.'

d. *l-wle:d ʔadˁdˁo: kil laylit l-ʒumʕa [w-hinne*
the-children spend.PERF.3.PL all night the-Friday [COMP-they
ʕam-byiħko: ʕan l-riħle yo:m l-sabit]
PROG-talk.IMPERF.3.PL about the-excursion day the-Saturday]
'The children spent all night Friday talking about the excursion on Saturday.'

The complementizer *w-* is known in Arabic as *wa:w l-ħa:l* 'circumstantial *w-*' and may be glossed as *while* in the examples in (4). This *w-* is homophonous with the coordinating conjunction *w-* 'and'. However, the two differ in at least one crucial way: Only circumstantial *w-* accepts a preceding pronoun. Thus, sentence (4b may be also realized as in (5).

(5) *l-tle:mi:z* *dˤaharo:* *min* *l-ʔimtiħa:n*
the-students come.out.PERF.3.PL from the-exam
[hinne *w-ʕam-byiḍˤħako:]*
[they COMP-PROG-laugh.IMPERF.3.PL]
'The students came out of the exam laughing.'

If context permits, circumstantial *w-* in (4b), which precedes the pronoun, may alternatively be interpreted as a coordinating conjunction. In this case, the sentence would mean that the students came out of the exam, and they themselves or some other group of people are now laughing. No such alternative is available when circumstantial *w-* follows the pronoun, (5), no matter how much context is provided.

COMP and COMP-less circumstantial clauses have several characteristics in common. First, both clause types denote an overlap between two eventualities (where an "eventuality" may be any event or a state). In (3b) and (4b), for example, the overlap is between two events: the matrix event of coming out of an exam and an embedded event of laughing. Next, the verb in both types of circumstantial clause must be imperfective; a perfective verb leads to ungrammaticality, as the sentences in (6) illustrate. Note that *w-* in (6b) may be interpreted as a coordinating conjunction, leading to one possible grammatical reading with the perfective verb, in which *hinne* 'they' refers emphatically to the children or to other individuals. The same is not true in (6c), where *w-* follows the pronoun. In this order, only the COMP reading of *w-* is available, and this reading is incompatible with perfective verbs.

(6) a. COMP-less Circumstantial Clauses
**l-wle:d*$_i$ *dˤaharo:* *[Ø*$_{i/*k}$ *dˤiħko:]*
the-children$_i$ go.out.PERF.3.PL [Ø$_{i/*k}$ laugh.PERF.3.PL]

b. COMP Circumstantial Clauses
l-wle:d *dˤaharo:* *[w-hinne* *dˤiħko:]*
the-children go.out.PERF.3.PL [COMP-they laugh.PERF.3.PL]
✓ 'The children went out, and THEY laughed.'
*'The children went out laughing.'

c. COMP Circumstantial Clauses
**l-wle:d* *dˤaharo:* *[hinne* *w-dˤiħko:]*
the-children go.out.PERF.3.PL [they COMP-laugh.PERF.3.PL]

Third, the tense in both types of circumstantial clause is semantically dependent on the matrix tense. The sentences in (7) show that a mismatch in tense is not grammatical.

(7) a. COMP-less Circumstantial Clauses
l-wle:d$_i$ *dˤaharo:* *mbe:riħ*
the-children$_i$ go.out.PERF.3.PL yesterday
[Ø$_{i/*k}$ *ʕam-yidˤħako:* *(*lyo:m)]*
[Ø$_{i/*k}$ PROG-laugh.IMPERF.3.PL (*today)]
'The children went out yesterday laughing (*today).'

b. COMP Circumstantial Clauses
l-wle:d$_i$ *dˤaharo:* *mbe:riħ*
the-children$_i$ go.out.PERF.3.PL yesterday
[hinne *w-ʕam-yidˤħako:* *(*lyo:m)]*
[they COMP-PROG-laugh.IMPERF.3.PL (*today)]
'The children went out yesterday laughing (*today).'

There is, however, one difference between the two types of circumstantial clauses that is important for our purposes. Only COMP-less circumstantial clauses require their subject to corefer with a matrix argument (which in this case is also the subject). Thus, sentence (3a) above, repeated here as (8), may only mean that the children who entered the house were themselves singing a song by Nancy Ajram, as the indices indicate. The same does not hold true for COMP circumstantial clauses, as the sentences in (9) illustrate.

(8) *l-wle:d*$_i$ *fe:to:* *ʕa-l-be:t* *[Ø*$_{i/*k}$ *ʕam-biɣanno:*
the-children$_i$ enter.PERF.3.PL to-the-house [Ø$_{i/*k}$ PROG-sing.IMPERF.3.PL
ɣinniyye la-Na:nsi ʕaʒram]
song by-Nancy Ajram
'The children walked into the house singing a song by Nancy Ajram.'

(9) a. *l-wle:d*$_i$ *fe:to:* *ʕa-l-be:t*
the-children$_i$ enter.PERF.3.PL to-the-house
[hinne$_{i/k}$ *w-ʕam-biɣanno:]*
[they$_{i/k}$ COMP-PROG-sing.IMPERF.3.PL]
'The children walked into the house while they were singing.'

b. *l-wle:d* *fe:to:* *ʕa-l-be:t*
the-children enter.PERF.3.PL to-the-house
[ʔana: *w-ʕam-bɣanni:]*
[I COMP-PROG-sing.IMPERF.1.SG]
'The children walked into the house while I was singing.'

Importantly, the coreferentiality requirement in structures with COMP-less circumstantial clauses is not correlated with the embedded subject's covert nature. The subject may in fact appear overtly in the form of a quantificational element or a strong pronoun, as (10) and (11) show. Even in these cases, the pronoun cliticized to the subject obligatorily corefers with the matrix subject.

(10) *l-wle:d*$_i$ *fe:to:* *ʕa-l-be:t*
the-children$_i$ enter.PERF.3.PL to-the-house
[kill-un$_{i/*k}$ */ tle:tit-un*$_{i/*k}$ *ʕam-biyanno:*
[all-them$_{i/*k}$ / three-them$_{i/*k}$ PROG-sing.IMPERF.3.PL
'The children walked into the house, all of them/all three of them singing.'

(11) *l-wle:d*$_i$ *dˤaharo:* *[nisˤ-un*$_{i/*k}$ *ʕam-byidˤħako:*
the-children$_i$ go.out.PERF.3.PL [half-them$_{i/*k}$ PROG-laugh.IMPERF.3.PL
w-nisˤ-un$_{i/*k}$ *ʕam-byibko]*
and-half-them$_{i/*k}$ PROG-cry.IMPERF.3.PL]
'The children went out, half (of them) laughing and half (of them) crying.'

In the rest of this paper, I will treat COMP circumstantial clauses as CPs, since they are realized with an overt complementizer. I assume that COMP-less circumstantial clauses are (at least) IPs that project as high as AspP (Aspect Phrase) or a defective TP. Several observations support this assumption. First, the COMP-less circumstantial clauses we have seen above all contain a progressive imperfective verb, which suggests the presence of an AspP (see Hallman 2015a). COMP-less circumstantial may also contain the future marker *raħ*, (12), which presumably occupies TP. Note, however, that the tense of the circumstantial clause is interpreted in relation to the matrix clause. That is, the crying event is interpreted in the future relative to the tense of the matrix clause (see Hallman 2015b [this volume] for a similar observation).

(12) *l-tle:mi:z* *dˤaharo:* *min* *l-ʔimtiħa:n* *[raħ* *yibko:]*
the-students go.out.PERF.3.PL from the-exam [FUT cry.IMPERF.3.PL]
'The students came out of the exam about to cry.'

In addition, COMP-less circumstantial clauses may be modified by sentence level (IP/CP) adverbs, such as 'unfortunately' and 'probably', as (13) and (14) show.

(13) *l-tle:mi:z* *dˤaharo:* *min* *l-ʔimtiħa:n*
the-students go.out.PERF.3.PL from the-exam
li-l-ʔasaf *ʕam-byibko:*
unfortunately PROG-cry.IMPERF.3.PL
'The students came out of the exam unfortunately crying.'

(14) *l-tle:mi:z* *raħ* *yiḍˁharo:* *min* *l-ʔimtiħa:n*
the-students FUT go.out.IMPERF.3.PL from the-exam
ʕala l-ʔarʒaħ *ʕam-byibko:*
probably PROG-cry.IMPERF.3.PL
'The students came out of the exam probably crying.'

Finally, Lebanese Arabic, like other varieties of Arabic, allows sentences like (15). According to Alexopoulou, Doron, and Heycock (2003), structures like (15) are multi-specifier constructions containing a broad subject (in this case, *l-wle:d* 'the children) base-generated in spec,TP. The broad subject is followed with a sentential predicate, which is itself a TP with its own spec,TP filled with a narrow or ordinary subject (in this case, *ra:s-un* 'their head'). The authors provide evidence that broad subjects behave like ordinary subjects. For example, the sentential predicate may be conjoined with an ordinary predicate, as the parenthetical part of (15) shows. The noun phrase *l-wle:d* 'the children' behaves as a broad subject of the first conjunct and as a narrow subject of the second conjunct. Note that the second predicate is adjectival. Unlike verbal predicates, adjectival predicates do not allow pro-drop; thus, the subject of *niʃse:ni:n* 'sleepy' cannot be *pro*.

(15) l-wle:d ra:s-un ʕam-byu:ʒaʕ-un (w-niʃse:ni:n)
the-children head-their PROG-hurt.IMPERF.3.M.SG-them (and-sleepy.PL)
'The children, their head is hurting them (and they are sleepy).'
'The children have a headache (and are sleepy).'

COMP-less circumstantial clauses may also be clauses with broad subjects, as sentence (16) shows. This and the examples above indicate that COMP-less circumstantial clauses are at least IPs. Evidence that they may even project higher as COMP-less CPs comes from sentences like (17) in which *kilme* 'word' occupies a Focus position in the left periphery.

(16) *l-tle:mi:z*$_i$ *dˁaharo:* *min* *l-ʔimtiħa:n* *[(lilʔasaf)*
the-students$_i$ go.out.PERF.3.PL from the-exam [(unfortunately)
(kill-un$_{i/*k}$*)* ra:s-un ʕam-byu:ʒaʕ-un]
(all-them$_{i/*k}$) head-their PROG-hurt.IMPERF.3.M.SG-them]
'The students came out of the exam (unfortunately) (all) having a headache.'

(17) *l-wuzara:* *ʔaʕadu:* *bi-l-ʔiʒtime:ʕ* *kilme*
the-ministers$_i$ sit.PERF.3.PL in-the-meeting word
ma: *ʕam-byiħku:*
NEG PROG-speak.IMPERF.3.PL
'The ministers sat in the meeting not saying a word (completely quiet).'

The question that follows is: Why do COMP-less, but not COMP, circumstantial clauses enforce a control dependency between the embedded and matrix subjects? In the following section, I derive the structure of the COMP-less clauses. I show that the COMP-less structure is best analyzed as the outcome of movement. This movement, however, is not driven by feature checking, as is standardly assumed. Rather, the movement of the subject takes place in order to license the merge of the circumstantial clause, allowing it to satisfy the Merge Condition on Adjuncts. No such movement is necessary out of COMP circumstantial clauses.

3. The derivation of COMP-less circumstantial clauses

In this section, I will briefly consider and rule out two approaches to adjunct control into COMP-less circumstantial clauses in Lebanese Arabic. These are the PRO approach and the predicational approach. I will then show that the movement approach to control – according to which the subject copies out of the circumstantial clause and merges into the matrix clause – is able to account for the data. However, I will argue that this movement is not feature-driven. Rather, the movement of the subject allows the COMP-less circumstantial clause to satisfy the Merge Condition on Adjuncts and thus to undergo merge. In this sense, movement becomes a merge-licensing operation.

The PRO approach to adjunct control

PRO Theory, in its different incarnations (e.g., Chomsky and Lasnik 1995; Landau 2000; see Potsdam and Haddad, to appear, for an overview), states that the subject in an embedded clause is a silent pronominal element, PRO, that is necessarily referentially dependent and thus has to be co-indexed with an antecedent in the matrix clause. Under the assumption that PRO is necessarily a phonologically null element, this approach straightforwardly fails to account for the Lebanese Arabic data. Consider, for instance, the sentences in (18), in which the embedded subject has phonological content:

(18) a. *l-tle:mi:z*$_i$ *ʔaʕado:* *bi-l-sˁaf* *kill-un*$_{i/*k}$
the-students$_i$ sit.PERF.3.PL in-the-class all-them$_{i/*k}$
ʕam-byismaʕo: *la-l-ʔiste:z*
PROG-listen.IMPERF.3.PL to-the-teacher
'The students sat in class all listening to the teacher.'

b. *[ʔana: w-Na:dya:]*$_i$ *fitna:* *nne:m*
[I and-Nadia]$_i$ enter.PERF.1.PL sleep IMPERF.1.PL
tnayne:t-na:$_{i/*k}$ *ra:s-na:* *ʕam-byu:ʒaʕ-na:*
two-us$_{i/*k}$ head-our PROG-hurt.IMPERF.3.M.SG-us
'Nadia and I went to bed both having a headache.'

The predication approach to adjunct control

Another approach that is frequently employed in connection with control into adjuncts is the predicational approach. This approach holds that the subordinate clause in an adjunct control structure is a predicate with an open subject position, which is predicated of the matrix subject through co-indexation (Williams 1992; Landau 2000: 176–178, 2007: 304). Under this approach, a sentence like (19) has the structure in (20). There is no subject in the adjunct itself; instead, the adjunct is an open predicate coindexed with Tom.

(19) Tom escaped after kissing Mary.

(20) Tom$_i$ escaped [after ___ kissing Mary]$_i$.

However, the examples in (18) and in previous sections seem to rule out the predicational approach to adjunct control into COMP-less circumstantial clauses. In those examples, as we saw, the subject position in COMP-less circumstantial clauses may be filled; thus, the circumstantial clause only optionally contains the open subject position necessary for the predicational approach to adjuncts.

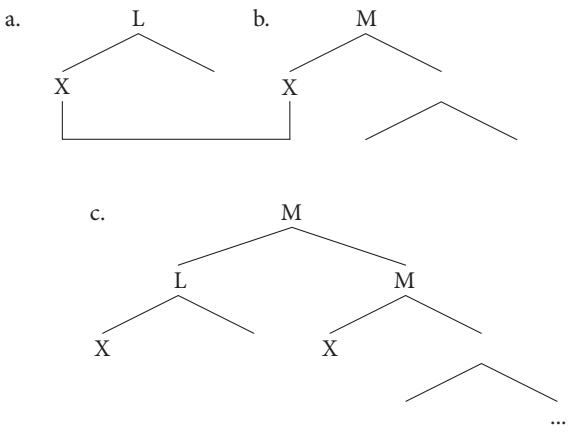
The movement approach to adjunct control

The movement approach to control (Hornstein 1999) argues that control relations are the outcome of movement: the subject moves out of its thematic position in the embedded clause and merges in another thematic position in the matrix clause. At PF, the matrix copy is normally pronounced, while the embedded copy is deleted. The opposite can also take place, resulting in a backward control structure in which the embedded copy is pronounced and the matrix copy is deleted. In some cases, both copies are pronounced, resulting in a configuration known as copy control (see Polinsky and Potsdam 2006; Haddad and Potsdam 2013).

The movement approach may account for adjunct control into COMP-less circumstantial clauses in Lebanese Arabic. In this case, movement is inter-arboreal rather than intra-arboreal: it takes place between the adjunct and the matrix clause via sideward movement (Nunes 2004; see applications of this approach in Haddad

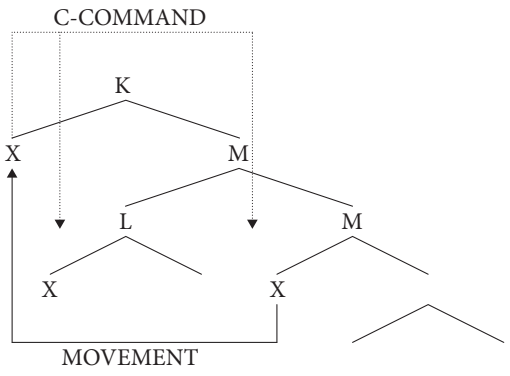
2009, 2011). This type of movement allows an object to undergo copy-plus-merge between two unconnected structures. For example, L and M in (21) are two independent structures. X undergoes sideward movement between L and M before the two phrasal structures merge.

(21)



Movement is made up of four independent operations: copy, merge, form chain, and chain reduction. The first two operations take place in (21); X copies out of L and merges in M. To understand the "form chain" operation, let's assume that X is the subject in our story, and that L and M are the adjunct and matrix *v*P, respectively. In (22), X moves to a higher position – specifically, to spec, IP, labeled as K. From this position, the higher copy of X, or the subject, c-commands the two lower copies, forming a chain with each. Finally, chain reduction applies, and the lower copy in each chain gets deleted.

(22)



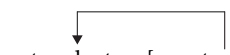
Now the question is: What happens in sentences like those in (18), in which the subject of the adjunct clause is pronounced overtly? The presence of the overt subject in these cases suggests that the lower copy of the moved subject is not deleted.

Notice that the embedded subject in these cases is not an exact copy of the matrix subject; it takes the form of a strong pronominal. In fact, an exact copy is not possible, as (23) illustrates:

(23) *l-wle:d* *dˤaharo:* *[**l-wle:d*** *ʕam-byidˤħako:]*
the-children go.out.PERF.3.PL [**the-children** PROG-laugh.IMPERF.3.PL]

Given this evidence, I consider the adjunct subject in the case of (18) and similar structures to be a resumptive pronoun. Derivation of these sentences proceeds as in (24) (Aoun, Choueiri, and Hornstein 2001). Here, the antecedent undergoes first merge with the resumptive element low in the structure. Later in the derivation, the antecedent moves, and the resumptive element is stranded (see Boeckx 2003; Kayne 2002; Haddad 2010a for similar analyses). As (24) illustrates, a weak pronominal resumptive element, like little *pro*, will occupy the D position of a DP, while the antecedent occupies spec,DP prior to movement. However, if a strong pronoun (such as *kill-un* 'all of them' or *tnayne:t-un* 'both of them') is involved, that pronominal element base-generates as an adjunct within DP before the antecedent undergoes movement.

(24)



If the movement approach sketched out here is on the right track, the question becomes: Why does movement take place at all? In principle, if a syntactic object moves, it does so to satisfy a feature of its own or a feature on the target (Lasnik 1995). Since the subject in a circumstantial adjunct clause may be phonologically realized, it is unlikely that this movement occurs to check any features of the subject, including case.

One possible solution would be to suggest that T in COMP-less circumstantial clauses is defective, in the sense that it is dependent on the tense of the matrix clause. This defective T checks defective case on the subject, which forces the subject to move. The main issue with this line of argument is that T is equally defective in COMP circumstantial clauses, yet no movement/control is enforced in structures with this type of adjunct.

Movement for the purpose of checking a feature on the target does not seem likely either. Let us assume that theta-roles are features and that the subject moves to check the theta-role feature on matrix little *v*. While this sounds like a viable option, it should not be strictly necessary: it should also be possible for little *v* to check its theta-role feature via an element in the numeration – that is, by external merge rather than movement or internal merge. In other words, under this solution, control should be optional at best – but it isn't.

My solution to the problem of motivating movement concerns the Merge Condition on Adjuncts in (1), repeated here as (25).

(25) The Merge Condition on Adjuncts
Adjuncts merge in accordance with their own edge feature.
a. If an adjunct has a non-predicational edge feature [– PRED], it may merge as a syntactically saturated element with no need to establish a predication relation (subject-predicate relation) with an element in the matrix clause.
b. If an adjunct has a predicational edge feature [+ PRED], it must merge as a syntactically unsaturated element and must establish a predication relation with an element in the matrix clause.

I suggest that COMP circumstantial clauses have [–PRED] as an edge feature, which requires them to merge as syntactically independent objects. COMP-less circumstantial clauses, by contrast, have the edge feature [+PRED], which forces them to merge as syntactically unsaturated objects. The movement of the subject makes this merge possible by converting the adjunct into an open predicate that may be predicated of an element in the matrix clause.

Evidence in favor of this solution comes from the fact that only COMP, but not COMP-less, circumstantial clauses may merge as arguments. As Rothstein (2001, 58–60) maintains, predicates – or structures with [+PRED] as an edge feature – cannot function as arguments, as (26) (in original (56–iv)) states (see also Stowell 1991).

(26) Predicates are not assigned theta-roles since theta roles are assigned to syntactically closed maximal projections.

I use the subject position as a test for argument-hood since, in principle, subject positions may only be filled with syntactically non-predicative constituents. As (27) and (28) illustrate, COMP circumstantial clauses may occupy subject positions.

(27) *[hinne w-(l-wle:d) ʕam-bye:klo:] (miʃ) ʔafḍal*
[they COMP-(the-children) PROG-eat.IMPERF.3.PL] (NEG) best
waʔit tiħki: maʕ-on
time talk IMPERF.2.SG with-them
'While the children are eating is (not) the best time to talk to them.'

(28) *[w-hinne ʕam-byilʕabo:] ke:n waʔit*
[COMP-they PROG-play.IMPERF.3.PL] be.PERF.3.M.SG time
tilʕab maʕ-un … miʃ hallaʔ,
play.IMPERF.2.M.SG with-them … NEG now,
[hinne w-ʕam-byidirso:]
[they COMP-PROG-study.IMPERF.3.PL]
'While they were playing was the time to play with them … not now, while they are studying.'

By contrast, sentences (29) and (30) show that the COMP-less counterparts of (27) and (28) may not fill in the subject position.[4]

(29) *[(l-wle:d)* *ʂam-bye:klo:]* *(miʃ)* *ʔafdˁal* *waʔit*
[(the-children) PROG-eat.IMPERF.3.PL] (NEG) best time
tiħki: *maʂ-on*
talk IMPERF.2.SG with-them

(30) *[ʂam-byilʂabo:]* *ke:n* *waʔit* *tilʂab*
[PROG-play.IMPERF.3.PL] be.PERF.3.M.SG time play.IMPERF.2.M.SG
maʂ-un … *miʃ* *hallaʔ*, *[ʂam-byidirso:]*
with-them … NEG now, [PROG-study.IMPERF.3.PL]

If the above observations suffice to conclude that COMP-less circumstantial clauses may not merge as syntactically non-predicative constituents, it follows that they may only merge as open predicates. Stated differently, the head of a COMP-less circumstantial clause bears a [+PRED] feature that dictates how the adjunct may undergo merge.

According to Rothstein, there are two types of predicates: inherent (31) and derived (32) (2001, 58–60, (55)).

(31) Inherent predicates are maximal projections of lexical heads.

(32) Derived predicates are derived from maximal projections of functional heads by syntactic operations.

APs (adjective phrases) and VPs, for example, are inherent predicates, while (predicative) CPs are derived predicates. That is, a CP is inherently non-predicative – i.e., propositional – unless an operator is inserted in spec,CP, binding a syntactic variable inside CP and rendering the CP predicative. For example, *for you to read* in (33) (Rothstein's (52b)) is a derived predicate.

(33) I bought a book $[_{CP}$ OP_i $[_{C'}$ for $[_{IP}$ you to read $t_i]]]$.

As Rothstein observes, while a non-predicative CP may function as an argument, as shown in (34), a predicative CP may not (35).

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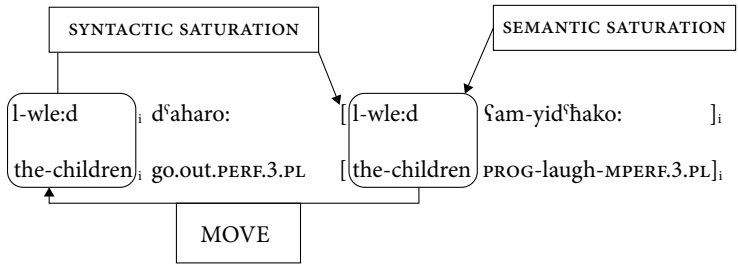
4. Evidence similar to that provided in (27) through (30) is also found in Germanic languages. This evidence led Webelhuth (1992) to label COMP clauses – or clauses with an overt complementizer – as nominal or [–Verbal] and COMP-less clauses – i.e., clauses with no overt complementizer – as [+Verbal]. Webelhuth concludes that clauses must have an overt complementizer and thus must be [–Verbal] in order to qualify as external arguments (83–90). Here I use [–PRED] and [+PRED] instead of [–Verbal] and [+Verbal]. Note that COMP and COMP-less clauses may in fact both be CPs. In this case, it is not the absence vs. presence of C but rather the phonological realization of C that is responsible for the edge features [–PRED] and [+PRED].

(34) $[_{CP}[_{C'}$ for $[_{IP}$ Tom to meet the president]]] would be amazing.

(35) * $[_{CP}$ OP_i $[_{C'}$ for $[_{IP}$ Tom to meet t_i]]] would be amazing.

We saw above that a COMP-less circumstantial clause projects at least as high as IP before its lexical subarray is exhausted.[5] This means that it does not qualify as an inherent predicate like, say, AP or VP. Therefore, it must merge as a derived predicate. Recall that, according to Rothstein, this is possible only if a *syntactic operation* converts such clauses to open predicates. I suggest that the syntactic operation in this case is movement. The subject of a COMP-less circumstantial clause moves to the matrix predicate, converting the adjunct into an open predicate that is indirectly predicated of an element in the matrix clause; see (36).

(36)



In (36), the circumstantial clause gives up its semantic saturation in order to merge in accordance with the syntactic specifications of its head, thus satisfying the Merge Condition on Adjuncts. Just as structural restrictions (e.g. the Predicate Licensing Condition in (2) above) can force a position to be filled with a vacuous (pleonastic) element for licensing reasons, the Merge Condition on Adjuncts may force a thematic element to move out of a structure with a [+PRED] edge feature so that the structure may properly merge.

5. Assuming that the numeration contains subarrays (Chomsky 2000) makes the employment of Look Ahead unnecessary. The movement of the embedded subject takes place when the subarray of the circumstantial clause is exhausted and the edge feature of the adjunct is determined to be [–PRED]. If, on the other hand, the numeration of the whole structure (matrix and embedded clauses) constitutes a single array, the movement of the subject has to take place prior to the exhaustion of the numeration, requiring the undesired operation Look Ahead to anticipate that no head with a [+PRED] feature will be available to license the merge of the adjunct as non-predicational.

4. Beyond circumstantial clauses

The application of the Merge Condition on Adjuncts is not limited to circumstantial clauses. It applies to other types of adjuncts, such as depictives and purpose clauses.

The sentences in (37) and (38) are examples of structures with COMP-less and COMP depictive clauses, respectively. Depictives are similar to circumstantial clauses in that they describe the circumstances under which a matrix event occurs. In both types of structure, there is an overlap between two eventualities (events or state). (37a) and (38a) describe how the children were involved in an event of sleeping that took place while they were in a state of hunger. Unlike the circumstantial clauses we examined above, however, the subject of a COMP-less depictive clause may be coreferential with a matrix subject *or object*, as (37b) shows.[6] Importantly, control dependency is only required in COMP-less depictive clauses, as the indices in (37) and (38) show.

(37) COMP-less Depictive Clauses

a. *l-wle:d*$_i$ *ne:mo:* *[Ø*$_{i/*k}$ *ʒu:ʕa:ni:n]*
the-children$_i$ sleep.PERF.3.PL [Ø$_{i/*k}$ hungry.PL]
'The children slept/went to bed hungry.'

b. *Layla nayyamit* *l-wle:d*$_i$ *[Ø*$_{i/*k}$ *ʒu:ʕa:ni:n]*
Layla put.to.sleep.PERF.3.SG.F the-children$_i$ [Ø$_{i/*k}$ hungry.PL]
'Layla put the children in bed hungry.'

(38) COMP Depictive Clauses

a. *l-wle:d*$_i$ *ne:mo:* *[w-hinne* *ʒu:ʕa:ni:n]*
the-children$_i$ sleep.PERF.3.PL [COMP-they$_{i/k}$ hungry.PL]
'The children slept/went to bed hungry.'

b. *Layla nayyamit* *l-wle:d*$_i$ *[w-hinne*$_{i/k}$ *ʒu:ʕa:ni:n]*
Layla put.to.sleep.PERF.3.SG.F the-children$_i$ [COMP-they$_{i/k}$ hungry.PL]
'Layla put the children in bed hungry.'

Purpose or purposive clauses like those in (39) and (40) are event-oriented adjuncts that express the purpose of the matrix event. For example, the (b) sentences in (39) and (40) establish that the purpose behind going out to the balcony was to smoke a cigarette. The sentences in (39) are COMP-less purpose clauses, while the ones in

6. This may be because circumstantial clauses may only merge above vP, while depictives may merge below or above vP; see Huettner (1989). Another difference between circumstantial and depictive clauses is that the former are event-oriented, while the latter are participant-oriented. Only depictives are interpreted as stage-level modifiers of a matrix argument. See Schultze-Berndt and Himmelmann 2004; Potsdam and Haddad, to appear.

(40) are their COMP equivalent. Only the former require a control interpretation between their subject and a matrix argument. As the optional material in parentheses in (40) shows, a COMP purpose clause may have disjoint reference.

(39) COMP-less Purpose Clauses

a. *l-wle:d*$_i$ *fe:to:* *ʕa-ʔudˁit-un*
the-children$_i$ enter.in.PERF.3.PL to-room-their
[Ø$_{i/*k}$ *yilʕabo:* *ʃatˁaranʒ]*
[Ø$_{i/*k}$ play.IMPERF.3.PL chess]
'The children went to their room to play chess.'

b. *Kari:m*$_i$ *dˁahar* *ʕa-l-balko:n*
Karim$_i$ go.out.PERF.3.SG.M to-the-balcony
[Ø$_{i/*k}$ *ydaxxin* *siga:ra]*
[Ø$_{i/*k}$ smoke.IMPERF.3.SG.M cigarette]
'Karim went out to the balcony to smoke a cigarette.'

(40) COMP Purpose Clauses

a. *l-wle:d*$_i$ *fe:to:* *ʕa-ʔudˁit-un* *[la-yilʕabo:*
the-children$_i$ enter.in.PERF.3.PL to-room-their [to-play.IMPERF.3.PL
(ʔahl-un) *ʃatˁaranʒ]*
(parents-their) chess]
'The children went to their room (for their parents) to play chess.'

b. *Kari:m*$_i$ *dˁahar* *ʕa-l-balko:n* *[la-(bayy-o)*
Karim$_i$ go.out.PERF.3.SG.M to-the-balcony [to-(father-his)
ydaxxin *siga:ra]*
smoke.IMPERF.3.SG.M cigarette]
'Karim went out to the balcony (for his father) to smoke a cigarette.'

We saw above that only COMP, but not COMP-less, circumstantial clauses may occupy a subject position. I took this restriction to indicate that COMP-less circumstantial clauses are syntactically predicative and must merge as such in accordance with the Merge Condition on Adjuncts. I further posited that movement of the subject from circumstantial clauses is motivated by the need for the circumstantial clause to establish a predication relation with the matrix clause. A similar situation applies to depictive and purpose clauses. Like COMP circumstantial clauses, COMP depictive and purpose clauses may occupy a subject position, as the sentences in (41) illustrate. This indicates that they are syntactically non-predicative and thus can merge without resorting to movement as a merge-licensing operation. This is why no control interpretation is enforced in (38) and (40) above.

(41) COMP Depictive Clause

a. *[w-hinne (kill-un) ʒu:ʕa:ni:n] ke:n ʔafdˤal*
[COMP-them (all-them) hungry.PL] be.PERF.3.M.SG best

waʔit tˤtˤaʃmiyy-un
time feed.IMPERF.2.M/F.SG-them

'While they were (all) hungry was the best time for you/her to feed them.'

b. COMP Purpose Clause
[la-(kill-un) yilʕabo: ʃatˤaranʒ bidu:n ma:
[to-(all-them) play.IMPERF.3.PL chess without that

yitxe:naʔo:] ʃi: ma: byitsaddaʔ
argue.IMPERF.3.PL] thing NEG believable

'For them to play chess without arguing is unbelievable.'

The same is not true for COMP-less depictives and purpose clauses. As the sentences in (42) illustrate, these clauses may not occupy a subject position, suggesting that they are syntactically predicative. In order for these clauses to merge with their matrix clauses in accordance with the feature specification of their heads – and thus in accordance with the Merge Condition on Adjuncts – their subjects move to the matrix clause, allowing the adjunct to be indirectly predicated of one of the matrix arguments. Thus, control is enforced in the sentences in (37) and (39) above.

(42) a. COMP-less Depictive Clause
**[(kill-un) ʒu:ʕa:ni:n] ke:n ʔafdˤal*
[(all-them) hungry.PL] be.PERF.3.M.SG best

waʔit ttˤaʃmiyy-un
time feed.IMPERF.2.M/F.SG-them

b. COMP-less Purpose Clause
**[(kill-un) yilʕabo: ʃatˤaranʒ bidu:n]* ma:
[(all-them) play.IMPERF.3.PL chess without] that

yitxe:naʔo: ʃi: ma: byitsaddaʔ
argue.IMPERF.3.PL thing NEG believable

5. Conclusion

This paper has shown that the merge of adjuncts does not "just happen," but is subject to a condition that I called the Merge Condition on Adjuncts. This condition dictates that the ability of adjuncts to merge is restricted by their edge feature, which can be non-predicational [–PRED] or predicational [+PRED]. A [–PRED] edge

feature allows an adjunct to merge as a syntactically independent object, whereas [+PRED] forces it to merge as syntactically dependent. I suggested that the Merge Condition on Adjuncts is a purely syntactic requirement that may override semantic content and enforce semantic dependencies. Support for the existence of this condition comes from circumstantial clauses in Lebanese Arabic. These clauses come in two flavors: COMP and COMP-less. I showed that only COMP-less circumstantial clauses require co-referentiality between their subject and the subject of the matrix clause they adjoin to, and argued that this co-referentiality, and thus control, is the outcome of movement. I also showed that movement takes place in order to license the merge of the adjuncts under examination. In this way, COMP-less circumstantial clauses satisfy the Merge Condition on Adjuncts.

The Merge Condition on Adjuncts is framed within the structural theory of predication and uses the argument-hood of adjuncts (i.e., their ability or inability to merge as arguments) as a test to determine their edge feature specifications. The proposed condition could also be framed within Phase Theory: CPs might merge as independent syntactic objects because they constitute a phase, while IPs – or any projections smaller than CP – merge as dependent syntactic objects. There are two reasons to be suspicious of a phase-based approach. First, we cannot be sure that COMP-less adjuncts are not CPs. All we know is that they do not have an overt complementizer. Second, under some approaches (e.g., Dikken 2006), IPs may also be phases.

If the Merge Condition on Adjuncts and the support provided in this article are on the right track, we may conclude that adjuncts have a merge advantage over matrix clauses. Take a syntactic object that projects as high up as an IP before its lexical subarray is exhausted. This object cannot be spelled out as a matrix clause unless it merges with a C head. An IP adjunct, on the other hand, may undergo parasitic merge with the matrix clause, forcing it into a control dependency. In this sense, it is probably a mischaracterization to say that the matrix subject controls the referential properties of the adjunct subject; rather, it is the adjunct that forces its subject on the matrix clause.

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