

Exploring interrogative elliptical structures with prepositional phrases in Arabic

Yara Alshaalan

College of Language Sciences, King Saud University, Riyadh, Saudi Arabia

Abstract

Purpose – This article is a comprehensive analysis of the current studies investigating elliptical questions (sluicing) with prepositional phrases in Arabic. Arabic strictly prohibits P-stranding in interrogative structure; however, it permits leaving out the preposition under sluicing. An analysis of sluicing with syntactic identity between antecedent and ellipsis site predicts that such examples to be ungrammatical in Arabic, which is not the case. This violates Merchant's (2001) second form identity generalization. The most predominant view of this phenomenon in Arabic is analyzing it in terms of wh-movement in the ellipsis site, but with pre-sluices that are semantically but not necessarily syntactically identical to the antecedent. Current accounts reduce these examples to either wh-clefts, wh-resumption, function heads or repair by ellipsis mechanism. This paper does not aim to resolve the disputes on the source of sluicing with determiner phrase (DP) remnants that correlate with prepositional phrases in Arabic; rather, it is a comprehensive analysis of the current literature on Arabic. By bringing together various views on the topic, I hope to pave the way for a better understanding of the nature of elliptical questions with prepositional phrases to overcome the current theoretical impasse in the literature.

Design/methodology/approach – The design methodology approach in this study entails an exhaustive literature review on sluicing in Arabic, focusing on prepositional phrases. This study was based on peer-reviewed articles and conference proceedings sourced from reputable academic databases. The research was limited to studies published between 2011 and 2025, as no relevant studies were identified prior to 2011. The studies collected examined sluicing with DP remnants and PP correlates in Arabic, particularly within spoken Arabic dialects. All identified studies advocate a structural interpretation of sluicing, emphasizing the pre-sluice's role as the origin of OPUS in the Arabic dialect under analysis.

Findings – This paper provides an intensive overview of sluicing with DP remnants corresponding to PP correlates across diverse Arabic dialects. Four prevailing perspectives on OPUS in Arabic endorse a structural approach to sluicing. The first perspective links OPUS to a cleft source, distinguishing between sluicing and pseudosluicing. The second perspective posits wh-resumption as an alternative explanation for OPUS. The third viewpoint advocates for a functional structure account, highlighting Najdi Arabic's unique P-stranding features. Lastly, Emirati Arabic is associated with a repair by ellipsis mechanism. Each perspective is critiqued for its limitations. This study concludes that there is no consensus on the current status of OPUS in Arabic. Further inclusive studies are still needed.

Research limitations/implications – The proposed approaches currently hold for a specific Arabic dialect. A general, inclusive study is needed to determine the source of OPUS in Arabic sluicing.

Originality/value – This paper fills a critical gap by consolidating existing theories to shed light on the complexities of OPUS in Arabic, underscoring the necessity of such integration to advance understanding in this area. By offering a thorough examination of elliptical questions (sluicing) with prepositional phrases in Arabic, a domain where conventional linguistic expectations are challenged. It presents prevalent viewpoints attributing this to diverse mechanisms such as wh-clefts, wh-resumption, functional heads or ellipsis repairs. Rather than conclusively settling disputes, this study consolidates existing literature, aiming



1. Introduction

This article provides a critical overview of the current approaches to sluicing with determiner phrase (DP) remnants that correlate with prepositional phrases in Arabic. This paper does not aim to resolve the disputes concerning the source of this phenomenon, but rather it critically examines the evidence and arguments presented in the current literature on Arabic dialects.

Sluicing describes the formation of elliptical questions where only the *wh*-phrase is pronounced (Ross, 1969). As illustrated in (Alshaalan and Abels, 2020), a standard example for sluicing is shown in (1).

- (1) a. John read a book, but I don't know which book. []
 b. John read a book, but I don't know what else. []
- correlate
remnant ellipsis site
- antecedent*
sluice

In Example (1a), although only *which book* is pronounced, the embedded question is understood to mean *which book John read*. I will refer to the pronounced material in the question as the remnant. Unlike the remnant, the sluice is a clausal constituent (Culicover and Jackendoff, 2005; Ginzburg and Sag, 2001; Levin, 1982; Merchant, 2001). According to some theories, the sluice contains both a remnant and an ellipsis site. The content of the sluice is recovered by a contextually given antecedent. In example (1a), the remnant corresponds to an indefinite in the antecedent: the correlate (Chung *et al.*, 1995, “inner antecedent”). Chung *et al.* (1995) coined the term “merger-type sluicing” for examples such as (1a), in which there is an overt indefinite correlate in the antecedent, and the sluice questions its identity. Following Dayal and Schwarzschild (2010), I refer to the full clausal structure hypothesized to fill the ellipsis site in some theories as the pre-sluice. There are two plausible pre-sluices in (1a): *which one John read*, and *which book it is*. Moreover, (1b) is an instance of contrast sluicing (following Merchant (2001)), in which the sluice is questioning the identity of another entity. In example (1b), *what else* is understood to mean, *what is the other entity that John read*.

Although sluicing has been intensively investigated for the past 60 years, there is no consensus on whether the understood material is syntactically present at the ellipsis site (Abe, 2015; Abels, 2017b; Baker and Brame, 1972; Barros, 2014; Chomsky, 1972; Chung *et al.*, 1995; Fukaya, 2007; Griffiths and Lipták, 2014; Lakoff, 1970; Lasnik, 2005; Merchant, 2001; Müller, 2011; Ross, 1969; van Craenenbroeck, 2010a; Van Craenenbroeck, 2010b) or not (Barker, 2013; Culicover and Jackendoff, 2005; Dalrymple *et al.*, 1991; Ginzburg and Sag, 2001; Levin, 1982; Sag and Nykiel, 2011). In other words, it is unclear whether there is a syntactically present structure at the ellipsis site (i.e. the pre-sluice) whose structure may vary in some way with the antecedent clause.

No consensus has been reached regarding the syntactic nature of ellipsis sites. One influential early insight, attributed to Ross (1969), notes that sluicing can circumvent island constraints, which some have taken as support for a non-structural view of the ellipsis site (see Culicover and Jackendoff, 2005 – although see Barros *et al.*, 2014; Abels, 2018) for a different assessment). Furthermore, Ross (1969) also notes that the correlate and the remnant match in morphological case. This pattern is often taken to argue not only for the existence of syntactic structure at the ellipsis site but also for the presence of structure syntactically isomorphic to the antecedent (Ross, 1969; Lasnik, 2005 but see Ginzburg and Sag, 2001; Culicover and Jackendoff, 2005; and for discussion of more complex cases see Abels, 2018; Kidwai, 2018; Kim, 2015; Vicente, 2015;

Wood *et al.*, 2016). Additionally, Ross (1969) proposed that sluicing is derived from wh-movement in the ellipsis site. The foundation of this claim is that sluicing observes constraints on pied piping in corresponding full questions. Although different authors have explained the relevant facts about sluicing in various ways and come to diverging conclusions.

The present study explores pied-piping phenomena within Arabic sluicing. This article provides an analytical examination of the current approaches to sluicing with prepositional phrases in Arabic dialects. This paper does not aim to resolve the disputes on the source of DP remnants that correlate with prepositional phrases in Arabic sluicing, but rather, this paper critically examines the current literature.

The remainder of the paper is structured as follows. The following section introduces the phenomenon under investigation, while Section 2 presents the methods and studies incorporated in this analysis and delves into the current views on sluicing with DP remnants that correlate with prepositional phrases in Arabic, along with the limitations of each approach. Finally, Section 3 serves as the conclusion, outlining avenues for future research endeavors.

1.1 Sluicing with DP remnants and PP correlates (*OPUS*)

As indicated above, Ross (1969) presents a theory of sluicing where the remnant undergoes regular wh-movement, and the ellipsis site contains syntactic structure identical to the antecedent. Therefore, under Ross's (1969) theory, constraints on pied-piping, specifically pied-piping of prepositions, are enforced under sluicing (Abels, 2019). This approach predicts Merchant's (2001) second form identity generalization: "language L will allow preposition stranding, under sluicing iff L allows preposition stranding under regular wh-movement" (Merchant, 2001, p. 92). As shown in example (2) from Merchant (2001), since English allows P-stranding under wh-movement (2b), thus, English allows P-stranding under sluicing (2a).

(2) a. Peter was talking with someone, but I don't know who.

b. Who was Peter talking with to?

On the other hand, a theory of sluicing which assumes no syntactic structure at the ellipsis site makes no such prediction (Kim, 2015; Nykiel, 2013; Sag and Nykiel, 2011): the presence or absence of the preposition in the sluice is independent to syntactic constraints on pied-piping and is instead determined by other factors. Recognizing the theoretical consequences of Merchant's (2001) generalization, a substantial body of literature has since probed the truth of this generalization and produced an impressive number of counterexamples to the generalization (Abels, 2017a; Albukhari, 2016; Algryani, 2010; Almeida and Yoshida, 2007; Alshaalan and Abels, 2020; Fortin, 2007; Leung, 2014b; Nykiel, 2013; Philippova, 2014; Rodrigues *et al.*, 2006; Sato, 2010; Stjepanović, 2008, 2012, , 2012; Szczegielniak, 2008; van Craenenbroeck, 2010a; Vicente, 2006; Vlachos, 2012; Wei, 2011). The focus of this paper is sluicing with prepositional phrases in Arabic dialects. Thus, I will set aside the arguments presented for the different languages cited above and focus on Arabic sluicing.

Following Alshaalan and Abels (2020), I refer to the examples of sluicing where the remnant is a DP and the correlate DP is the complement of a preposition as *OPUS* (which the reader is invited to interpret as an abbreviation, depending on their theoretical predilections, as Ostensible P-stranding Under Sluicing or as Omission of Preposition Under Sluicing). As illustrated in the following example from Alshaalan and Abels (2020), Saudi Arabic is a non-P-stranding language and pied-piping is forced under wh-movement (3a-b). However, as indicated in example (3) *OPUS* is acceptable. This phenomenon is realized across all Arabic dialects present in this paper.

(3) Saudi Arabic (Alshaalan and Abels, 2020, p. 19).

ʔa:lqna: ʔlʔa:wla swt mqa:bl mʕ wzjr sʕwdj bs nsjt ʔj wzjr

the-channel the-first made-3fsg interview with minister Saudi but forget.1 which minister
'Channel 1 made an interview with a Saudi minister, but I forgot which minister.'

- a. * [ʔj wzjr]_i ʔlqna: ʔlʔa:wla swt mqa:bl mʕ t_i
which minister made-3fsg interview with
- b. [mʕ ʔj wzjr]_i ʔlqna: ʔlʔa:wla swt mqa:bl t_i
With which minister made-3fsg interview
'Which minister did channel 1 interview?'

Given that Arabic strictly prohibits P-stranding under wh-movement but allows it under sluicing, this initially poses as a counterexample for Merchant's (2001) generalization. This issue has been intensively investigated in the literature. Different authors investigated various Arabic dialects, including different Saudi Arabic dialects, Libyan Arabic, Jordanian Arabic, Iraqi Arabic, Omani Arabic and Emirati Arabic. All recent studies on Arabic OPUS argue for a structural approach. However, a consensus has yet to be reached regarding the identity of the syntactic structure at the ellipsis site.

2. Current views on Arabic opus

This study presents a comprehensive review of the literature on sluicing, with a particular focus on its interaction with prepositional phrases in Arabic. The study encompasses peer-reviewed articles and conference proceedings sourced from reputable academic databases. The research was restricted to studies published between 2011 and 2025, as no relevant studies on the topic were identified prior to 2011. The focus was specifically on studies examining sluicing with DP remnants and PP correlates in Arabic, as this remains a contested topic in the literature. The review adhered to two primary inclusion criteria: (i) studies that explicitly investigate both sluicing and PP correlate structures, and (ii) studies that focus on spoken Arabic dialects. Relevant studies were identified using keywords such as "sluicing," "ellipsis," "prepositional phrases" and "Arabic dialects." After an initial screening of titles and abstracts,

Table 1. Summary of the studies on OPUS in Arabic sluicing

Reference	Dialect	The source of OPUS
Algryani (2010, 2012)	Libyan Arabic	wh-cleft
Leung (2014a), Leung and Shemeili (2011)	Emirati Arabic	wh-cleft
Albukhari (2016)	Jordanian Arabic	wh-cleft
Albuarabi (2019)	Iraqi Arabic	wh-cleft
Algryani (2019)	Omani Arabic	wh-cleft
Taha and Ott (2020)	Lebanese Arabic	wh-cleft
Saleh (2021)	Iraqi Arabic	wh-cleft
Al-humari (2025)	Ta'izzi Arabic	wh-cleft
Alkahtani (2021)	Najdi Arabic ¹	Head of functional projection
Alshaalan (2021), Alshaalan and Abels (2020)	Saudi Arabic ²	wh-resumption
Leung (2014b)	Emirati Arabic	Repair by ellipsis
Alaowffi and Alharbi (2021)	Hejazi Arabic ³	No source is given

Note(s): ¹Najdi Arabic is a Saudi dialect spoken in the central region of Saudi Arabia
²In Alshaalan (2021), the author states that the experimental items used in the study were written in Najdi Arabic. However, given that the experiments were conducted online, participants with different Saudi Arabian dialects were recruited. The author argues that no significant effect of dialect was found between the results of the 34 different Saudi dialects collected, therefore, the author refers to these dialects collectively as Saudi Arabic
³Hejazi Arabic is a Saudi dialect spoken in the western region of Saudi Arabia
Source(s): Author's own work

full-text analyses were conducted to determine the relevance of each study. Given that the literature reviewed consistently adopts a structural approach to sluicing, this study centers on identifying the nature of the pre-sluice, which arguably underlies *OPUS* structures in the Arabic dialects analyzed. A summary of the studies included is provided in [Table 1](#).

[Alaowffi and Alharbi \(2021\)](#) investigate whether the Preposition Stranding Generalization (PSG) holds in Hijazi Arabic. They present data on the syntactic behavior of preposition stranding in both *wh*-movement and sluicing contexts, concluding that PSG does not hold in Hijazi Arabic. However, the study does not provide a detailed explanation or theoretical account for this conclusion. Given the absence of a clear rationale for why PSG fails in Hijazi Arabic, the study has not been included in the present analysis, as it does not fully address the complexities of the sluicing phenomena in Arabic.

As mentioned above, all studies in [Table 1](#) argue for a structural approach to sluicing; however, they differ in the identity of the structure elided in the ellipsis site. The first view argues to reduce the phenomenon of *OPUS* in Arabic to *wh*-cleft structures. The second view argues to extend this approach to include *wh*-resumption in Arabic. The third view argues to abandon the *wh*-resumption approach and adopt a functional projection account. Finally, the last view argues to reduce *OPUS* to a repair by ellipsis phenomena. In the following, I will examine each view and highlight its limitations.

2.1 Cleft source

The majority of published studies on *OPUS* in Arabic fall into this category. These authors argue for a syntactically present structure at the ellipsis site. Working within structural approaches to sluicing, these researchers have analyzed the phenomenon in terms of *wh*-movement in the ellipsis site but with pre-sluices that are semantically but not necessarily syntactically identical to the antecedent. Advocates for a cleft-based account argue that *wh*-movement and *wh*-clefts are derived from separate mechanisms. Thus, these authors suggest that sluicing in Arabic can be derived from two (roughly) synonymous types of pre-sluices: *wh*-movement structures that are structurally identical to the antecedent and *wh*-clefts that is only semantically identical to the antecedent ([Albuarabi, 2019, 2019](#); [Albukhari, 2016](#); [Algryani, 2010, 2012, 2019](#); [Al-humari, 2025](#); [Leung, 2014a](#); [Leung and Shemeili, 2011](#); [Saleh, 2021](#); [Taha and Ott, 2020](#)).

These authors adopt [Merchant's \(2001\)](#) theory and claim that the P-stranding generalization remains intact, since *OPUS* stems from a *wh*-cleft source and not *wh*-movement. The base of this claim is shown in example (4), unlike *wh*-movement (4a), *wh*-clefts do not require preposition pied-piping in Arabic (4b).

(4) Libyan Arabic ([Algryani, 2010](#), p. 5)

- a. *man tekəlləm Sami mʕa?
who talked.3MS Sami with
'Who did Sami talk with?'
- b. man illi Ali tekəlləm mʕa-*(ah)?
who that Ali talked.3MS with-him
'Who did Ali talk with?'

The arguments presented in cited studies use several diagnostic tools employed by [Merchant \(2001\)](#) to distinguish regular *wh*-movement structures from *wh*-cleft structures. They show that *wh*-cleft structures are syntactically different from *wh*-movement structures. Given that *wh*-movement structure as in (5a) is ill-formed as a possible source for (5), they conclude that *OPUS* in Arabic is the result of IP ellipsis of a cleft structure as indicated in example (5b).

Although this analysis is compatible with these types of structures, they do not force this conclusion, a point which I'll return to in the next section.

(5) Libyan Arabic (Algryani, 2010, p. 5)

Ali tekəlleṃ mʕa waḥed lakin ma-naʕrəf-š (mʕa) man

Ali talked.3MS with someone but NEG-know.1S-NEG with who

'Ali talked with someone, but I don't know (with) who(m).'

a. ... lakin ma-naʕrəf-š man [*Ali tekəlleṃ mʕa]

but NEG-know.1S-NEG who [Ali talked.3MS with]

... but I don't know who [Ali talked with].

b. ... lakin ma-naʕrəf-š man [illi Ali tekəlleṃ mʕa-ah]

but NEG-know.1S-NEG who [that Ali talked.3MS with-him]

... but I don't know who [was it that Ali talked with].

They conclude that although Arabic is a non-P-stranding language, given that OPUS is derived from wh-cleft, the structural account remains intact. Thus, these authors do not argue against the presence of structure at the ellipsis site. Rather, they challenge the notion that the structure at the ellipsis site must be syntactically identical to its antecedent.

2.1.1 Limitations of a cleft-based analysis. It is important to note that the cleft-based theory is inherently a structural theory that allows paraphrases of the antecedent as pre-sluiques. Such theory predicts that OPUS structures will only be acceptable if there is a suitable paraphrase in the ellipsis site. Thus, it does not argue against the possibility of another suitable available source at the ellipsis site.

While a cleft-based theory assists in explaining OPUS structures across different languages (Abels, 2017a; Barros *et al.*, 2014; Rodrigues *et al.*, 2006; van Craenenbroeck, 2010a; Van Craenenbroeck, 2010b; Wood *et al.*, 2016), there are certain limitations in assuming a cleft structure as a potential source in Arabic sluicing. The first limitation is that although the examples presented in the cited literature above are compatible with a cleft-based theory, the data are not inclusive. All studies mentioned above investigate merger-type sluicing and barely touch upon contrastive sluicing with prepositional phrases in Arabic.

Some advocates of cleft-source analysis (Algryani, 2012; Leung and Shemeili, 2011) mention "else" modification as a diagnostic tool used by Merchant (2001). However, they report Arabic structures without a prepositional phrase in the correlate phrase. Thus, it remains unclear how contrastive sluicing involving OPUS behaves in these languages. As shown in example (6) from Algryani (Algryani (2012), the modifier "else" in Libyan Arabic is compatible with wh-movement (6a) and sluicing constructions (6), but it is not compatible with wh-clefts (6b). The same pattern has been reported for Emirati Arabic (Leung, 2014a), Jordanian Arabic (Albukhari, 2016), and Omani Arabic (Algryani, 2019).

(6) Libyan Arabic (Algryani, 2012, p. 76)

Ali ʕədda, lakən miš ʕarəf man tani

Ali went.3MS but NEG know.1MS who else

'Ali went, but I don't know who else.'

a. man tani ʕədda l-l-ḥafla?

who else went.3MS to-the-party

"Who else went to the party?"

- b. *man tani (huwwa) illi fdda l-l-ḥafla?
who else (PRON.he) that went.3MS to-the-party
'Who else is it who went to the party?'

Assuming clefts are the sole source of OPUS in Arabic, this predicts that OPUS should be prohibited under contrast sluicing. This prediction is not met (see Alshaalan, 2021; Alshaalan and Abels, 2020 for inclusive examples). Thus, a major limitation for such studies is that while the data presented in the research cited above are compatible with a cleft-based theory, this approach is not forced. As pointed out in (Alshaalan, 2021; Alshaalan and Abels, 2020), none of the cited research explores the consequences of lacking a well-formed pre-sluice. In other words, there is no mention of OPUS contrastive structures.

Finally, the above authors investigate two possible structures to be available in the ellipsis site: wh-movement and wh-clefts. These authors consider wh-clefts only as an alternative pre-sluice for OPUS examples without investigating other possible alternatives. Thus, these authors completely overlooked the two other possible interrogative structures that Arabic grammar allows: wh-resumption and wh-in-situ (see Alshaalan, 2021 for Saudi Arabic, Aoun *et al.*, 2009 for Lebanese Arabic).

2.2 Resumption as a possible source for OPUS

Advocates for this account propose that the structure at the ellipsis site is not restricted to wh-clefts, but rather argue that wh-resumption is a plausible source for OPUS in Arabic (Alshaalan, 2021; Alshaalan and Abels, 2020). It is important to note that the cited authors do not argue against a cleft-based theory, however, they argue that a paraphrase in the ellipsis site is not limited to cleft structure, as they show that there exist examples where a cleft structure is unavailable, yet OPUS is still acceptable in Arabic.

The first experimental research on OPUS in Arabic was presented in recent studies (Alshaalan, 2021; Alshaalan and Abels, 2020). The authors present four acceptability judgment experiments on OPUS in Saudi Arabic sluicing to demonstrate the need for some structure at the ellipsis site (isomorphic or not) by showing that if no candidate structure exists, there is an acceptability penalty. The experiments presented in their work not only confirm the acceptability of OPUS in merger type sluicing in Arabic (see example (7)), but also it shows that contra to predictions of previous research, OPUS is acceptable in contrast sluicing in Saudi Arabic (as indicated in example (8)).

- (7) Saudi Arabic (Alshaalan and Abels, 2020, p. 19).

ʔa:lqna: ʔlʔa:wla swt mqa:bl mʕ wzjr sʕwdj bs nsjt ʔj wzjr
the-channel the-first made-3fsg interview with minister Saudi but forget.1 which minister
'Channel 1 conducted an interview with a Saudi minister, but I forgot which minister.'

- (8) al-qana al-ʔawlā saw-t maqābla maʕ wazīr at-taʕīm bas nasit ʔay wazīr baʕd

the-channel the-first made-3fsg interview with minister the-education but forget.1 which minister else
'Channel 1 conducted an interview with the minister of education, but I forgot which other minister.'

Their work differs from previous work on Arabic OPUS in that they present cases where cleft structure is blocked as a possible source in the ellipsis site, but OPUS is still acceptable (i.e. contrast sluicing). They concluded the need to consider wh-resumption as a possible structure in the ellipsis site. They argue that example (8) above is problematic for cleft-based approaches like (Albukhari, 2016; Algryani, 2010; Leung, 2014a) that assume clefts to be the sole pre-

Table 2. Mean acceptability rating by condition ($n = 57$) (Alshaalan and Abels, 2020, p. 19)

Structure	Mean
Merger type sluicing with PP remnant	6.4647
Contrast sluicing with PP remnant	6.0351
Merger type sluicing with OPUS	6.3655
Contrast sluicing with OPUS	6.0265

Source(s): Alshaalan and Abels (2020, p. 19)

sluice giving rise to OPUS in Arabic. This is because a cleft continuation is impossible in contrastive structures in Arabic (for Saudi Arabic, see Alshaalan, 2021; For Libyan Arabic, see Algryani, 2012; for Jordanian Arabic, see Albukhari, 2016; for Lebanese Arabic, see Aoun *et al.*, 2009). Therefore, given that contrast sluicing is incompatible with cleft structures, if the source of OPUS in Arabic solely relies on cleft structures, this predicts that contrast sluicing with OPUS is unacceptable. This prediction is not met. As indicated in Table 2, Alshaalan and Abels (2020) show that there is no significant difference between contrast and non-contrast sluicing, both in sluicing and non-elliptical structures with OPUS and pied-piping structures.

Furthermore, they note that in Arabic, adverbial *wh*-phrases behave differently than nominal *wh*-phrases in Saudi Arabic. They compare the acceptability rates of two adverbial *wh*-remnants: *where* (which is hypothesized to be compatible with resumption) and *when* (which is incompatible with resumption). They argue that if resumption is linked to OPUS in Saudi Arabic, this predicts that whenever *wh*-resumption is incompatible, OPUS structures are unacceptable. This prediction is met. As indicated in example (9), OPUS is acceptable with *where* as *wh*-remnant with mean = 6.1471. Similarly, the non-elliptical counterpart in (9a) is also reported to be acceptable with a mean = 5.1318. On the other hand, as shown in example (10), OPUS is degraded with *when* as *wh*-remnant with mean = 4.6230. While the non-elliptical counterpart in (10a) is unacceptable with mean = 2.5339.

(9) Saudi Arabic (Alshaalan and Abels, 2020, p. 26)

Nawf ʔal't ta'mīn šaḥī man makān bas m-adrī wayn
 noaf got.3fsg insurance health from place but neg-know.1 where
 'Noaf got health insurance from someplace, but I don't know where.'

- a. wayn ʔal't ta'mīn šaḥī ma-nh
 where got.3fsg insurance health from-it
 "... where she got health insurance from it."

(10) *Nawf tadr man zamān bas m-adrī matā

Noaf study.3fsg from time but neg-know.1 when
 'Noaf has been studying for some time, but I don't know when.'

- a. *matā tadr man-h
 when study.3fsg from-it

Although they acknowledge that Saudi Arabic may differ from other Arabic dialects in that *wh*-resumption is more permissible, they provided sufficient evidence to show the need to consider *wh*-resumption as a possible source for OPUS structure. Their experiments show a clear correlation between the availability of *wh*-resumption in the ellipsis site and the acceptability of OPUS structures in Saudi Arabia. They show that *wh*-resumption is compatible

with *which*, *who*, *what* and *where*, but not with *when*. Interestingly, OPUS shows that same pattern in Saudi Arabic; the result shows OPUS is acceptable whenever wh-resumption is compatible, but degraded with *when* which is incompatible with resumption in Saudi Arabic.

Their findings show that Saudi Arabic violates Merchant's (2001) second form identity generalization. The experiments presented in their study reveal that the status of the examples depends on the status of the most acceptable synonymous source within the ellipsis site; in particular, when neither a cleft structure nor a resumptive structure is grammatically available in the ellipsis site, the acceptability of the OPUS decays. They interpret this as evidence that there is syntactic structure at the ellipsis site and that the wh-remnant in these elliptical questions can – and sometimes must – relate to a resumptive pronoun in the ellipsis site.

2.2.1 Limitations of a resumption-based analysis. This is the only study that investigates wh-resumption as a possible source for OPUS in Arabic. Although they show strong evidence to argue for a structural approach which allows resumption in the ellipsis site, all the data presented are in Saudi Arabic. Thus, the argument currently holds for Saudi Arabic. Although the authors claim that this analysis can extend to other Arabic dialects, as in theory most Arabic dialects allow wh-resumption, they don't present data to support this claim. It would be interesting to investigate the acceptability of OPUS in contrastive structures in other Arabic dialects that do not employ the use of resumption as extensively as Saudi Arabic. Thus, further investigate the claim whether the acceptability of OPUS depends on the permissive use of wh-resumption in a given dialect.

The second limitation for this study is that the authors did not provide a method to exclude wh-clefts as a possible source for merger-type sluicing. However, given that the authors argue for a structural account which allows resumption in the ellipsis site, there is no need to distinguish between wh-clefts and wh-resumption as a possible source for merger type sluicing; unless we need to determine between identical and non-identical structural theories (see Alshaalan, 2021). Finally, it is unclear why sluicing with *where* as remnants is more acceptable than it is expected. They argue that these examples are significantly degraded, although their non-elliptical counterparts are ungrammatical. They brush this result to the effect of repair by ellipsis, but no clear argument is presented. A point I will return to in Section 2.4.

2.3 Function head as a possible source for OPUS

Arguing against a resumption account, Alkahtani (2021) points out that one limitation of Alshaalan and Abels (2020) study is that they treat various dialects of Saudi Arabia as one dialect: Saudi Arabic. Although this claim is valid, it is important to point out that the authors addressed this limitation (Alshaalan and Abels, 2020). They note that the experimental items were written in Najdi Arabic (specifically, Riyadh city dialect). Moreover, prior to the experiment, participants were asked to specifically identify their dialect (i.e. Najdi dialect – specifically, Alqassem dialect). They note over 32 different dialects identified by participants. They report that no significant difference was found between the different Saudi dialects. As a result, they refer to the language investigated as Saudi Arabic.

Arguing against a resumption account, Alkahtani (2021) puts forward a new account to OPUS phenomenon in Arabic. She claims that Najdi Arabic (a subdialect of Saudi Arabic) optionally allows P-stranding both in wh-questions (11) and under sluicing (12).

(11) Najdi Arabic (Alkahtani, 2021, p. 13)

- a. mi:n/min_j tikalam Sami maʕa-h t_j?
who_j spoke Sami with-F t_j
'Who did Sami speak with?'
- b. [maʕa-mi:n/min]_j tikalam Sami t_j?

[with-who]_j spoke Sami t_j

'Who did Sami speak with?'

- (12) Najdi Arabic (Alkahtani, 2021, p. 14)

Sami raḥ [maʕa sʕadg-ah], bas ma-dri)maʕa(ʔaj waḥid

Sami went with friend-his, but not- 1.know (with) which one

'Sami went his friend, but I don't know which friend.'

Arguing against a resumption account, she claims that *-h* in the above examples is not a resumptive pronoun as argued by Alshaalan and Abels (2020), but rather a functional projection. She posits that Najdi Arabic is different from other Arabic dialects due to morphosyntactic properties specific to Najdi Arabic. She claims that a functional projection occurs as a complement of a preposition between P and DP and allows the extraction of the wh-DP. Therefore, the wh-question example in (11a) above shows P-stranding since the clitic *-h* is not occupying the gap position as argued by Alshaalan and Abels (2020), but rather is a functional head.

The author argues for a three-way typology regarding P-stranding in wh-elements in Arabic. One, languages that ban P-stranding in both wh-questions and under sluicing (i.e. Modern Standard Arabic). Two, languages that ban P-stranding under wh-questions but allow it under sluicing (see dialects examined in Sections 2.1 and 2.2 above). Three, languages that allow P-stranding both in wh-questions and under sluicing (i.e. Najdi Arabic). She proposes three reasons to support her claim that *-h* is not a resumptive pronoun but rather a head of functional projection. One, *-h* appears optionally in regular PPs without movement. Two, it does not show up in relative clauses with *which* and *how many*. Three, it does not show agreement with the head NP. In the following section, I will explore the validity of these arguments and shed light on the potential weaknesses in the reasoning, which may raise questions regarding the validity of the function head proposal for OPUS in Najdi Arabic.

2.3.1 Limitation of a function head account. The first argument presented in Alkahtani (2021) against a resumption analysis for OPUS in Arabic is that *-h* appears optionally in regular PPs without movement. As shown in example (13), the claim is that in Najdi Arabic, both structures with and without *-h* are grammatical (for the full list of examples, see examples (7–11) in Alkahtani, 2021).

- (13) Najdi Arabic (Alkahtani, 2021, p. 7)

tikalam Sami maʕ(a) (h-) al-ʔasʕdiga

spoke.MASC Sami with (F -) the-friends

'Sami spoke with these friends.'

As clear from the reading in (13), the item *-h* used in this example is a demonstrative pronoun *these*. It is well-known that demonstrative pronouns are syntactically different than the pronoun used in Alshaalan and Abels (2020) experiments to argue for a resumptive pronoun in the ellipsis site (see example (11) above). Furthermore, in example (13), the *-h* demonstrative pronoun originates from Standard Arabic (*hatha* “that”) and is phonologically reduced to *-h* in most Arabic dialects. Both reduced and non-reduced pronouns are used in Saudi Arabic, however, only the non-reduced version shows agreement in number and gender (see examples (14–15)).

- (14) sāmi taklm maʕ h(ḏūl) al-āṣḏqāʕ

Sami talked with these.pl the-friends

'Sami talked with these friends.'

- (15) sāmi taklm ma^ʕ h(ḏā) al-wald
Sami talked with this.M the-boy
'Sami talked with this boy'.

- (16) sāmi taklm ma^ʕ h(ḏeh) al-bant
Sami talked with this.F the-girl
'Sami talked with this girl'.

The base of the argumentation that Najdi Arabic has no resumptive pronoun is that the *-h* (i.e. demonstrative pronoun) in the above examples shows that the *-h* item is optional. However, it is crucial to note that in Najdi Arabic, omitting the pronoun will change the semantics of the structure. As indicated in the following examples, in (17) when the *-h* is present the meaning of the sentence is that Sami talked to *this boy*, whereas in (18) when the *-h* is absent, the meaning of the sentence changes to refer to *the boy*.

- (17) sāmi taklm ma^ʕ h-al-wald
Sami talked with this.M the-boy
'Sami talked with this boy'

- (18) sāmi taklm ma al-wald
Sami talked with the-boy
'Sami talked with the boy'

The semantic differences between (17) and (18) stem from the specific and proximal connotations evoked by the demonstrative pronoun *this* in (17). The use of *this boy* implies a sense of immediacy or proximity, suggesting that the boy in question is nearby or currently relevant within the conversation or context. Moreover, the use of *this* can also highlight a specific individual among others. On the other hand, *the boy* is a more general statement indicating a conversation between Sami and *any boy* without specifying proximity or emphasizing a particular individual, making it a more straightforward and less specific reference.

The second argument presented in Alkahtani (2021) against treating *-h* as a resumptive pronoun in Najdi Arabic is that it does not show up in relative clauses. She claims that *-h* cannot appear in relative clauses, instead, a resumptive pronoun appears in the position of the gap. She gives the following example in (19).

- (19) Najdi Arabic (Alkahtani, 2021, p. 19)
- jif -t al-bana-at_j illi_j Sami gabl-him_j ʔams
saw-I the-girl-PL who Sami met-them.FEM yesterday
'I saw the girls who Sami met yesterday.'
 - jif -t al-bana-at illi Sami gabl*-h ʔams
saw-I the-girl-PL who Sami met-F yesterday

The examples presented in Alkahtani (2021) do not show the item's *-h* incompatibility with relative clauses. But rather, all examples provided are ruled out due to the lack of agreement in gender and number with the antecedent. It is well-known that resumptive pronouns in Arabic follow the antecedent in gender and number [1]. In example (19b) above, the antecedent *the girls* is both feminine and plural; however, the *-h* pronoun is masculine and singular. Thus, (19b) is ruled out due to a mismatch in number and in gender between the antecedent and

the pronoun. If this issue is addressed, as indicated in the example (20), the structure is acceptable in Najdi Arabic.

- (20) ʃif -t al-rajal illi Sami gabl-h ʔams
saw-I the-man-s who Sami met-HIM yesterday
'I saw the man that Sami met (him)'

The third argument presented in [Alkahtani \(2021\)](#) against treating *-h* as resumptive pronoun is that the functional *-h* does not show agreement with *where*. To support this claim, [Alkahtani \(2021\)](#) gives the example (21).

- (21) Najdi Arabic ([Alkahtani, 2021](#), p. 22)
wi:nj Mohammed Xaḏa al-kitab min -h tʃ?
where_j Mohammed took.MASC the-book from -F t_j
'Where did Mohammed take the book from?'

This issue has been addressed in experiment 3 ([Alshaalan and Abels, 2020](#)) and in experiment 4 ([Alshaalan, 2021](#)). Example (21) in fact shows agreement in gender and number. Since *where* refers to a *place* which is masculine and singular in Arabic, only the masculine singular resumptive pronoun *-h* is compatible with *where* in Arabic. As indicated in example (22), using the feminine resumptive pronoun will result in ungrammaticality.

- (22) *wjn mḥmd ʔxḏ ʔlkta:b mn-ha:?
where_j Mohammed took.MASC the-book from -HER

Additionally, [Alkahtani \(2021\)](#) claims that the *-h* and the trace of the moved *wh*-phrase do not occupy the same syntactic position (as indicated in example (21) above). If this line of argumentation is correct, then given that Najdi Arabic allows *in situ* structure (see [Albaty, 2013](#)), this predicts that leaving the *wh*-phrase *in situ* should be compatible with the pronoun *-h*. This prediction is not met as indicated in example (23).

- (23) *mḥmd ʔxḏ ʔlkta:b mn-h wjn ?
Mohammed took.MASC the-book from-F where

In conclusion, the claim to treat *-h* as a functional head rather than a resumptive pronoun reveals significant weaknesses. It is crucial to scrutinize and remedy these shortcomings before dismissing the other approaches to *OPUS* in Arabic.

2.4 Repair by ellipsis

In this section, I will discuss the only study that reduced *OPUS* in Arabic to repair by ellipsis mechanism. [Leung \(2014b\)](#) argues for a structural approach to ellipsis in Emirati Arabic. He notes that there are cases where no appropriate grammatical structure is available in the ellipsis site, yet the sluice is acceptable in Emirati Arabic. Thus, he concludes that Emirati Arabic poses as a real counterexample for [Merchant's \(2001\)](#) P-stranding generalization.

In this squib, [Leung \(2014b\)](#) investigates Emirate Arabic sluicing. He argues that Emirati Arabic falsifies Merchant's P-stranding generalization. As indicated in example (24), he notes that although P-stranding is banned in *wh*-questions, under sluicing *OPUS* is acceptable.

- (24) Emirati Arabic ([Leung, 2014b](#), p. 332)
John ʃerab gahwa wijja s^ʕadiq, bes maa ʃerf ʔay s^ʕadiq
john drank coffee with friend but not 1.know which friend

'John drank coffee with a friend, but I don't know which friend.'

a. *ʔay sʕadiq John frb qhw [pp wja: t]]

which friend John drank coffee with

He acknowledges that Emirati Arabic possesses two types of wh-constructions: wh-movement and wh-cleft. However, he claims that OPUS structures, as in example (24) above, are genuine cases of sluicing which are generated from wh-movement followed by eliding an ill-formed structure. To support this claim, he argues that wh-cleft structures in Emirati Arabic allow only the use of bare-wh-words and wh-arguments, as indicated in example (25). Thus, he further argues that wh-cleft strictly bans the use of *which NP*, as shown in example (26) [2]. He concludes that in Emirati Arabic, *which NP* must be derived by wh-movement since it is the only compatible interrogative structure.

(25) ʔaj kitab ʃter-et ʔms?

Which book bought-2sm yesterday

'Which book did you buy yesterday?'

(26) *ʔaj kitab(hu) elli ʃter-et-ah ʔms?

Which book 3 ms that bought-2sm yesterday

'Which book is it that you bought yesterday?'

He shows that the use of *which NP* in the absence of a preposition is fully grammatical under sluicing, which suggests that these OPUS examples can only be the results of wh-movement of the remnant *which NP* that strands the preposition, followed by IP deletion of the ill-formed structure. This is illustrated in example (27).

(27) john ʃerab gahwa wijja sʕadiq, bes maa ʃerf ʔay sʕadiq

john drank coffee with friend but not 1.know which friend

'John drank coffee with a friend, but I don't know which friend.'

b. *ʔay sʕadiq John frb qhw [pp wja: t]]

which friend John drank coffee with

He concludes that Emirati Arabic is a real counterexample for the P-stranding generalization. He proposes to amend the generalization to fit OPUS structures with no grammatical source at the ellipsis site. He proposes that non-p-stranding languages will allow P-stranding under sluicing if the P-stranding violations are determined at PF. Thus, he reduced the ill-formedness of the structure to some repair phenomena of ellipsis.

2.4.1 Limitations of repair by ellipsis approach. It is important to note that this account is published in a squib, after which the author subsequently published two studies on the same topic advocating for a cleft-based analysis to OPUS in Emirati Arabic (see [Section 2.1](#) above). The initial observation that *which NP* in Emirati Arabic is not compatible with wh-cleft structures, upon which the entire argument was based, was later revised ([Leung, 2014a](#); [Leung and Shemeili, 2011](#)). Therefore, the issue with the repair by ellipsis approach is that the base of this argument is questionable.

However, before dismissing the repair by ellipsis account, it is crucial to consider the current available data on OPUS in Arabic. The findings highlighted in [Alshaalan \(2021\)](#) and [Alshaalan and Abels \(2020\)](#), namely OPUS sluicing with *where* as the remnant in Saudi Arabic, which exhibited a degree of degradation compared to its unacceptable non-elliptical counterparts. As mentioned in [Section 2.2](#) above, the authors reduced the degraded outcomes, which were more acceptable than initially anticipated, to a repair by ellipsis mechanism.

The results seen in Saudi Arabic call for a critical reevaluation of the current repair by ellipsis approach.

The improved acceptability of sluiced structures, despite the ill-formedness of their ellipsis sites, poses a challenge to purely grammatical accounts of sluicing. Similar effects have been reported in languages such as Greek (Molimpakis, 2019) and Polish [3] (Nykiel, 2013), which exhibit patterns comparable to *when* sluices in Saudi Arabic. In these cases, the non-elliptical counterparts are degraded, while the elliptical forms – particularly in *OPUS* constructions – are judged significantly more acceptable. Crucially, neither Greek nor Polish permits a fully grammatical pre-sluice configuration, reinforcing the view that ellipsis helps repair otherwise unacceptable structures. This cross-linguistic pattern underscores the consistent ameliorative effect of ellipsis in contexts where corresponding overt structures are disfavored.

The phenomenon of repair by ellipsis has been the subject of ongoing debate, particularly in relation to whether ellipsis genuinely *repairs* syntactic violations or whether its effects arise from interpretive or processing mechanisms. One line of analysis argues that ellipsis repairs illicit structures by deleting the offending material from the syntax, thus circumventing constraints such as island violations under sluicing (Lasnik, 2005; Merchant, 2001). In contrast, alternative accounts propose that there is no true structural repair; rather, ellipsis licenses otherwise illicit configurations because the omitted content can be pragmatically inferred or semantically accommodated (Chung *et al.*, 1995; Ginzburg and Sag, 2001). A third view is the recycling approach to ellipsis. This view suggests that when a mismatch occurs between the ellipsis site and its antecedent, the comprehension system engages in a repair process to construct a plausible interpretation. This type of repair parallels what is observed in garden-path processing, where the parser adjusts its initial analysis based on minimal revisions and strong semantic cues. Research indicates that the acceptability of such structures is influenced by the complexity of the repair required; thus, structures demanding fewer modifications are more readily accepted (Arregui *et al.*, 2006; Frazier, 2013; Frazier and Duff, 2019).

Together, these findings suggest that repair by ellipsis may result from an interaction of syntactic, semantic and processing factors, rather than a single unified mechanism. However, the unresolved issue of repair by ellipsis mechanism needs further investigation and analysis for future research endeavors.

3. Conclusion

To summarize, this paper presents a state of the art on sluicing with *OPUS* in various Arabic dialects. There are four current views on *OPUS* in Arabic, all of which argue for a structural approach to sluicing. The first view reduces *OPUS* to a cleft source. These authors assume that two independent sources for IP ellipsis in Arabic: sluicing, which is formed via *wh*-movement followed by IP deletion and pseudosluicing, which is formed by *wh*-clefts followed by IP deletion. These authors assume that the latter is the source of the *OPUS* in Arabic, thus Merchant's (2001) P-stranding generalization remains intact. The second account argues to reduce *OPUS* to *wh*-resumption. Advocates of a resumption account also assume structure at the ellipsis site; however, they argue that the structure is not restricted to a cleft structure but rather argue that *wh*-resumption is a plausible source for *OPUS* in Arabic. Therefore, they do not argue against a cleft-based theory, however, they present evidence to show that there is syntactic structure at the ellipsis site and that the *wh*-remnant in these elliptical questions can – and sometimes must – relate to a resumptive pronoun in the ellipsis site. The third view of *OPUS* in Arabic is functional structure. This view argues that, unlike other Arabic dialects, Najdi Arabic has P-stranding both in regular *wh*-movement and in sluicing. Furthermore, this account proposes that P-stranding in Najdi Arabic is licensed by a layer of functional structure within the prepositional phrase. This view assumes that other Arabic dialects lack this feature, which as a result prohibits P-stranding under *wh*-movement. Finally, a repair by ellipsis account is proposed for Emirati Arabic. This account assumes that Arabic lacks grammatical structure in

Table 3. Limitations of current accounts to *opus* in Arabic

Theory	Key limitations
Cleft-source	- Not inclusive - Not forced
Resumption	- Currently applicable to Saudi Arabic only - Impossible to exclude wh-cleft in the ellipsis site - Unclear degradation in <i>opus</i> with <i>when</i>
Functional head	- Argument flaws (see Section 2.3) - Only applicable to Najdi Arabic
Repair by ellipsis	- Not inclusive - Incorrect assumptions about Emirati Arabic - Unclear repair mechanism
Source(s): Author’s own work	

the ellipsis site, however, the sluice is still acceptable. This paper has shown the limitations for each of the mentioned views. This is summarized in [Table 3](#) below.

The data presented in this paper clearly demonstrate that Arabic sluicing offers compelling evidence for the claim that the acceptability of ellipsis is closely tied to the presence of a grammatical structure at the ellipsis site. In particular, the findings show that the wh-remnant in these elliptical constructions can, and in some cases must, be linked to a resumptive pronoun within the ellipsis site. The analysis of Arabic *opus* constructions further underscores the need to explore the role of repair by ellipsis mechanisms, especially in cases where the ellipsis site appears to lack a fully grammatical structure. These findings contribute significantly to the broader theoretical debate by providing strong support for structural accounts of sluicing, which posit that ellipsis involves a recoverable syntactic structure. However, the data also reveals mixed evidence regarding the type of identity required between the ellipsis site and its antecedent – whether syntactic or semantic isomorphism is needed. Ultimately, the results suggest that neither structural theories nor repair-based accounts alone are sufficient; rather, there is a need for a unified analysis that incorporates both to fully capture the patterns observed in sluicing.

In terms of future research directions, this paper puts forth several key recommendations. Firstly, there is a suggested need to investigate the cleft source and explore instances where it is unavailable at the ellipsis site to better understand its consistency and implications. Secondly, a closer examination of wh-resumption in various Arabic dialects could provide valuable insights into its prevalence and its relationship with the *opus* framework. Furthermore, replicating [Alshaalan’s \(2021\)](#) experiments in different Arabic dialects and conducting comparative analyses would serve to enhance our comprehension of the phenomena under scrutiny. Lastly, it is essential to conduct a thorough exploration of the repair by ellipsis mechanism to uncover the reasons behind the observed degradation, rather than outright rejection of the structure of elliptical structures that lack a grammatical structure at the ellipsis site.

Notes

1. In [Alshaalan and Abels \(2020\)](#) both masculine and feminine singular resumptive pronoun were used across all examples.
2. This claim is later abandoned. See [Leung \(2014a\)](#) and [Leung and Shemeili \(2011\)](#).
3. For a structural account to Polish sluicing see [Szczegielniak \(2008\)](#).

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Corresponding author

Yara Alshaalan can be contacted at: yalshaalan@ksu.edu.sa