

A compositional morphosemantic analysis of exclusivity in Ch'ol*

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1 INTRODUCTION

- We provide novel empirical generalizations on exclusive operators in Ch'ol (Mayan)
 - These provide strong evidence for a separation of exclusivity into a core semantic entry and focus sensitivity.
- There is a robust literature on exclusivity and the distributions of scalar particles in various languages (Beaver & Clark, 2003, 2008; Orenstein & Greenberg, 2010; Coppock & Beaver, 2011a,b).
 - Recent work on the semantics of focus constructions in Mayan languages include Yasavul (2013) for K'iche' and AnderBois (2012) for Yucatec Maya
 - Syntactic work on focus includes Aissen (1992) for Mayan in general and Clemens et al. (2017) for Ch'ol
- Little work has been done on the variation among exclusives in morphologically rich languages like Ch'ol.
- Original data from fieldwork indicate that exclusivity can occur independently of focus marking, and when divorced from focus, the exclusive morpheme has a wider distribution and range of meanings.

- (1) **Jiñ** *aj-Maria tsa'* (2) *Aj-Maria=jach tsa'* (3) **Jiñ=jach** *aj-Maria*
 FOC NC-Maria PRF NC-Maria=**EXCL** PRF FOC=**EXCL** NC-Maria
jul-i-Ø. *jul-i-Ø.* *tsa' jul-i-Ø.*
 arrive-IV-B3 arrive-IV-B3 PRF arrive-IV-B3
 '[_{FOC} Maria] arrived.'¹ 'Just Maria arrived.' 'Only Maria arrived.'

- We argue that *=jach* is an exclusive and *jiñ* a focus restrictor

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¹Glosses: 1 = first person; 2 = second person; 3 = third person; A = Set A markers (ergative/possessive); B = Set B markers (absolute); CL = classifier; EXCL = exclusive; FOC = focus; IV = intransitive verb; NC = noun classifier; PREP = preposition; PRF = perfective aspect. Ch'ol uses a Spanish-based orthography: ' = [ʔ]; ä = [i]; b = [β] ch = [tʃ]; j = [h]; ñ = [ɲ]; ty = [tʰ]; x = [x]; y = [j]; C' = ejective consonant.

2 BACKGROUND ON EXCLUSIVITY

- Exclusives are generally assumed to be quantifiers over propositions taken from an alternative set (usually derived via association with focus) (Rooth, 1992)
 - Generally use schema “X and no more than X”
 - E.g., English *only, just, merely, simply*
 - Beyond the general schema, exclusives can differ in their meaning and distribution
- (4) a. He just has three dogs. (5) a. Your house is just gorgeous!
 b. He only has three dogs. b. # Your house is only gorgeous!
- Wiegand (2018, 2017, Forthcoming) proposes a morphosemantic framework to explain the differences between *only, just*, and *merely* in English
 - Main idea:
 - All exclusives have at least the core exclusive meaning EXCL (given in §4.1)
 - Exclusives that are more restricted in meaning/distribution contain (covert) morphosemantic restrictions
 - So, since *only* is more restricted than *just*, *only* is more complex than *just*
 - This analysis can account for the distribution of exclusives in English, but relies heavily on the assumed existence of covert morphological restrictions
 - However, the pattern of exclusive operators in Ch'ol provides strong empirical evidence for separating exclusivity into smaller morphological units

ROADMAP

- Empirical generalizations and the distribution of *=jach, jiñ*, and *jiñ=jach*
- Morphosemantic compositionality of exclusives and focus
 - We give background on the compositionality of English exclusives
 - We argue that *jiñ* is an overt manifestation of a restricting operator (with an added definiteness condition) and *=jach* carries the exclusive meaning
- Further evidence in Ch'ol for separating exclusive *=jach* from focus comes from the use of *=jach* in emphatic and unexplanatory contexts
- We expect other morphologically rich languages to derive exclusives similarly, with variation coming from other selectional requirements
- We conclude with some remaining questions and directions for future research with Ch'ol and across other languages

3 EMPIRICAL GENERALIZATIONS ON CH'OL

3.1 Distribution of *jiñ*, *=jach*, and *jiñ=jach*

- The morphemes of interest are a focus particle *jiñ*, an exclusive clitic *=jach*, and a bimorphemic exclusive *jiñ=jach*.

- Focus-marked NPs can be marked with the focus particle *jiñ* (6a)
- Exclusivity is marked with the second position clitic *=jach*, or the bimorphemic *jiñ=jach*

- (6) *Majki tsa' jul-i-Ø?* (7) *Tsa' jul-i-Ø-yob x-ch'ok-ob?*
 who PRF arrive-IV-B3 PRF arrive-IV-B3-PL NC-girl-PL
 'Who arrived?' 'Did the girls arrive?'
- a. *Jiñ aj-Maria tsa' jul-i-Ø.* a. *Ma'añik, aj-Maria=jach tsa' jul-i-Ø.*
 FOC NC-Maria PRF arrive-IV-B3 no NC-Maria=EXCL PRF arrive-IV-B3
 '[FOC Maria] arrived.' 'No, just Maria arrived.'
- b. *Ma'añik, jiñ=jach aj-Maria tsa' jul-i-Ø.*
 no FOC=EXCL NC-Maria PRF arrive-IV-B3
 'No, only Maria arrived.'

- Vázquez Álvarez (2011) reports that the particle *jiñ* is restricted to focused nominals that are definite.²

- (8) a. **Jiñ juñ-k'ej k-om-Ø waj.* b. **Jiñ tyi Palenque tsa' k'oty-i-Ø.*
 FOC one-CL A1-want-B3 tortilla. FOC PREP Palenque PRF arrive-IV-B3
 Intended: 'I want [FOC one] tortilla.' Int: 'He arrived [FOC to Palenque].'

- However, *=jach* shows no such distributional restriction.

- *=jach* is licensed as an exclusive over numerals (9a) and PPs (9b), cf. *jiñ* in (8).

- (9) a. *Juñ-k'ej=jach k-om-Ø waj.* b. *Tyi Palenque=jach tsa' k'oty-i-Ø.*
 one-CL=EXCL A1-want-B3 tortilla. PREP Palenque=EXCL PRF arrive-IV-B3
 'I want just one tortilla.' 'He arrived just to Palenque.'

- The bimorphemic *jiñ=jach* 'only', though synonymous with *=jach*, is restricted in the same way as *jiñ*, i.e., not licensed over numerals (10a) or PPs (10b).

- (10) a. **Jiñ=jach juñ-k'ej k-om-Ø* b. **Jiñ=jach tyi Palenque tsa'*
 FOC=EXCL one-CL A1-want-B3 FOC=EXCL PREP Palenque PRF
waj.
 tortilla arrive-IV-B3
 Intended: 'I want only one tortilla.' Intended: 'He arrived only to Palenque.'

- This pattern indicates that for *jiñ=jach*, the semantic content of exclusivity is provided by the morpheme *=jach*, but selectional requirements come from *jiñ*.

- We argue that this parallels the distribution of English *only* and *just*: *only* is more restricted, always requiring focus, while *just* exhibits a wider range of uses.

²Indeed the morpheme *jiñi* (*jiñ+i*) is a determiner in Ch'ol, however Vázquez Álvarez (2011: 250) analyzes it separately from *jiñ* the focus marker.

3.2 Summary

Table 1: Meaning and distribution of *jiñ*, *=jach*, and *jiñ=jach*

	Meaning		Occurs with:		
	exclusive	focus	NPs	Numerals	PPs
<i>=jach</i>	✓	✗	✓	✓	✓
<i>jiñ</i>	✗	✓	✓	✗	✗
<i>jiñ=jach</i>	✓	✓	✓	✗	✗

4 MORPHOSEMANTIC COMPOSITIONALITY

4.1 Formalism

- Wiegand (2018, 2017) proposes a morphosemantic framework decomposing exclusive operators into a core exclusive meaning and additional restrictions

- Variation among exclusives is attributed to the presence or absence of additional covert morphological restrictions

- The core meaning predicted to be shared by all exclusives across languages is given in (11).

$$(11) \llbracket \text{EXCL} \rrbracket = \lambda C_{\leq} . \lambda p . \lambda w . \forall q [(q \in C_{\leq} \wedge w \in q) \rightarrow p \leq q] \quad (\text{Wiegand, 2018, 2017})^3$$

- Basically (11) says that the prejacent is the strongest true proposition among its alternatives
- To capture the differences in meaning between English exclusive operators, Wiegand (2018, 2017) proposes a covert morphological operator [FR] (focus restriction).
- Unlike *only*, English *just* can show exclusivity even when it does not associate with focus, exemplified with the 'unexplanatory' reading where it quantifies over causes (12-13)

- (12) I was sitting there and the lamp just broke! I don't know what happened.

- (13) *Context: Cordelia and Harmony are at the top of a staircase. Suddenly, Harmony jerks backwards and falls down the stairs. (Later revealed that an invisible girl had pushed her.)*

Principal Snyder: ... What happened?

Cordelia: She fell She, she, we were standing at the top of the stairs and she **just** fell! All by herself!

Harmony: No! I was pushed! (*Buffy the Vampire Slayer*, S1E11)

- In cases like these, *just* does appear to be acting as an exclusive, but there is no focused element in the prejacent that could give rise to the appropriate alternative set *C*

- Importantly, other English exclusives like *only* cannot be used in contexts like (12) and (13)

³This is equivalent to most standardly adopted lexical entries for English *only* (Rooth, 1992). The main difference is the inclusion of the C_{\leq} argument, which represents the ordered pair $\langle C, \leq \rangle$ of an alternative set *C* and an ordering \leq on *C*. In standard Roothian semantics, \leq would be entailment, \subseteq , while other contextually provided orderings are needed to capture the evaluative readings of exclusives like *merely*.

- Wiegand (2018, 2017) argues that *just* allows quantification over implicit arguments like causes
- (14) Sample derivation of exclusive semantics for unexplanatory *just*:
 Utterance: The lamp just broke.
e: the event of the lamp breaking
 $C = \{e \sqsubseteq \text{because } x \mid x \text{ is a contextually salient potential cause for } e\}$
 $\phi = e \sqsubseteq \text{because CAUSE}_0$, where CAUSE_0 is some “minimal cause”
 $\llbracket \text{EXCL}(\phi) \rrbracket = \lambda w. \forall q (q \in C \wedge w \in q) \rightarrow \phi \leq q$
 Resulting Paraphrase: “For all explanations $q = \text{The lamp broke necessarily because } x$ that are not entailed by $\phi = \text{The lamp broke necessarily because CAUSE}_0$, $q \notin w$ ”
- The reason that *just* can quantify over these covert elements while *only* cannot is attributed to the presence of the [FR] restriction on *only*, which results in obligatory association with a prosodically focused element in the prejacent
 - This is a reframing of the Focus Principle (Rooth, 1992) as a lexical restriction rather than a general rule for all exclusives⁴
- (15) $\llbracket \text{FR} \rrbracket = \lambda F. \lambda K. \lambda q [F(K)(q) \wedge \partial(C \subseteq \llbracket q \rrbracket^F)]$
- In this framework, *just* contributes only the exclusive semantics of [EXCL], while *only* contributes [EXCL] restricted by [FR]:
 - The addition of [FR] to [EXCL] actually restricts the meaning
- (16) *Only*: Composition of [EXCL] and [FR]:
- $$\begin{array}{c} \lambda w. \forall q [(q \in C_{\leq} \wedge w \in q) \rightarrow \phi \leq q] \wedge \partial(C_{\leq} \subseteq \llbracket \phi \rrbracket^F) \\ \lambda r. \lambda w. \forall q [(q \in C_{\leq} \wedge w \in q) \rightarrow r \leq q] \wedge \partial(C_{\leq} \subseteq \llbracket r \rrbracket^F) \quad \phi \\ \lambda K. \lambda r. \lambda w. \forall q [(q \in K \wedge w \in q) \rightarrow r \leq q] \wedge \partial(K \subseteq \llbracket r \rrbracket^F) \quad C_{\leq}(\phi) \\ \text{EXCL} := \lambda C_{\leq}. \lambda p. \lambda w. \forall q [(q \in C_{\leq} \wedge w \in q) \rightarrow p \leq q] \quad \text{FR} := \lambda F. \lambda K. \lambda r [F(K)(r) \wedge \partial(K \subseteq \llbracket r \rrbracket^F)] \end{array}$$
- The lack of restriction on *just* accounts for its wider distribution of interpretations compared to other English exclusives
 - These include emphasis, temporal or spacial nearness, mitigation of social implications, and others
- (17) a. I just love your scarf! (emphasis)
 b. That fish was just gigantic! (emphasis)
 c. I'm just finishing my homework. (temporal recency)
 d. You have something just below your eye. (spacial nearness)
 e. I'm just saying... (social mitigation)
- In the framework presented, the availability of these uses is due to the lack of the [FR] restriction present with other exclusives

⁴(∂ used for selectional requirement/presupposition; \leq a variable over orderings on C)

4.2 Applying the formalism to Ch'ol

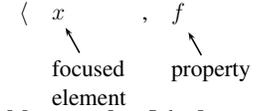
- Starting point (English exclusive semantics):

- (18) a. $\llbracket \text{EXCL} \rrbracket = \lambda C. \lambda p. \lambda w. \forall q [(q \in C \wedge w \in q) \rightarrow p \leq q]$ (*just*)
 b. $\llbracket \text{FR} \rrbracket = \lambda F. \lambda K. \lambda q [F(K)(q) \wedge \partial(C \subseteq \llbracket q \rrbracket^F)]$ (focus restriction on *only*)
 c. $\llbracket \text{EXCL} + \text{FR} \rrbracket = \lambda C. \lambda p. \lambda w. \forall q [(q \in C \wedge w \in q) \rightarrow p \leq q] \wedge \partial(C \subseteq \llbracket p \rrbracket^F)$ (*only*)

- For Ch'ol, we need more than the restriction to subset of focus alternatives, as *jiñ=jach* is restricted by definiteness. However, since the focus particle *jiñ* is also restricted, this restriction must be part of the semantics *jiñ*, rather than exclusivity.

- As the formalism stands now, we do not have access to the focused element inside the proposition p
 - Therefore we are not able to restrict *jiñ* to compose only with arguments of type e
 - Thus we adopt a structured meaning from von Stechow (1991) to replace p in (18) that lets us target focused elements and restrict what the focused element is

- (19) a. Structured propositions for focus von Stechow (1991)



- b. Mary saw _[FOC] John. $\langle J, \lambda x [\text{see}(x)(M)] \rangle$
 c. _[FOC] Mary] saw John. $\langle M, \lambda x [\text{see}(J)(x)] \rangle$

- From the structured proposition we can easily get back the original proposition from (18a), by applying the property f to the focused element x to get the ordinary p in (18a)
- We assume $=jach$ in (20) is identical to (18a), simply with the structured proposition formalism from (19a)
- We propose *jiñ* is exactly like [FR], except it also contains a requirement that the focused element be of type e in (21)

- (20) $\llbracket =jach \rrbracket = \lambda C. \lambda \langle x, f \rangle. \lambda w. \forall q. \forall y [(q = f(y) \wedge q \in C \wedge w \in q) \rightarrow p \leq q]$, where $p = f(x)$

- (21) $\llbracket jiñ \rrbracket = \lambda F. \lambda C. \lambda \langle x, f \rangle [F(C)(\langle x, f \rangle) \wedge \partial(C \subseteq \llbracket p \rrbracket^F \wedge x \in D_e)]$

- (22) $\llbracket jiñ=jach \rrbracket = \llbracket jiñ \rrbracket (\llbracket =jach \rrbracket) = \lambda C. \lambda \langle x, f \rangle. \lambda w. \forall q. \forall y [(q = f(y) \wedge q \in C \wedge w \in q) \rightarrow p \leq q] \wedge \partial(C \subseteq \llbracket p \rrbracket^F \wedge x \in D_e)]$

- This approach requires an additional operator so that *jiñ* occur without $=jach$
 - We suggest that this is an optional identity function that is inserted freely when *jiñ* is modifying its proposition
- We argue that exclusivity comes from $=jach$, the selectional restriction comes from *jiñ*
 - Given this analysis, we expected $=jach$ to occur in environments where the selectional restrictions are not met

5 FURTHER EVIDENCE FOR SEPARATING EXCLUSIVITY FROM FOCUS

- In addition to places where definiteness isn't met (see 9), =*jach* appears as an intensifier in (23a) and an unexplanatory exclusive in (23b), paralleling the English in (24a-b)

- (23) a. *Uts'aty=jach aw-otyoty.* b. *Che'=jach tsa' jul-i-Ø.*
 nice=EXCL A2-house PART=EXCL PRF arrive-IV-B3
 'Your house is so nice.'⁵ 'Just like that he arrived.'
- (24) a. Your house is just gorgeous! b. The man just appeared!

- This is strong evidence that exclusives when dissociated from focus can result in a variety of discourse effects beyond basic exclusivity, including intensification and mitigation of social implications.
- Overall, these original data constitute compelling crosslinguistic support for separating the meaning attributed to exclusive operators like *only* into smaller components, each of which contribute a portion of exclusive semantics in general.

6 CONCLUSIONS AND FUTURE DIRECTIONS

- We expect to find other morphologically rich languages that have their exclusives compositionally derived from one another
 - There may be variation on how they are morphologically derived – other morphemes involved may contribute different restrictions
- We expect a language to have exclusive operators that occur without a focus structure
 - In Hebrew, the exclusive *stam* 'just/merely' appears in the absence of a focus structure (see Orenstein (2015) for more discussion)
- We want to investigate if there are other combinations of morphemes in Ch'ol with =*jach* that result other types of meanings, e.g., the depreciatory meaning associated with *merely* and *stam*
- Ch'ol has another exclusive *ko=jach* that is not restricted in the way *jiñ=jach* is
 - Thus far we have found that *ko=jach* occurs with definite and indefinite nouns
 - We think that *ko* is an affirmative marker, though we are still investigating its distribution and meaning
- We will be investigating *ko=jach* and further questions on exclusivity in Ch'ol in our upcoming fieldwork
 - In fact, we're flying to Mexico tomorrow!
- *Wokolix la'wälä!*

⁵In this case, =*jach* is in its phonetically reduced form [haʃ]. This parallels usages of 'just' [dʒs] as an exclusive marker separate from focus.

REFERENCES

- AISSEN, JUDITH. 1992. Topic and focus in Mayan. *Language* 68.43–80.
- ANDERBOIS, SCOTT. 2012. Focus and unformativity in Yucatec Maya questions. *Natural language semantics*, 1–42.
- BEAVER, DAVID, and BRADY Z. CLARK. 2003. *Always and only: Why not all focus-sensitive operators are alike. Natural Language Semantics* 11.323–362.
- BEAVER, DAVID, and BRADY Z. CLARK. 2008. *Sense and sensitivity: How focus determines meaning*, vol. 12. John Wiley & Sons.
- CLEMENS, LAUREN; JESSICA COON; CAROL-ROSE LITTLE; and MORELIA VÁZQUEZ MARTÍNEZ. 2017. Focus in Ch'ol. Presented at The Society for the Study of the Indigenous Languages of the Americas (SSILA).
- COPPOCK, ELIZABETH, and DAVID BEAVER. 2011a. Mere-ology. *Alternatives in Semantics*.
- COPPOCK, ELIZABETH, and DAVID BEAVER. 2011b. Sole sisters. *Proceedings of SALT*, ed. by Neil Ashton, Anca Chereches, and David Lutz, vol. 21, 197–217.
- ORENSTEIN, DINA. 2015. A family of exclusives in Hebrew. *ESSLLI 2015 student session*, 96–106.
- ORENSTEIN, DINA, and YAEL GREENBERG. 2010. The semantics and focus sensitivity of the Hebrew (unstressed) *stam*. *Proceedings of IATL*, vol. 26.
- ROOTH, MATS. 1992. A theory of focus interpretation. *Natural Language Semantics* 1.75–116.
- VON STECHOW, ARNIM. 1991. Focusing and backgrounding operators. *Discourse particles* 6.37–84.
- VÁZQUEZ ÁLVAREZ, JUAN JESÚS. 2011. *A grammar of Chol, a Mayan language*. University of Texas Austin PhD thesis.
- WIEGAND, MIA. 2017. Morphosyntax of exclusives and the underspecificity of *just*. *Proceedings of Berkeley Linguistics Society (BLS)*.
- WIEGAND, MIA. 2018. Exclusive morphosemantics: *Just* and covert quantification. *Proceedings of the west coast conference on formal linguistics (WCCFL)*, ed. by Wm. G. Bennet et al, vol. 35. Somerville, MA: Cascadilla Proceedings Project.
- WIEGAND, MIA. Forthcoming. *Alternatives, exclusivity and underspecification*. Cornell University dissertation.
- YASAVUL, MURAT. 2013. Two kinds of focus constructions in K'iche'. *Semantics and linguistic theory*, vol. 23, 611–632.