Movement in adverbial clauses:
Morphological evidence from Akɔɔse wh-agreement

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1 Introduction

(1) Theoretical questions:
  a. Does the derivation of adverbial clauses involve movement? If so,
  b. What moves?
  c. What is the site of extraction for the moved element?
  d. What is the landing site for the moved element?
  e. How should we classify adverbial clauses to account for variation
     in answers to these questions?

(2) Empirical domain:
  a. Wh-agreement in Akɔɔse [bss] (A15C), a Bantu language from southwest
     Cameroon (Hedinger 1985, 2008)
     i. Wh-subject
        Ø-Nzé  ṕ-im-e-Ø  ó-mbaangé?
        1-who  1.NEG-throw.out-PRF-SE  10-cocoyam
        ‘Who didn’t throw out the cocoyams?’
        (Hedinger 2008: 105 (295))
     ii. Wh-non-subject
        Ché  mw-ān  ṕ-im-ɛɛ́?
        what  1-child  NSE.1.NEG-throw.out-PRF.IRR
        ‘What didn’t the child throw out?’
        (Hedinger 2008: 106 (297))

Note: The transcription system used for Akɔɔse follows Hedinger (2008: 3–10). The symbols
that depart from IPA usage are given here with their IPA equivalents: ch [ʧ], g [ɡ], j [dʒ], mb [ᵐb, mb],
nd [ⁿd, nd], ng [ᵑɡ], ny [ɲ], nz [ⁿz, nz], y [j]. Following Hedinger (1985) but deviating from
Hedinger (2008), <ʔ> is retained instead of being replaced by an apostrophe. Syllables with
level low tones are left unmarked.

Abbreviations used include 1sg = 1st person singular, 2pl = 2nd person plural, 3pl = 3rd
person plural, 3sg = 3rd person singular, appl = applicative, caus = causative, comp =
complementizer, fut = future, hort = hortative, inf = infinitive, ipfv = imperfective,
irr = irrealis, loc = locative, neg = negative, nse = non-subject extraction, pers =
personifier, prf = perfect, pst = past, q = question particle, quot = quotative, rel =
relative, se = subject extraction, top = topic. Bare numerals in glosses indicate noun
class, encoding both number and gender features. In Akɔɔse, most odd-numbered noun
classes are singular, while most even-numbered noun classes are plural.

I have occasionally adjusted Hedinger’s glosses and translations for clarity and consistency.
These adjustments involve adding morpheme boundaries that were not given in the
cited examples but are evident from other parts of Hedinger 2008, standardizing abbreviations
and punctuation to match the Leipzig Glossing Rules, adding noun class prefixes
in examples where they were omitted, changing 0 ‘object’ to NSE ‘non-subject extraction’,
changing SE ‘non-specific verbal suffix’ to either NSE ‘non-subject extraction’ or
IRR ‘irrealis’ depending on context, and changing s ‘subject’ to SE ‘subject extraction’.
Examples (2a.i-ii), (20)–(22), (24)–(25), (26)–(29), and (48) did not have interlinear glosses in
the original source; I have added glosses for these examples following Hedinger (2008), but
note that IRR ‘irrealis’ is a consequence of my analysis and does not appear in his work.

b. In Akɔɔse, wh-agreement takes place in adverbial clauses as well
   as the canonical wh-movement contexts (Chomsky 1977).
c. Crucially, Akɔɔse wh-agreement shows a subject/non-subject asymmetry, and different
types of adverbial clauses pattern differently with respect to this asymmetry.

(3) Aims:
  a. Provide a novel morphosyntactic analysis for Akɔɔse wh-agreement
  b. Give morphological evidence that central temporal and central
     conditional clauses involve movement, but peripheral adverbial
     clauses do not (answering (1a,e))
  c. Pinpoint the extraction sites for the operators in central temporal
     and central conditional clauses (answering (1c,e))

(4) Roadmap:
  a. Background on the internal syntax of adverbial clauses
  b. Akɔɔse wh-agreement data
  c. Morphosyntactic analysis of Akɔɔse wh-agreement
  d. Wh-agreement and the internal syntax of Akɔɔse adverbial clauses

1 I am grateful to Claire Bowern, Mike Freedman, Emily Gasser, Jeff Good, Liliane
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especially Bob Frank for helpful comments on versions of this paper and the ideas herein. All
responsibility for errors remains my own.
(5) **Classification of adverbial clauses** (Haegeman 2007: 285–286)

<table>
<thead>
<tr>
<th></th>
<th>Central</th>
<th>Peripheral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modify event or state of affairs in main clause</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Provide discourse background for main clause</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Anchored directly to speaker or speech time</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>May contain epistemic modality expressions</td>
<td>X</td>
<td>✓</td>
</tr>
</tbody>
</table>

(6) **Central adverbial clauses**

a. Peter heard the news *[when he arrived at the office]*.
b. Jayne fell asleep *[while she rode the bus home]*.
c. *[If you find that paper helpful]*, let me know.

(7) **Peripheral adverbial clauses**

a. The solution seems straightforward, *[although I never would have thought of it]*.
b. *[While some might question his methods]*, his claims cannot be ignored.
c. *[If Clara’s caustic remark was provoked]*, it still was unprofessional.

2 **Internal syntax of adverbial clauses**

(8) Several authors have provided **syntactic**, **semantic**, and even **etymological** arguments for a derivation of adverbial clauses that involves movement (Geis 1970; Larson 1987, 1990; Dubinsky & Williams 1995; Demirdache & Uribe-Etxebarria 2004; Bhatt & Pancheva 2006; Haegeman 2007, 2009a, 2010a, b).

2.1 Are conditional clauses derived via movement?

(9) **Ambiguity in temporal clauses** (Geis 1970; Larson 1987, 1990)

The professor wrote a recommendation letter for Mark *[after he said he needed it]*.

a. High: The professor wrote the letter after being asked.
   
   \[ [PP \text{ after } [CP \text{ OP}_{i} [IP \text{ he said } [CP \text{ [IP he needed it ] } t_{i} ] ] ] ] ]

b. Low: The professor wrote the letter after the deadline.
   
   \[ [PP \text{ after } [CP \text{ OP}_{i} [IP \text{ he said } [CP \text{ [IP he needed it ] } t_{i} ] ] ] ]

(10) **However**, the low construal reading is unavailable for conditional clauses, casting doubt on a movement derivation for conditionals (Geis 1970; Iatridou 1991; Citko 2000).

(11) **No ambiguity in conditional clauses**

I’ll buy this car *[if you think it’s a good deal]*.

a. High: My buying this car is conditional upon your evaluation.
b. *Low: My buying this car is conditional upon its price/value ratio.*

(12) Other evidence suggests, however, that movement is involved even for conditionals (Bhatt & Pancheva 2006; Arsenijević 2009; Tomasyszewicz 2009; Haegeman 2007, 2009a, 2010a, b).

2.2 **Argument fronting in English** (Haegeman 2003, 2007, 2009a, 2009b, 2010a, b)

(13) **Argument fronting allowed in main clauses**

\[ [TopP \text{ This book } [IP \text{ you should read } \text{ this book next summer } ] ] ]

(14) **Argument fronting disallowed in central temporal clauses**

\[ *[CP \text{ When } [TopP \text{ this movie } [IP \text{ she saw } \text{ this movie } ] ] ] ]\text{, she hated it.}]

(15) **Argument fronting disallowed in central conditional clauses**

\[ *[CP \text{ If } [TopP \text{ that paper } [IP \text{ you find } \text{ that paper helpful } ] ] ] ]\text{, let me know.}]

(16) **Argument fronting allowed in peripheral adverbial clauses**

\[ [CP \text{ While } [TopP \text{ his methods } [IP \text{ some might question his methods } ] ] ] ]\text{, his claims cannot be ignored.}

(17) Haegeman (2007 and following) treats the failure of argument fronting in central adversial clauses as an **intervention effect**. The availability of argument fronting in peripheral adverbial clauses suggests that there is no intervention effect in those clauses, so they must not involve movement.
3 Akɔɔse wh-agreement


(19) Akɔɔse marks its verbs with respect to whether an element has been extracted to the left periphery. Crucially, extracted subjects trigger different verbal morphology from extracted non-subjects.

3.1 Wh-questions

(20) No extraction
Mw-ān ē-pim-ɛɛ́ Ø-mbaaŋgé.
1-child 1.NEG-throw.out-PRF.IRR 10-cocoyam
‘The child didn’t throw out the cocoyams.’ (Hedinger 2008: 105 (295))

(21) Wh-subject (repeated from (2a.i))
Ø-Nzɛ́ ē-pim-e-Ø Ø-mbaaŋgé?
1-who 1.NEG-throw.out-PRF.SE 10-cocoyam
‘Who didn’t throw out the cocoyams?’ (Hedinger 2008: 105 (295))

(22) Wh-object (repeated from (2a.ii))
Chě mw-ān ē-pim-ɛɛ́?
what 1-child NSE.1.NEG-throw.out-PRF.IRR
‘What didn’t the child throw out?’ (Hedinger 2008: 106 (297))

(23) Wh-adject
Ø-Póndé e-héé ā-pédé hén?
9-time 9-which NSE.1-arrive-PRF here
‘When did she get here?’ (Hedinger 2008: 197 (486))

3.2 Relative clauses

(24) Subject relative
mw-ān aw-ɛ́ ē-pim-e-Ø Ø-mbaaŋgé
1-child 1-REL 1.NEG-throw.out-PRF-SE 10-cocoyam
‘the child who didn’t throw out the cocoyams’
(Hedinger 2008: 105 (295))

(25) Object relative
Ø-mbaaŋgé čh-e mw-ān ē-pim-ɛɛ́
10-cocoyam 10-REL 1-child NSE.1.NEG-throw.out-PRF.IRR
‘the cocoyams that the child didn’t throw out’
(Hedinger 2008: 106 (297))

(26) Adjunct relative
m-bwɛ́=ɛ́ɛ̄ 3-day=REL nám-ɛ́ m-ɔnɛ́ wɛ́ Ø-kúl-ɛ
3-day =REL NSE.1.take-PRF 3-that 3-money to 9-tortoise-PERS
‘the day he took the money to Tortoise’ (Hedinger 2008: 59 (156))

3.3 Cleft questions

(27) Clefted non-subject
Saá áw-í eʔ-wóŋgé mé-m-bɛ́=ɛ?
is.it.not LOC-3SG.POSS 14-marriage NSE.1SG-PST-be=Q
‘W asn’t it to him I was married?’ (lit. ‘Isn’t it in his marriage I was?’) (Hedinger 2008: 198 (492))

3.4 Topicalization

(28) Topicalized subject
Mw-ān m-ɔ̄ ē-pim-e-Ø Ø-mbaaŋgé
1-child 1-TOP 1.NEG-throw.out-PRF-SE 10-cocoyam
‘It is the child who didn’t throw out the cocoyams.’
(Hedinger 2008: 105 (295))

Hedinger (2008: §7.3) describes a construction that he calls topicalization, comprised of an extracted element followed by an agreeing topic marker or a reduced non-agreeing clitic. In his English translations of the sentences, he uses it-clefts, which typically introduce focus, not topic, material. Hedinger (pers. comm.) acknowledges that further investigation is necessary to determine whether these are topic or focus constructions, but regardless of the information status of this construction, it employs extraction marking for subjects and non-subjects.
(29) **Topicalized non-subject**

Ø-Mbaaŋgé 10-ch 10-cocoyam mw-ăn 1-phere.out-PREFF.IRR

‘It is the cocoyams that the child didn’t throw out.’

(Hedinger 2008: 106 (297))

(30) **Topicalized adjunct**

Bɔɔb 5-Ø nyábə́ə́-dyɛ́-ɛ́. 5-now 5-PREFF.NSE.2PL.3PL.FUT-eat-NSE

‘Now you and they will eat.’

(Hedinger 2008: 201 (508))

### 3.5 Morphosyntactic analysis

There are widely divergent analyses of wh-agreement (Zaenen 1983; Clements 1984; Watanabe 1996; Chung 1998; Reintges et al. 2006; Lahne 2008).

Here, I propose a new syntactic analysis that can account for the distribution of Akɔɔse wh-agreement morphology.

#### 3.5.1 Morphological facts

(33) **(Present) imperfective paradigm of the verb pim ‘throw out’, given with class 1 subject agreement markers** (gleaned from Hedinger 2008: 114-117)

<table>
<thead>
<tr>
<th>NE</th>
<th>SE</th>
<th>NSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>apimɛʔ/e</td>
<td>apimɛʔ/e</td>
</tr>
<tr>
<td>-</td>
<td>épimɛ́ɛ́</td>
<td>épimɛ́ɛ́</td>
</tr>
</tbody>
</table>

(34) **Morphological generalizations I** (Hedinger 1985, 2008)

a. In the affirmative, the no extraction form taken as a whole is syncretic with the subject extraction form.

b. In the negative, there is a three-way distinction.⁵

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⁵In addition, a floating falling tone prefix in the future negative causes syncretism between the no extraction and non-subject extraction forms. Further neutralization of wh-agreement contrasts occurs with subject agreement prefixes that have an underlying high tone; for instance, the class 2 marker bé- yields bɛpimɛ́ for all perfect affirmative forms.

### 3.5.2 Syntactic account

(37) **Representational assumptions**

a. **Cartographic** approach: Each of the three layers of the clause (CP, IP, VP) is articulated (Cinque 1999; Larson 1988; Rizzi 1997).

b. Following Julien (2002), Bantu verbal **suffixes** are generated as heads and attach to the root via **head movement**, so they surface in mirror order of their original positions (Baker 1985). Bantu verbal **prefixes** are generated as heads but are **spelled out in their original positions**, so they surface in order.

c. **Operators**

<table>
<thead>
<tr>
<th>SpecCP</th>
<th>SpecFinP</th>
</tr>
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<tbody>
<tr>
<td>AgrS</td>
<td>Fin</td>
</tr>
<tr>
<td>Neg</td>
<td>T</td>
</tr>
<tr>
<td>Mood̂realis</td>
<td>Asp</td>
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<tr>
<td>V</td>
<td></td>
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</table>

### 3.5.2 Syntactic account

(35) **Underlying affixes in the (present) imperfective paradigm** (gleaned from Hedinger 1985: 38-39)

<table>
<thead>
<tr>
<th>NE</th>
<th>SE</th>
<th>NSE</th>
</tr>
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<tbody>
<tr>
<td>+</td>
<td>SM-</td>
<td>-ɛʔ</td>
</tr>
<tr>
<td>-</td>
<td>SM-e-</td>
<td>-ɛʔ</td>
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<tbody>
<tr>
<td>-ɛʔ</td>
<td>-ɛʔ</td>
<td>H-</td>
</tr>
<tr>
<td>-ɛʔ</td>
<td>-ɛʔ</td>
<td>H-</td>
</tr>
</tbody>
</table>

(36) **Morphological generalizations II**

a. The **non-subject** extraction forms all have H- (Hedinger 1985, 2008).

b. In **subject** extraction forms, the polarity contrast in suffixes is neutralized in the direction of the **affirmative**.

c. In **non-subject** extraction forms, the polarity contrast in suffixes is neutralized in the direction of the **negative**.
(38) *Principles constraining derivations*

a. **Locality Condition on Movement:** In a chain created by movement, neighboring links must not be in separate, non-neighboring layers of the clause. The highest projections of the VP, IP, and CP layers are v, AgrS, and C, respectively; these form the boundaries between layers (cf. Subjacency (Chomsky 1973)).

b. **Wh-agreement Licensing:** H is licensed under upward agreement with a DP that is [+wh] and [+irrealis] (Baker 2008).

c. **Economy Condition on Operator Movement:** Operator chains must have as few links as possible (cf. Grimshaw’s (1997) STAY), subject to (38a–38b).

d. **Irrealis Licensing:** Mood$_{\text{irrealis}}$ is licensed by a specifier that is [+irrealis] (cf. the first clause of the Neg Criterion (Haegeman & Zanuttini 1991)), subject to (38c).

(39) *Affirmative no extraction*

   1-child 1-throw.out-IPFV 10-cocoyam
   ‘The child is throwing out the cocoyams.’

b. **Structure**

c. The verb stem is built via head movement into v and Asp.

d. On its way to SpecFinP, the subject moves through AgrS, licensing subject agreement and satisfying the Locality Condition.

(40) *Negative no extraction*

   1-child 1-throw.out-IPFV.IRR 10-cocoyam
   ‘The child isn’t throwing out the cocoyams.’

b. **Structure**

c. Mood$_{\text{irrealis}}$ is selected by Neg, but Irrealis Licensing requires there to be a specifier of Mood$_{\text{irrealis}}$P, so the subject stops in Spec Mood$_{\text{irrealis}}$P on its way to Spec AgrS.

d. Although the subject is [+irrealis] (required in order to license -ɛʔ), it is not [+wh], so Wh-agreement Licensing is not met, and H does not appear.
Affirmative subject extraction

a. Ø-Nzɛ́ a-pim-ɛʔ-Ø  Ø-mbaangé.
   1-who 1-throw.out-IPFV-SE 10-cocoyam
   ‘Who is throwing out the cocoyams?’

b. The derivation proceeds as in (39), except that the [+wh] continues up to SpecCP.

(42) Negative subject extraction

a. Ø-Nzɛ́ ð-1-pim-ɛʔ-Ø  Ø-mbaangé.
   1-who 1.NEG-throw.out-IPFV-SE 10-cocoyam
   ‘Who isn’t throwing out the cocoyams?’

b. Structure

   c. Mood_{irrealis} is selected by Neg, but Irrealis Licensing requires there to be a specifier of Mood_{irrealis}P.

d. However, Irrealis Licensing is subject to the Economy Condition on Operator Movement, so because the subject is a [+wh] operator, it cannot make an extra stop in SpecMood_{irrealis}P.

e. Thus, Mood_{irrealis}P is not projected and -ʔɛ́ does not appear, despite that this is a negative context.

Affirmative non-subject extraction

a. Chè mw-ān ā-pim-ɛʔ?
   what 1-child NSE.1-throw.out-IPFV.NSE
   ‘What is the child throwing out?’

b. Structure

   c. The [+wh] object cannot skip the IP layer on its way to SpecCP because of the Locality Condition on Movement, so it lands in SpecMood_{irrealis}P. This licenses -ʔɛ́ even though it is an affirmative context. The Economy Condition on Operator Movement is subject to the Locality Condition, so this extra link is licit.

d. The object is both [+wh] and [+irrealis], so it licenses H̥ via upward agreement, according to Wh-agreement Licensing.
(44) **Negative non-subject extraction**

a. Chě mw-ān é-pim-ɛ́?  
   *What isn’t the child throwing out?*

b. The derivation proceeds as in (43).

(45) Ultimately, the H̥-prefix is the only instance of **true wh-agreement**, where an element agrees with a wh-element. The suffixes effectively mark extraction, but not because of an agreement relation between any suffix and the wh-element.

4 **Wh-agreement in adverbial clauses**

(46) Wh-agreement in adverbial clauses is not unique to Akɔɔse (see Mc-Closkey 2001: 71, 82–87 for Irish), but Akɔɔse’s sensitivity to the height of extraction sheds light on where the moved elements originate.

4.1 **Temporal adverbial clauses**

(47) Central temporal clauses in Akɔɔse have verbs with **non-subject extraction morphology**.

(48) Áde ‘when’ with **non-subject extraction marking**

   [Áde mw-ān é-pim-ɛ́ Ø-mbaangé,] …
   *[when 1-child NSE.1.NEG-throw.out-PRF.IRR 10-cocoyam]*
   ‘When the child didn’t throw out the cocoyams, …’

   (Hedinger 2008: 106 (297))

(49) Hɛ́ɛ ‘then’ with **non-subject extraction marking**

   [Hɛ́ɛ an-e mw-ān á-tím-ɛ́ ámbid ābwɔ̄g~ābwɔ̄g.]
   *[then 1-that 1-child NSE.1-return-PRF back immediately]*
   ‘Then that child returned immediately.’

   (Hedinger 2008: 185 (432))

(50) Ngáne ‘as’ with **non-subject extraction marking**

   [Ngáne Ø-nguu é-pédé hɛ́n,] …
   *[as 9-pig NSE.9-arrive-PRF here]*
   ‘As pig arrived here, …’

   (Hedinger 2008: 227 (600))

(51) Nɛ́ɛ ‘as, when, after’ with **non-subject extraction marking**

   [Nɛ́ Ø-sánkala n-hăg n-e mw-ën á-hū əmín,]
   *[as 1-big 3-(fruit) 1-that 1-self NSE.1-return-PRF up]*
   a-bom-ɛ́ Ò-kūl-ɛ́ á Ø-mbīd te, tōy.
   1-knock-PRF 9-tortoise-PERS LOC 9-back in boom
   ‘As a huge nheg fruit came down, it knocked Tortoise on the back, boom.’

   (Hedinger 2008: 277 (TD054))

(52) **Extraction site hypotheses:**

   a. In the IP layer, in SpecAsp (Demirdache & Uribe-Etxebarria 2004)
   b. In the IP layer, in a temporal projection (Haegeman 2007: 293)
   c. In the VP layer, as a PP-type adjunct (Larson 1987, 1990)

(53) The non-subject extraction marking in Akɔɔse central temporal clauses suggests that the locus of extraction for the temporal operator is **VP-internal**, just like objects and the temporal adjuncts that trigger non-subject extraction marking. If the temporal operator originated above the VP layer, it would not need to stop in SpecMoodirrealisP in order to satisfy the Locality Condition on Movement, so it would not receive non-subject extraction in affirmative contexts. This conclusion supports hypothesis (52c).

4.2 **Conditional clauses**

(54) Central conditional clauses in Akɔɔse have verbs with **subject extraction morphology**.

(55) Nzé ‘if’ with **subject extraction marking**

   Ø-Pɔpɛ́ e-kut-ɛʔ, [n̥e̥ yag-e-Ø 9-crack.appl--ipfv]
   9-papaya 9-crack.APPL--IPFV [if 9.NEG-ripe-PRF-SE well]
   ‘Papaya cracks if it is not fully ripe.’

   (Hedinger 2008: 237 (657))

(56) Nzé ‘if’ with **subject extraction marking**

   [Nzé bē-hīd-e-Ø éch-ê Ø-mbēndá ámbid,]
   *[if 2.NEG-follow-PRF-SE 10-that 10-law LOC 9-back]*
   é-yök-ê a-bê nēn mw-ān á-kud Ø-mbēb.
   10-always-PRF INF-be COMP 1-child INF-get 9-bad
   ‘If they don’t follow the laws, bad will always happen to the child.’

   (Hedinger 2008: 237 (656))
(57) **Extraction site hypotheses:**
   a. In the VP layer (Bhatt & Pancheva 2006, at least implicitly)
   c. In the CP layer, in SpecFin\_P (Haegeman 2010a: 636)

(58) The subject extraction marking in Akɔɔse central conditional clauses suggests that the locus of extraction for the relevant operator originates above Mood\_irrealis\_P or below Mood\_irrealis\_P within the IP layer. If it were VP-internal, it would need to stop in SpecMood\_irrealis\_P in order to satisfy the Locality Condition on Movement, which would trigger non-subject extraction morphology. If it were in SpecMood\_irrealis\_P, it would license -ʔɛ́. This conclusion is compatible with hypothesis (57c).

4.3 **Peripheral adverbial clauses**

(59) Peripheral adverbial clauses in Akɔɔse have verbs with no extraction morphology.

(60) Kénɛ́ɛ ‘although, even though’ with no extraction marking

Aá á-chą̄g mó m-bą́ŋ, [kénɛ́ɛ Ọ-ngwà] 1.qoUt 1-càll.hort 1 3-nickname [although 9-leopard.pers ě-hɛ́-ɛ́ 3-m-ŋwà a-chą̄g.] 1.neg-can-prf.īr 3-that 3-nickname inf-càll] ‘He said that he should call him names, even though Leopard wasn’t able to do it.’ (Hedinger 2008: 235 (644))

(61) The absence of extraction marking in these clauses supports Haegeman’s (2007; 2010a) claim that movement is not involved in the derivation of peripheral adverbial clauses.

5 **Conclusion**

(62) Extraction morphology may be the result of true wh-agreement (contra Lahne (2008)), but it may also arise through other syntactic means.

(63) Wh-agreement provides compelling morphological evidence for a movement-based derivation of adverbial clauses.

(64) Due to its sensitivity to the operator status and structural position of moved elements, Akɔɔse wh-agreement (in the broad sense) lends insight into the question of where the moved elements originate.

(65) **Theoretical questions:**
   a. Does the derivation of adverbial clauses involve movement?
      - Yes (central)
      - No (peripheral)
   c. What is the site of extraction for the moved element?
      - Somewhere in the VP layer (temporal)
      - Somewhere above Mood\_irrealis\_P or below Mood\_irrealis\_P within the IP layer (conditional)
   e. How should we classify types of adverbial clauses to account for variation in answers to these questions?
      - Central vs. peripheral
      - Temporal vs. conditional

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