

Movement and crossover asymmetries in the Seediq pivot

keywords: Austronesian voice, A/A' movement, topicalization, crossover, dynamic semantics

1. Overview: Recent literature on *crossover asymmetries* (Bhatt & Keine 2023, Chierchia 2024) has called attention to a seemingly diverse range of constructions that obviate *weak crossover* (WCO) but not *strong crossover* (SCO). I show that in Seediq, an Austronesian language, movement into pivot position displays similar crossover asymmetries as well. I argue that these facts support an A' analysis of Austronesian voice systems where pivots are topic-like elements (Pearson 2005, Chen 2017). Overall, this work contributes to the idea that the A/A' distinction must be further decomposed to differentiate between topic and focus, as the former patterns with A-movement with respect to crossover (van Urk 2015, Chierchia 2024).

2. Data: Seediq [Atayalic; Taiwan] has the typical Austronesian voice system where one argument of the clause is the privileged *pivot*, which is sentence-final and signaled through morphological alternations on the verb. The pivot is known for its constraints on extraction, semantic interpretation, etc., and it has long been debated whether these systems reflect argument or information structure related movement.

Building on emerging work that situates Austronesian languages within the broader A/A' literature (van Urk 2015, Chen 2017, Katochoritis & Lohninger 2023), I show that the diagnostics for *subjecthood* (Table 1) and *topichood* (Table 2) yield the following results when applied to Seediq, which appear to be mixed. (Note that similar data on reflexives and WCO have already been reported; see Holmer 1996, Chen 2017).

Table 1:	control	reflexives	imperatives	Table 2:	reconstruction	WCO	SCO
	n/a	x	x		✓	x	✓

First, pivots do not display the canonical properties of subjects, which straightforwardly shows that pivots do not involve A-movement. In particular, *reflexives* are licensed in thematic *patients* (1), and *imperative* addressees are licensed in (covert) thematic *agents* (2), regardless of which argument is the pivot. That is, the movement of the agent (a) or the patient (b) are both possible without affecting the basic meaning.

- | | |
|---|--|
| <p>(1) a. q(m-n)ita heya nanaq [ka Temu]
 ⟨AV-PFV⟩see 3SG self PIV Temu
 'Temu saw himself.'</p> <p>(2) a. ekan ido [∅]!
 eat.AV.IMP rice
 '(You) eat rice!'</p> | <p>b. q(n)ita na Temu [ka heya nanaq]
 ⟨PV.PFV⟩see GEN Temu PIV 3SG self
 'Temu saw <i>himself</i>.'</p> <p>b. puq-i ∅ [ka ido]!
 eat-PV.IMP PIV rice
 '(You) eat <i>the rice</i>!'</p> |
|---|--|

Second, pivots display mixed results in terms of canonical A' properties, obviating weak (3) but not strong (4) crossover. In particular, the quantified *patient knkingal* 'every' cannot bind into the *agent* in-situ (3a), but can when it is moved into pivot position (3b); however, it can never bind the agent itself (4). Therefore, pivots are able to establish new binding relations, although additional explanations are in need for SCO.

- | | |
|---|--|
| <p>(3) a. #wada m-emux kn-kingal laqi₂ [ka bubu=daha₂]
 PST AV-hug RED-one child PIV mother=3PL.GEN</p> <p>b. wada mex-un na bubu=daha₂ [ka kn-kingal laqi₂]
 PST hug-PV GEN mother=3PL.GEN PIV RED-one child
 'Their₂ mother hugged <i>every child₂</i>.'</p> | <p>(4) a. #wada m-angal hndayu na kn-kingal seediq₃ [ka heya₃ / dheya₃]
 PST AV-take lunchbox GEN RED-one person PIV 3SG 3PL</p> <p>b. #wada ngal-un na heya₃ / dheya₃ [ka hndayu na kn-kingal seediq₃]
 PST take-PV GEN 3SG 3PL PIV lunchbox GEN RED-one person
 'They₃ took <i>every person₃'s lunchbox</i>.'</p> |
|---|--|

3. Account: I argue that the results are in fact fully consistent with a topic-like analysis of Seediq pivots, once we re-evaluate WCO as an A' diagnostic and A' movement as a whole. Recent literature has shown a range of constructions—including those considered A' or mixed A/A' movement—appear to obviate WCO

but not SCO (Table 3) (Bhatt & Keine 2023, Chierchia 2024). Crucially, there is a contrast in these languages between these topic-like constructions and basic *wh*-constructions or QR. Note that the observation that topicalization can create new antecedents was also described in *weakest crossover* (Lasnik & Stowell 1991).

	WCO obviated	WCO not obviated
Table 3: constructions that obviate WCO	English (PP) dislocation	English <i>wh</i> -movement and QR
	Italian clitic left dislocation (CLLD)	Italian <i>wh</i> -movement and QR
	Hindi local scrambling	Hindi <i>wh</i> -in-situ and QR
	Seediq pivot movement	Seediq <i>wh</i> -in-situ and QR

I adopt Chierchia’s (2024) proposal that A’ movement must be decomposed into topic versus focus movement—as the former patterns with A-movement with respect to WCO—and thus argue that Seediq provides further evidence in support of this view. The semantic basis of this account comes from ‘*bimodal*’ approach to binding under dynamic semantics (Chierchia 2020), where dedicated syntactic positions—e.g. AG, TH, T, C—can introduce new discourse referents (DRs) into the common ground by an $\overset{n}{\lambda}()$ -operator. In particular, i) traces are *static variables* bound by lambda extraction, while ii) pronouns are *dynamic variables* bound across conjuncts of the $\overset{n}{\lambda}()$ -operator. Given the semantics below of the topic (TOP) operator (5) hosted in C, topics are able to activate DRs and create new binding relations for XP_n ’s that are moved to Spec,CP.

$$(5) \quad \text{a. } \llbracket \text{TOP}^n \rrbracket = \lambda P \lambda u. \overset{n}{\lambda}(u) \wedge P(u) \quad \text{b. } [XP_n \text{ TOP}^n \Phi] \quad \begin{array}{l} XP\text{'s of type } e \Rightarrow \overset{n}{\lambda}(XP) \wedge \lambda x_n. \Phi(XP) \\ XP\text{'s of type } \langle\langle e, t \rangle, t \rangle \Rightarrow XP[\lambda u. [\overset{n}{\lambda}(u) \wedge \lambda x_n. \Phi(u)]] \end{array}$$

The derivation for WCO in Seediq is in (6), where I assume pivots move into Spec,CP. The core arguments start in their base positions, and when the C head with TOP^3 merges with TP it activates the $\overset{3}{\lambda}()$ -operator. The TOP^3 operator looks down into TP and does two things: i) it binds the dynamic variable *daha* ‘their’ at the index ‘3’, and ii) it searches and finds the closest argument *knkingal laqi* ‘every child’ with the static index ‘3’ and moves it to Spec,CP. Crucially, since static and dynamic variables are bound through distinct mechanisms, neither the binding of the pronoun nor the trace interferes with each other (Chierchia 2024).

$$(6) \quad \text{a. } [CP [TP \text{ wada mex-un } [DP \text{ na bubu=daha}_3] t_3] [DP \text{ ka } \overset{3}{\lambda}(\text{kn-kingal laqi}_3)]] \\ \text{b. } [\text{every child}_3] \text{TOP}^3 [[\text{their}_3 \text{ mother}] \text{hugged } t_3] \Rightarrow \\ \text{(i) } \llbracket \text{every child}_3 \rrbracket [\lambda u. [\overset{3}{\lambda}(u) \wedge \lambda x_3. \llbracket \text{their}_3 \text{ mother hugged } t_3 \rrbracket (u)]] \\ \text{(ii) } \lambda P. \forall z [\text{child}(z) \rightarrow P(z)] [\lambda u. [\overset{3}{\lambda}(u) \wedge \lambda x_3. \text{hug}(\omega_3 \text{'s mother})(x_3)(u)]] \\ \text{(iii) } \lambda P. \forall z [\text{child}(z) \rightarrow P(z)] [\lambda u. [\overset{3}{\lambda}(u) \wedge \text{hug}(\omega_3 \text{'s mother})(u)]] \\ \text{(iv) } \forall z [\text{child}(z) \rightarrow \overset{3}{\lambda}(z) \wedge \text{hug}(\omega_3 \text{'s mother})(z)]$$

Under this framework, violation of SCO can straightforwardly be reduced as *minimality*, since the agent pronoun would serve as the closest argument with the index ‘3’ and thus an intervener between TOP^3 and the patient (see Chierchia 2024 for E-type pronouns in secondary crossover). In general, this supports the idea that A-movement and topicalization should always violate SCO (McGinnis 2004, van Urk 2015).

Finally, I show in the talk how this account predicts certain semantic and pragmatic consequences that are borne out in Seediq: i) pivots have wide scope and are definite/kinds if they are bare nouns, and ii) pivots are subject to discourse constraints with respect to the behavior of different types of topic and focus.

4. Discussion: This work has several implications: 1) it supports an A’ analysis of Austronesian voice and connects it to the broader literature on A/A’ movement, 2) it provides evidence that crossover asymmetries can be reduced to general binding principles, and 3) it further shows that A-movement and topicalization pattern together for purposes of binding. Overall, topicalization remains an understudied area of research, perhaps due to restrictions on possible topicalized constituents in well-studied languages like English, but looking to other languages provides us with testable evidence that topic and focus are not the same.

5. Selected references: Chen (2017). A reexamination of the Philippine-type voice system and its implications (...). Chierchia (2024). Movement and crossover in three languages. Keine & Bhatt (2023). Crossover asymmetries. van Urk (2015). A uniform syntax for phrasal movement: A case study of Dinka Bor.