

## The Syntax of Questions in Moro

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**Goal:** to present and analyze *wh*- questions in Moro

### I. BASICS OF MORO

- Kordofanian language, spoken in Sudan, SVO word order, head-initial, rich agreement morphology (grammars: Black & Black 1971, Baker et al. 2005); tone-marking in this handout has been omitted

(1) *declarative sentence*

kuku g.a.tað.o                      umja  
Kuku CL.MAIN.abandon.PERF boy  
'Kuku abandoned the boy.'

- Two question formation strategies: *wh*- word *in-situ* or a clause-initial form

### II. OBJECT *WH*- QUESTIONS

- *in-situ*

(2) kuku g.a.s.o                      wande                      (3) kuku g.a.tað.o                      edʒəgaŋo  
Kuku CL.MAIN.eat.PERF what                      Kuku CL.MAIN.abandon.PERF who  
'What did Kuku eat?'                      'Who did Kuku abandon?'

- clause-initial *wh*- word

(4) ɲwəndəki (nə).kuku (nə).g.ə.s.o                      (5) ɲwədʒeki (nə).kuku (nə).g.ə.tað.o.ŋo  
what (WH).Kuku (WH).CL.SUB.eat.PERF                      who (WH).Kuku (WH).CL.SUB.abandon.PERF.RES  
'What did Kuku eat?'                      'Who did Kuku abandon?'

**Abbreviations:** CL: class agreement, MAIN: matrix clause, SUB: subordinate, PERF: perfective, IMP: imperfective, RES: resumptive pronoun, WH: *wh*- agreement, parentheses indicate optionality

### III. SUBJECT *WH*- QUESTIONS

- No subject *wh*- questions with *in-situ* forms

(6) \*wande g.i.d.u                      (7) \*edʒəgaŋo g.i.d.u  
what CL.MAIN.fall.PERF                      who CL.MAIN.fall.PERF  
'What fell?'                      'Who fell?'

- Subject *wh*- questions with clause-initial *wh*- word

(8) ɲwəndəki g.i.d.u                      (9) ɲwədʒeki g.i.d.u  
what CL.SUB.fall.PERF                      who CL.SUB.fall.PERF  
'What fell?'                      'Who fell?'

- **Comparison:** *in-situ* and *clause-initial* question formation strategies differ in *wh*- agreement, main/subord. verbs, and resumptive pronouns, but the *in-situ* and *clause-initial* forms do share similar morphology

Table 1. Moro *wh*- question words

	<i>in-situ</i> form	<i>clause-initial</i> form
'what'	wande	ɲwəndəki
'who'	edʒəgaŋo	ɲwədʒeki

### IV. OVERVIEW OF ANALYSIS

- Problems raised:

- What is the nature of these clause-initial *wh*- questions?
- Given that languages are expected to choose either an *in-situ* or fronting strategy for *wh*- questions (Cheng 1997), how come Moro appears to use both?

- Proposal:

- Moro does not have *wh*- movement
- Clause-initial *wh*- questions consist instead of a predicate and headless relative clause (cf. Potsdam to appear) – *wh*- cleft structures are common in African Languages (Nguni, Sabel & Zeller 2006; Sesotho, Demuth 2003; Edo, Omoruyi 1989; *inter alia*)

- Outline

- Compare properties of Moro's other cleft and relative clause structures
- *Wh*- agreement patterns for subject/object extraction
- Additional agreement data: modifiers and larger structures

## V. EVIDENCE FOR PREDICATE PHRASE

Cleft morphology appears in clause-initial *wh*- words

- (10) **ɲw**    ɖamala.ði    ɖ.e.s.o            loana  
 copula camel.DEM CL.SUB.eat.PERF corn  
 'It is the camel that ate the corn.'
- (11) **ɲw**    udʒ.eki        g.e.s.o            loana  
 copula person.DEM CL.SUB.EAT.perf corn  
 'It is the person who ate the corn.'
- (12) **ɲw**ɖʒeki    g.e.s.o            loana  
 who            CL.SUB.EAT.perf corn  
 'Who ate the corn?' ('Who is it that ate the corn?')

## VI. EVIDENCE FOR RELATIVE CLAUSES: VOWEL CHANGE

Like verbs in relative clauses (Weidman 2005), verbs in questions undergo vowel fronting

- (13) *indicative*  
 umja g.ɹ.s.o            loana  
 boy CL.MAIN.eat.PERF corn  
 'The boy ate the corn.'
- (14) *relative clause (RC)*  
 umje.ki    [RC g.ɛ.s.o            loana] g.a.var.a  
 boy.dem    [RC CL.SUB.eat.PERF corn ] CL.MAIN.cry.IMP  
 'The boy who ate the corn is crying.'
- (15) *clause-initial wh- question*  
 ɲwɖʒeki [RC g.ɛ.s.o            loana]  
 who        [RC CL.SUB.eat.PERF corn ]  
 'Who ate the corn?'

## VII. EVIDENCE FOR RELATIVE CLAUSES: *wh*- AGREEMENT

Like relative clauses, questions bear *wh*- agreement in extraction domain

***wh*- Agreement:** use of agreement to mark the domain of extraction (evidence of agreement on complementizers (Irish, McCloskey 1979) and verbs (Chamorro, Chung 1994))

Table 2. Moro *wh*- agreement

<i>wh</i> - Agreement Morphemes	
for object/adjunct extraction	n(ə)-
for subject extraction	∅-

(16) **overt agreement for object (and other non-subject) extraction**

- (a) *object relative clause*  
 umje.ki    [RC (nə).kuku    (nə).g.ə.tað.o            ] g.a.var.a  
 boy.DEM [RC (WH).Kuku (WH).CL.SUB.abandon.PERF] CL.MAIN.cry.IMP  
 'The boy who Kuku abandoned is crying.'
- (b) *object wh- question*  
 ɲwɖʒeki (nə).kuku    (nə).g.ə.tað.o.ɲo  
 who            (WH).Kuku (WH).CL.SUB.abandon.PERF.RES  
 'Who did Kuku abandon?'
- (c) *adjunct wh- question*  
 ɲənd<sup>w</sup>oŋ (n).owa            (nə).g.e.s.a            ɲaðamana  
 when            (WH).woman (WH).CL.SUB.eat.IMP beans  
 'When does the woman eat beans?'

(17) **no overt agreement for subject extraction**

(a) *subject relative clause*

udʒi.ki [RC (\*nə).g.ə.tað.o kuku] g.a.var.a  
 man.DEM [RC (\*WH).CL.SUB.abandon.PERF Kuku] CL.MAIN.cry.IMP  
 ‘The man who abandoned Kuku is crying.’

(b) *subject wh- question*

ɲwədʒeki [RC (\*nə).g.ə.tað.o kuku]  
 who [RC (\*WH).CL.SUB.abandon.PERF Kuku]  
 ‘Who abandoned Kuku?’

**Interim Summary:**

- Clause-initial *wh-* word acts like a cleft
- Material following cleft contains a relative clause
  - Parallels relative-clause vowel fronting
  - Parallels relative-clause *wh-* agreement
- *Wh-* agreement acts as *wh-* scope marking

**VIII. WH- AGREEMENT WITH ADJUNCTS**

- Adverbs are scope-marking, adjoining at different levels: CP, IP, VP
- *Wh-* scope selects eligible adverbs

- (18) **no agreement outside extraction domain** – CP adjunction too high  
 ɲwədʒeki [(nə).kuku (nə).g.ə.tað.o.ɲo] (\*n).ereka  
 who [(WH).Kuku (WH).CL.SUB.abandon.PERF.3SG] (\*WH).yesterday  
 ‘Who did Kuku abandon yesterday?’
- (19) **no agreement VP-internal** – VP adjunction is too low  
 ɲwədʒeki [(nə).kuku (\*n).ereka (nə).g.ə.tað.o.ɲo]  
 who [(WH).Kuku (\*WH).yesterday (WH).CL.SUB.abandon.PERF.RES]  
 ‘Who did Kuku yesterday abandon?’
- (20) **agreement on sentential adverbs** – IP adjunction permitted  
 ɲwədʒeki [(n).ereka (nə).kuku (nə).g.ə.tað.o.ɲo]  
 who [(WH).yesterday (WH).Kuku (WH).CL.SUB.abandon.PERF.RES]  
 ‘Who yesterday did Kuku abandon?’

**IX. SIGNIFICANCE OF SYNTACTIC HEADS FOR WH- AGREEMENT**

- Agreement permitted on head of root clause (Infl)

(21) ɲwəndəki (nə).kuku (nə).g.ə.rm.o (\*nə).da.tu.tʰ.e  
 what (WH).Kuku (WH).CL.SUB.continue.PERF (\*WH).CL.IMP.be.IMP  
 ‘What did Kuku continue to be?’  
 [possible answer: ‘king’]

- No agreement on modifiers

(22) \*possessor  
 ɲwədʒeki (nə).ɲəni (\*nə).ɲ.umja (nə).ɲ.ə.s.o.ɲo  
 Who (WH).dog (\*WH).GEN.boy (WH).CL.SUB.eat.PERF.RES  
 Who did the boy’s dog bite?

(23) \*adjective  
 ɲwəndəki (n).umja (\*nə).ke.do.o (nə).g.ə.ker.o  
 what (WH).boy (\*WH).CL.fat.PERF (WH).CL.SUB.break.PERF  
 ‘What did the fat boy break?’

**X. COMPARISON TO WH- AGREEMENT IN RELATED LANGUAGE**

Duala, Bantu language spoken in Cameroon, appears to use a similar pattern of *wh-* agreement (Epée 1976)

Table 2. Comparison of Moro & Duala *wh-* Agreement

	Duala	Moro
agreement asymmetry for subject/object extraction	✗	✗
<i>wh-</i> agreement on verb	✗	✗
<i>wh-</i> agreement on verb or auxiliary verb only if head of root clause (Infl)		✗
<i>wh-</i> agreement on subject		✗
<i>wh-</i> agreement on sentential adverbs		✗



### XIII. CONCLUSIONS AND OPEN QUESTIONS

- **Moro provides novel data for *wh*-agreement:**
  - *wh*-scope (CP-IP)
  - *wh*-matching (CP-CP)
  - subject/object agreement asymmetry
- **Summary of analysis:**
  - [Cleft + relative clause] structure to distinguish clause-initial *wh*-questions from *in-situ* constructions
  - Similarities between clause-initial *wh*-questions and relative clauses: vowel-fronting and *wh*-agreement
  - *wh*-agreement signals the domain of extraction
- **Open Questions:**
  - Optionality – where *wh*-agreement is permitted, it is never required
  - Resumptive pronouns – unlike relative clauses, *wh*-questions use resumptive pronouns, suggesting additional structural differences
  - Composition of question word – separable cleft or bound lexical item

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#### Appendix

An alternative analysis takes the morphology of the clause-initial *wh*-words as direct evidence of their syntactic structure:

- (i) [<sub>PreDP</sub> ŋw] [<sub>DP</sub> wənd.əkɪi] [<sub>CP</sub> C<sub>Op</sub> [<sub>IP</sub> (n).udʒi (nə).g.e.s.o t<sub>i</sub> ]]]  
 copula what.DEM (WH).man (WH).CL.SUB.eat.PERF  
 ‘What did the man eat?’
- (ii) [<sub>PreDP</sub> ŋw] [<sub>DP</sub> ədʒ.eki] [<sub>CP</sub> C<sub>Op</sub> [<sub>IP</sub> (n).udʒi (nə).g.ə.tað.o.ŋo t<sub>i</sub> ]]]  
 copula who/person.DEM (WH).man (WH).CL.SUB.abandon.PERF.RES  
 ‘Who did the man abandon?’

Advantages: headed relative clause; no need to stipulate null head

Problems with this account:

- Unexplained vowel reduction (‘udʒ’ for ‘person’, ‘ədʒ’ for ‘who’)
- Unexplained vowel harmony – unexpected across morpheme boundary (‘wande’ ‘what’ becomes ‘wəndə’ with demonstrative suffix ‘iki’)
- Nothing in (i) to force ‘wəndəki’ to move