Exclamative Sluices in Tunisian Arabic

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Outline

Background

Exclamative clause type (English: Ginzburg & Sag, 2000; Siemund, 2017; Ginzburg & Kim, 2023 — French: Beyssade & Marandin, 2005; Marandin, 2008):

(1) a. *decl-cl* ⇒ [CONT *proposition*]
b. *inter-cl* ⇒ [CONT *question*]
c. *imper-cl* ⇒ [CONT *outcome*]
d. *exclam-cl* ⇒ [CONT *fact*]
exclam-cl ⇒ [CONT *proposition*]

Background

(2) a. Belle has been going on and on about what a great leader Boris is.

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

Background

- Marandin (2008) argues that the content of an exclamative is presented as **self-evident from the speaker's perspective** → *ego-evidentiality*.
- Unlike declaratives, exclamatives do not assert facts but convey:
  - the speaker's **emotional reaction**, or
  - their **evaluative stance**.

Sluices

- Interrogative sluice

  (3) - Someone broke the mirror.
  - **Who**?

- Exclamative sluice

  (4) - John broke the mirror.
  - **What an idiot!**

Exclamative Sluices: English

Properties:

- Non-sentential utterances (NSUs), contextually recoverable (Ginzburg, 2012; Ginzburg & Kim, 2023)
- Cannot be embedded, unlike full clauses
- More frequent than full clauses (BNC, COCA, ICE-GB)
- Semantic interpretation: often exophoric interpretations (ExInf: 56.4%)

Exclamative sluices: English

Semantic interpretation

- **ExInf** (Exophoric/Inferential): The sluice is resolved with a non-linguistic antecedent or inferred from context (Looking at a bouquet. - How beautiful!).
- **RRef** (Recent Referent): The sluice is resolved by referring to an entity or an individual in the antecedent (- John left. - What a fool!).
- **RQUD** (Recent Question Under Discussion): The sluice is resolved using the entirety of the recent proposition (- She lost her cat. - What a pity! (that she lost her cat)).

Tunisian Arabic Exclamatives

Word	**Type**	**Examples**
malla	Adjective	malla bhim! 'How stupid!'
	Noun	malla dkhama! 'What elegance!'
qadesh ('how much')	Adjective	qadesh mezyena! 'How beautiful!'
	Noun	qadesh dkhama! 'How much elegance!'
	Verb	qadesh aajbetni! 'How much I liked her!'
shnowa(-el) ('what(a)')	Noun	shnowa-el zin hetha! Lit. 'what a beauty this!' (What a beauty!)
	Adjective	shnowa mezyena! 'What beautiful!'
	Verb	shnowa rqadt mlih! 'What I slept well!' = I slept very well!

Research questions

- How frequent are exclamative sluices in TA?
- What are their embedding properties?
- What is their denotation?

Corpus study: Extraction

Three *wh*-words:

- *shnowa (el)* ('what (a)')
- *qadesh* ('how much')
- *malla*

Corpora:

- Tunisian Arabic Corpus (TAC) (Karen & Faiza, 2010; Younes et al., 2015)
- Spoken Tunisian Arabic Corpus (STAC) (Zribi et al., 2015)

Corpus study: Extraction

Written corpus: 1485 tokens

- 645 with *shnowa* ('what')
- 675 with *qadesh* ('how much')
- 165 with *malla*

After filtering: 442 exclamatives

- 14 with *shnowa*
- 277 with *qadesh*
- 151 with *malla*

Spoken corpus: 162 tokens

- 135 with *shnowa*
- 27 with *qadesh*
- 0 with *malla*

After filtering: 5 exclamatives

- 3 with *shnowa*
- 2 with *qadesh*

Corpus study: Annotation

- **Form**: Sluice or not (verbal or verbless with a subject).
- **Semantic interpretation** for the sluices, following the taxonomy proposed by Ginzburg and Kim (2023).
- **Distribution**: Embedded or matrix (including root, reported speech and coordinated structures).
- **Factivity** of the embedding predicates, following Hooper's (1975) distinction between true factive (TF), semi-factive (SF) and non-factive (NF) predicates.
  - TF: imply the truthfulness of their complements even under negation or interrogation: primarily emotive verbs
  - SF: have a weaker presupposition than factives and generally treated as assertive: predominantly cognitive verbs
  - NF: such implications are not possible: mainly communication verbs.

Corpus data: Results: Frequency

Wh-word	**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**

Table: Exclamatives in Tunisian Arabic: Written and spoken corpora.

Corpus data: Results: Embedding

- Sluices: only 3.5%, 0 embedded cases with *shnowa*.
- Non-elliptical **verbless exclamatives**: 16.7%.
- Sentential **verbal exclamatives**: 17.6%.

Corpus data: Results: Embedding

(5) 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!'

Corpus data: Results: Embedding

Construction	**SF**	**NF**	**TF**	**Total**
Sluice	4	1	0	5
Non-elliptical	48	14	1	63
Total	52 (76.5%)	15 (22.1%)	1 (1.5%)	68

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

Corpus data: Results: Embedding

(6) SF

t-aaraf-ni **qadesh** n-heb-ek shiraz
2SG-know-1SG how.much 1SG-love-2SG Shiraz
'You know how much I love you Shiraz.'

(7) NF

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!'

(8) TF

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

Corpus results: semantic interpretation

- **ExInf**
  Context:

  t-tetlafet hawl-ha [-] ya mimt-i **malla** blassa
  3SG.F.look around-her VOC mom.1SG.POSS EXCL place

  '[Context: She looked around her.] - What a place!'

- **RRef**

  [...] hall-et el-beb mahla lebset-ha **qadesh** finou
  [...] open.PST-3SG.F the-door how.beautiful outfit-3SG.F how.much elegant

  'She opened the door, her outfit is beautiful! How elegant!'

- **RQUD**

  mshe hke l-tahqiq elli huwa hatl-ek el-hrabesh w enti
  he.went told to-investigators that he put-you the-pills and you
  mafibeleksh hab yhezha hua el-qadia **malla** rajel **malla** tadhia
  don't.know wanted take.it him the-case EXCL man 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!'

Corpus results: semantic interpretation

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**

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

Corpus results: semantic interpretation

(9) qadesh fama shiaarat fi tounes ya khouya
how.much EXIST emblems in Tunisia VOC brother
'Man, how many emblems there are in Tunisia!'

Corpus data: Excl. vs Interrogatives

- Interrogatives embed more (27%) than exclamatives (15.9%).
- Embedded sluices:
  - Interrogatives: 13.9%.
  - Exclamatives: 3.5%.
- Exophoric potential: Results suggest exclamatives are propositional and can refer to non-linguistic context, unlike interrogative sluices which require recoverable antecedents.
- Overall: Exclamative sluices (31.5%) more frequent than interrogative sluices (10.7%).

Corpus study: Main conclusions

- **Sluice rates:** In Tunisian Arabic (TA), sluices are not majoritarian (unlike French/English).
- **Resolution:** Exclamative sluices can be resolved without an antecedent. This reading is majoritarian with *malla* (40.3%).
- *qadesh*-clauses can quantify over propositions or degrees, but *qadesh*-sluices are restricted to entity readings.
- **Embedding:** Exclamative sluices in TA tend to resist embedding (3.5%).
- *Shnowa*-sluices do not embed, similar to English *what a*.
- **NF verbs:** 21.4% of embedding verbs are NF.
- Suggests exclamatives are propositional (Marandin, 2008).

Acceptability judgment experiments

- Two experiments with *malla* and *qadesh*: compared sluices with verbal exclamatives.
- Tested embedding acceptability + Embedding verb factivity role.

Acceptability judgment experiments: *qadesh/malla* + Adj

Speaker A: "My brother gets angry often."

(a) Matrix-sluice

qadesh/malla moosab
'How hot-tempered!'

(b) Matrix-verbal

qadesh/malla moosab khouk tlaa
'How hot-tempered your brother turned out to be!'

(c) Embedded-sluice

staghrabt qadesh/malla moosab

'I'm surprised how hot-tempered!'

(d) Embedded-verbal

staghrabt qadesh/malla moosab khouk tlaa
'I'm surprised how hot-tempered your brother turned out to be!'

Q: Is Speaker A talking about his brother?

Acceptability judgment experiments: *qadesh/malla* + N

Speaker A: "We don't have water."

(a) Matrix-sluice

qadesh/malla miziria
'What a misery!'

(b) Matrix-verbal

qadesh/malla miziria aayshin fi-ha
'What a misery you're living at!'

(c) Embedded-sluice

n-etkhayel qadesh/malla miziria

'I imagine what a misery!'

(d) Embedded-verbal

n-etkhayel qadesh/malla miziria aayshin fi-ha
'I imagine what a misery you're living at!'

Q: Is Speaker A complaining to Speaker B?

Acceptability judgment experiments

Participants

- *malla*: 44 participants (8 excluded)
- *qadesh*: 47 participants (5 excluded)
- Institut Supérieur des Langues de Tunis
- Online (Ibex Farm), 1–5 rating scale + comprehension questions
- Compensation: 10 TND (£9/h)

Predictions

- *malla*: matrix sluices > embedded sluices
- *qadesh*: overall lower ratings
- Embedding under NF verbs possible, but preference for SF verbs

Results

Condition	Mean Rating	SD
Matrix sluice	3.88	1.39
Matrix verbal	3.98	1.26
Embedded sluice	3.79	1.39
Embedded verbal	4.02	1.26
Ungrammatical control	2.28	1.37

Table: Experiment 1 (*malla*): Mean ratings of exclamatives

Results

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

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

Results

Condition	Mean Rating	SD
Matrix sluice	3.84	1.27
Matrix verbal	3.97	1.25
Embedded sluice	3.71	1.38
Embedded verbal	3.83	1.25
Ungrammatical control	3.08	1.36

Table: Experiment 2 (*qadesh*): Mean ratings of exclamatives

Results

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

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

Discussion: Experimental Results

- **Ellipsis vs. Verbal:** Sluices (*malla*, *qadesh*) rated similarly to verbal exclamatives → no penalty for ellipsis.
- **Matrix vs. Embedded:** Both matrix and embedded sluices rated similarly, despite embedded sluices being rare in the corpus.
- **Verb type:** Embedded exclamatives acceptable under semi-factive (SF), non-factive (NF), and true-factive (TF) verbs → contrasts previous claims that only factive predicates allow excl. embedding.

Excl. sluice and Excl. clause

Property	**Excl. Sluice**	**Excl. Clause**
Frequency (corpus)	31.5% Tunisian Arabic	Higher in TA
Embeddability	very rare in the corpus but exp. show it is possible	Higher: embedding possible
Preferred embedding predicates	mainly SF > NF > TF	Mainly SF > NF > TF
Semantic interpretation	Propositional	Propositional
Exophoric potential	High (esp. *malla*, *quel*)	__ (*not tested*)
Referent type for *combien*/*qadesh* (exclamative 'how much')	Entity required	Can have different readings
Syntactic complexity	Base-generated, head only phrase	Full clause (verbal or verbless)

Table: Comparison between exclamative sluices and exclamative clauses

Formal analysis

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

Formal analysis: HPSG$_{TTR}$

$$\left[\begin{array}{l}\textsc{phon}: \textit{malla/shnowa(-el)/qadesh} \\ \textsc{syn}: \left[\begin{array}{l}\textsc{cat} = \textsc{det}: \textsc{PoS} \\ \textsc{select}: \left[\begin{array}{l}\textsc{cat} = \textsc{n}: \textsc{PoS} \\ \textsc{cont} = \textsc{p}: \textsc{iv}\end{array}\right] \\ \textsc{wh} = \{\textsc{cont}\}: \textsf{Set(semObj)}\end{array}\right] \\ \textsc{cont} = \lambda x\ \textsc{ScaleUp}\ (\textsc{p})(\textsc{x}): \textsc{iv}\end{array}\right]$$

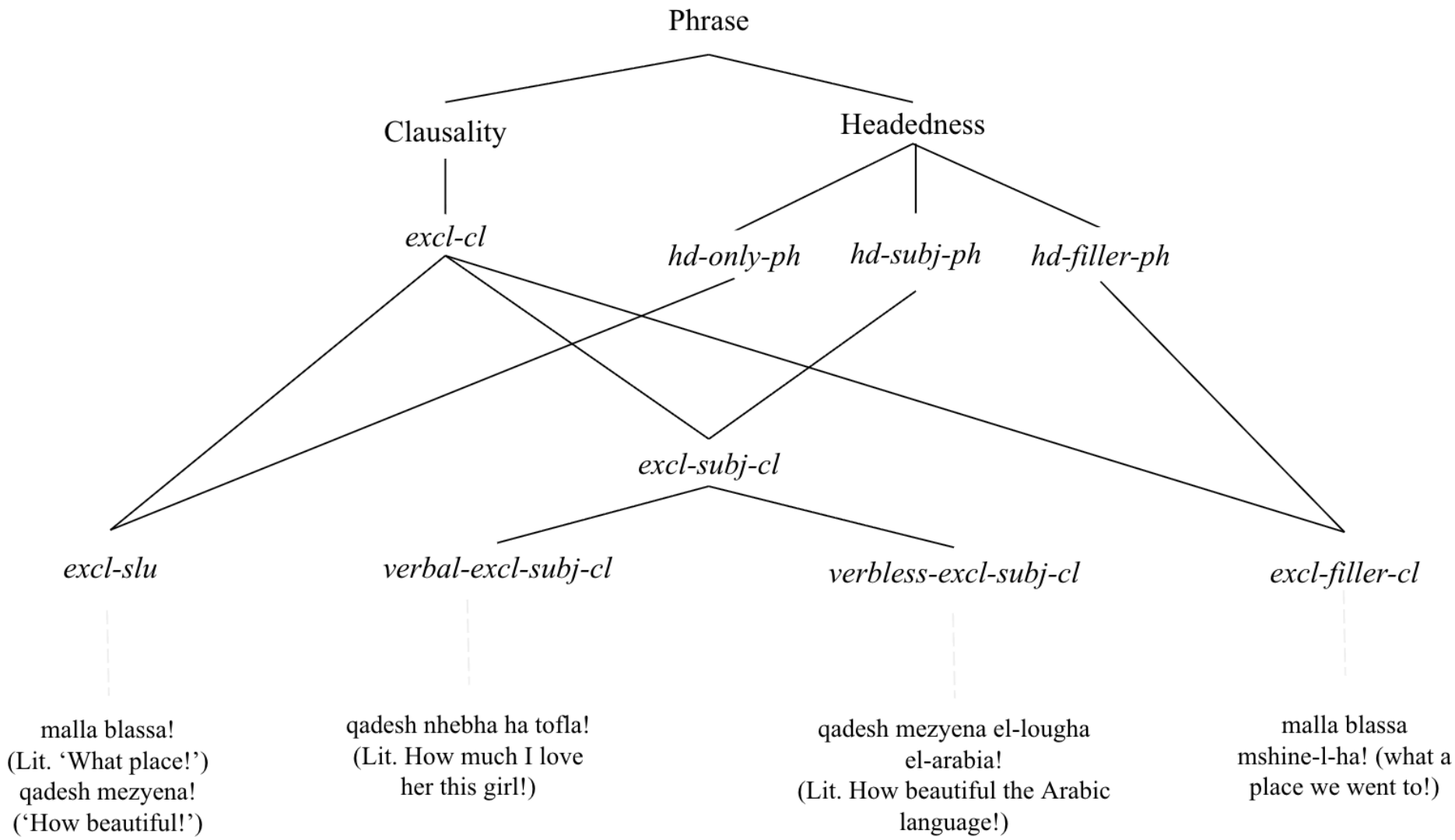
Formal analysis: HPSG$_{TTR}$

$$\left[\begin{array}{l}\textsc{phon} : \textit{malla} \\ \textsc{syn} : \left[\begin{array}{l}\textsc{cat} = \textsc{Adv} : \textsc{PoS} \\ \textsc{mod} : \left[\begin{array}{l}\textsc{cat} = \textsc{Adj} : \textsc{PoS} \\ \textsc{cont} = \mathrm{P} : \mathrm{IV}\end{array}\right] \\ \textsc{wh} = \{\textsc{cont}\} : \mathsf{Set}(\mathsf{semObj})\end{array}\right] \\ \textsc{cont} = \lambda x\ \textsc{ScaleUp}\ (\mathrm{P})(\mathrm{x}) : \mathrm{IV}\end{array}\right]$$

Formal analysis: HPSG$_{TTR}$

$$\begin{bmatrix} \textsc{phon} : \textit{shnowa/qadesh} \\ \textsc{syn} : \begin{bmatrix} \textsc{cat} = \textsc{Adv} : \textsc{PoS} \\ \textsc{mod} : \begin{bmatrix} \textsc{cat} = \textsc{Adj/V} : \textsc{PoS} \\ \textsc{cont} = \textsc{P} : \textsc{IV} \end{bmatrix} \\ \textsc{wh} = \{\textsc{cont}\} : \mathsf{Set}(\mathsf{semObj}) \end{bmatrix} \\ \textsc{cont} = \lambda x\ \textsc{ScaleUp}\ (\textsc{P})(\textsc{x}) : \textsc{IV} \end{bmatrix}$$

Formal analysis: HPSG$_{TTR}$



Formal analysis: HPSG$_{TTR}$

(11) *excl-slu*

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

$$\Big|$$

$$\mathsf{hd\text{-}dtr} : \left[\begin{array}{l} \textsc{syn} : \left[\begin{array}{l} \textsc{cat.head} = \mathsf{N/Adj} \\ \textsc{wh} = \{\mathsf{ScaleUp}\} : \mathsf{set(SemObj)} \end{array}\right] \\ \\ \textsc{cont} = \lambda x \mathit{ScaleUp}(P)[x] : \mathsf{IV} \end{array}\right]$$

Formal analysis: HPSG$_{TTR}$

(12) *excl-slu* example

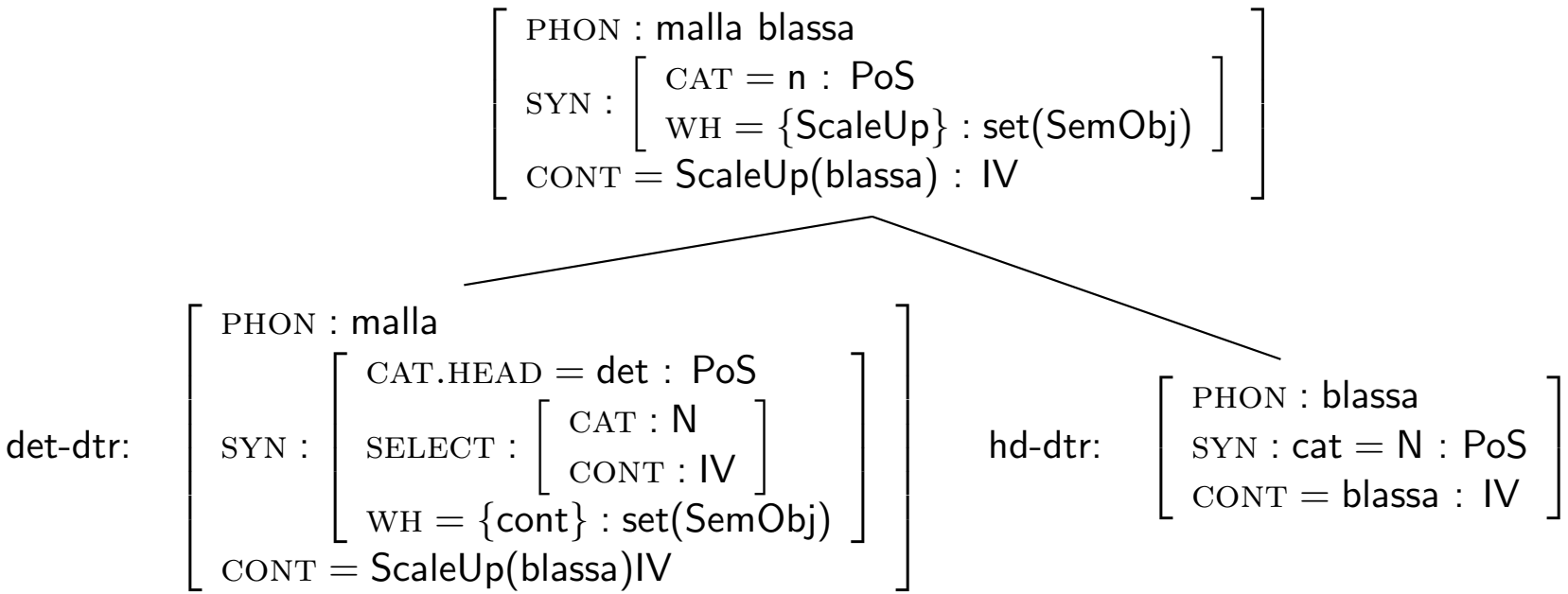
$$\left[\begin{array}{l} \textsc{syn} : \left[\ \textsc{cat} = \mathsf{v} : \mathsf{PoS}\ \right] \\ \textsc{dgb-params} : \left[\begin{array}{l} \mathsf{z} : \mathsf{Ind} \\ \mathsf{c1} : \mathsf{exclaimable(z)} \end{array}\right] \\ \textsc{cont} = \left[\ \mathsf{c2} : \mathsf{ScaleUp(blassa)(z)}\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

$$\Big|$$

$$\mathsf{hd\text{-}dtr} : \left[\begin{array}{l} \textsc{phon} : \mathsf{malla\ blassa} \\ \textsc{syn} : \left[\ \textsc{cat} = \mathsf{NP}\ \right] \\ \textsc{cont} = \lambda x \left[\ \mathsf{c2} : \mathsf{ScaleUp(blassa)(x)}\ \right] : \mathsf{IV} \end{array}\right]$$

Formal analysis: HPSG$_{TTR}$

(13) *wh-exclP* example: malla blassa! ('what a place!')



Formal analysis: HPSG$_{TTR}$

(14) qadesh mezyena! (how.much beautiful.SG.F)

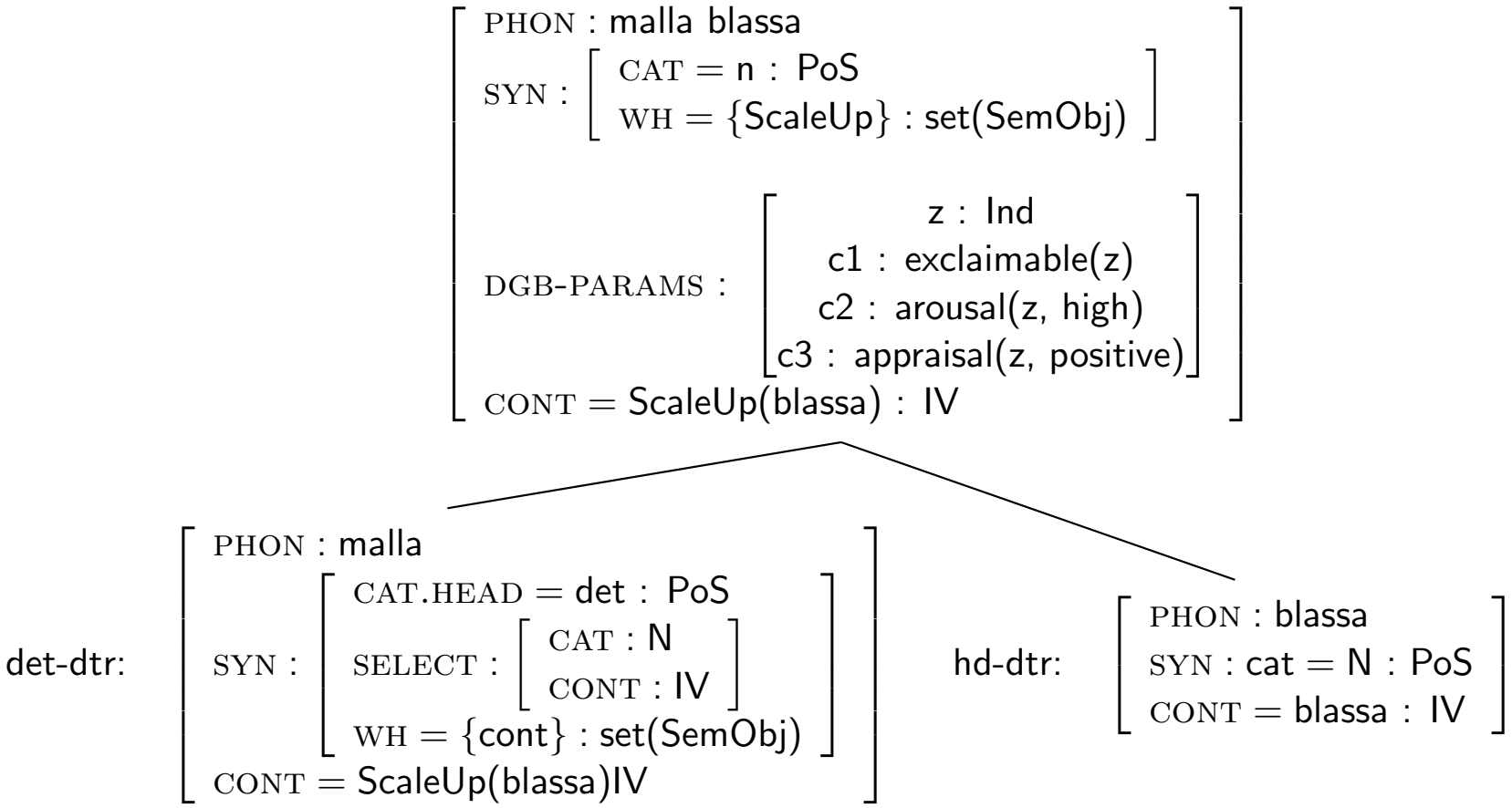
$$\begin{bmatrix} \text{PHON} : \text{qadesh mezyena} \\ \text{SYN} : \begin{bmatrix} \text{CAT} = \text{AdjP} : \text{PoS} \\ \text{WH} = \{\text{ScaleUp}\} : \text{set(SemObj)} \end{bmatrix} \\ \text{CONT} = \text{ScaleUp(mezyena)} : \text{IV} \end{bmatrix}$$

mod-dtr:
$$\begin{bmatrix} \text{PHON} : \text{qadesh} \\ \text{SYN} : \begin{bmatrix} \text{CAT.HEAD} = \text{adv} : \text{PoS} \\ \text{MOD} : \begin{bmatrix} \text{CAT} : \text{Adj} \\ \text{CONT} : \text{IV} \end{bmatrix} \\ \text{WH} = \{\text{cont}\} : \text{set(SemObj)} \end{bmatrix} \\ \text{CONT} = \text{ScaleUp} : \text{(mezyena)IV} \end{bmatrix}$$

hd-dtr:
$$\begin{bmatrix} \text{PHON} : \text{mezyena} \\ \text{SYN} : \text{cat} = \text{Adj} : \text{PoS} \\ \text{CONT} = \text{mezyena} : \text{IV} \end{bmatrix}$$

Formal analysis: HPSG$_{TTR}$

(15) malla blassa! ('What a place!')



Conclusion

- Exclamative sluices in TA are frequent and distinct from interrogatives.
- Corpus and experimental results:
  - No ellipsis penalty.
  - Embedding possible under wider range of verbs than expected.
- Implications:
  - Exclamatives are propositional.
  - Exclamative sluices are non-sentential utterances.

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Exclamatives in Arabic

- Jordanian Arabic (JA) and Modern Standard Arabic (MSA) (Al-Bataineh, 2020).
- Al-Bataineh identifies three main exclamative types:
  - **Wh-exclamatives** (elliptical, non-sentential) e.g., JA: *ayš ha-l-ḥalāwih* 'What a beauty!'
  - **Vocative exclamatives** e.g., MSA: *yā la-jamāl-i al-ṭabīat-i* 'How beautiful nature is!'
  - **Verbal exclamatives** e.g., MSA: *mā aalama Zayd-a-n* 'How knowledgeable Zayd is!'
- Wh-exclamatives are only elliptical; exclamations are full clauses (declarative + falling intonation).
- Demonstrative *ha* is obligatory in JA exclamatives but optional in clauses.
- Only *šū* ('how') and *ayš* ('what') are limited to exclamative sluices; other *wh*-words appear only in clauses (as exclamations).

Bayesian models

Predictors	**Est.**	**SE**	**95% CrI**	**Post.Prob.**
Intercept[1]	-3.43	0.35	[-4.13, -2.74]	1
Intercept[2]	-2.55	0.34	[-3.23, -1.89]	1
Intercept[3]	-1.41	0.33	[-2.07, -0.76]	1
Intercept[4]	-0.11	0.33	[-0.76, 0.54]	0.63
Construction (Emb.)	-0.13	0.26	[-0.65, 0.38]	0.70
Form (Sluice)	-0.17	0.27	[-0.70, 0.38]	0.74
Constr. $\times$ Form	-0.18	0.33	[-0.83, 0.47]	0.71

Table: Bayesian regression model: *malla* exclamatives

Bayesian models

Predictors	**Est.**	**SE**	**95% CrI**	**Post.Prob.**
Intercept[1]	-3.35	0.33	[-4.02, -2.70]	1
Intercept[2]	-2.30	0.32	[-2.93, -1.67]	1
Intercept[3]	-1.13	0.31	[-1.75, -0.51]	1
Intercept[4]	0.39	0.31	[-0.22, 1.01]	0.90
Construction (Emb.)	-0.08	0.20	[-0.46, 0.31]	0.66
Form (Sluice)	-0.11	0.27	[-0.64, 0.41]	0.67
Constr. $\times$ Form	-0.18	0.32	[-0.81, 0.45]	0.70

Table: Bayesian regression model: *qadesh* exclamatives

Comparison with French and English

Language	**Sluice rate**	**Sl. embedding rate**
English (spoken)	84.6%	0
French (spoken)	63%	2.4%
Tunisian (spoken)	0	0
French (written)	72.2%	0.2%
Tunisian (written)	31.9%	3.5%

Table: Comparison of exclamative sluice rate and sluice embedding rate across languages.

excl-filler-cl

- malla blassa mshine-l-ha! ('What a place we went to!')
  $\exists x$ [ScaleUp(place)(x) $\wedge$ went.to(we,x)]

$$\left[\begin{array}{l} \textsc{syn}: \left[\ \textsc{cat} = \text{v} : \text{PoS}\ \right] \\ \textsc{cont} = \left[\begin{array}{l} \text{z} : \text{Ind} \\ \text{c2} : \text{ScaleUp(blassa)(z)} \\ \text{c3} : \text{went.to(we,z)} \end{array}\right] : \text{Prop} \end{array}\right]$$

filler-dtr : $\left[\begin{array}{l} \textsc{phon} : \text{malla blassa} \\ \textsc{cat.head} = \text{N} : \text{PoS} \\ \textsc{cont} = \\ \lambda x[\text{ScaleUp(blassa)(x)}] : \text{IV} \end{array}\right]$

hd-dtr : $\left[\begin{array}{l} \textsc{phon} : \text{we went} \\ \textsc{cat.head} = \text{v} : \text{PoS} \\ \textsc{gaps.cont} : [\text{x} : \text{Ind}] \\ \textsc{cont} = [\text{c3} : \text{went.to(we,x)}] : \text{Prop} \end{array}\right]$