# A Minimalist Analysis of *jā* for Coordination in Jordanian Arabic

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*This study examines the use of the particle jā as a scope indicator and as a disjunctive co-ordinator in Jordanian Arabic. This particle has those functions in structures that necessitate the interpretation of two copies of jā. The first copy functions as a scope indicator either, while the second copy functions as a disjunctive co-ordinator or. This architecture is contextualized by a discussion of recent attempts at syntactizing particles. This study provides a way to account for the conjunctive nature of jā, which is left unexplored in previous accounts. Some of data of the study is extracted from the natural speech of thirty hours of radio conversations that have been obtained from Radio Fan Fm and and Facebook posts and comments for speakers of Jordanian Arabic. Another source of data came from the intuitions of native speakers of Jordanian Arabic. The study utilizes the Minimalist Program for data analysis and develops a battery of tests to highlight syntactic contexts of jā when it functions for coordination.*

**Keywords**: *Particles, the Minimalist Program, Coordination, Jordanian Arabic*

## 1 Introduction

This study examines the use of *jā* particle, a particle commonly used with vocatives, as a co-ordinator in Jordanian Arabic (1).

(1)

a. *jā* *muħamad* *jā* *ʕalī* *ʔilli* *dˁarb* *ʔal-walad.*
PART Mohammed PART Ali that hit DEF-boy
'It is either Mohamed or Ali that hit the boy.'

b. *maʃ* *mitʔakkid* *ʃuft* *jā* *ʔaxūj* *jā* *ʔaxūk.*
not sure saw PART brother.my PART brother.your
'I am not sure I saw either my brother or your brother.'

c. *bāxð* *maʕī* *jā* *ʔaħmad* *jā* *ʔaxūj* *bas*
take.1SG with.1SG PART Ahmed PART brother.my but
*miʃ* *ʔil-ʔiθnīn*.
not DEF-both
'I will go with either Ahmed or Ali but not both.

In those examples, the particle *jā* appears clause-initially (1a), clause-finally (1b), and/or clause-medially (1c). In (1a), *jā* precedes the determiner phrases (DP) *muħamad* 'Mohamed' and the DP *ʕalī* 'Ali.' Both DPs are proper names. In (1b), *jā* occurs clause-finally, and it precedes the DPs *ʔaxūj'*'my brother' and *ʔaxūk* 'your brother.' In (1c), *jā* occurs clause-medially, and it comes before the DPs *ʔaħmad* 'Ahmed' and *ʔaxūj* 'my brother.' In this study, we show that the particle

*jā* in Jordanian Arabic has a conjunctive function. That is, the particle *jā* functions as a disjunctive co-ordinator. As a co-ordinator, this particle must appear in two phrases. In the first phrase, *jā* has the function of *either*, and in the second part, *jā* fulfills the function of *or*. This phenomenon is overlooked in all previous syntactic treatments (Larson 2013; Aoun et al. 1994). This study aims to introduce the use of *jā* as a co-ordinator, and it aims to test recent theories on co-ordination (Bruening & Al Khalaf 2019; Al Khalaf 2015). As a co-ordinator, *jā* can join complementize phrases (CPs), DPs, prepositional phrases (PPs), and others. The study utilizes the Minimalist Program (Chomsky 1995) for data analysis.

The paper is organized as follows. Section 2 provides a theoretical background. This section aims to solidify the distinct use of *jā* as a co-ordinator. The section introduces co-ordination in the Arabic language to understand the function of *jā* as a co-ordinator. Section 3 introduces the Minimalist Program (Chomsky 1995) as a framework for data analysis. Section 4 presents how the data of the study is collected and analyzed. Section 5 introduces tests that highlight the conjunctive function of *jā*. The final part concludes the study.

## 2 Background

Luraghi & Parodi (2008: 91) define coordinated structures as a "series of two or more items connected with some kind of conjunction." They refer to this type of co-ordination as syndetic co-ordination. The second type of coordinated structures can be juxtaposed; that is, in this type, structures must be related with "a unitary syntactic status, rather than in a hierarchical relationship with each other." Another classification of co-ordination appears with the type of co-ordinator; that is, the use of *and* shows *conjunctive* co-ordination *(*2a), the use of *or* results in *disjunctive* co-ordination (2b), and the use of *but* demonstrates *adversative* co-ordination (2c).

(2)

a. John and Mary went to the party.
b. John will go to the party or to the movies.
c. John went to the party, but Mary remained home. (Luraghi & Parodi 2008: 91)

In all the examples in (2), the co-ordinators combine similar phrases. In (2a), two DPs, [John] and [Marry], are coordinated by *and.* In (2b), the disjunctive co-ordinator *or* combines the PPs [to the party] and [to the movies]. In (2c), the adversative co-ordinator conjoins two CPs, [John went to the party] and [Mary remained home].

Co-ordination can be symmetric and asymmetric (Reich 2009; Wesche 2012; Luraghi & Parodi 2008; Weisser 2015). Symmetric co-ordination appears when conjuncts have the same syntactic type (2), and asymmetric co-ordination shows up when conjuncts have different syntactic patterns (Wesche 2012: 13).

(3) *mo* *gó* *tó* *mō* *gē.*
1PL:INCL:IND with 2SG:F:IND 1PL:INCL:CMPL.be.finished
'You and I are through (i.e., I divorce you).'
(lit. Us with you we're finished) (Makary Kotoko; Allison 2012: 127)

The example in (3) shows a pattern of asymmetric co-ordination in Makary Kotoko, an Afro-Asiatic language spoken in northern Cameroon and southwestern Chad. In this language, "the plural pronominal reference always precedes the NP object of the comitative preposition *gó* 'with'" (Allison 2012: 127); that is, *mo* '1PL' must always come before *tó* '2SG'. This restriction on word order is not applicable to the symmetric patterns in (2).

Both the symmetric and asymmetric co-ordination impact word order patterns. Ross (1967: 161) posits a constraint on coordinative structures. He refers to it as the Coordinative Structure Constraint. This constraint restricts syntactic movements in coordinative structures, and it goes as follows: "in a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct." That is, extraction from a single conjunct may lead to ungrammatical patterns.

(4) * Whose tax did the nurse polish her trombone and the plumber compute?

(Ross 1967:160)

The example in (4) shows a pattern in which co-ordination impacts word-order patterns. It shows that it is unacceptable to ask a question through wh-movement from the second conjunct [the plumber computed whose tax] and across the first one [the nurse polished her trombone]. Before we go through this constraint's intricacies and implications, we will present generative grammar as a theoretical framework.

## 3 Theoretical framework

The study of language offers several tools that facilitate an understanding of how our minds process language. Syntacticians show how sentences, clauses, and phrases abide by rules that govern such structures. Investigations have viewed syntactic structures as a window to learn how the brain processes languages. The link led to the assumption that languages abide by a set of universal rules despite their variations. One of the proposed models to understand how languages work is Chomsky's (1995) Minimalist Program (MP). In this part, we aim to introduce this program, its tools, and machinery. The MP will help in building a set of diagnostics to judge the examples. Additionally, it will provide a powerful tool to account for the phenomenon under investigation.

Chomsky's (1995) MP builds upon and develops Chomsky's earlier views on the transformations (Chomsky 1965) and his Government and Binding Theory (Chomsky 1993). The program focuses on figuring out universal principles that govern languages, and it encompasses those parameters that may lead to language variations. The MP attempts to capture those patterns in a way that matches humans' cognition; that is, the MP views those principles and parameters by the conception that the human mind should utilize minimum efforts in processing languages. Luraghi & Parodi (2008:31) state that the Government and Binding Theory needed "several levels of representations (D-structure, S-structure, PF, and LF). However, the MP interprets structures "as combinations of sounds (π or PF ) and meanings (λ or LF)." In a technical sense, structures are subject to feature interpretation at the PF and LF interfaces; that is, in syntax, there are features that determine the interpretability of structures at both the PF and LF.

At LF, features are of two types: interpretable and uninterpretable. The syntax proper matches and deletes features and abide by the economy of principle. Features, such as case, agreement, and Φ features (person, gender, and number), must be checked against "those associated with the functional nodes." Uninterpretable features must be deleted. Those features enter either with a value (valued features) or they require to get their value by checking their features again something else (unvalued); for example, a noun can have both interpretable (e.g., number) and uninterpretable features (e.g., case). The number feature on nouns is valued and interpretable (a feature that has sense by itself). The case feature, however, is unvalued and uninterpretable (a grammatical feature that does not add to the semantic interpretation of nouns). The uninterpretable feature must look for a matching valued feature, and it must get a value and delete it before sending the derivation to the interfaces; otherwise, the derivation crashes. A verb comes with a valued case feature. The verb AGREES with the noun and deletes its unvalued feature in a PROBE-GOAL relation.

Pesetsky & Torrego (2007: 263) illustrates Chomsky's (1995) AGREE mechanism as follows.

(5)

a. *Ha-ec* *puell-a* *Roman-a*
this-NOM.F.SG girl-NOM.F.SG Roman-NOM.F.SG
*ambul-at*.
walks-3SG

b. *Ha-e* *puell-ae* *Roman-ae*
these-NOM.F.PL girls-NOM.F.PL Roman-NOM.F.PL
*ambul-ant*.
walk-3PL

(Latin; Pesetsky & Torrego 2007: 263)

The example in (5a) shows that the determiner *Haec*, the noun *puella*, and the adjective *Roman* has a feminine mark (feature). The source of this feature is the noun because determiners and adjectives come from the lexicon without this value; that is, the gender feature is a valued and interpretable feature for nouns, but it is unvalued and uninterpretable for determiners and adjectives. The unvalued features of determiners and adjectives get their value by agreement with the valued feature of the noun. This captures the process of AGREE, which operates upon valued/unvalued and interpretable/uninterpretable features.

## 4 Data of the study

This study examines the use of *jā* in the natural speech of Jordanian Arabic speakers. The data is extracted from Radio Fann conversations and Facebook posts and comments that are available publicly over a period of three months. The data is extracted by taking notes on the use of *jā*. To test different syntactic patterns, the data is altered to include made-up sentences.

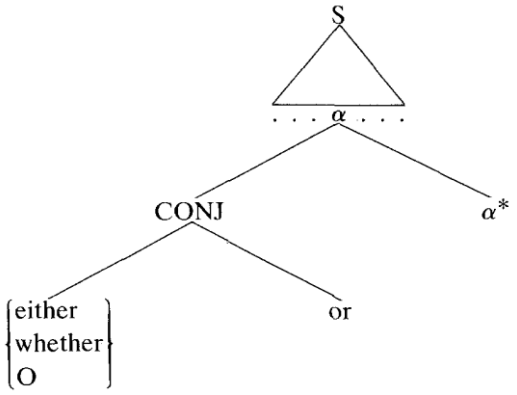
The data analysis utilizes the MP (Chomsky 1995; Chomsky 1999). Five speakers of Jordanian Arabic judged the grammaticality of constructions (grammatical or not grammatical). Finally, the data is glossed and translated for clarification.

## 5 Studies on Either…Or

Our proposal is that *jā* has a coordinative disjunctive function. In this section, we review those approaches that examine the syntax of *either…or* from a generative perspective (Dikken 2006; Schwarz 1999; Larson 1985; Munn 1993; Hu & Pan 2019). Specifically, we review Larson's (1985) theory on movement, Munn's (1993) theory on quantification, and Schwarz's (1999) argument against Larson's (1985) views. Those studies form the basis for the analysis of *jā* as a disjunctive co-ordinator in Jordanian Arabic.

Larson (1985) presents an analysis of the syntax and scope of disjunction in English. He examines the interpretation of *or* and shows that the scope of disjunction is related to the syntax of *either* and *whether*. He proposes "an analysis within [Government and Binding Theory] wherein or scope is assigned syntactically through the movement of *scope indicators*, including *either*, *whether* and a phonologically null indicator *O*." (Larson 1985:217). The diagram in (6) depicts his syntactic representation of *either…or*.

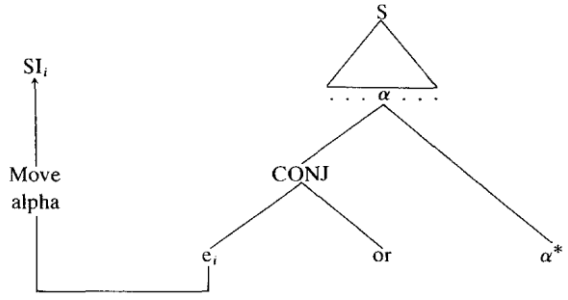
(6)




(Larson 1985:228)

Larson (1985: 228) posits that the syntax of the disjunction scope indicators has two levels. The D-level (6) has a conjunctive element CONJ that consists of two parts: the disjunction co-ordinator *or* and the scopal indicator element *either*. Additionally, Larson (1985:228) assumes at the S-structure *either* [-wh] moves to higher position (7). He refers to this movement as Move alpha—the movement of *either* results in a trace.

(7)




(Larson 1985:229)

Larson's (1985) theory provides accounts for the position of *either* and the scope of *or*. First, he shows that *either* abides locality condition, the length of the distance of syntactic relations is local (Luraghi & Parodi 2008:134). Larson's (1985) theory predicts that syntactic islands cannot separate *either* from its licensing disjunction *or*. That is, the length of the distance between *either* and *or* should be minimal.

(8)

a. John revised his decision to cook either rice or beans.
b. *John either revised his decision to cook rice or beans. (Schwarz 1999: 342)

(9)

a. John was wondering whether to either resign or retire.
b. *John was either wondering whether to resign or retire. (Schwarz 1999: 342)

As we mentioned before, syntactic islands can appear with complex noun phrases (8) and in wh-islands (9). The ungrammaticality of structures in those examples appears because *either* violates the locality conditions. Larson (1985) adds contexts in which locality conditions are not violated. He shows that "finite clauses block the extraction of *either*, whereas infinitival ones do not" (Schwarz 1999: 342). Those generalizations are significant for the analysis of *jā* because *jā* can impact extraction in Jordanian Arabic.

Another significant contribution of Larson's (1985) study is that his data reveals how negation interacts with *either*. He shows that negation is not permissible to intervene between *either* and its licensing disjunction.

(10)

a. ? John didn't eat either rice or beans.
b. ?? John either didn't eat rice or beans.
c. ?? Either John didn't eat rice or beans. (Schwarz 1999:343)

The examples in (10) show a relation between the scope of negation and that of *either*. Schwarz (1999:343) summarizes Larson's (1985) explanation as follows: "e*ither* is a quantifier which must bind a variable to avoid vacuous quantification." Therefore, "no unselective quantifier may intervene between *either* and its licensing disjunction." In other words, Larson views *either* as a quantifier. The movement of this quantifier leaves a trace. *Either* binds this trace, and no other quantifier can bind it. Therefore, it is not permissible to have a negation particle between *either* and its licensing disjunction. This explains the ungrammaticality of the examples in (10) above. Our data support this observation.

Munn (1993) analyzes *either* in terms of quantification. That is, he views *either* in light of S-structure Quantifier Raising (QR), "a covert movement of a generalized quantifier" (Dikken 2006: 693). This theory provided a natural explanation for examples in which *either* does not always move.

(11)

a. John wanted for you to eat either rice or beans.
b. ?? John either wanted for you to eat rice or beans.

Note that the movement of *either* across infinitival-to is not permissible b). Munn (1993:187) states a generalization that can capture such instances as follows: "*either* may move at S-Structure by way of Quantifier Raising. This generalization extends Quantifier Raising to target *either*."

Schwarz (1999) criticizes the movement theory (Munn 1993; Larson 1985) based on the examples in (12) and (13) below.

(12)

a. Either they answered my question or yours correctly.
b. ? Either he found this or that at a flea market.
c. ? Either he invited you or me to a party.
d. ? Either this pleased Bill or Sue off. (Schwarz 1999:347)

(13)

a. ?? Either this pissed Bill or Sue off.
b. ?? Either she turned the test or the homework in.
c. ?? Either they locked you or me up.
d. ?? Either he gulped one or two down. (Schwarz 1999:347)

In those examples, *either* should not undergo movement. That is, it should be at a minimal distance from its disjunction. Those examples, however, cannot fit neatly with the reasons proposed by Larson (1985) because the movement of *either* is not blocked "by islands, by finite clauses, and/or by an intervention of unselective quantifier. Additionally, the examples are against (Munn's 1993) predictions because the quantifier scope of *some* in English has different restrictions than those imposed by *either*. Therefore, According to Schwarz (1999:349), the movement is blocked because of clause reduction; that is, "*either* may not be distant from its licensing disjunction if that disjunction is not final." He refers to this condition as the '*finality restriction*' and explains such patterns in light gapping, "the leaving out of the verb in two or more coordinated clauses" (Luraghi & Parodi 2008:115).

Dikken (2006) examines the syntax of two puzzling patterns of either: *either too high* (14) and *either too low* (15).

(14)

a. John ate either rice or beans.
b. John either ate rice or beans.
c. Either John ate rice or beans.

(15)

a. Either John ate rice or he ate beans.
b. John either ate rice or he ate beans.

His main proposal is that "both either and or are phrasal categories. They originate in a position adjoined to their disjunct, to the contrastive focus or to a higher node on the 'theta-path' projected from the contrastive focus" (2006:689).

For Dikken (2006), *either* does not move and both *either* and *or* are not disjunction particles but phrases. The *or* phrase should establish "a local feature checking with a functional head *J*. This approach is captured in the following representation.

(16) <*either*> (. . .) [JP [XP (. . .) <*either*> . . .] [J [YP or . . .]]]

This approach operates upon two generalizations. The first generalization (17) captures the position of *either* and the second one (18) defines its theta(θ)-path.

(17) Either is a phrasal constituent in construction with
a. the first disjunct, attaching to it; or
b. the first contrastive focus, attaching to
i. the contrastive focus itself, or
ii. a phrasal node on the θ-path projected from the first contrastive focus.
(Dikken 2006:707)

(18)
a. A θ-path is a sequence of nodes such that each node is θ-linked to the next higher node on the main projection line.
b. α is θ-linked to ß iff a or its head assigns a θ-role to ß or receives a θ-role from ß. (Dikken 2006:708)

Those two generalizations govern the distribution of *either*. First, *either* is behaving like adverbs (19) in showing a θ-path; that is, *either* is like "adverbial modifiers that are predicated of the VPs they modify"(Dikken 2006:710). Second, *either* shows some phrasal aspects, which renders it as a phrase.

(19) <*Either*> he <*either*> drove <*either*> [DP his [NP [AP BLUE] [NP car]]]
or (he drove) his GREEN one. (Dikken 2006:710)

Wu (2018) presents an alternative analysis to account for the syntax of *either…or*. He posits that there are two copies of *either* in *either…or* constructions. He calls the first copy *low either* and the second copy *high either.* In his proposal, low either c-commands the leftmost contrasted phrase i.e., the phrase before the disjunctive co-ordinator, and high either originates in the left periphery of a disjunction phrase (DisjP); that is, high either exist in the specifier position of DisjP. His model appears in the following representation.

(20) [DisjP Either$_i$ [Disj' [A … t$_i$ … Contrast$_1$ …] or [B … Contrast$_2$ …]]] (Wu 2018:4)

Wu (2018:4) utilizes Larson's (1985) movement hypothesis and posits that "the two copies [of *either*] are related by movement: low either moves overtly or covertly to the position of high *either*."

Against this background, we test how *jā* abides the constraints stated for *either…or*. Then, we explain the results against the theories proposed for the analysis of *either…or* (Larson 1985; Schwarz 1999; Dikken 2006; Munn 1993; Wu 2018).

## 6 Data diagnostics

We begin our analysis by revealing the syntactic contexts in which the particle *jā* functions as a coordinator.

(21)

a. *jā ʔanā jā ʔinta bi-āl-bīt.*
PART I PART you in-DEF-house
'Either I or you will remain in the house.'

b. *bid-dak taxtār jā ʔanā jā ʔaxū-k.*
must-2SG choose.2SG PART I PART brother-your
'You must choose either me or your brother.'

(22)

a. *ħutˁ ʔal-kitāb jā ʕalā atˁ-tˁāwla jā ʕalā al-kursī.*
put DEF-book PART on DEF-table PART on DEF-chair
'Put the book either on the table or on the chair.'

b. *ʃuwft jā sajāra jā bāsˁ miʃ miteʔkkid.*
saw.1SG PART car PART bus not sure.1SG
'I saw either a car or a bus. I am not sure.'

In (21), we notice that *jā* precedes first-person and second-person pronouns (I and you). In (22), *jā* comes before inanimate objects; in (22a), *jā* precedes the definite inanimate nouns, *atˁ-tˁāwla* 'the table' and *al-kursī* 'the chair,' while in (22b), it precedes *sajāra* 'car' and *bāsˁ* 'bus.'

The second piece of evidence comes from the use of *jā* before independent clauses. That is, *jā* can precede CPs (23).

(23)

a. *saʔlat-nī jā wayn ʔaxū-k jā wayn rāħ ʔabū-k.*
asked.3SG.F-me PART where brother-your PART where went father-your.
'She asked me either where your brother is or where went your father.'

b. *jā* *ʃuft* *ʔaħmad* *nāyim* *jā* *ħlimit*
PART saw.1SG Ahmed sleeping PART dreamt
*ʔinnī* *ʃuftuh* *nāym.*
that.1SG.ACC saw.him sleeping
'Either I saw Ahmed sleeping or I dreamt that he is sleeping.'

c. *fiʕllān* *jā* *ʔinī* *ʔahbal* *jā* *ʔinī*
evidently PART that.1SG.ACC crazy PART that.1SG.ACC
*madʒnūn*.
nut
'Evidently, either I am crazy, or I am nut.'

In (23a), the verb *saʾla* 'asked' is a ditransitive verb; that is, it selects two objects. We notice that the embedded CPs [*wajn ʔaxū-k*] and [*wajn rāħ ʔabū-k*] are preceded by *jā*. Additionally, we notice that the speaker is unsure if the girl asked him about his brother or his father. The use of *jā* before those clauses shows that the speaker is between those two options. In (23b), *jā* comes before two root clauses; that is, *jā* appears before two independent CPs [*ʃuft ʔaħmad nājim* ] and [*ħlimit ʔinnī ʃaftuh nājim*]. The interpretation of this example is that the speaker is between two options. He is not sure if he saw Ahmed sleeping or if he has dreamt that he has seen Ahmed sleeping. The same applies to the example in (23c). This optionality confirms the disjunctive function in those contexts.

The third piece of evidence comes from the optionality of *jā* and its associated constructions. In our data, *jā* is not optional. That is, it is impossible to have a disjunctive function if we omit the second *jā*.

(24)

a. * *saʔlat-nī* *jā* *wajn* *ʔaxū-k.*
asked.3SG.F-me PART where brother-your
'She asked me either where your borther is.'

b. * *saʔlat-nī* *jā* *wajn* *ʔaxū-k* *jā*
asked.3SG.F-me PART where brother-your PART
'She asked me either where your borther is.'

c. * *saʔlat-nī* *jā* *jā* *wajn* *rāħ* *ʾabū-k*
asked.3SG.F-me PART PART where went father-your
'She asked me where went your father.'

(25)

a. * *jā* *ʃufit* *ʔaħmad* *nājim* *ħlimit*
PART saw.SG Ahmed sleeping dreamt
*ʔinnī* *ʃaftuh* *nāyim.*
that.1SG.ACC saw.him sleeping
'Either I saw Ahmed sleeping or I dreamt that he is sleeping.'

b. * *ħutˁ ʔal-kitāb jā ʕalā ʔatˁ-tˁāwla ʕalā ʔal-kursī.*
put DEF-book PART on DEF-table on DEF-chair
'Put the book either on the table or on the chair.'

c. * *ʃuwfit jā sajāra bāsˁ miʃ mitaʔkkid.*
saw.1SG PART car bus not sure.1SG
'I saw either a car or a bus. I am not sure.'

d. * *kānat jā tˁajārra sˁārūx.*
was.3SG.F PART plane rocket
'It was either a plane or a rocket.'

In (24), the examples show patterns of deletion. In (24a), the omission of the second *jā* phrase leads to ungrammatical structure. (24b) and (24c) show ungrammatical structures because of the deletion of those phrases selected by *jā*. The presence of the first *jā* phrase must trigger the use of *jā* in the second phrase; the omission of *jā* in the second phrase leads to ungrammatical patterns (25a-d).

The fourth piece of evidence comes from agreement patterns. Verbs appear to show agreement only with the first phrase headed by *jā*, not with the second one, in terms of gender. We notice that *jā* in Jordanian Arabic does not always lead to agreement in number. The contrast in agreement patterns shows up in the following examples.

(26)

a. *kān-at jā tˁajjārra jā sˁārūx.*
was-3SG.F PART plane.SG.F PART rocket.SG.M
'It was either a plane or a rocket.'

b. *kān jā sˁārūx jā tˁajjārra.*
was.3SG.M PART rocket.SG.M PART plane.SG.F
'It was either a plane or a rocket.'

c. * *kān jā tˁajjārra jā sˁārūx.*
was.3SG.F PART plane.SG.F PART rocket.SG.M
'It was either a plane or a rocket.'

d. * *kān-at jā sˁārūx jā tˁajjārra.*
was-3SG.F PART rocket.SG.M PART plane.SG.F
'It was either a plane or a rocket.'

We notice that the verb *kān* 'was' agrees with the DP of the first phrase headed by *jā* in gender. In (26a), the verb *kān* agrees with the DP *tˁajjāra* 'plane.' Therefore, it is suffixed with the feminine marker *-at* even though the structure includes the masculine DP *sˁārūx* 'rocket.' The verb, in example (26b), shows a masculine agreement because it agrees with *sˁārūx* as it is the DP of the left conjunct. If a verb fails to agree with the first *jā* phrase, a structure crashes (26c-d).

(27)

a. *jā* *ʕalī* *jā* *fatʿima* *kul-lu.*
PART Ali PART Fatema eat-3PL
'Hey Ali, Hey Fatima, eat.'

b. * *jā* *ʕalī* *jā* *fatʿima* *kul.*
PART Ali PART Fatema eat.3SG.M
'Hey Ali, Hey Fatima, eat.'

c. * *jā* *ʕalī* *jā* *fatʿima* *kul-li.*
PART Ali PART Fatema eat-3SG.F
'Hey Ali, Hey Fatima, eat.'

In terms of number, calling triggers agreement with the addressees (26). We notice that the verb *kullu* must agree with plural addressees (Ali and Fatima). This means that if the verb agrees with Ali (26a) or with Fatima only (26b), this leads to problematic structures.

The fifth piece of evidence comes from syntactic islands and movement. A syntactic island is a domain that blocks extraction (Boeckx 2012; Pearl & Sprouse 2013; Sabel 2002). That is, moving an element from a syntactic island is not permissible. For instance, a wh-island prevents wh-movement, and a complex noun phrase (NP) island blocks moving elements from this NP. Recall Ross' (1967) constraint on co-ordination. Our data shows that asking wh-questions in *jā* phrases is allowed in Jordanian Arabic. However, those questions must be in-situ; that is, wh-words must not undergo movement.

(28)

a. *kānat* *jā* *sajjāra* *jā* *bas.*
was.3SG PART car PART bus
'It was either a car or a bus.'

b. *kānt* *jā* *sajjāra* *jā* *ʃū*?
was.3SG PART car PART what
'It was a car or what?'

c. * *ʃū* *kānt* *jā* *sajjāra* *jā*?
what was.3SG PART car or
'What was it either a car or?'

d. * *ʃū* *kānt* *jā* *sajjāra*?
what was.3SG PART car
'What was it either a car?'

As we have seen, questions can target *jā* phrases (28b). But those phrases must be interpreted as *either…or*. The most remarkable thing about *jā* phrases is that they form syntactic islands. While it is permissible to ask questions about *jā* phrases that have the disjunctive function, both types of *jā* phrases do not allow wh-movement. In addition, in support of this conclusion, those phrases do not allow peripherical movements (Rizzi 1997).

The literature (Larson 1985; Munn 1993; Dikken 2006) shows a relation between negation and *either…or*. It is crucial to test our data against negation because this test will reveal if *jā* permits negation, or if it does not.

(29)

a. *ʃirib ʕasʿīr ʕinab miʃ ʕasʿīr tuffāħ.*
drank.3SG juice grapes not juice apples
'He drank grapes juice, not apple juice.'

b. *ʃirib jā ʕasʿīr ʕinab jā ʕasʿīr tuffāħ.*
drank.3SG PART juice grapes PART juice apples
'He drank either grapes juice or apple juice.'

c. * *ʃirib jā ʕasʿīr ʕinab miʃ jā ʕasʿīr tuffāħ.*
drank.3SG PART juice grapes not PART juice apples
'He drank either grapes juice or not apple juice.'

d.* *ʃirib jā ʕasʿīr ʕinab jā miʃ ʕasʿīr tuffāħ.*
drank.3SG PART juice grapes PART not juice apples
'He drank either grapes juice or not apple juice.'

e. * *ʃirib jā miʃ ʕasʿīr ʕinab jā miʃ ʕasʿīr tuffāħ.*
drank.3SG PART not juice grapes PART not juice apples
'He drank either grapes juice or not apple juice.'

(30)

a.* *ma ʃirib jā ʕasʿīr ʕinab jā ʕasʿīr tuffāħ.*
not drank.3SG PART juice grapes PART juice apples
'He did not drink either grapes juice or apple juice.'

b. ? *ma ʃirib jā ʕasʿīr ʕinab jā ma ʃirib ʕasʿīr tuffāħ.*
not drank.3SG PART juice grapes part not drank.3SG juice apples
'He did not drink either grapes juice, or he did not drink apple juice.'

The examples in (29) show that is ungrammatical to negate *jā* and the phrase following it. Therefore, the insertion of *miʃ* 'not' leads to problematic structures. In addition, any attempt to negate the verb that comes before *jā,* and its phrase is equally problematic (30). However, my informants reported that it might be possible (yet not common) to negate the following structure.

(31)

A: why is this glass full?
B:*laʔinnuh ʕalī jā mā biħib ʔil-ʕasʿīr jā mā baduh jiʃrab.*
because Ali PART not like.3SG DEF-juice PART not want drink
'Because either Ali does not like juice, or he does not want to drink juice.'

The example in (31) shows a case of negation with *jā*. The remarkable thing about this example is that negation appears only in a specific grammatical context, i.e., before CPs.

The last piece of evidence comes from the status of co-ordinated phrases. This diagnostic test shows that it is impossible to use different types of phrases before the two *jā*s in Jordanian Arabic; for example, it is ungrammatical to use a DP in the first part of *jā* and a PP in the second part (32a), and it is equally problematic to have a DP in the first part and a VP in the second one (32b).

(32)

a. * *ʃufit* *jā* *ʕalī* *jā* *ʕalā* *ʔatˤ-tˤāwlla.*
saw.1SG PART Ali PART on DEF-table
'I saw either Ali or on the table.

b. * *ʃufit* *jā* *ʕalī* *jā* *ʃarb* *ʕasˤīr.*
saw.1SG PART Ali PART drank juice
'I saw either Ali or drank juice.'

The test confirms a case of symmetric co-ordination that appears in our data.

In Jordanian Arabic, *jā* may function as a disjunctive co-ordinator because of the following remarks. First, with regard to optionality, in our data, *jā* phrases are not optional. Second, our data support Ross' (1967) constraint on co-ordination; *jā* phrases form syntactic islands and do not allow extraction of wh-movement. Third, agreement patterns support that *jā* phrases have a conjunctive function. Finally, *jā* phrases show symmetries.

## 7 Analysis and discussion

The diagnostics show that *jā* can function as *either…or* in Jordanian Arabic. In this section, we will address the following question: Are the models proposed for that analysis of *either..or* in English universal? If yes, what is the optimal model? If no, what is the mechanism that governs the use of *jā* as *either…or* in Jordanian Arabic? Our data shows that *jā* function as *either…or* in Jordanian Arabic. First, we will show that *jā* is a disjunctive co-ordinator. Then, we will show how *jā* can function as a scope indicator. For clarity, we will refer to *jā* that functions as *or* as DIS-JĀ, and we will refer to *jā* that functions as *either* as IND-JĀ. We analyze disjunction through syntactic layers (Haegeman 2014). The disjunction layers operate like particle phrases (Haegeman 2014). We posit that those layers consist of a functional head DIS and two layers: big DIS and little DIS. *jā* originates in DIS. Then, it moves to DIS. The movement is triggered by a feature [+DIS]; once *jā* moves from DIS to DIS, it leaves a trace. This trace is visible at the PF interface. Our proposal follows Larson's (1985) movement theory for the syntax of *either…or.* Additionally, our model builds upon Wu's (2018) multiple copies of *either*. However, our model aims to draw a unified picture along the lines of recent models that views particles as a sequence of layered projections (Haegeman 2014).

Our data shows that, in Jordanian Arabic, *jā* can function as a disjunction co-ordinator *or*. This *jā* represents the lowest copy in the syntactic derivation. In addition, the data shows that *jā* can also function as *either*. However, to function as *either jā* must be the highest copy in the derivation. One may wonder why *jā* in all its positions does not function as a disjunctive co-

ordinator; that is, why do we assume that the highest copy function as *either*? First, the diagnostics show that the two *jā* behave differently, and their impact agreement, extraction, and other patterns. Second, in the Arabic language (and probably all languages), a co-ordinator does not come before conjuncts; that is, a co-ordinator must come after the first conjunct and before the second conjunct, and so forth. See (33) and (34) below.

(33)

a. *ʕalī wa ʔaxūh raħħū.*
Ali and brother.his went.3PL.M
'Ali and his brother went.'

b. * *wa ʕalī wa ʔaxūh raħħū.*
and Ali and brother.his went.3PL.M
'Ali and his brother went.'

(34)

a. *ʕalī ʾaw ʔaxūh raħħū.*
Ali. or brother.his went.3PL.M
'Ali or his brother went.'

b.* *ʾaw ʕalī ʔaw ʔaxūh raħħū.*
or Ali or brother.his went.3PL.M
'Ali or his brother went.'

c. *ʾimmā ʕalī ʾaw ʔaxūh raħħū.*
either Ali or brother.his went.3PL.M
'Either Ali or his borther went.'

The example in (33) shows a case of co-ordination using the co-ordinator *wa* 'and.' The example in (34) shows a point in which the conjuncts are conjoined by *ʔaw* 'or'. The examples show that it is ungrammatical to use two co-ordinators to conjoin the DPs, Ali and his brother. This is evident in examples (33b) and (34b). (34c) shows a different case. Using *ʔimmā* 'either' can save the structure.

Also, if we assume that *jā* always functions as a disjunctive co-ordinator, we will encounter a violation for the *co-ordination condition*, "only constituents of the same type can be co-ordinated" (Radford 2009:59). Consider the following example.

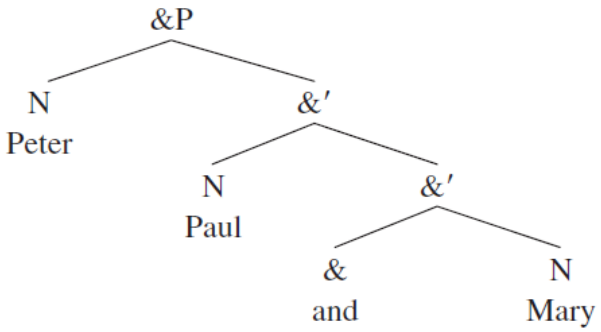
(35)

*ʕalī jā ʃirib ʔal-ʕasʕīr jā ʔakal ʔat-tafāħ.*
Ali PART drank DEF-juice PART ate DEF-apples
'Ali either drank the juice or ate the apples.'

Notice the position of *jā (*35). The first *jā* appears between the DP and a VP; if we assume that *jā* in this position is a co-ordinator, then we are wrongly assuming that *jā* is conjoining unequal phrases; that is, the structure violates the co-ordination condition. This supports our observation that the highest *jā* functions as *either*. Additionally, notice that the DP Ali, the subject of the verb, appears before *jā*; if *jā* is a co-ordinator, extraction must be blocked, but this is not the case.

Radford (2009:53), among others, present a tentative structure for co-ordinated phrases (36). Researchers seem to agree on that a co-ordinator is a head of a co-ordintive phrase; it selects a complement, and it may have multiple specifiers. This appears in the syntax of *and* in a structure such as [John, Paul, and Mary]. Most researchers agree that *and* occupies an additive functional head & (Radford 2009, among others), and *or* occupies a disjunctive functional head DIS (37) (Wu 2018, among others).

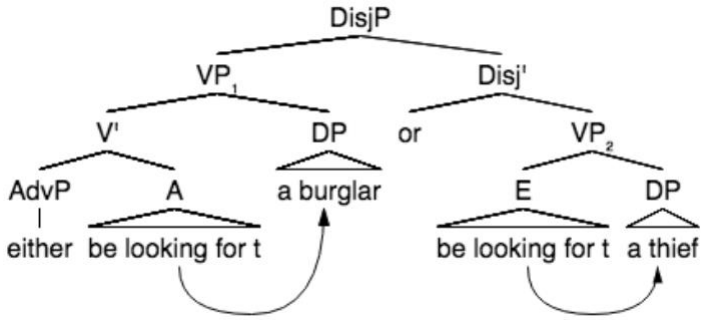
(36)




(Radford 2009:53)

In (36) we have additive phrase &P. The co-ordinator *and* selects the noun Mary as its complement, and it has Paul and Peter as its specifiers.

(37)

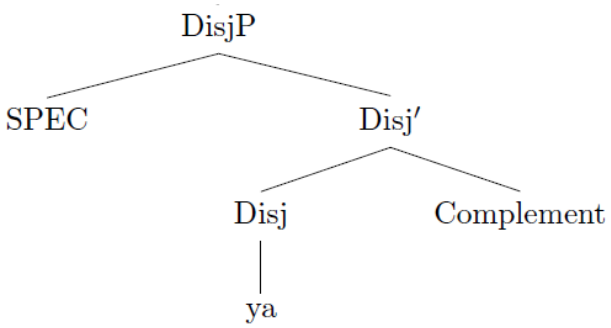



(Wu 2018:10)

In (37), the disjunctive co-ordinator selects the VP [be looking for a theif] as its complement, and it has the VP [either be looking for a burglar] as its specifier.

We follow the same analysis and posit that *jā* as a disjunctive co-ordinator originates in a functional head that marks disjunction DIS. This head selects a complement, and it has a specifier.

(38)




However, the nature of co-ordination in the Arabic language compels us to view this analysis in light of Haegeman' (2014) layered projections. We assume that *jā* may move to a higher disjunction head because in Jordanian Arabic (and most varieties of Arabic, including Modern Standard Arabic) a co-ordinator may appear in multiple positions.

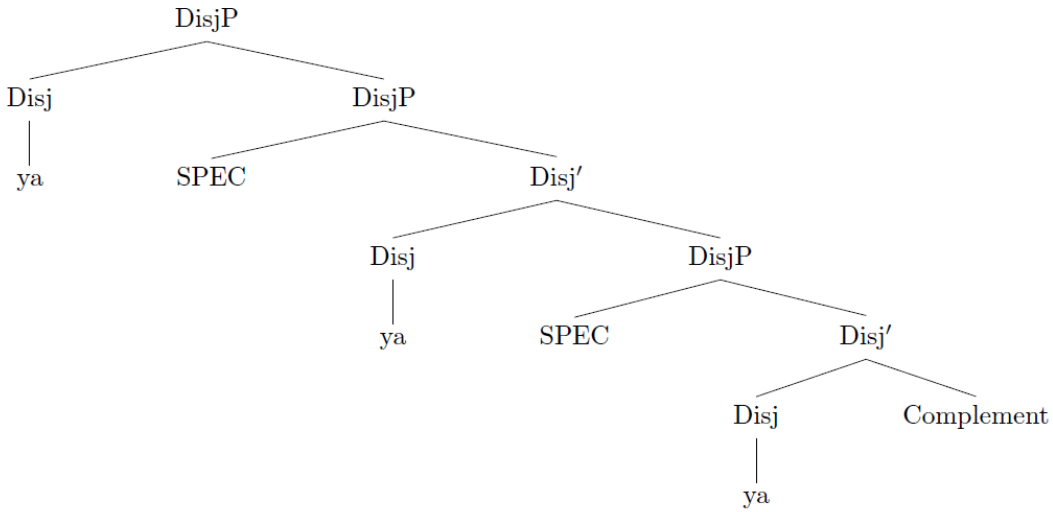
(39)

| *smiʕit* | *ʕalī* | *ʔaw* | *ʔusāma* | *ʔaw* | *salīn* | *ʔaw* | *xāllid.* |
|---|---|---|---|---|---|---|---|
| heard.1SG | Ali | or | Osama | or | Saleen | or | Khalid |

'I heard Ali, Osama, Saleen or Khalid.'

The layered projections view can account for the multiple appearances of a co-ordinator between conjoined phrases. We predict that the multiple spell-out of co-ordinators is because the co-ordinator moves from one head to a higher head. In all its positions, the co-ordinator can be spelled-out.

(40)



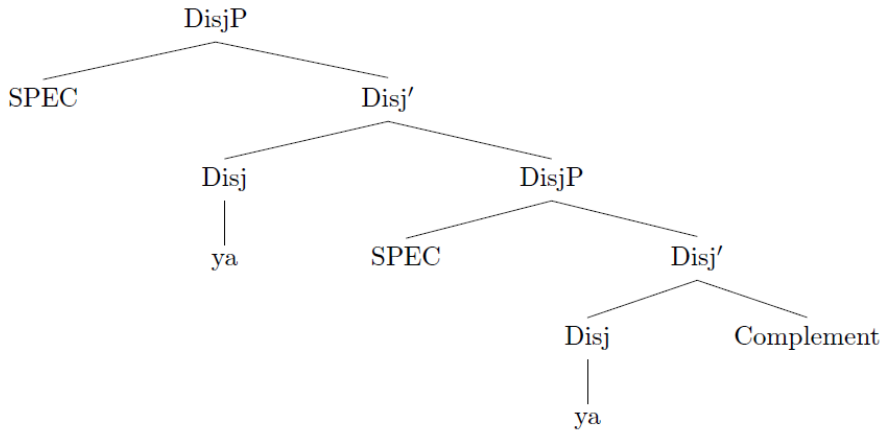

Because our data does not include instances of more than two *jā*s, we will not use layered disjunction projections in this sense.

Now, we need to account for the position of *jā* that functions as *either*. The layered projection of *jā* inspires us to develop a model for *either* in light of those predictions. Notice that

the structure in (40) shows that *jā* can appear as the topmost c-commanding element between layers. That is, in the first layer (marked by the intermediate projection), *jā* has a specifier and a complement. Imagine that once this projection is selected by the second *jā*, the topmost c-commanding *jā* functions as *either* provided that it does not have a specifier. Imagine that the specifier changes *jā* to be interpreted as *or*, and without a specifier *jā* functions as *either*. This analysis means that *jā* agrees with the specifier in a spec-head relation. This means that *jā* has an unvalued but interpretable disjunctive feature [*u*DIS] (Pesetsky & Torrego 2007). This feature agrees with the specifier. Once the feature is valued, *jā* functions as *or*. Because the topmost-commanding *jā* functions as *either*, we predict that it has different characteristics. But, we anticipate that *jā* will undergo movement as expected by Larson (1985). Because the purpose of this paper is to introduce *jā* as *either…or*, we will leave the intricacies of scope and how movement takes place for future research.

The model implicates that IND-JĀ has does not have a specifier or that the specifier position of the topmost DIS is occupied by something else. In violation of Chomsky's (1995) Head Movement Constraint, "head Movement is only possible between a given head and the head of its complement" (Radford 2009:157) and in agreement with Harizanov's (2019) argument that heads may move to specifier positions for discoursal reasons, we posit that DIS-JĀ moves from the head DIS to the specifier position of DIS at the topmost c-commanding layer. This movement leads to IND-JĀ. In this position, it behaves like a quanitifier. Larson's (1985) approach speaks of a featural relation between *either* and *or*. In our model, this relation is due to movement. Notice that it is ungrammatical to use *either* with *and*. First, *either* is not compatible with *and*. We predict that this incompatibility appears because *either,* in its original form, before movement to the specifier position, has a connection with disjunction. Our model also has a basis in those models that view *either* as a phrase and those models that view *either* as a focus element. If Harizanov (2019) is right in his prediction, then for a discoursal reason, i.e., focus, the disjunctive *or* moves from the head to the specifier position. This position must be vacant, and it must c-command the disjunctive coordinator *or* (41).

(41)




This model explains the multifunctionality of *jā*. We posit that the two functions utilize the same form at the PF because they are pronunciations of different copies of *jā*. DIS-JĀ and IND-JĀ are

copies of *jā*. The movement of DIS-JĀ creates different copies. One of those copies, specifically, the copy that does not appear with a specifier, that is, a conjunct, is the copy that makes DIS-JĀ move to the specifier position of DIS. This movement results in the *scope indicator* reading.

## 8 Concluding Remarks

In this paper, we analyze *jā* as a disjunctive co-ordinator and indicator. In Jordanian Arabic, *jā* is a multifunctional particle. It can function as a call on addressee; hence, it may occupy the specifier position of a vocative functional head. Additionally, we presented data in favor of a coordinative function of *jā*.

The data shows that *jā* can function as a disjunctive co-ordinator and a scope indicator. The research focuses on establishing those functions in the use of *jā* in Jordanian Arabic. The research, therefore, highlights that the contexts in which *jā* has a conjunctive function The study examines the features of disjunctive co-ordinators against *jā*, and it shows that the particle fits all the features that qualify a particle for disjunction. The study develops a disjunction model by looking at disjunction as layers and introduces an observation that the topmost c-commanding *jā* is the particle that functions as a scope indicator, not the lower ones.

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## Abbreviations

1= First person, 2= Second person, 3= Third person, ACC = Accusative, COMP/COMPL= Complementizer, DEF= Definite, DET = Determiner, F=Feminine, IND=Indicative, M=Masculine, NOM=Nominative, PART= Particle, PL=Plural, SG = Singular, INCL = Inclusive person, DIS= Disjunctive, SPEC = Specifier

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