

The Structural PF–Deletion Approach to Sluicing Investigation

Al Zahrani, Mohammad^{1*}, Al Thagafi, Khulud²

¹Taif University, Foreign Languages Department (FLD), Associate Professor, Fellow, Advance HE, UK

²MA in Linguistics, Taif University, Taif, Saudi Arabia

Corresponding Author: Al Zahrani Mohammad, E-mail: moali66@hotmail.com;m.zah@tu.edu.sa

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ABSTRACT

The present paper investigates the Hijazi Arabic (HA) morphosyntactic properties of the widely known linguistic phenomenon of sluicing from a generative perspective, taking into account the latest advancements of the Minimalist Approach (Chomsky 1995, 2000, 2001). In this paper, sluicing is a linguistic phenomenon of deleting an entire TP clause, leaving only a wh-remnant. Adopting the Structural PF-Deletion approach, we argue that HA employs sluicing and that the ellipsis site contains a fully-fledged syntactic structure that must be deleted at the PF level after the movement of the remnant to a higher CP. On a par with previous crosslinguistic ellipsis studies, the current study shows that ellipsis is permitted if and only if there is a specific head carrying some specific morphosyntactic properties occurring in a local relation to the ellipsis site. This specific head, with its morphosyntactic properties, licenses for the ellipsis phenomenon to occur. The head properties trigger the whword to move from its base-generated position to the specifier position of this particular head, i.e., Spec CP, and then delete all other constituents included within the TP.

INTRODUCTION

One of the main goals of understanding a language is to understand how a meaning is coded in clauses that speakers produce to deliver such a meaning to hearers. However, sometimes the clauses speakers use contain some more meanings that are semantically interpreted though they are not represented by sounds in those clauses. Put another way, some parts of the clauses are not phonetically produced but rather syntactically represented and semantically interpreted. This is the cross linguistic phenomenon of ellipsis.

Linguists have shown interests in uncovering this linguistic phenomenon of ellipsis, such as Merchant (2001; 2003; 2004; 2005, 2006a, 2006b, 2013, 2016; 2012), McShane (2005; 2016), Kolokonte (2008), Aelbrecht (2010), and Abels (2018), to mention a few.

Merchant (2001) describes ellipsis as the ‘syntax of silence’: a description suggesting that there are syntactic properties of the unpronounced structures. McShane (2005: 24) defines ellipsis as the omission of certain categories during speech. This omission of some specific categories shows that the ellipsis phenomenon is not arbitrary. Rather, it is governed by certain constraints that play a crucial rule

in the grammaticality and the semantics of the sentences containing ellipsis. Hence, ellipsis reflects the interface between syntax, semantics and pragmatics; this explains its complexity that has been accounted for by different theories and approaches.

Ellipsis has been investigated in different languages including English (Merchant, 2001), German (Klein, 1981), Japanese (Takahashi, 1993), Spanish (Lipták & Saab, 2014), Mandarin Chinese (Li & Thompson, 1981) and Turkish (Ince, 2006), to mention a few. Given that languages differ in their syntactic environments and properties that may or may not employ ellipsis, these aforementioned studies have followed and adopted different approaches and theories, from which the present paper recalls some in different sections.

Arabic, as well, employs ellipsis, known in Arabic grammar as *idmar* or *alhaḍf*. The form *idmar* is derived from the verb *aḍmara*, which refers to the notion of concealing, while the form *alhaḍf* is derived from the verb *haḍafa*, which refers to the notion of deletion. The interpretation of the meaning in the ellipsis site is called *taqdir*, which refers to the notion of interpretation. Ellipsis has also been studied in different Arabic varieties including Classical/Standard Arabic (Kanakri, 2018), Emirati Arabic (Leung, 2014a, 2014b), Jordanian

Arabic (Al-bukhari, 2016), Libyan Arabic (Algryani, 2012), and Omani Arabic (Algryani, 2019). To the best of our knowledge, sluicing has never been investigated in Hijazi Arabic (HA), so the present paper fills in this gap by investigating sluicing and exploring its syntactic properties from generative perspective, obeying the principles of the latest advancements of the Minimalist Program (MP) of Chomsky (1995, 1999; 2000, 2001).

For the investigation of HA sluicing, a type of ellipsis (see section 2), the present study follows Merchant (2001) in adopting the PF approach. It argues that HA sluicing exhibits a fully-fledged internal structure in which the PF-Deletion operation of the of the entire TP takes place, after the movement of the remnant *wh*-element.

Significantly, the present study contributes to providing significant clarifications of the HA linguistic phenomenon of sluicing. Also, while it contributes to the ellipsis literature in general, it also contributes more particularly to the HA growing literature; needless to say it establishes the HA sluicing literature, which is, assumingly, has not been established yet.

Why HA? This dialect has been remarkably attracting several linguists since 1970s. Examples of early studies are like the works of Bakalla (1973) Ingham (1971) and Sieny (1978), which are traditional descriptive studies. Also, there are the HA reader textbook by Feghali (1991) and the basic course textbook by Margaret (1975). It is worth noting that Margaret's (1975) textbook was sponsored by the Foreign Service Institute in Washington, which, in turn, shows a global attention of the HA dialect. On the generative ground, several linguists have been exploring different morphosyntactic and semantic properties in HA (including, Al Barrag, 2007, 2014; Al Barrag & Al Zahrani, 2017; Al Zahrani, 2008, 2013, 2014a, 2014b, 2015a, 2015b, 2016, 2018, 2020, forthcoming; Al Zahrani & Alzahrani, 2019; Bardeas, 2005, 2009; Eifan, 2017; Kheshaifaty, 1996).

The paper is organized as follows. Section 2 presents an overview of the linguistic phenomenon of ellipsis and its types, with some focus on sluicing. Section 3 and its subsequent sections present the theoretical background of ellipsis, as a general linguistic phenomenon, and the theories (LF-Copy & PF-Deletion) used to account for the analysis of elliptical structures. Section 4, on the one hand, discusses briefly the HA *wh*-constructions that are needed for the discussion of sluicing, and, on the other hand, it shows how HA sluices fulfill the two conditions of ellipsis: recoverability and licensing. Section 5 investigates the sluicing phenomenon in the dialect under study. Section 6 concludes the paper and provides some recommendations. Following this latter section are Appendix 1 and Appendix 2, providing the HA Consonants and Vowels, and the Abbreviations used in the paper.

SLUICING: A TYPE OF ELLIPSIS

Ellipsis refers to the omission of a certain category that causes a mismatch between sound and meaning (Aelbrecht, 2010). It is characterized by two conditions: recoverability and licensing (Aelbrecht, 2010; McShane, 2005). The former condition, on the one hand, is concerned with the

semantics of elliptical structures; it indicates that an elliptical structure must be semantically recoverable from the context. Otherwise, the hearer would not be able to infer the elided structure (Aelbrecht 2010: 10). Licensing, on the other hand, is concerned with the syntactic properties of elliptical structures; it refers to the requirement of the presence of an appropriate syntactic environment that can allow for the ellipsis phenomenon to occur. Briefly put, ellipsis requires a licensing head with some ellipsis feature [E]-feature (section 5). The licensing condition entails that the recoverability condition is not enough, i.e., the ability to derive a semantic interpretation of ellipsis is not enough for ellipsis to occur because “not all syntactic configurations allow ellipsis” Aelbrecht (2010:10). Thus, ellipsis requires interpretable (recoverable) lexical categories and licensing syntactic environments. We show how this works with HA examples in Section 5.

Recalling that ellipsis exhibits hidden meanings and materials, some linguists go beyond the phonetic realization to explore the hidden structures while others argue that there is no hidden structure. This suggests two competing approaches to the elliptical material: the structural approach and the non-structural approach. These two approaches are widely used in the literature to account for the ellipsis phenomena; they are in conflict as to whether or not there is a hidden structure in the elliptical site (see Section 3).

The linguistic phenomenon of ellipsis covers a wide range of syntactic categories; this, in turn, produces different types of ellipsis according to the elided position and the grammatical category. These types include verb phrase ellipsis, nominal phrase ellipsis, gapping, stripping and sluicing, as presented in examples (1) to (6) below.

- | | | |
|-----|--|---|
| (1) | <i>“Abby can play five instruments, and Ben can play six.”</i> | NP-Ellipsis (Merchant, 2013: 2) |
| (2) | <i>“Sue went to London and Peter to Paris.”</i> | Gapping (Kolokonte, 2008: 1) |
| (3) | <i>“Jack doesn't eat meat, but Victor does.”</i> | VPE (McShane, 2005: 146) |
| (4) | a. <i>“Who did she see?”</i>
b. <i>“John.”</i>
c. <i>“She saw John.”</i> | Fragments answers (Merchant, 2004: 673) |
| (5) | <i>“Abby speaks passable Dutch, and Ben, too.”</i> | Stripping (Merchant, 2003: 1) |
| (6) | <i>“Abby can play something, but I don't know what.”</i> | Sluicing (Merchant, 2013: 2) |

The current paper focuses only on sluicing, which is represented in example (6). This linguistic phenomenon of sluicing was first observed by Ross (1969) who describes it as “sentences in which an interrogative clause is elided leaving only its *wh*-word (or phrase) overt.” Merchant (2004: 664) defines sluicing as “the ellipsis phenomenon, in which the sentential portion of a constituent question is elided, leaving only the *wh*phrase”. Aelbrecht (2010: 1) states that sluicing “is the omission of elements that are inferable from the context and thus constitutes a mismatch between sound and meaning”. What these definitions show is that the salient

property of sluicing is the deletion operation that results in a mismatch between the utterance and its interpretation.

To show the linguistic phenomenon of ellipsis, its components and the conventions used in the present paper, consider the structure in (6) above, repeated as (7) below, where we expect to have a full question structure after the *wh*-element.

- (7) “*Abby can play something, but I don’t know what [Abby can play t_i].*”

In (7), the interrogative element *what* is a remnant. The bracketed structure [*Abby can play t_i*] is the elided site, known as the sluicing site, which is indicated in the example by the strikethrough diacritic. This missing category is interchangeably referred to in the literature as the elided constituents or the elided sites. The paper also refers to this site as the sluiced clause, or more generally, the elliptical clause. The higher TP clause *Abby can play something* is the antecedent clause; *something* is the complement of the verb *play* and it is called the correlate, which is an element of the antecedent clause.

Notice that the unpronounced structure (due to deletion) following the *wh*-element *what* in (7) is isomorphic. That is, the unpronounced structure [*Abby can play t_i*] occurring after *what* is identical in form to the antecedent structure *Abby can play*. However, elided constituents are not necessarily isomorphic. Some elided constituents can be non-isomorphic, as shown in (8).

- (8) “*Someone just left guess who [it was].*”

In (8), the elided constituent [*it was*] differs in form from the antecedent constituent [*someone just left*], so the constituent [*it was*] is non-isomorphic.

Sluicing is a cross linguistic phenomenon. Consider the following examples, adopted from different resources exhibiting sluicing in different languages.

Classical/Standard Arabic

- (9) *ha:tafa-ni xalid-un la:kin laa ?aʕrif-u mata*
called.1SG. Khalid- but NEG 1SG. when
GEN NOM know-IND

“*Khalid phoned me, but I don’t know when.*” (Kanakri, 2018: 265)

German:

- (10) *er will jemandem loben aber sie wissen nicht wen*
he wants someone. praise but they know not who.
ACC ACC

“*He wants to praise someone, but they don’t know who.*” (Merchant, 2004: 665)

Greek:

- (11) *I astinomia anekrine enan apo tous Kiprious prota*
the police interrogated one- from the Cypriots first
ACC
ala dhen ksero pjon
but not I.know who-
ACC

“*The police interrogated one of the Cypriots first, but I don’t know who.*” (van Craenenbroeck, 2010, p. 1717)

- (12) *I Anna milise me kapjon alla dhe ksero pjon*
the Anna spoke with someone but not I.know who
“*Anna spoke with someone but I don’t know who.*” (Merchant, 2001: 94)

Norwegian:

- (13) *Per har snakket med noen, men jeg vet ikke hvem.*
Per has talked with someone but I know not Who
“*Per has talked to someone but I don’t know who.*” (Merchant, 2001: 93)

Hebrew:

- (14) *Dani katav le-mishehu aval ani lo yodea mi*
Dani wrote to-someone but I not who
know

“*Dani wrote to someone but I don’t know who.*” (Merchant, 2001: 99)

What is common in these examples is that they all employ sluicing with *wh*-elements occurring in the lower clause. This is on a par with Ross’ definition since all these languages show clauses where the question part is elided, but the *wh*-word is left overt. The next section presents the theoretical framework adopted for the discussion of the present paper.

FRAMEWORK

The investigation of the elliptical elements, which are sluices in this paper, can be conducted within one of the two competing approaches: the structural approach or the non-structural approach. Although this paper does not aim to resolve the disputes between the two approaches, it briefly sheds light on each approach.

The structural approach, as its name suggests, indicates that the ellipsis site contains hidden structures that are null or deleted (Merchant, 2001; Aelbrecht, 2010; van Craenenbroeck, 2010a). Because this approach argues for a hidden/null unpronounced structure, it analyzes such a structure as a full unpronounced constituent and uses a number of theories including the LF-Copying theory and the PF-Deletion theory to account for its claims. This structural approach is supported by the majority of linguists (Abels, 2018; Aelbrecht, 2010; Chung, 2006; Chung *et al.*, 1995; Leung, 2014a; Merchant, 2001, 2004; 2005; Merchant & Simpson, 2012; van Craenenbroeck, 2010), to mention a few.

The nonstructural approach, as its name suggests, claims that the ellipsis site does not contain any hidden structures. Put another way, there is no syntactic structure in the elliptical clause. Assumingly, there are no categories other than what the uttered structure shows, this approach attempts to analyze the meaning from the existing superficial structure. This approach is supported by some linguists (including: Ginzburg & Sag, 2000; Hankamer & Sag, 1976; Sag & Hankamer, 1984). Merchant (2005: 3) schematizes the two approaches as shown in Figure 1.

Figure 1 shows that the nonstructural approach claims for no pronounced syntactic structures in the ellipsis site.

Contrary, the structural approach argues for the presence of a syntactic structure in the ellipsis site. Furthermore, Figure 1 also shows that the structural approach has three theories that may account for whether or not the omission is due to the presence of lexical null elements. The next subsections present a brief overview of these two approaches.

Nonstructural Approach

The nonstructural approach argues that there are no lexical items other than what is pronounced or appears in the elliptical structure. Put another way, there is no deletion and no null categories in such a structure (Aelbrecht, 2010). Supporters of the non-structural approach, (such as, Culicover & Jackendoff, 2005; Van Riemsdijk, 1978), claim that the elliptical site contains only the *wh*-remnant, which can either be a DP or a PP, and is considered a complement of its preceding verb.

Given that the approach claims that there are no hidden or deleted structures, the interpretation of the entire clause depends on more than the phonetic realization; i.e., the interface between semantics and syntax helps interpret the elliptical construction (Aelbrecht, 2010). Consider the following example in (15) supporting this approach, adopted from Aelbrecht (2010: 3).

(15) “*Someone was singing La Marseillaise but I don’t know who.*”

In (15), the *wh*- element following the lexical verb *know*, is claimed to be the only element in the complement structure as represented in Figure 2, adopted from Aelbrecht (2010: 3).

The representation in Figure 2 shows that there is no syntactic structure in the elided site other than the DP *who*, which has been selected for by the verb *know*. In other words, the elided site contains only the *wh*- element that is not followed by any hidden clauses, LF-Copying or PF-Deletion operations.

The nonstructural approach is not favored by the majority of linguists such as Merchant (2001: 40-54) who argues that the type of analysis presented in Figure 2 fails to account for the fact that the sluiced clause appears to be explained not as a nominal node, but rather as a sentential complement. Following this line of reasoning, the present paper does not adopt the nonstructural approach. It adopts the structural approach, which is presented in the next section.

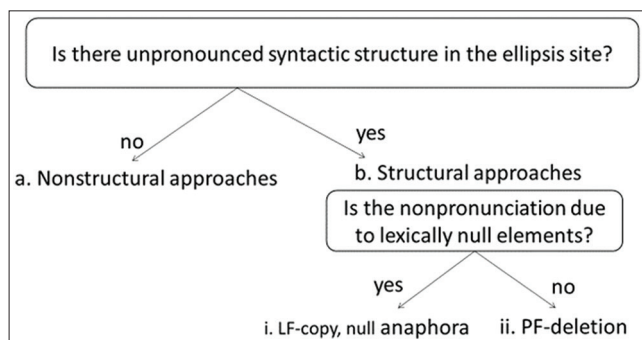


Figure 1. Approaches to Ellipsis, adopted from Merchant (2005: 3)

Structural Approach

Considering elided structures, the structural approach holds that there are more categories than those explicitly pronounced. The supporters of this approach claim that the unpronounced structure is either null or deleted. This variation depends on what theory the followers of the structural approach adopt to account for the elided components: the Logical Form (LF) Copying theory or the Phonological Form (PF) Deletion theory. This variation results in creating two structural views: Structural LF-Copying view and Structural PF-Deletion view. These two views are explained below.

LF Copying theory

Recalling Figure 1, the LF-Copying theory holds that the ellipsis site is a null category drawn from the lexicon and is filled by copying the semantic component of the correlate of the antecedent clause at the LF level (Chung *et al.*, 1995; Wilder, 1997a, 1997b). This LF-Copying theory is also known as the non-movement theory because the basic argument about the LF analysis is that there is no movement of the remnant. If the movement process is rejected by this view, it, in turn, suggests that the *wh*-word is base-generated in Spec CP. This proposal is supported by Chao (1987), Fortin (2011) and Lobeck (1995) who argue for an empty TP category containing the *wh*-word that is base-generated in Spec CP. We show this argument in example (16), adopted from Fortin (2011: 87).

- (16)a. “*Sam is drinking something, but I don’t know [CP what [C° [TP e]]]*”
- b. “*Sam is drinking something, but I don’t know [CP what [C° [TP Sam is drinking.]]]*”

Example (16) represents the spell-out level before applying the copy theory. The LF copy theory suggests that the interpretation of the empty category comes after copying the appropriate syntactic category from the antecedent, as shown in (16b), which shows the resulting structure after copying the entire TP [TP *Sam is drinking*] at LF. In other words, the matrix clause has the TP antecedent that is copied in the lower clause. This entails that the LF-Copying analysis shows no movement of the remnant. Rather, the remnant is based-generated in Spec CP and it stays *in situ*. This backs

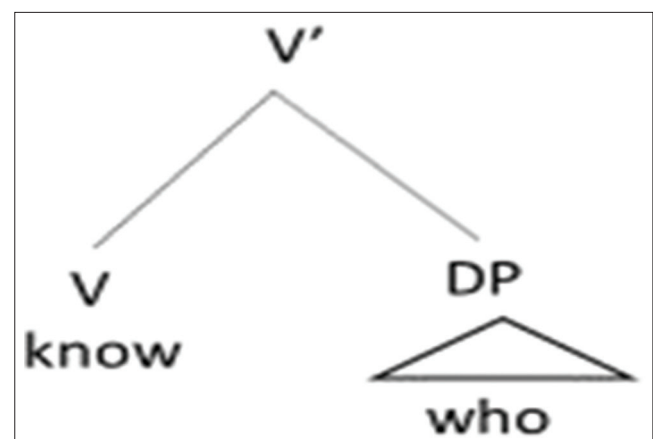


Figure 2. Nonstructural approach hierarchy

up the argument that the derivation of sluicing does not show any overt movement. This is what has made Abe (2015: 22) argue that this proposal accounts for the island insensitivity of sluicing.

According to these arguments supporting the LFCopying theory, elliptical structures have no island effects because LF theory indicates that the lack of island reveals no movement. Consider the example in (17), adopted from Fortin (2011: 88), where items (a) and (b) are different completions of the clause in (17).

- (17) “Chris was disappointed because he lost some contest, but I don’t know...
 a. *... which contest [_{TP} Chris was disappointed because [_{TP} he lost which contest]].”
 b. ... which contest”.

The example in (17), as Fortin (2011) argues, shows empirical evidence for LF-Copying theory in that “the behavior of *wh*-remnants differs from the behavior of *wh*phrases in nonelliptical questions”. In other words, Fortin (2001: 88) argues that LF-Copying theory can account for the grammaticality of (17b) “if and only if the *wh*-remnant “does not undergo movement”. This in turn shows the lack of Subjacency island effect in sluicing. Contrary, overt movement is considered ungrammatical as shown in (17a).

With respect to the examples in (17), Kanakri (2018: 264) argues that Fortin’s (2011) support for the LF-Copying view by claiming that Subjacency is a hybrid approach is not valid as it contains two types applied at the PF level: derivational and representational. Fortin’s derivational type places a * at a specific place in the structure; also, Fortin’s representational type includes the deletion of the island that eliminates the *. Going against Fortin’s (2001) argument about the examples in (17), Kanakri (2018: 264) holds that having these two types as a hybrid approach is not valid in principle within minimalism. The reason behind this invalidity is the fact that the placing of * violates the Inclusiveness Condition, which is one of the Minimalist Approach (MP) conditions suggested by Chomsky (1995) (see Kanakri 2018: 264-68 for more). Following this line of arguments against the LF-Copying approach, the present paper adopts the PF Deletion theory, which is discussed in the next section.

PF Deletion theory

This approach claims that there is a full syntactic structure in the second clause, which is the null TP that is deleted at the derivation of the phonological form (PF). The PF-Deletion theory is also known as the movement theory or deletion theory, and this is due to the fact that the basic claim of this theory is that the deletion operation of TP occurs after the movement of the *wh*-element to a higher position has already taken place. Consider the following example in (18), adopted from Kolokonte (2008: 61).

- (18) “Mary wants to eat something, but I don’t know [_{CP} what_i [_{IP} Mary wants to eat t_i]].

In (18), the elided structure [*Mary wants to eat*] is a TP structure. The *wh*-word has moved from the complement posi-

tion of the verb *eat* to Spec CP. This shows a movement operation of the *wh*-remnant, the movement operation this approach supports. This also shows the main difference between the previous PF-Deletion theory, discussed above in Section 3.2.1, and the LF-Copy theory, i.e., while the LF theory claims for no syntactic structures in the elliptical site, the PF theory claims that the elliptical site contains elided constituents that are fully fledged TP syntactic structures that have undergone the process of deletion after the movement operation of the *wh*-remnant has already taken place. To represent the PF-Deletion argument hierarchically, consider the example in (19) and its tree diagram in Figure 3, both adopted from Aelbrecht (2010: 3)

- (19) “Someone was singing La Marseillaise but I don’t know who.”

Figure 3 illustrates that the remnant item *who* has moved from the specifier position of TP to that of CP leaving a trace behind, represented in Figure 3 by [_{t_{who}}]; the head of TP and its little vP complement [*was singing La Marseillaise*] are then deleted. This suggests that the ellipsis site has undergone two syntactic operations: movement and deletion. Ross (1969), Lasnik (2001) and Merchant (2001) argue that sluicing happens under regular *wh*-movement where it requires the movement of the remnant and the deletion of its TP. A basic hierarchy of this argument, shown in Figure 4, is suggested by Merchant (2005: 665).

Figure 4 shows the deletion of the entire TP after the movement of the remnant *wh*- element to the specifier of the head of the higher CP, represented by (XP) in Figure 4. The deleted TP structure is represented by (...t...) and the position of the *wh*-word is represented by [*wh*] in Spec CP (XP). Note that the head of CP carries the interrogative feature [*wh*,Q], see (Chomsky, 2007; Radford, 2009a, 2009b). Note also that the abstract interrogative feature occupying

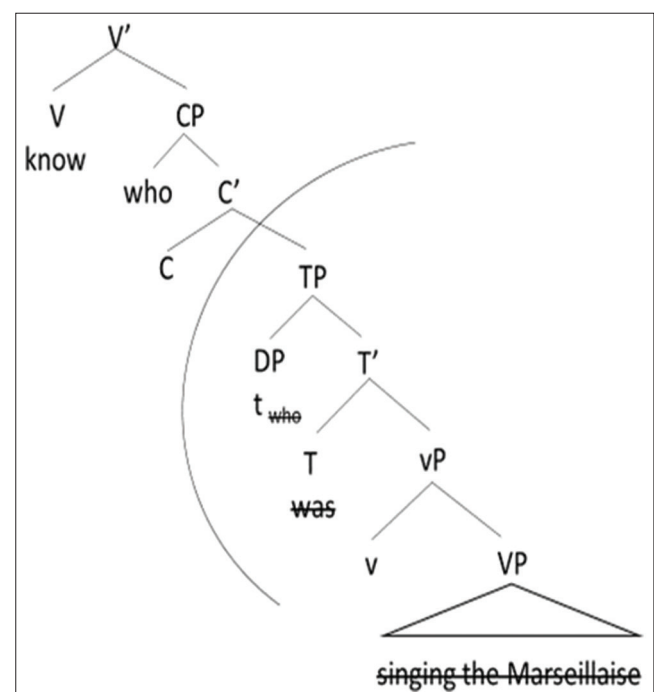


Figure 3. Hierarchy of the Structural PF-deletion approach

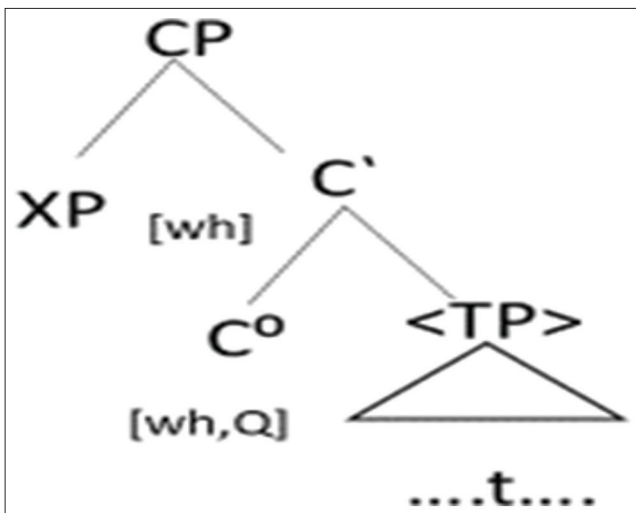


Figure 4. Basic hierarchy for PF-deletion theory

the head C° is essential in forming constituent questions. These features, following Merchant (2001), are also needed in sluicing structures that are characterized by the E[llipsis] feature [E], which works only with interrogative C° (wh,Q). We will elaborate more on this in Section (5). The next section discusses the basic structure of HA interrogatives, which are essential to the discussion of sluicing, and the how the sluicing conditions are applied to HA.

HA INTERROGATIVE STRUCTURES AND SLUICING CONDITIONS

Recall Ross’ (1969: 252) coinage of *sluicing* as “sentences in which an interrogative clause is elided leaving only its *wh*-word (or phrase) overt” (McShane 2005: 143). Ross (1969: 252) also points out that sluicing is resulted by the process of “deleting everything but the proposed constituent of an embedded question”. This, in turn, suggests that sluicing requires a syntactic environment of *wh*-interrogatives. Hence, the aim of this section is twofold. It, firstly, shows the basic derivation of HA interrogative structures, which are essential to the investigation of the HA sluices. Secondly, the section shifts to show that HA sluices meet the two conditions of ellipsis, suggested by McShane (2005) and developed by Aelbrecht (2010), namely, recoverability and licensing, discussed briefly in Section (1). It is important, however, to note that this paper uses the term ellipsis and sluicing interchangeably, i.e., the paper uses the generalizations and arguments on ellipsis and its types to apply them to sluicing, so when we discuss arguments on ellipsis we refer to applying them on sluicing. Starting with the HA interrogative structures, consider the example in (20a).

- (20) a. *qa:balt* *mi:n*
met.2SG.M who
“You met who?”
- b. *mi:n* *qa:balt*
who met.2SG.M
“Who did you meet?”

Following Radford’s (2009a, 2009b) arguments and analyses of *wh*-movement and structures, (20a) shows a *wh*-*in-situ*-question because the *wh*- element *mi:n* (who) stays in its base-generated position, i.e., *in situ*, as a complement of the perfective verb *qa:balt* (you met). (20b) shows the preposing (fronting) process of the interrogative element *mi:n*. It has occupied a position higher than the perfective verb, which, according to Al Zahrani (2013, 2014b, 2016, 2018) occupies the head of TP to merge with the abstract past tense feature. This new position of the *wh*-remnant *mi:n* is the specifier position of the CP dominating that TP. When the interrogative element moves, it leaves a null copy behind (trace) in its base-generated position (Radford 2009a: 155).

The head of CP contains an edge feature (EF), as argued by Chomsky (1977; 1981, 2007), that is responsible for triggering the movement of the *wh*- element from its base-generated position to Spec CP. Given this analysis, the HA clause in (20b) is an interrogative clause known as non-echoic, and it meets the Interrogative Condition stated in (21), adopted from Radford: (2009b: 194).

- (21) "A clause is interpreted as a non-echoic question if (and only if) it is a CP with an interrogative specifier (i.e., a specifier containing an interrogative word).

Thus, the important conclusion to be drawn from this analysis so far is that the movement of a HA *wh*-word starts from its base-generated position, which is the position of the verb complement within the TP. It, the *wh*-word, moves to the specifier position of the CP dominating that TP. We will see how this movement occurs in sluicing and what motivates it in Section 5.

The remainder of the section now shifts to the application of the two sluicing conditions to HA. We start with the recoverability condition.

Consider the example in (22) that is uttered out of context, i.e., “out of the blue” in Aelbrecht’s expression (2010: 11).

- (22) # *bas* *maa* *ʔaʃref* *mi:n*
but NEG know.1SG who
“But I do not who.”

Semantically, the interpretation in (22) cannot be appropriately recovered because the utterance is out of context. HA, however, considers such a sentence semantically odd, and this is represented by the hash sign #. The oddness of the utterance in (22) is accounted for by the fact that it lacks a linguistic antecedent, which is what makes the meaning non-recoverable by the hearer. Merchant (2001: 26) claims that the recoverability condition of ellipsis (sluicing in this example) can be implemented by the e-GIVEN notion, stated in his Focus Condition on Ellipsis quoted in (23), adopted from Merchant (2001: 26).

- (23) "A constituent *α* can be deleted only if *α* is e- GIVEN".

(23) indicates that a constituent must be e-GIVEN to be deleted as an ellipsis; the e-GIVEN notion is a property of an expression that can only count as e-GIVEN if and

only if it has a salient antecedent. In light of (23), the HA *wh*-expression *mi:n* in (22) does not have antecedent; also the example does not contain an e-GIVEN constituent that can be deleted. Now consider the utterance in (22), repeated as (24) with different interpretations.

- (24) a. *Ali qa:bal wa:hed ...*
 Ali met.3SG.M one ...
 “*Ali met someone....*”
 b. *...bas maa ʔaʕref mi:n [Ali-qa:bat]*
 ...but NEG know.1SG who Ali met.3SG.M
 “*...but I do not know who [Ali-met].*”
 c. *#...bas maa ʔaʕref mi:n [al-musa:fri:n]*
 ...but NEG know.1SG who D-travelling
 (people)

#“*...but I do not know who the travelers are.*”

In (24b), the expression [*Ali-qa:bat*] has the property of the e-GIVEN notion; it can be deleted as an ellipsis. Thus, (24a) can receive the interpretation in (24b), but not that in (24c) because (24b) features the presence of the salient antecedent of [*Ali-qa:bat*], and contains the variable inference corresponding to the subject. In addition, (24c) shows no binding with the main clause in (24a) while (24b) does as indicated by the interpretation with the strikethrough.

The second condition of ellipsis is licensing. It is important, however, to recall that “not all elliptical phenomena occur in all languages” (Aelbrecht, 2010: 13); because languages have different syntactic properties, some languages may employ all the elliptical structures exemplified in (1) to (6) above whereas other languages may not employ all of them. This fact explains why Aelbrecht (2010: 14) holds that syntactic environments play crucial roles in allowing ellipsis to occur.

Put another way, missing elliptical structures must be syntactically licensed by a licensing head containing ellipsis feature: [E]-feature (Section 5). If [E] is absent, ellipsis is impossible. For instance, since sluicing requires the presence of *wh*words/phrases, and since HA licenses sluicing through *wh*-interrogatives, If the *wh*-remnant is absent as in (25a) below, the structure environment would not seem appropriate for sluicing. Also, if the preposition following the *wh*-remnant *mi:n* appears stranding as in (25b) the sentence would be grammatically unacceptable.

- (25) a. *Ali qa:bal wa:hed bas maa ʔaʕref-uh*
 Ali met.3SG.M one but NEG know.1
 SG-
 3SG.M
 “*Ali met someone but I do not know him.*”
 b. **Ali sa:far maʕa wa:hed bas maa ʔaʕref*
 Ali travelled.3SG.M with one but NEG know.
 1SG
mi:n [Ali sa:far maʕa]
 who Ali travelled.3SG.M with
 “*...but I do not know who [Ali travelled] with.*”

(25a) and (25b) are not sluices in HA due to the following. (25a) does not have the *wh*remnant, so the required

syntactic environment for sluicing is absent (see Section 5). (25b) shows that the preposition is stranded in its base-generated position, which, in turn, entails that it has not moved with the *wh*-remnant; this is not grammatical in HA. Once again, the required syntactic environment for sluicing is not perfect. The investigation of preposition stranding in sluicing is beyond the scope of this paper; it is left for a forthcoming paper.

This section has shown HA interrogative clauses, on the one hand, and how HA employs sluicing by fulfilling its conditions of recoverability and licensing. The next section investigates the HA sluices.

SLUICING STRUCTURES IN HA

Having shown the basic HA interrogative structures and the application of the sluicing conditions to HA structures, this section investigates the HA sluicing structures within the Structural PF-Deletion theory, presented in Section 3.2.2, and shows that this theory obeys the principles of the generative grammar and minimalism.

Sluicing in Hijazi Arabic is similar to other languages in that it is licensed through a *wh*interrogative word, which is the remnant in a sluicing structure. Consider the examples in (26).

- (26) a. *Ali qa:bal wa:hed bas maa ʔaʕref mi:n*
 Ali met.3SG.M one but NEG know.1SG who
 “*Ali met someone but I do not know who.*”
 b. *Salma tigra bas maa ʔaʕref aiš*
 Salma read.3SG.F but NEG know.1SG what
 “*Salma is reading, but I do not know what.*”

In (26a-b) *mi:n* ‘who’ and *aiš* ‘what’ are the interrogative elements whose presence has licensed for the sluicing phenomenon in these examples. What we assume to have after the remnants *mi:n* ‘who’ (26a) and *aiš* ‘what’ (26b) are the elided constituents [*Ali-qa:bt*] and [*Salma-tigra*] respectively. Notice that the verb *ʔaʕref* ‘I.know’ occurs in the embedded clause and selects for a CP complement as illustrated below.

Following Merchant (2001) in adopting the Structural PF-Deletion theory, the paper argues that the sluices in (26a-b) contain fully syntactic fledged TP structures that have undergone a deletion process. Put another way, (26a-b) show interrogative structures in which each *wh* element is basically generated in its position as a complement of the lexical verb *qa:bal/tigra*. Then, it has been triggered to move to Spec CP where it has copied itself before leaving a trace behind. This is illustrated in examples (27a-b) with their linear representations and translations.

- (27) a. *bas maa ʔaʕref Ali qa:bal mi:n*
 but NEG know.1SG Ali met.3SG.M who
 [*bas* [_{NegP} *maa* [_{TP} *ʔaʕref* [_{CP} [_C [_{TP} *Ali qa:bt mi:n*]]]]]]]
 “*... but I do not know Ali met who.*”
 [*bas* [_{NegP} *maa* [_{TP} *ʔaʕref* [_{CP} *mi:n* [_C [_{TP} *Ali qa:bt t*]]]]]]]
 “*... but I do not know who, Ali met [t].*”
 [*bas* [_{NegP} *maa* [_{TP} *ʔaʕref* [_{CP} *mi:n* [_C [_{TP} *Ali-qa:bt t*]]]]]]]
 “*... but I do not know who, [Ali-met] [t].*”

- b. *bas maa ʔaʕref aiš Salma tɪgra*
 but NEG know.1SG what *Salma* read.3SG.F
 [*bas* [_{NegP} *maa* [_{TP} ʔaʕref [_{CP} [_C [_{TP} *Salma tɪgra aiš*]]]]]]]
 “...but I do not know *Salma is reading what*”.
 [*bas* [_{NegP} *maa* [_{TP} ʔaʕref [_{CP} *aiš* [_C [_{TP} *Salma tɪgra t*]]]]]]]
 “...but I do not know *what, Salma is reading* []”.
 [*bas* [_{NegP} *maa* [_{TP} ʔaʕref [_{CP} *aiš* [_C [_{TP} *Salma tɪgra t*]]]]]]]
 “...but I do not know *what, [Salma is reading]* []”.

The linear representations in (27a-b) show the movement operations of the remnants *mi:n* and *aiš* respectively. As discussed above in this section, the first condition of ellipsis, recoverability, is not enough to allow for the deletion of any TP whose meaning is recoverable. The question being at this juncture is what has motivated the movement of the remnants and deletion of the TP within the principles of minimalism and generative grammar.

It has been shown that sluicing requires interrogative structures. Following Merchant (2001) and Aelbrecht (2010), sluicing is licensed via *wh*-interrogatives that should move to Spec CP. Put another way, sluicing can only be licensed by the interrogative C° appearing in interrogative structures C° [wh,Q], as represented in Figure 4 above, repeated here for convenience as Figure 5.

To elaborate on Figure 5 and make it more practical, the paper adopts Merchant’s (2001, 2004) argument of the Ellipsis-Feature ([E]-feature), which is also supported by many recent works on ellipsis (such as, Aelbrecht 2010). Merchant (2001: 55-61, 2004) proposes that the [E]-feature is only compatible with the head of CP in constituent questions, represented in Figure 5 as C° [wh, Q]. The [E]-feature triggers the deletion of the interrogative head’s (C°) sister, represented in Figure 5 as <TP> [...t...]. Figure 6, adopted from Aelbrecht (2010: 87), incorporates the analysis of Figure 5 and the [E]-feature of ellipsis. It represents the relation between [E]-feature and interrogative C°.

Considering Figure 6, which is similar to the analysis of Figure 3 above, Merchant (2001: 5561, 2004) holds that the lexicon carries a specific [E]-feature for each elliptical structure in a language. The [E]-feature occupies the head of CP: the interrogative C°, and triggers the deletion of the ellipsis site, which is the entire TP clause: the sister of C, represented in Figure 5 by (X) that contains the [E]-feature. The syntactic property of the [E]-feature ensures that “it can only occur on certain heads, thus capturing the licensing requirements on ellipsis” Aelbrecht (2010: 91).

Given this analysis, a HA elliptical structure, such as (27b), is licensed according to the relation between the [E]-feature and the ellipsis licensing head. This proposes a Head-Complement relation. The HA example in (27b) and the provided linear representations illustrate that the [E]-feature has triggered the deletion of the TP *Salma-tɪgra* ‘Salam is reading’ after the movement of the remnant *aiš* to Spec CP, as illustrated in Figure 7.

To summarize, Figure 7 shoes that Spec CP carries the [+wh] feature to which the remnant *aiš* has moved. The interrogative head C°, represented in Figure 7 as C^[E] [wh,Q], carries both the ellipsis feature ([E]feature) and the interrogative feature [wh,Q] by which sluicing can only be licensed,

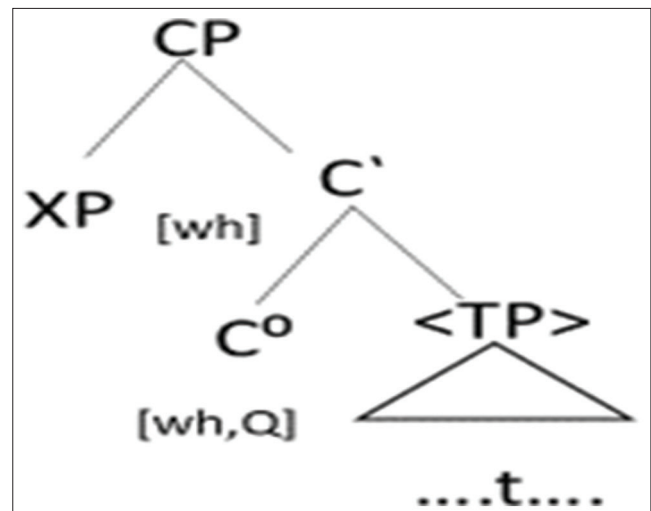


Figure 5. [E]-feature and the sluicing licensing head

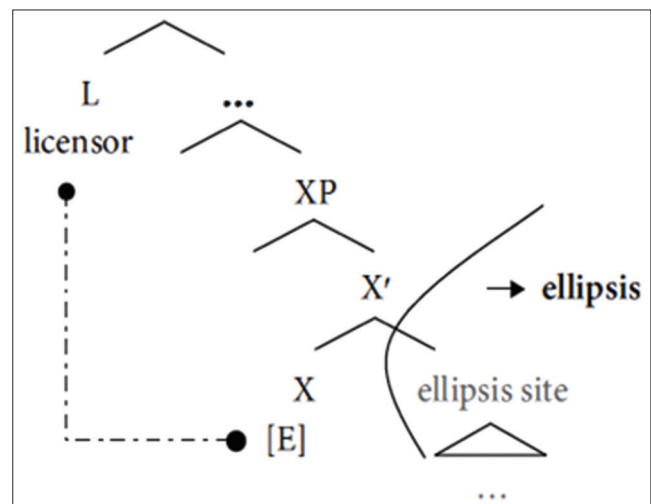


Figure 6. The [E]-feature and its Relation to the Interrogative C°

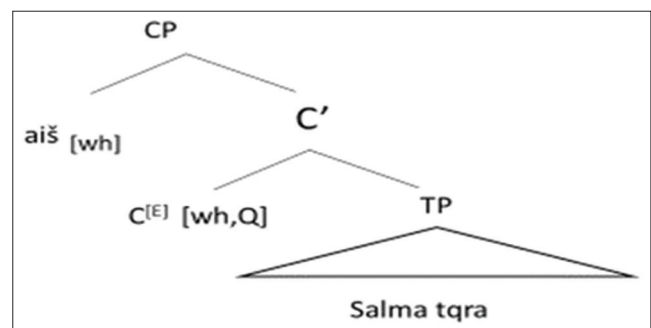


Figure 7. HA sluicing structure

i.e., by the interrogative C° appearing in interrogative structures C° [wh,Q], as discussed above. Applying the structural PF-Deletion theory, which requires movement then deletion, the movement operation in Figure 7 has been successfully applied as the remnant *aiš* (*what*) has moved to Spec CP. What we assume next is the deletion operation of the sister of the interrogative head C°. This deletion operation is triggered by C^[E]. Given this assumption, the TP [*salma tɪgra*] is deleted, as shown in Figure 8.

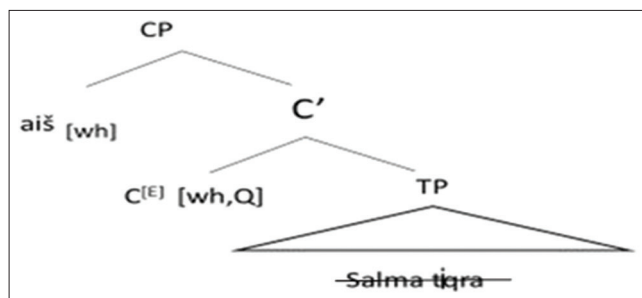


Figure 8. Movement and deletion operations in HA sluicing

Figure 8 shows the resulting structure derived from (27b) where the sister of C° , which is the entire TP [*salma tīgra*], is deleted after the movement of the *wh*-remnant to Spec CP.

CONCLUSIONS AND RECOMMENDATIONS

The current paper has covered a range of topics related to sluicing in HA. Sluicing occurs in HA and it is licensed through a *wh*-interrogative word, as is the case in other languages. The *wh*-interrogative word is triggered to move out of its base-generated position to a higher position: Spec CP. This movement is followed by deletion of the TP from which the interrogative word has moved.

The findings of the paper are on a par with previous studies on ellipsis including Merchant (2001, 2004, 2005, 2006b, 2013, 2016), McShane (2005), and Aelbrecht (2010). These studies have adopted the Structural PF-Deletion theory operating under the principles of generative grammar and minimalism (Chomsky, 1995) with its latest advancements (Chomsky, 1999; 2000, 2001). The basic findings have shown that ellipsis is allowed if and only if a specific head carrying a specific morphosyntactic property specification occurs in a local relation to the ellipsis site. This very specific head, with its morphosyntactic properties, is the licensor for the ellipsis phenomenon to occur. The head is represented in the above figures as $C^{[E]}$ [wh,Q] where it carries both an interrogative feature and ellipsis feature. These features motivate the *wh*-word to move to the specifier position of this particular head (Spec CP) and then delete all other constituents included within the TP.

Future sluicing studies on HA may investigate *pseudo-sluicing* as a type of sluicing suggested by Merchant (1998). The study can also consider the *sprouting* and *merger* types of sluicing, suggested by Chung *et al.* (1995), to show how they are different/similar to *pseudo-sluicing*.

Other HA studies may investigate the other types of ellipsis exemplified in (1) to (5) in Section 2, namely NP ellipsis, VP ellipsis, gapping, fragment answers and stripping.

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APPENDIX

Appendix 1. HA Consonants and Vowels (adopted from Al Zahrani (2013))

Consonants		Vowels	
	Description	IPA Equivalent	Description
	Glottal stop	[a]	Short low front
[b]	Bilabial stop	[a:]	Long low front
[t]	Voiceless dental stop	[i]	Short high front
[θ]	Voiceless emphatic dental fricative	[i:]	Long high front
[ɖ]	Voiceless retroflex fricative	[u]	Short high back
[ħ]	Voiceless pharyngeal fricative	[u:]	Long high back
[x]	Voiceless velar fricative		
[d]	Voiced dental fricative		
[ð]	Voiced emphatic dental fricative		
[r]	Dental trill		
[z]	Voiced dental fricative		
[s]	Voiceless dental fricative		
[ʃ]	Voiceless palatal fricative		
[sʕ]	Voiceless emphatic dental fricative		
[dʕ]	Voiced emphatic stop		
[tʕ]	Voiceless emphatic dental stop		
[ðʕ]	Voiced emphatic interdental fricative		
[ʕ]	Voiced pharyngeal fricative		
[ɣ]	Voiced velar fricative		
[f]	Voiceless labiodental fricative		
[q]	Voiceless uvular stop		
[k]	Voiceless velar stop		
[l]	Lateral dental		
[m]	Bilabial nasal		
[n]	Dental nasal		
[h]	Voiceless laryngeal fricative		
[w]	Bilabial glide		
[j]	Palatal glide		

Appendix 2. Abbreviations

1	First person
2	Second person
3	Third person
ACC	Accusative Case
C	Complementizer: The head position of CP
CA	Classical Arabic
CP	Complementizer Phrase (Projection)
D	Determinative
F	Feminine
GEN	Genitive case
HA	Hijazi Arabic
LF	Logical Form
M	Masculine
NEG	Negative
NOM	Nominative case
P	Preposition
PF	Phonological Form
PL	Plural
SA	Standard Arabic
SG	Singular
Spec	Specifier position of XP
T	The head position of TP
TP	Tense Phrase (Projection)
VP	Verb Phrase (Projection)