

they appear in wh-questions); and iii) how do they fit into the typology of wh-questions cross-linguistically?

In this paper, I outline my proposal for the first two parts of this question in §2. In §3 I show that this proposal derives the data in (1-2); then in §4 I address the third issue by comparing the Nêhiyawêwin and Yorùbá data with scope-marking data in languages like Hindi, German, and Malay (cf. Dayal 1994; Cheng 2000; Cole & Herman 2000). I show that Nêhiyawêwin and Yorùbá differ from these languages in crucial ways, and that my analysis accounts for precisely the places where they differ.

2. Proposal

My proposal is bi-partite. First, I propose that these morphemes are VP-external heads that introduce phrasal adjuncts in their specifier positions. Thus adjuncts are not adjoined, but are in spec positions (cf. Kayne 1994; Cinque 1999). This proposal captures the relationship of the phrasal adjunct (e.g., a locative expression, a manner adverbial, a rationale clause, etc.) with the morpheme that shows up in wh-constructions as a spec-head relationship, as in (3). It also means that extraction markers are overt at the extraction site.

(3) [_{LocP} Phrasal Adjunct [_{Loc°} Extraction Marker [_{VP} ...]]]

Second, I account for the overtness of adjunct heads by means of an Activation Principle akin to the EPP (cf. also Koopman's (2000) Activation Principle), and it crucially posits that phonologically overt material must be generated in either the spec or the head position of the projection in order for that projection to be activated (cf. 4)

(4) **Activation Principle:** Either the specifier or the head of a projection must be overt in order for the projection to be activated.

If we consider the possible Spec-Head combinations of null and overt positions, the typology in (5) emerges. What the activation principle does is filter out any occurrences of (5d), where both spec and head are phonologically null.

(5)		[_{XP} SPEC [_{X°} HEAD]]
a.	XP	X
b.	XP	∅
c.	∅	X
d.	* ∅	∅

In the next section, I show that, due to the bi-clausal structure that Nêhiyawêwin and Yorùbá use for wh-questions, the Activation Principle requires that the head of these VP-external projections be spelled out.

3. Deriving adjunct heads in Nêhiyawêwin and Yorùbá

This section provides a quick overview of how the proposals in §2 derive the problem.

It has been established on independent grounds that both Nêhiyawêwin and Yorùbá utilize a syntactic cleft for wh-questions (cf. Manfredi 1995; Déchaine 2002; Jones 2004; Aḍesola 2004 for Yorùbá and Johns 1983; Blain 1997 for Nêhiyawêwin). I here adopt the formal analyses of Manfredi (1995), Blain (1997), which is given in (6a-d): the wh-word serves as a nominal predicate and is fronted through the general process of predicate fronting (6a); the DP subject of the nominal predicate hosts a headless relative clause (6b); a null operator is generated in Spec, XP and moves to spec, CP (6c); the wh-word thus serves as an antecedent for the null-operator chain via predication with the null head of the relative clause (6d).

- (6) a. [XP]_i [DP t_{PRE}D] inverse predication
 b. [XP]_i [DP pro_i [CP ...] t_{PRE}D] headless relative clause
 c. [XP]_i [DP pro_i [CP Op_i [IP ... t_i ...]] t_{PRE}D] A'-movement of NO
 d. [XP]_i [DP pro_i [CP Op_i [IP ... t_i ...]] t_{PRE}D] wh-word is antecedent

If we integrate this bi-clausal structure with my proposed structure for adjuncts (i.e., in spec positions of VP-external projections), the structure in (7) emerges.

- (7) [Wh]_i [DP pro_i [CP Op_i [IP [XP t_i [X Ø [VP ...]]]]]] t_{PRE}D]

Note that, since the spec position of the VP-external XP is generating a phonologically null operator, that XP will not be activated under the Activation Principle unless the head is overtly spelled out. Thus, to save the derivation, the X^o is overt in wh-questions, and we get the appearance of these adjunct heads at the site of 'extraction' (cf. 8a-b for an example taken from Yorùbá and the corresponding structure).

- (8) a. níbo ni Adé **tí** ñ şeré **Yorùbá**
 where FOC A. EM PROG play
 'Where is Adé playing?'
 b. [níbo]_i ni [DP pro_i [CP Op_i [IP Adé [XP t_i [X **tí** [VP şeré]]]]]] t_{PRE}D]

I have shown how the current proposal accounts for the presence of extraction markers in adjunct wh-questions. In the remainder of the paper, I compare extraction marking with scope marking, focusing on the latter's manifestation in German. I show that the properties of extraction marking in Nêhiyawêwin and Yorùbá are, on closer inspection, quite different from the

properties of German scope-marking, but in ways that are predictable from my analysis.

4 Extraction-marking vs. Scope-marking

Each of the following subsections (§3.1 – 3.9) focuses on one characteristic of scope-marking and, when appropriate, compares the German data to Nêhiyawêwin and Yorùbá data.

4.1 Phonological form is consistent

In scope-marking phenomena, the scope marker serves to mark the scopal position of the *wh*-word – i.e., where the *wh*-word would be if it moved overtly. Thus, there is no difference in the *wh*-scope marker for *who* as opposed to the scope-marker for *where*, as shown in (9a-b).

- (9) a. **Was** glaubst du, **mit wem** Maria gesprochen hat
 what believe you with whom M. spoken has
 ‘Who do you believe Maria talked with?’
 (Beck & Berman 2000: 18)
- b. **Was** glaubst du, **wo** Maria getanzt hat
 what believe you where M. danced has
 ‘Where do you believe Maria danced?’ (Beck & Berman 2000: 19)

Extraction marking, on the other hand, is marking the site of introduction for the null operator. The different VP-external positions that the null operator may be introduced in correlate to different extraction markers. Thus, in both Nêhiyawêwin (10) and Yorùbá (11), different *wh*-words correspond to different extraction markers.

- (10) a. *tânisi ê-si-nimihitot* Misti **Nêhiyawêwin**
 Q-MNR CONJ-EM-dance.3 M.
 ‘How does Misti dance?’
- b. *tânêhki k-ôh-nikamot* Wâpastim
 Q-RAT REL-EM-sing.3 W.
 ‘Why did Wâpastim sing?/Why is Wâpastim singing?’
- (11) a. *báwo ni Adé* **şe** *tàlu* **Yorùbá**
 how FOC A. EM sell.drum
 ‘How did Adé sell drums?’
- b. *níbo ni ó* **ti** *jòro*
 where FOC 3S EM eat.mango
 ‘Where does s/he eat mangos?/Where has s/he eaten mangos?’

(12)

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X

4.2 Any wh-phrase may be associated with a scope marker

Scope-marking is blind to the argument-adjunct asymmetry: both arguments and adjuncts participate in scope-marking structures, as in (13a-b).

- (13) a. **Was** glaubst du, **mit wem** Maria gesprochen hat
 what believe you with whom M. spoken has
 ‘Who do you believe Maria talked with?’ (Beck & Berman 2000)
- b. **Was** glaubst du, **wo** Maria getanzt hat
 what believe you where M. danced has
 ‘Where do you believe Maria danced?’ (Beck & Berman 2000: 19)

In extraction marking, each extraction marker correlates to a specific phrasal adjunct. In both Nēhiyawēwin and Yorùbá, there is an asymmetry between how VP-internal projections are spelled out and how VP-external projections are spelled out; thus there is an argument-adjunct asymmetry that falls out from the different domains in which arguments and adjuncts are introduced (14-15).

- (14) a. awîna kê-sipwêht-ê-t **Nēhiyawēwin**
 who REL-leave-AN.SUBJ-3
 ‘Who left?’
- b. tân-isi kê-**isi**-sipwêht-ê-t Wâpastim
 Q-MNR rel-ADJ-leave- AN.SUBJ-3 W.
 ‘How did Wâpastim leave?’
- (15) a. kí ni Adé f̣ò **Yorùbá**
 WH FOC A. break
 ‘What did Adé break?’
- b. Nítorí kí ni Adé **se** f̣ò àwo
 reason WH FOC A. **EM** break plate
 ‘Why did Adé break the plate?’

(16)

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X
2. All wh-phrases marked?	√	X

4.3 Multiple wh-questions

Scope-marking languages that allow multiple wh-questions (e.g., German) allow multiple wh-questions to be associated with the scope marker (cf. 17).

- (17) **Was** glaubst du, **wann** Hans an **welcher Universität** studiert hat?
 what believe you when H. at which university studied has
 ‘When do you think H. studied at which university?’
 (Beck & Berman 2000: 19)

Now, multiple wh-questions are independently ruled out in Nêhiyawêwin and Yorùbá, because they use a bi-clausal structure with a nominal predicate, and a predicate can only have one subject (cf. Calabrese 1984; 1987). Thus, on the surface, this test appears to be non-applicable for adjunct heads.

However, because my analysis links the presence of overt adjunct heads to the bi-clausal structure of a question, which is in turn linked to the absence of multiple wh-questions, I in fact predict that a language that has adjunct heads will not be able to have multiple wh-questions of the German-type (i.e., where neither wh-word is in-situ). Both languages are consistent with this: In Nêhiyawêwin, no multiple wh-questions are allowed (18); in Yorùbá a multiple wh-question is grammatical *only* when one of the wh-words is in-situ and is interpreted as an echo question. This is shown in (19), where the high tone on *ta-ní* shows that it is sitting in subject position (i.e., in-situ).

- (18) ***awîna** ê-itwê^t **kîkwây** (Blain 1997:90, (52a))
 who CONJ-say.3 what
 ‘Who said what?’

- (19) Kí ní ta-ní rà ní àná
 what FOC who-FOC buy yesterday
 ‘What did who buy yesterday?’

(20)

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X
2. All wh-phrases marked?	√	X
3. Multiple WH-questions	√	X

4.4 Iterative scope marking

For German wh-questions with more than two clauses, the scope-marking element appears iteratively in each clause (paralleling the successive-cyclic nature of the movement) between the highest CP and the CP in which the contentful wh-word is sitting (21a); note that the contentful wh-word can move to the intermediate position as well (21b).

- (21) a. **Was** glaubst du **was** Hans meint **mit wem** Jakob gesprochen hat?
 WH believe you WH H. thinks with whom J. talked has
 ‘Who do you believe Hans thinks Jakob talked with?’
 (Cheng 2000:79)
- b. **Was** glaubst du **mit wem** Hans meint dass Jakob t_i gesprochen hat?
 WH believe you who Hans thinks that Jakob talked has
 ‘Who do you believe Hans thinks Jakob talked with?’
 (Cheng 2000:79)

Extraction markers do not mark the path of successive-cyclic movement; rather, they are marking the site where the null operator is being introduced. Thus I predict no iterative marking in multi-clausal wh-questions. Both languages follow this prediction. In Yorùbá, only the clause from which the operator comes is marked, as in (22).

- (22) a. níbo ni [_{CP} Ayò ó **ti** sọ [_{CP} pé Adé tòro]]
 where FOC A. HTS EM say COMP A. sell.mango
 ‘Where_i did Ayo say t_i that Adé sold mangoes?’
- b. níbo ni [_{CP} Ayò ó sọ [_{CP} pé Adé **ti** tòro]]
 where FOC A. HTS say COMP A. EM sell. mango
 ‘Where_i did Ayo say that Adé sold mangos t_i ?’

In Plains Cree, again the wh-word only applies to the clause in which the extraction marker appears, as in (23). If multiple clauses are marked with the extraction marker, then each clause is interpreted as a question (cf. 24):

- (23) tânêhki k-ôh-kiskêyitahk Wâpastim ê-nipâhayit Tomio kinêpikwa
 Q-RAT REL-EM-know.3 W. CONJ-kill.3OBV T. snake.OBV
 ‘Why_i did Wâpastim know t_i that Tomio killed a snake?’
- (24) **tânêhki** k-ôh-kiskêyitahk Wâpastim k-ôh-nipâhayit Tomio kinêpikwa
 Q-RAT REL-EM-know.3 W. REL-EM-kill-3OBV T. snake.OBV
 ‘Why did he know- Wâpastim – why Tomio killed the snake?’

(25)

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X
2. All wh-phrases marked?	√	X
3. Multiple WH-questions	√	X
4. Iterative scope-marking	√	X

4.5 Dependency between wh-word and marker

Scope-marking elements have a dependency with the lower clause: the embedded clause must have a wh-word for the scope marker to be associated with. This means that (26) is bad in German:

- (26) ***Was** glaubst du, dass Maria mit Hans gesprochen hat?
 what believe you that M. with H. talked has

Extraction marking is triggered by the presence of an operator in its spec position, and the operator in turn must have an antecedent. Thus extraction marking also involves a dependency; the extraction marker is ungrammatical without the wh-word in the preceding clause.

- (27) a. * **ó ɕe máa n jòro Yorùbá**
 b. * ni-wí-pê-isi-mícison Nèhiyawêwin

(28)

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X
2. All wh-phrases marked?	√	X
3. Multiple WH-questions?	√	X
4. Iterative scope-marking?	√	X
5. Dependency on wh-word?	√	√

4.6 Specific to Question Formation?

The presence of scope-marking is tied to a Q-operator that must sit in Spec, CP (cf. Shima 1999) Thus, scope-marking is specific to question formation.

On the other hand, the presence of overt adjunct heads are tied to the co-occurring presence of a null element in their spec positions; their presence is thus not tied specifically to wh-questions. I predict that these heads should be present any time there is a phonologically null element generated in spec (note that this excludes traces, which are left behind when a phonologically *overt* element has been moved, but includes both operators and *pro*). In (29a-b), we see that extraction marking appears in other null operator constructions, such as focus (also a cleft in Nèhiyawêwin and Yorùbá) and relative clauses.

- (29) a. osâm ê-kî-kowacit ana kôh-atâwêt astotin Nèhiyawêwin
 because CONJ-PERF-cold.3 DEM REL.EM-buy.3 hat
 ‘It was because he was cold that he bought a hat.’
- b. Ayò ó mọ idí tí Adé fi tàlù Yorùbá
 A. HTS know reason COMP A. EM sell.drum
 ‘Ayò knows why Adé has sold drums.’

(30)

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X
2. All wh-phrases marked?	√	X
3. Multiple WH-questions?	√	X
4. Iterative scope-marking?	√	X
5. Dependency on wh-word?	√	√
6. Specific to questions?	√	X

4.7 Restrictions on predicate

In German, the complement of the matrix clause is (at minimum) restricted to those that do not require a [+wh] complement:

- (31) *Was **fragst** du, mit wem Maria gesprochen hat?
 What ask you with whom M. talked has

In Plains Cree & Yorùbá extraction marking structures, there are no restrictions on the properties of the predicate - the relevant criteria is whether the expression being questioned sits in the VP-external domain.

(32)

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X
2. All wh-phrases marked?	√	X
3. Multiple WH-questions?	√	X
4. Iterative scope-marking?	√	X
5. Dependency on wh-word?	√	√
6. Specific to questions?	√	X
7. Restrictions on predicate?	√	X

4.8 Intervention Effects

In German, negation in the higher clause is ungrammatical for scope-marking structures (33a), even though it's grammatical with overt (long) movement of the wh-word to the matrix CP (33b).

- (33) a. *Was glaubst du **nicht, mit wem** Maria gesprochen hat?
 What believe you not with whom M. talked has
- b. **Mit wem** glaubst du **nicht**, dass Maria gesprochen hat?
 with whom believe you not that M. talked has
 'Who don't you think Mary talked to?'

This test involves overt vs. covert movement across a higher clause, which is non-applicable for the extraction marking, since there is no movement across clauses (i.e., the wh-word is base-generated clause-externally).

(34)

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X
2. All wh-phrases marked?	√	X
3. Multiple WH-questions?	√	X
4. Iterative scope-marking?	√	X
5. Dependency on wh-word?	√	√
6. Specific to questions?	√	X
7. Restrictions on predicate?	√	X
8. Intervention effects?	√	N/A

4.9 A-bar movement

Finally, scope-marking is a phenomena that is correlated with A-bar movement of the wh-word: the scope-marking element (e.g., *was*) demarcates the covert path of movement for the wh-word.

In contrast, we know on independent grounds that both Yorùbá and Nèhiyawêwin wh-words do not participate in direct A-bar movement; rather they are base-generated clause-externally. My proposal is consistent with these facts, and predicts that extraction markers are actually correlated with the presence of a wh-cleft.

Property	Scope Marking	Adjunct Heads
1. Consistent phonology?	√	X
2. All wh-phrases marked?	√	X
3. Multiple WH-questions?	√	X
4. Iterative scope-marking?	√	X
5. Dependency on wh-word?	√	√
6. Specific to questions?	√	X
7. Restrictions on predicate?	√	X
8. Intervention effects?	√	N/A
9. A-bar movement?	√	X

4. Conclusion

In this paper, I proposed that extraction markers are VP-external heads that appear overtly as a by-product of the Activation Principle. The reason that they appear in Nèhiyawêwin and Yorùbá is because these two languages use wh-clefts, and thus generate phonologically null operators in the VP-external spec positions.

I then showed that although extraction marking looks like scope marking on the surface, all but one of the diagnostic characteristics of scope marking

either do not hold of or are not applicable to extraction marking. Simultaneously, I showed that my proposal can derive the Nêhiyawêwin and Yorùbá extraction-marking data.

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