Exclamative sluices in Tunisian Arabic

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Abstract

This paper studies the syntax and semantics of exclamative sluices (*What a pity!*) in Tunisian Arabic. Based on corpus data and two acceptability judgment experiments, the study investigates exclamative sluices formed with *shnowa* 'what', *qadesh* 'how much', and the exclamative word *malla*. The corpus results show that *malla*-sluices are frequent (82.1% in written data), while other exclamative sluices are rare. Semantically, *malla*-sluices often allow exophoric interpretations, whereas *qadesh*-sluices mainly allow recent reference readings. Experimentally, *malla* and *qadesh* sluices were rated as acceptable as their verbal non-elliptical counterparts, indicating no ellipsis advantage nor penalty. Embedded sluices occurred under both factive and non-factive predicates, suggesting that exclamatives denote propositions (Marandin 2018) rather than facts. Following Ginzburg and Kim (2023), we analyze exclamative sluices as non-sentential utterances with propositional content modeled via a ScaleUp predication over contextually salient entities.

1 Introduction

Wh-exclamatives can be either verbal, as in (1a) or non-verbal. Non-verbal exclamatives lack either the verb, as in (1b), or both the verb and the subject, as in the sluice in (1c).

(1) a. What a nice face she has!
b. How fresh and green the grass!
c. What a beautiful day!

Exclamative sluices have received little attention in the literature compared to interrogative sluices. One reason for this is that exclamative clauses are often not recognized as an independent clause type. They are often assumed to share the same *wh*-words (and syntax) as interrogatives but to denote facts (Ginzburg & Sag 2000) rather than propositions, unlike declaratives. Ginzburg and Sag (2000), Zanuttini and Portner (2003), Siemund (2015), among others, suggest a clause-type for exclamatives in English. Ginzburg and Sag (2000) suggest that exclamatives differ from both declaratives and interrogatives in their semantic type. While interrogatives are associated with questions, exclamatives denote facts. For French, Marandin (2008) and Abeillé and Godard (2021) suggest that exclamative clauses are a specific clause type with a propositional content: example (2) shows that exclamatives

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can be embedded under non-factive verbs, indicating that their content is not necessarily factive.[1]

(2) Marie nous a raconté [comme Paul avait souffert pendant sa
Mary us has told how Paul has suffered during his
jeunesse].
youth
'Marie told us how Paul had suffered in his youth.' (Marandin 2018: 23)

For English, Ginzburg and Kim (2023) argue that exclamatives both introduce a novel propositional content and update the speaker's MOOD, which is their public emotional stance. Exclamatives pattern with interrogatives in some respects, yet they seem to differ crucially in others, such as in their distribution, embeddability, and interpretation. For example, as interrogatives, exclamatives allow sluices, and while interrogative sluices can typically embed, Ginzburg (2012) and Ginzburg and Kim (2023) argue that exclamative sluices in English cannot (see (3)).

(3) a. What a shot!
b. * It's amazing what a shot.
c. It's amazing what a shot she made.

This point has been used to argue that sententialist analyses to ellipsis, which consider exclamative sluices as verbal covert clauses, face significant challenges. Ginzburg (2012) suggests instead that exclamative sluices are non-sentential utterances (NSUs) that share only semantic properties with their non-elliptical counterparts.

Ginzburg and Kim (2023) argue against a structural approach to ellipsis and in favor of a direct interpretation approach, analyzing exclamative sluices as non-sentential utterances (NSUs) whose meaning is recoverable from context. In a corpus study of English exclamatives (*what a* + N, *how* + Adj) across the BNC, London Lund, and COCA, they found that exclamative sluices occur more frequently than their non-elliptical counterparts, echoing results by Siemund (2017).

They identified three types of readings, which can be diagnosed based on what the exclamative refers to in context: (i) Recent Question Under Discussion (RQUD), where the recent proposition in the antecedent is used to resolve the sluice, as in (4), (ii) Recent Reference (RRef), where only a specific individual or entity mentioned in the antecedent is used, as in (5), and (iii) Exophoric or inferred interpretation (ExInf), relying on a non-linguistic antecedent or on a conclusion drawn from a prior utterance, as in (6).

[1] This relates to the wider theoretical debate on whether exclamatives are fundamentally assertive/propositional or non-assertive (see e.g., Chernilovskaya 2014, Driemel 2017).

(4) A: Look, leaving Nick all the way down there all on his own! What a shame! (BNC) (→ What a shame that (they were) leaving Nick all the way down there all on his own!) (Ginzburg & Kim, 2023: 6).

(5) Tim: Here's my cracker! Dorothy: Oh what a lovely cracker! (BNC) (→ what a lovely cracker this cracker is) (Ginzburg & Kim 2023: 7).

(6) (Context: New Conversation) Madge: What a lovely garden! Anon 4: Hello Jean! Anon 1: Isn't it? That's what I was saying (Ginzburg & Kim 2023: 7).

Their analysis shows that exophoric readings are predominant, suggesting that the meaning of most exclamative sluices does not rely on linguistic antecedents. Furthermore, exclamative sluices cannot be embedded, unlike sentential exclamatives or interrogative sluices, though exclamative clauses can embed under a variety of matrix verbs (3c), including non-factive verbs (see (7) for an example of NF use), supporting Marandin's (2008) claim that they denote propositions rather than facts.

(7) Jo tried to convince me what a fine, virtuous leader Nero had been. (Ginzburg & Kim 2023: 19)

1.1 Tunisian Arabic exclamatives

Wh-exclamatives in Tunisian Arabic (TA) are formed using *shnowa* 'what' (see (8a)), *qadesh* 'how much', or the exclamative-only word *malla*[2].
The word *qadesh* can introduce adjectives (8b) or nouns (8c), while *malla* can precede either a noun, as in (8d), or an adjective, as in (8e).

(8) a. shnowa ha-l zin!
what this-the beauty
'What a beauty!'

b. qadesh mezyena!
how.much beautiful.SG.F
'How beautiful!'

c. qadesh dkhama!
how.much elegance
lit. 'How much elegance!'

[2] *Malla* does not have an exact equivalent in English. Depending on the context, it can be translated to 'what a', as in (i), or the exclamative 'how', as in 8e. Therefore, in the glosses, we will refer to *malla* as EXCL.

(i) malla jaw
what vibe
'What a vibe!'

d. malla dkhama!
EXCL elegance
lit. 'What elegance!'

e. malla bhim!
EXCL donkey
'How stupid!'

TA allows non-elliptical verbless exclamatives, which include a subject but lack a verb, as in (9). These differ from sluices, which are fully elliptical and lack both a subject and a verb.

(9) qadesh mezyen-a ha tofla!
how.much beautiful-F.SG DEM girl
'lit. How beautiful this girl!'

To the best of our knowledge, exclamatives in TA, and particularly exclamative sluices, have not been previously studied. The following sections present a corpus study and two acceptability judgment experiments that study the syntactic and semantic properties of exclamative sluices in TA.

2 Corpus study of Tunisian Arabic exclamatives

We conducted a corpus study of exclamatives in TA, based on both written and spoken data. The goal is to study their syntactic properties, focusing on the frequency of elliptical versus non-elliptical forms, the ability of sluices to be embedded and the types of predicates that allow their embedding, and their semantic interpretations.

2.1 Extraction

We searched for exclamatives with three words *shnowa* 'what', *qadesh* 'how much' and *malla* in two corpora: The Tunisian Arabic Corpus (TAC) (Karen & Faiza 2010, Younes et al. 2015) includes both spoken and written data in different genres (blogs, TV/movies/plays, fiction, non-fiction, newspapers, web posts, forums, and SMS/Facebook), and the Spoken Tunisian Arabic Corpus (STAC)[3] (Zribi et al. 2015) includes radio recordings.

2.1.1 Written corpus

We extracted 1485 tokens, 645 with *shnowa* 'what', 675 with *qadesh* 'how much', and 165 with *malla*. We then filtered out duplicates, interrogatives and declaratives, as well as examples that are rather indefinites (as in (10a)),

[3]We thank Prof. Lamia Hadrich Belguith and Dr. Inès Zribi for allowing access to STAC, and Dr. Asma Mekki for providing additional annotations.

and when *qadesh* is used to mean *so long* (as in (10b)) and when it is used with the preposition *men* 'from' (10c), to indicate a number of times.

(10) a. e-nahda tnaseb fi nafsha ka hami le-din w
the-Nahdha is.positioning in herself as protector of-religion and
ma naaraf shnowa.
NEG know what
'The Nahdha is positioning itself as the protector of religion and I don't know what.'

b. aand-i qadesh n-heb n-estadaa-k
PREP-1SG how.much 1SG-love 1SG-invite-2SG
'I've been wanting to invite you for a long time.'

c. qadesh men mara qal-i n-heb-ek
how.much from time he.told-me 1SG-love-you
'How many time he told me that he loved me.'

After filtering, the written data consisted of 442 exclamatives, 14 with *shnowa*, 277 with *qadesh*, and 151 with *malla*.

2.1.2 Spoken corpora

The spoken data were collected from the spoken part of TAC and from STAC. We extracted a total of 162 tokens: 135 with *shnowa*, 27 with *qadesh* and none with *malla*. After filtering out interrogatives and indefinite uses (e.g. *dra shnowa* 'I don't know what'), only 3 exclamatives with *shnowa* + N remained. Among the *qadesh* verbal tokens, 2 were exclamatives. In total, 5 exclamatives were found in the spoken corpora.

2.2 Annotation

We annotated the following factors: whether the construction is a sluice, if not, whether it is verbal or verbless, whether it appears in a root (matrix, coordinated or reported speech) or embedded context. When embedded, we annotated the factivity of the embedding predicate, following Hooper's (1975) distinction between true factive (TF), semi-factive (SF), and non-factive (NF) predicates. While TF predicates (psychological/emotive) presuppose the truth of their complement (*She's happy [that you came]*), NF ones (epistemic and communication verbs) do not (*She thinks [that you came]*), and with SF (knowledge and perception verbs), the presupposition is weaker than that TFs (*She knows [that you came]*) (see Bîlbîie et al. 2022 for the relevance of this tripartition for embedded gapping). For SF perception verbs like *see*, the complement is generally taken to be true, but the presupposition can be suspended if the perception is partial, uncertain or reported under negation (*She didn't notice [that he left]* does not presuppose that he left).

We also annotated the semantic interpretation of sluices, following the taxonomy suggested by Ginzburg and Kim (2023).

2.3 Results

In the corpus, exclamatives were mainly formed with *malla*, *qadesh*, and *shnowa*. *Malla* typically combines with nouns, *qadesh* with adjectives or nouns, and *shnowa* occurs in nominal and verbal exclamatives expressing intensification (e.g., *shnowa eejbetni*! 'I liked her so much!').

2.3.1 Sluice rate

The written corpus study resulted in 141/442 sluices, with a general sluice rate of 31.9%, distributed as follows: 6/14 (42.9%) sluices with *shnowa*, 11/277 (4%) sluices with *qadesh*, and 124/151 (82.1%) sluices with *malla*. The spoken corpora did not include any sluices.

The written data included a total of 80 non-elliptical verbless exclamatives, as in (11), and 226 verbal exclamatives, as in (12). All 5 exclamatives in the spoken corpora are verbal (3 with *shnowa* and 2 with *qadesh*).

(11) a. shnowa hetha ya ghzala
what DEM VOC deer
'What a beauty this is!'

b. rit qadesh-ha dhamra ya dorsaf
see how.much-3SG.F funny.SG.F VOC dorsaf
(Addressing Dorsaf) 'See how funny she is!'

c. malla jaw elli asami-na kifkif
EXCL situation that names-ours same
'Such a mood, our names match!

(12) a. shnowa hal-enjez el-aadim eli aamaltou
what DEM-accomplishment DEF-huge that you.did
'What a huge accomplishment you pulled off!'

b. meskin qadesh msakhafni
poor.3SG.M how.much made.me.feel.sorry
'Poor guy, he made me feel sorry for him!'

c. malla moshkla besh taamel-he-l-na
EXCL problem FUT do.2SG-it-to-us
'What a problem you will cause us!'

Table 1 presents a summary of the results from both the written and spoken corpora combined. Exclamative sluices in TA are not predominant, unlike in English[4].

[4]TAC and English corpora such as COCA are comparable in covering a range of

Table 1: Exclamatives in TA: Written and spoken corpora.

Construction	Sluice	Non-elliptical verbless	Sentential verbal	Total
shnowa	6 (35.3%)	3 (17.6%)	8 (47.1%)	17
qadesh	11 (3.9%)	61 (21.9%)	207 (74.2%)	279
malla	124 (82.1%)	16 (10.6%)	11 (7.3%)	151
Total	141 (31.5%)	80 (17.9%)	226 (50.6%)	447

2.3.2 Semantic interpretation of exclamative sluices

Similarly to English, the ExInf interpretation, which lacks a verbal antecedent and a clear verbal paraphrase (as shown in (13)), is possible in TA and is majoritarian with *malla* (50/124). *Malla blassa* 'What a place!' and *shnowa ha zin* 'lit. What this beauty!' are used to express admiration for two visual stimuli: the first for the place the girl saw, and the second for Dorra's beauty. RRef readings, as in (14), are the most frequent, while RQUD interpretations, exemplified in (15), are less common. Sluices with *qadesh* allowed only for RRef readings, as in (14b), where *finou* 'elegant' refers back to the girl's outfit.

- ExInf

(13) a. t-tetlafet hawl-ha [-] ya mimt-i malla blassa
3SG.F.look around-her VOC mom.1SG.POSS EXCL place
'She looked around her. - What a place!'

b. ezouz meshin l-ers Rihab w Ines fi el-baladia [.]
both going to-wedding Rihab and Ines in the-city.hall
Amel tuqabel Dorra [-] shnowa ha zin
Amel kisses Dorra what this beauty
'Both are going to Rihab and Ines's wedding at the city hall. Amel kisses Dorra and says, 'How beautiful!'

- RRef

(14) a. [-] Enti ghates fi el-asal - Rehab: [...] shnowa assal [...]
you soaking in DEF-honey - Rehab: what honey
'- You're soaking in honey! - (ironically) What honey!'

written and spoken genres and in containing relatively little free, spontaneous dialogue. Nevertheless, exclamative sluices are frequent in COCA (Ginzburg & Kim 2023) but not in TA. This suggests that genre composition alone does not account for the observed discrepancy, though further corpus work can be useful to firm up this conclusion.

b. [...] hall-et el-beb mahla lebset-ha qadesh
open.PST-3SG.F the-door how.beautiful outfit-3SG.F how.much
finou
elegant
'She opened the door, her outfit is beautiful! How elegant!'

- RQUD

(15) a. mshe hke l-tahqiq elli huwa hatl-ek el-hrabesh
he.went told to-investigators that he put-you the-pills
w enti mafibeleksh hab yhezha hua el-qadia malla rajel
and you don't.know wanted take.it him the-case EXCL man
malla tadhia
EXCL sacrifice
'He told the investigators that he was the one who gave you the pills, and that you had no idea about them. He wanted to take the fall. What a man! What a sacrifice!'

b. [...] mekesh hashem zeda tetbajah b el-fasad
NEG.2SG embarrassed too bragging PREP DEF-corruption
mtaa-ek shnowa el-waqaha [...]
of-2SG what DEF-audacity
'You're not even embarrassed, bragging about your corruption! What audacity!'

Table 2 summarizes the semantic interpretations of the sluices found in the corpus. While *malla* and *shnowa* allow for different readings (with ExInf majority with *malla*), *qadesh* is limited to RRef. Overall, RRef and ExInf readings are almost equally available.

Table 2: Semantic interpretations of *malla*, *shnowa* and *qadesh* exclamative sluices in TAC written corpus.

Construction	ExInf	RQUD	RRef	Ambiguous	Total
shnowa	2	1	2	1	6
qadesh	0	0	11 (100%)	0	11
malla	50 (40.3%)	33 (26.6%)	41 (33.1%)	0	124
Total	52 (36.9%)	34 (24.1%)	54 (38.3%)	1	141

2.3.3 Embedded exclamatives

The written corpus contains 70 embedded exclamatives, as follows: none with *shnowa*, 69 with *qadesh*, including 4 sluices, and 1 sluice with *malla*.

In the spoken corpora, only matrix exclamatives with *shnowa* were found: 1 verbless and 2 verbal. With *qadesh*, there is 1 embedded and 1 matrix, both verbal. Table 3 summarizes the distribution of the exclamatives in both the written and spoken corpora combined.

Table 3: Distribution of exclamatives with *malla*, *shnowa*, and *qadesh* in TA written and spoken corpora.

	Sluice		Non-elliptical verbless		Sentential verbal		Total
	Embed.	Matrix	Embed.	Matrix	Embed.	Matrix	
shnowa	0	6	0	3	0	8	17
qadesh	4	7	16	45	50	157	279
malla	1	123	0	16	0	11	151
Totals	5 (3.5%)	136 (96.5%)	16 (16.7%)	64 (83.3%)	50 (17.6%)	176 (82.4%)	447
	141 (31.5%)		80 (17.9%)		226 (50.6%)		

The embedding rate for exclamatives overall is 15.9% (71 tokens), with only 5 embedded sluices, as in (16).

(16) a. idhaken ma hke-sh aal-ina el eelem mosh lazem nahki-w
if NEG talk-NEG on-us the media NEG must talk-1PL
aal-ihom. shouf malla eelem aad (TAC)
on-them see EXCL media PTCL
lit. 'If the media didn't talk about us, then no need to talk about them. Look what media, seriously!'

b. t-asmaa fi-el pianiste qadesh mhaf-a
2SG-listen in-the pianist how.much brilliant-1SG.F
'Are you listening to how brilliant the pianist is?' (TAC)

Furthermore, the embedding predicates in the analyzed dataset were mainly verbs[5]. Table 4 summarizes the results based on the factivity of the embedding verb and the construction of the exclamative.
The majority of the embedding verbs are SF as the perception verbs in (16), followed by NF (17) and TF (18).

[5]In TA, it is possible to embed an exclamative in a prepositional phrase. In the analyzed corpora, there are two examples as in i.

(i) ma aand-ek-sh fekra qadesh khoft
NEG PREP-2SG-NEG idea how.much scared.1SG
'You have no idea how much I got scared.'

Table 4: Factivity of the embedding verbs in (written and spoken) TA exclamatives with *malla* and *qadesh*.

Construction	SF	NF	TF	Total
Sluice	4	1	0	5
Non-elliptical	48	16	1	65
Total	52 (74.3%)	17 (24.3%)	1 (1.4%)	70

(17) ma-tnjamsh tetsawar qadesh hasit b-dhanb
NEG-can.2SG-NEG imagine.2SG how.much felt guilty
'You can't imagine how guilty I felt!'

(18) t-arjaa t-exeth drous-ek [...] nsit om-ek qadesh
2SG-get.back 2SG-take classes-2SG forgot.2SG mom-2SG how.much
wassat-ek
advise-2SG
'You have to get back to your classes, apparently you forgot how much your mom advised you to do so.'

2.4 Discussion of the corpus study

The corpus study shows four main findings: (i) exclamative sluices are not majoritarian in TA, contrary to English, (ii) exclamative sluices can be resolved without reference to a linguistic antecedent, and this reading predominates with *malla*, (iii) as in English, exclamative sluices in TA tend to resist embedding and sluices with *shnowa* do not embed similarly to the English *what a* exclamatives[6], and (iv) 21.4% of the embedding verbs are non-factives, which suggests that exclamatives are propositional, as proposed by Marandin (2008).

3 Two acceptability judgment experiments

We conducted two experiments to study exclamatives in TA, focusing on native speakers' preferences for sluiced versus verbal exclamatives with *qadesh* and *malla*, the two most frequent forms of exclamatives found in the corpus. These experiments will adress the following questions: (i) whether there is a preference for elliptical over non-elliptical exclamatives in TA, and (ii) whether this preference is affected by the construction of the exclamative, namely embedded vs. matrix.

[6]See Michaelis (2001) for cross-linguistic variation in embedding conditions for *wh*-exclamatives, showing that languages differ in which *wh*-words can occur in matrix versus embedded exclamatives.

3.1 Methods

3.1.1 Experimental items

Since *qadesh* and *malla* introduce either adjectives or nouns, in order to ensure a balanced set of stimuli, we controlled the materials such that 12 items featured adjectives (see Table 5) and 12 featured nouns (see Table 6). The non-elliptical items were verbal as they were more frequent than the verbless exclamatives in the corpus. The embedding verbs were balanced, with 8 NF (*tsawer* 'imagine'), 8 SF (*shoft* 'you saw') and 8 TF (*nsit* 'I forgot') verbs. Each experiment included 24 items, followed by yes or no comprehension questions, and 24 fillers. The fillers were items of another experiment on interrogative sluices. These fillers included an ungrammatical control condition, as in Speaker B's utterance in (19).

Table 5: Example of stimuli: exclamative *qadesh/malla* + adjective

Condition	Example
–Embed+Sluice	*qadesh/malla moosab*
	'How hot-tempered!'
–Embed–Sluice	*qadesh/malla moosab khouk tlaa*
	'How hot-tempered your brother turned out to be!'
+Embed+Sluice	*staghrabt qadesh/malla moosab*
	'I'm surprised how hot-tempered!'
+Embed–Sluice	*staghrabt qadesh/malla moosab khouk tlaa*
	'I'm surprised how hot-tempered your brother turned out to be!'

(19) Speaker A: beedt men aabed fi-el khedma 'I got away from some people at work'
Speaker B: shkoun beedt? lit. 'Who did you get away?'

3.1.2 Procedure

A total of 44 and 47 students at the Institut Supérieur des Langues de Tunis, respectively, participated in the *malla* and *qadesh* experiments.[7] Participants were recruited in person. Both experiments were online using Ibex Farm (Drummond 2011). Participants were instructed to rate each item on a scale from 1 (completely unnatural) to 5 (perfectly natural), and to answer the

[7]Originally, 52 students participated in each experiment. However, data from 8 participants in the *malla* experiment and 5 in the *qadesh* experiment were excluded for scoring below 75% on the comprehension questions following each experimental item.

Table 6: Example of stimuli: exclamative *qadesh/malla* + Noun

Condition	Example
–Embed+Sluice	*qadesh/malla miziria*
	'What a misery!'
–Embed–Sluice	*qadesh/malla miziria aayshin fi-ha*
	'What a misery you're living in!'
+Embed+Sluice	*n-etkhayel qadesh/malla miziria*
	'I imagine what a misery!'
+Embed–Sluice	*n-etkhayel qadesh/malla miziria aayshin fi-ha*
	'I imagine what a misery you're living in!'

comprehension questions following each item. They were compensated with 10 Tunisian dinars, corresponding to an approximate rate of £9 per hour.

3.2 Predictions

Building on the findings of the corpus study, matrix sluices with *malla* are expected to receive higher ratings than their embedded counterparts. *Qadesh* sluices are expected to receive lower ratings overall. In addition, embedding sluices under NF verbs is expected to be acceptable, with a preference for embedding under SF verbs.

3.3 Results of experiment 1: *malla* exclamatives

The acceptability results show similar mean ratings across conditions: matrix sluices (M = 3.88, SD = 1.39), matrix verbal exclamatives (M = 3.98, SD = 1.26), embedded sluices (M = 3.79, SD = 1.39), and embedded verbal exclamatives (M = 4.02, SD = 1.26). The ungrammatical controls were rated lower (M = 2.28, SD = 1.37). The means of matrix sluice and matrix verbal are comparable, similarly to the corpus study results (96.5% matrix sluice and 82.4% matrix verbal exclamatives).

A Bayesian cumulative logit model with fixed effects for CONSTRUCTION (Embedded vs. Matrix) and FORM (Elliptical vs. Verbal), their interaction, and maximal random effects (subjects, items) found no reliable effects: all posterior probabilities < 0.8 and all 95% CrIs included zero. Specifically, Construction ($\widehat{\beta}$ = –0.13, 95% CrI = [–0.65, 0.38], P($\widehat{\beta} < 0$) = 0.70), Form ($\widehat{\beta}$ = –0.17, 95% CrI = [–0.70, 0.38], P($\widehat{\beta} < 0$) = 0.74), and their interaction ($\widehat{\beta}$ = –0.18, 95% CrI = [–0.83, 0.47], P($\widehat{\beta} < 0$) = 0.71).

Because half the items were *malla*+Adj and half *malla*+N, we compared their mean ratings: *malla*+Adj (m = 3.90, SD = 1.33) and *malla*+N (m = 3.93, SD = 1.32), they are essentially identical, suggesting no overall excl-phrase category effect. A follow-up Bayesian regression with REMNANT, FORM, and DISTRIBUTION (reference: *malla*+N, sluice, embedded) gives weak evidence that *malla*+Adj is preferred ($\widehat{\beta} = 0.42$, 95% CrI = [–0.49, 1.33], $P(\widehat{\beta} > 0) = 0.82$) and weak evidence for a distribution effect ($\widehat{\beta} = -0.37$, 95% CrI = [–1.04, 0.29], $P(\widehat{\beta} < 0) = 0.86$). The REMNANT:FORM interaction ($\widehat{\beta} = -0.89$, 95% CrI = [–1.93, 0.12], $P(\widehat{\beta} < 0) = 0.96$) suggests *malla* sluices may be relatively more acceptable with adjectives, but evidence is weak. Other interactions (REMNANT:DISTRIBUTION $\widehat{\beta} = 0.55$, 95% CrI = [–0.41, 1.55], P = 0.87; three-way: $\widehat{\beta} = -0.59$, 95% CrI = [–1.91, 0.71], P = 0.81) are likewise weak. Overall, remnant type did not affect acceptability in this experiment.

3.3.1 Embedded *malla* exclamatives

The results in Table 7 show that embedded exclamatives are more acceptable under SF verbs, and the means for NF and TF are comparable.

Table 7: Mean ratings for embedded sluices and embedded verbal exclamatives across different factivity levels: *malla* exclamatives

Condition	Factivity	Mean	SD
Embedded sluice	NF	3.56	1.47
	SF	4.04	1.24
	TF	3.80	1.39
Embedded verbal	NF	3.79	1.43
	SF	4.26	1.20
	TF	3.98	1.12

The data were analyzed using a Bayesian ordinal regression model with a cumulative logit link, including random intercepts for participants and items. Predictors were FACTIVITY (baseline: NF) and FORM (baseline: verbal). Results provide weak evidence that exclamatives embedded under SF verbs are preferred over those under NF ($\widehat{\beta} = 1.21$, 95% CrI = [–0.34, 2.81], $P(\widehat{\beta} > 0) = 0.94$). The TF-NF comparison shows no clear difference ($\widehat{\beta} = 0.35$, 95% CrI = [–1.10, 1.77], $P(\widehat{\beta} > 0) = 0.70$). A directional hypothesis test (Bürkner 2018) comparing SF and TF yields weak evidence for higher ratings with SF ($\widehat{\beta} = 0.86$, Est.Error = 0.8, Evid.Ratio = 6.65, 95% CrI = [–0.43, 2.17], $P(\widehat{\beta} > 0) = 0.87$), suggesting graded acceptability across factivity levels.

3.4 Results of experiment 2: *qadesh* exclamatives

Experiment 2 shows that mean acceptability ratings were similar across the four conditions: +matrix+ellipsis (m = 3.84, SD = 1.27), +matrix–ellipsis (m = 3.97, SD = 1.25), –matrix+ellipsis (m = 3.71, SD = 1.38), and –matrix–ellipsis (m = 3.83, SD = 1.25). The ungrammatical control averaged m = 3.08 (SD = 1.36). Thus, embedded sluices were rated as acceptable as other constructions. Although matrix sluices with *qadesh* were rated comparably to their verbal counterparts, they were rare in the corpus.

A Bayesian regression model with CONSTRUCTION (Embedded vs. Matrix) and FORM (Sluice vs. Verbal) dummy-coded (Matrix, Verbal = reference) showed no effects. Posterior probabilities were all below 0.8, and 95% credible intervals included 0. Specifically: Construction ($\widehat{\beta}$ = –0.08, 95% CrI [–0.46, 0.31], P($\widehat{\beta} < 0$) = 0.66), Form ($\widehat{\beta}$ = –0.11, 95% CrI [–0.64, 0.41], P($\widehat{\beta} < 0$) = 0.67), and their interaction ($\widehat{\beta}$ = –0.18, 95% CrI [–0.81, 0.45], P($\widehat{\beta} < 0$) = 0.70). These findings contrast with the corpus study, where embedded sluices with *qadesh* were relatively frequent (36.4%, Table 3).

Items with *qadesh* were constructed with either adjectives or nouns. The former were rated higher overall (m = 4.00, SD = 1.27 for sluices; m = 4.15, SD = 1.14 for verbals) than the latter (m = 3.55, SD = 1.34 for sluices; m = 3.65, SD = 1.31 for verbals), with a consistent pattern across conditions.

A second Bayesian model with predictors REMNANT, FORM, and DISTRIBUTION (reference levels: *qadesh*+N, Sluice, Embedded) revealed a simple effect of remnant type: *qadesh*+Adj was preferred over *qadesh*+N ($\widehat{\beta}$ = –1.18, 95% CrI [–2.04, –0.35], P($\widehat{\beta} < 0$) = 1). Thus, *qadesh* exclamatives with adjectives are consistently rated higher than those with nouns, independent of ellipsis. This suggests that the corpus bias toward sluices+Adj reflects a lexical preference rather than a structural difference.

3.4.1 Embedded *qadesh* exclamatives

The results reported in Table 8 show that embedding *qadesh* exclamatives under NF verbs is as acceptable as under SF and TF verbs. TF verbs seem to be more acceptable when embedding verbal exclamatives compared to sluices.

The data were fitted to a model similar to that used for *malla*. Results indicate that exclamatives embedded under SF verbs tend to receive higher ratings than those under NF verbs, with a possible preference for TF over NF embedding. The SF vs. NF comparison ($\widehat{\beta}$ = 0.47, 95% CrI [–0.64, 1.57], P($\widehat{\beta} > 0$) = 0.81) provides weak evidence, while TF vs. NF ($\widehat{\beta}$ = 0.78, 95% CrI [–0.33, 1.91], P($\widehat{\beta} > 0$) = 0.92) shows slightly stronger evidence. No reliable effects were found for Ellipsis ($\widehat{\beta}$ = –0.28, 95% CrI [–1.15, 0.57], P($\widehat{\beta} < 0$) = 0.75) or for the interactions (SF:Ellipsis: $\widehat{\beta}$ = 0.58, 95% CrI [–0.87, 2.03], P($\widehat{\beta} > 0$) = 0.80; TF:Ellipsis: $\widehat{\beta}$ = –0.55, 95% CrI [–2.07, 0.94], P($\widehat{\beta} <$

Table 8: Mean ratings for embedded sluices and embedded verbal exclamatives across different factivity levels: *qadesh* exclamatives

Condition	Factivity	Mean	SD
Embedded sluice	NF	3.54	1.45
	SF	3.95	1.31
	TF	3.67	1.36
Embedded verbal	NF	3.63	1.33
	SF	3.84	1.22
	TF	4.02	1.19

0) = 0.77). A direct comparison between SF and TF (Bürkner 2018) yielded no preference for TF ($\widehat{\beta}$ = –0.31, Est. Error = 0.63, 95% CrI [–1.34, 0.72], Evid. Ratio = 2.3, P($\widehat{\beta} > 0$) = 0.7).

3.5 Discussion

Two acceptability judgment experiments tested preferences for sluiced and verbal exclamatives, testing whether embedded exclamative sluices are as acceptable as their verbal counterparts. Results show that sluices with *malla* and *qadesh* were rated similarly to verbal exclamatives, indicating no penalty for ellipsis or preference for verbal exclamative clauses, unlike in the corpus study. In both experiments, matrix and embedded sluices received similar ratings, despite embedded sluices being rare in the corpus. Both experiments also revealed a general preference for embedding under SF verbs, while NF and TF embeddings were rated similarly. This challenges prior claims that exclamatives are felicitous only under factive predicates. Taken together with the corpus results, these findings support the view that exclamatives denote propositions, and that exclamative sluices have exophoric potential, more than interrogative sluices, which often require a recoverable linguistic antecedent (Hassen 2025). Overall, TA exclamative sluices and verbal exclamatives appear equally acceptable, providing no evidence that ellipsis incurs a penalty, nor an advantage, unlike English sluices.

4 Formal analysis of exclamative sluices

We analyze exclamative sluices as non-sentential utterances with a fully propositional meaning specified by the context, and that they function as scaled-up predications over contextually salient entities or situations, whether

linguistically or non-linguistically provided. We showed that exclamative sluices and exclamative clauses can both embed in TA, although the former rarely do. We showed that *qadesh* 'how much' sluices can only be interpreted by reference to an entity presented in the antecedent clause, contrarily to exclamative clauses who have a wider range of interpretations.
We provide a formal analysis of exclamative sluices, using Type Theory with Records version of HPSG. We use the ScaleUp predication, following Ginzburg and Kim (2023). The content of the predicate is a property P of an exclaimable entity x that was provided in the context, the degree of which increases on a scale s thanks to the ScaleUp predication, as explained in (20).

(20) ScaleUp(P)(x) iff for some δ : degree, s : scale: P(x, δ) and High(δ, s) hold (Ginzburg & Kim 2023: 20).

We analyze *shnowa*[8], *malla* and *qadesh* as determiners when they occur with a noun phrase (NP), and as adverbs when modifying an adjective (see 21). The lexical entries below are based on Ginzburg and Kim (2023: 20), who keep the syntactic analysis from (Ginzburg & Sag 2000: 234) and add the ScaleUp function to the semantics. We follow Ginzburg and Kim (2023) in using I(ntransitive)V(erb) to label the output property following ScaleUp.[9]

(21) Lexical entry for the exclamative words *malla/shnowa/qadesh*

$$\begin{bmatrix} \textsc{phon} & \textit{malla/shnowa/qadesh} \\ \textsc{syn} & \begin{bmatrix} \textsc{cat} = \textsc{det} : \textsc{PoS} \\ \textsc{select} = \begin{bmatrix} \textsc{cat} = \text{N/ADJ} : \textsc{PoS} \\ \textsc{cont} = \text{P} : \text{Intrans-V} \end{bmatrix} \\ \textsc{wh} = \{\textsc{cont}\}\text{: Set}(\textsc{semObj}) \end{bmatrix} \\ \textsc{cont} & \lambda x\ \textit{ScaleUp}(\text{P})(\text{x})\textit{:}\ \text{Intrans-V} \end{bmatrix}$$

Shnowa and *qadesh* can modify a verb as in (22), hence the lexical entry in (23).

(22) a. shnowa eejbetni! (TAC)
what she.pleased.me
'I liked her a lot!'

[8] *shnowa* can appear with the determiner *el* 'the', in which case, it is analyzed as one unit as Ginzburg and Kim (2023) suggested for *what a* in English.

[9] An anonymous reviewer questions how the exclamative uses of the discussed words differ from their interrogative counterparts and how this ambiguity is managed in the lexicon. *Wh*-words can have multiple functions (e.g., Hebrew has two determiners that have clearly distinctive quantificational, interrogative, exclamative uses) without requiring a derivational relationship between them (Ginzburg & Kim 2023). In TA, we treat these as cases of lexical polysemy with different lexical entries for each use, rather than positing a single mother entry. Each entry specifies its own syntactic and semantic properties independently. The WH feature regulates their distribution.

b. qadesh hyet-i kenet fergha bla bik
how.much life-1SG.POSS PST empty without you
'How much my life was empty without you!'

(23) Lexical entry for adverbs *shnowa/qadesh*

$$\begin{bmatrix} \textsc{phon} : \textit{shnowa/qadesh} \\ \textsc{syn} : \begin{bmatrix} \textsc{cat} = \text{ADV} : \text{PoS} \\ \textsc{mod} : \begin{bmatrix} \textsc{cat} = \text{ADJ/V} : \text{PoS} \\ \textsc{cont} = \text{P} : \text{Intrans-V} \end{bmatrix} \\ \textsc{wh} = \{\textsc{cont}\}\text{: Set(semObj)} \end{bmatrix} \\ \textsc{cont} = \lambda x\ \textsc{ScaleUp}\ (\text{P})(\text{x})\text{: Intrans-V} \end{bmatrix}$$

The *Wh* feature is a non-empty set. Ginzburg and Sag (2000) introduced this feature to mark the presence of *wh*-phrases and to track their distribution across larger structures. When a *wh*-word is present, its non-empty *wh* value marks the larger structure in which it occurs, such as a *wh*-exclamative (or any *wh*-structure). This allows the grammar to detect *wh*-elements even when they appear inside more complex structures. By contrast, non-*wh* exclamatives (e.g. those built with intensifiers such as *such* or the TA particle *ma* with an adjective, as in *ma-hleha* 'EXCL-beautiful.3SG.F!') receive an empty *WH* value and so are incompatible with *wh*-dependent constructions like sluices or fillergap dependencies. The subtypes of exclamative clauses (*excl-cl*, see Figure 1) are sluices (*excl-slu*), subject clauses (*excl-subj-cl*) and filler clauses (*excl-filler-cl*).

This is different from interrogative sluices which inherit from a head-fragment-phrase (Ginzburg & Sag 2000, Nykiel & Kim 2021) and rely on a parallelism constraint between a wh-remnant and a correlate in the antecedent clause. We analyze *excl-slu* as a non-verbal predicate (an NP or AdjP) that lacks an overt subject. It inherits from the *excl-cl* and *hd-only-ph* types. Its ARG-ST contains a single argument, *pro*. This argument is provided by the context and can be either the recent QUD, the recent referent or exophoric. The content is a proposition containing the scaled-up property from the ScaleUp output, as proposed in Ginzburg and Kim (2023). The rule of this type is in (24).

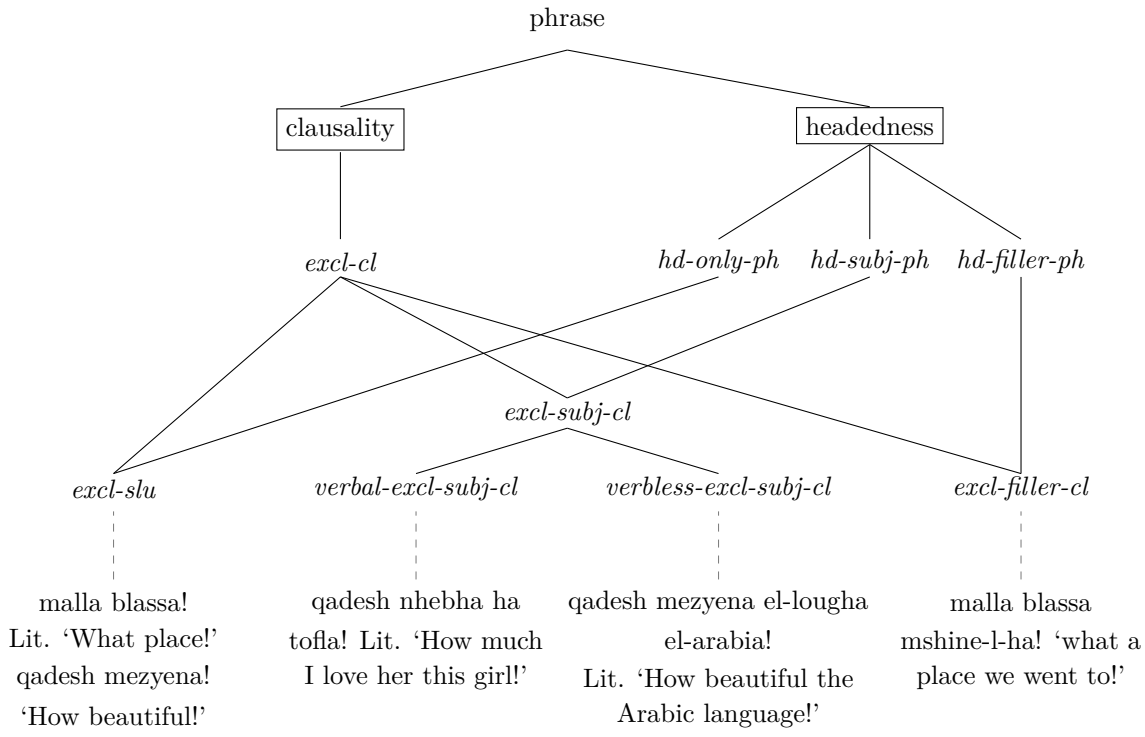

Figure 1: Clause type hierarchy for exclamatives

(24) Sluice rule: *excl-slu*

$$\left[\begin{array}{l} \textsc{syn}: \left[\begin{array}{l} \textsc{cat}: \text{PoS} \\ \textsc{wh} = \{\} : \text{set(SemObj)} \end{array}\right] \\ \textsc{dgb-params}: \left[\begin{array}{l} \text{z}: \text{Ind} \\ \text{c1}: \text{exclaimable(z)} \end{array}\right] \\ \textsc{cont} = \text{hd-dtr.cont(z)} : \text{Prop} \end{array}\right]$$

$$\Big|$$

$$\text{hd-dtr}: \left[\begin{array}{l} \textsc{syn}: \left[\begin{array}{l} \textsc{cat.head} = \text{N/ADJ} \\ \text{subj} = \langle\,\rangle \\ \text{arg-st} = \langle \text{NP}_{pro} \rangle \\ \textsc{wh} = \{\text{ScaleUp}\} : \text{set(SemObj)} \end{array}\right] \\ \textsc{cont} = \lambda \text{x. ScaleUp(P)(x)}: \text{Intrans-V} \end{array}\right]$$

(25) is an example of an exclamative sluice (see (26) for a detailed analysis of a *wh*-exclamative phrase). A verbal fragment (Head v) with an NP head daughter. This NP is composed of the determiner *malla* selecting for the noun *blassa* 'a place', the content of which is retrieved from the context (DGB).

(25) *excl-slu* example

$$\left[\begin{array}{l} \textsc{syn} : \left[\ \textsc{cat} = \text{v} : \text{PoS}\ \right] \\ \textsc{dgb-params} : \left[\begin{array}{l} \text{z} : \text{Ind} \\ \text{c1} : \text{exclaimable(z)} \end{array}\right] \\ \textsc{cont} = \left[\ \text{c2} : \text{ScaleUp(blassa)(z)}\ \right] : \text{Prop} \end{array}\right]$$

$$\Big|$$

$$\text{hd-dtr} : \left[\begin{array}{l} \textsc{phon} : \text{malla blassa} \\ \textsc{syn} : \left[\begin{array}{l} \textsc{cat} = \text{NP} \\ \text{subj} = \langle\,\rangle \\ \text{arg-st} = \langle \text{NP}_{pro} \rangle \end{array}\right] \\ \textsc{cont} = \lambda x \left[\ \text{c2} : \text{ScaleUp(blassa)(x)}\ \right] : \text{Intrans-V} \end{array}\right]$$

(26) *wh-exclP* example

$$\left[\begin{array}{l} \textsc{phon} : \text{malla blassa} \\ \textsc{syn} : \left[\begin{array}{l} \textsc{cat} = \text{n} : \text{PoS} \\ \textsc{wh} = \{\text{ScaleUp}\} : \text{set(SemObj)} \end{array}\right] \\ \textsc{cont} = \text{ScaleUp(blassa)} : \text{IV} \end{array}\right]$$

$$\text{det-dtr:}\ \left[\begin{array}{l} \textsc{phon} : \text{malla} \\ \textsc{syn} : \left[\begin{array}{l} \textsc{cat.head} = \text{det} : \text{PoS} \\ \textsc{select} : \left[\begin{array}{l} \textsc{cat} : \text{N} \\ \textsc{cont} : \text{IV} \end{array}\right] \\ \textsc{wh} = \{\text{cont}\} : \text{set(SemObj)} \end{array}\right] \\ \textsc{cont} = \text{ScaleUp(blassa)IV} \end{array}\right] \qquad \text{hd-dtr:}\ \left[\begin{array}{l} \textsc{phon} : \text{blassa} \\ \textsc{syn} : \text{cat} = \text{N} : \text{PoS} \\ \textsc{cont} = \text{blassa} : \text{IV} \end{array}\right]$$

5 Conclusion

We investigated the syntactic and semantic properties of exclamative sluices in TA, combining corpus data and two acceptability judgment experiments. We found that exclamative sluices in TA, while less frequent than in English (Ginzburg & Kim 2023) or French (Hassen 2025) for instance, occur more often than interrogative sluices and show distinctive patterns compared to both non-elliptical exclamatives and interrogative sluices. Corpus data indicate that *malla*-sluices frequently allow exophoric interpretations, whereas *qadesh*-sluices are rare and require reference to explicit discourse entities. Exclamative sluices with *shnowa* 'what' do not seem to be embeddable, similar to English *what a*-exclamatives (Ginzburg & Kim 2023), while sentential exclamatives with *shnowa* are embeddable. Approximately 21.4% of embedded cases occur under non-factive verbs, supporting the view that exclamatives denote propositions rather than facts.
Experimental results show that exclamative sluices are rated as acceptable as their non-elliptical counterparts, with embedding acceptable under both semi-factive and non-factive verbs. These findings challenge deletion-based analyses that treat sluices as derived solely from their non-elliptical counterparts and support a view of ellipsis resolution that integrates discourse and processing constraints, highlighting the distinct grammatical and pragmatic status of exclamative sluices in TA.

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