Mayan animacy hierarchy effects: A dynamic interaction approach¹

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1 Introduction

- In some languages, combinations of agents/objects are regulated by animacy hierarchy restrictions, given a scale like (1).
 - (1) HUMAN > ANIMATE > INANIMATE
- This is true of many Mayan languages (Aissen 1997, 1999; 2007, 2017; Curiel 2007; Pascual 2007; Vázquez Álvarez 2011; Polian 2013; Pérez Vail 2014), which show two interesting points of microvariation:

1. Articulation of the scale:

- Tsotsil (Aissen 1997,1999) (HUM>NON.HUM)
- Chuj: three distinctions (HUM > ANIM > INAN)
- Cajolá Mam (Pérez Vail 2014): seven distinctions

2. Where the hierarchy effect holds

- Ch'ol, Tsotsil: hierarchy effects in both actives and passives
- Chuj: hierarchy effects in actives but not passives
- Aissen (1997, 1999) connected these effects to **obviation** in Algonquian, with an analysis in terms of an obviation tier.

Today: Account of Mayan animacy restrictions and microvariation

- ► Animacy restrictions reflect Agree, echoing much recent work, including on Algonquian (e.g., Oxford 2019, to appear; Hammerly 2020).
- ► Interaction/satisfaction model of Agree (Deal, 2015, 2022)
- ► Dynamic interaction: a probe's Agreement with a first goal (G1) can change the probe's specification, such that it may only further agree with a G2 that has features in common with G1

Plan

- §2 Novel data on animacy restrictions in Chuj, and variation within Mayan
- §3 Account of restrictions in active sentences
- §4 Account of restrictions in passive sentences
- §5 A broader look at Set A (ergative/possessive) morphemes: extension to a novel description of possessum-possessor hierarchy effects in Chuj

2 Mayan animacy restrictions

2.1 A concrete example: San Mateo Ixtatán Chuj

- Mayan; Q'anjob'alan sub-branch
- Primarily spoken in Guatemala and Mexico
- ≈70,000 to 80,000 speakers
- VOS, head marking, ergative-absolutive
- Set A = ergative/possessive | Set B = absolutive
- Data come from Justin's fieldwork (2017-2023)
- Combinations of **third person arguments** in active sentences are subject to the following restriction:
 - (2) Chuj animacy restriction in actives:
 Objects cannot outrank agents on the hierarchy HUMAN > ANIMATE > INANIMATE

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Figure 1: Current-day Mayan-speaking area (Law 2014, p. 25)

• Active sentences: ✓ HUM>ANIM, *ANIM>HUM

(3)	a. •	Ix-y-il	nok' chan winh winak.	
		'The man say	w the snake.'	hum A, anim Obj
	b. *	* Ix-y-il PFV-A3-see	winh winak nok' chan. CLF man CLF snake	
		Int. 'The snal	ke saw the man.'	ANIM A, HUM Obj

- Note: *nok' chan* 'the snake' *can* be the agent of 'see'; it just can't be the agent of a "3rd person human-seeing" active, e.g. (3b).

(4)	a.	✓ Ix-y-il nok' much n	ok' chan.					
		PFV-A3-see CLF bird C	LF snake					
		'The snake saw the bird.'	ANIM A, ANIM OBJ					
	b.	✓ Ix-{in/ach/onh}-y-il PFV-B1S/B2S/B2P-A3-se	nok' chan. ee CLF snake					
		'The snake saw me/you/u	'The snake saw me/you/us.'					

Active sentences: ✓ HUM>INAN, *INAN>HUM

- (5) a. ✓ Ix-y-il k'en kamera waj Xun. PFV-A3-see CLF camera CLF Xun 'Xun saw the camera.' HUM A, INAN OBJ
 b. * Ix-y-il waj Xun k'en kamera. PFV-A3-see CLF Xun CLF camera
 - Int. 'The camera saw/filmed Xun.' INAN A, HUM OBJ
- Again, note that INAN>INAN is fine:
 - (6) ✓ Ix-y-il te' pat k'en kamera.
 PFV-A3-see CLF house CLF camera
 'The camera filmed the house.' INAN A, INAN OBJ

• Active sentences: ✓ ANIM>INAN, *INAN>ANIM

- (7) a. ✓ Ix-y-il k'en kamera nok' chab'in.
 PFV-A3-see CLF camera CLF monkey
 'The monkey saw the camera.' ANIM A, INAN OBJ
 - b. * Ix-y-il nok' chab'in k'en kamera.
 PFV-A3-see CLF monkey CLF camera
 Int. 'The camera saw/filmed the monkey.' INAN A, ANIM OBJ

.....

• To express the desired meaning for the ungrammatical sentences above, a passive is used (a common strategy to circumvent hierarchy effects; Zavala 2007).

(8)	Ix-il-j-i	winh	winak	[_{obl} y	uj nok'	chan].		
	PFV-see-PASS-IV	CLF	man	b	y CLF	snake	;		
	'The snake saw th	ne ma	n.'					cf. (3	3b)

- > Important: no animacy restrictions with passives in Chuj (the oblique agent *can* outrank the passive subject):
 - (9) Ix-il-j-i nok' chan [_{OBL} yuj winh winak].
 PFV-see-PASS-IV CLF snake by CLF man
 'The snake was seen by the man.'
 - This holds for all kinds of HUM/ANIM/INAN DPs.

In sum, (im)possible combinations of 3P in Chuj actives:

	AG	Obj		AG	Obj		AG	Овј	
(10)	HUM	HUM	1	ANIM	HUM	X	INAN	HUM	X
(10)	HUM	ANIM	\checkmark	ANIM	ANIM	\checkmark	INAN	ANIM	X
	HUM	INAN	✓	ANIM	INAN	✓	INAN	INAN	1

2.2 Mayan microvariation

Thanks to the large amount of existing work on the topic (Aissen 1997, 1999; Zavala 1997, 2007 2017; Curiel 2007; Pascual 2007; Vázquez Álvarez 2011; Polian 2013; Pérez Vail 2014), we know there's variation w.r.t.:

- 1. Articulation of the scale
- 2. Whether hierarchy effects also hold in passives

	scale	effect	s in:	
	n.d. = not determined	ACT	PASS	reference
Chuj	HUM>ANIM>INAN	Yes	No	-
Cajolá Mam	seven distinctions	Yes	No	Pérez Vail 2014
Akatek	ANIM>INAN; other n.d.	Yes	?	Zavala 2007
Q'anjob'al	ANIM>INAN; other n.d.	Yes	?	Pascual 2007
Tseltal	ANIM>INAN; other n.d.	Yes	?	Polian 2013
Tojol-ab'al	ANIM>INAN; other n.d.	Yes	Yes	Curiel 2007
Ch'ol	ANIM>INAN	Yes	Yes	Zavala 2007
Tsotsil	HUM>NON.HUM	Yes	Yes	Aissen 1997, 1999

- For example, Zavala (2007) and Vázquez Álvarez (2011) show Ch'ol animacy restrictions (ANIM>INAN) in both active and passive sentences.
- Active sentences: ✓ ANIM>INAN, *INAN>ANIM
 - (11) Ch'ol (Zavala 2007, (79)/(83))
 - a. ✓ Tyi i-mel-e waj k-ña'jel. PFV A3-make-TV tortilla A1-aunt 'My aunt prepared the tortilla.' ANIM A, INAN P
 b. * Tyi i-jats'-ä aj-Pedro li chajk. PFV A3-hit-TV CLF-Pedro DET lightning
 - 'The lightning hit Pedro.'

INAN A, ANIM P

- > Ch'ol is notably different from Chuj in also showing restrictions in passives—the oblique agent *cannot* outrank the passive subject.
 - (12) Ch'ol (Zavala 2007, (80)/(82))

a.	* Tyi mejl-i	waj	[_{OBL} tyi	k-ña'jel]	
	PFV make+PASS	-IV tortilla	PREP	A1-aunt	
	Int. 'The tortilla	was prepar	red by my a	unt.'	cf. (11a)
b.	✓ Tyi jajts'-i PFV hit+PASS-I	aj-Pedro V CLF-Ped	_{OBL} tyi	chajk] Plightning	
	'Pedro was hit b	by the light	ning.'	in ingintining	cf. (11b)

Rest of this talk:

• We follow much recent work that models hierarchy effects via **Agree** (Béjar and Rezac 2003, 2009; Nevins 2007, 2011; Coon and Keine 2021; Deal 2022...).

Core idea:

Hierarchy effects arise when a single probe Agrees with two goals.

- Dynamic interaction (Deal 2022):
 A dynamic feature [α↑] on a first DP goal alters the probe P such that P may only further Agree with goals bearing [α].
- To account for...
 - 1. Variation in the articulation of the scale: there's variation regarding which features are dynamic.
 - 2. Variation in where the hierarchy effects hold:
 - (i) ACTIVES (all relevant Mayan languages):*v* agrees 1st with the object and 2nd with the agent.
 - (ii) PASSIVES (a subset of Mayan languages): T agrees 1st with the oblique agent and 2nd with passive subject.
 - ► (ii) only happens in a subset of Mayan languages.

3 Deriving hierarchy effects in Mayan actives

- While all relevant Mayan languages show animacy effects in actives, Mayan actives are syntactically diverse (Coon et al. 2014, 2021; Aissen 2017; Royer 2022):
 - (13) Ch'ol is a **low-abs** language

TAM – Set A (ERG) – ROOT – (VOICE) – SS – Set B (ABS)

- (14) Chuj is a **high-abs** language TAM – Set B (ABS) – Set A (ERG) – ROOT – (VOICE) – SS
- Following Coon et al. (2014), we assume ABS varies across Mayan in whether it reflects a probe on v (low-abs) or T (high-abs).
- We also follow this and other work (Coon 2017a, 2019) in assuming that ERG reflects Agree with *v* across the family.



- Low-abs: **1** produces Set B (ABS), while **2** produces Set A (ERG)
- High-abs: produces Obj movement (Coon et al. 2021), and again produces Set A (ERG); Set B (ABS) results from Agree with T.
- Given Cyclic Agree, we assume v always Agrees with the Obj first.

Our proposal: this "one-head/two goals" configuration—present in all Mayan languages—is the source of animacy restriction effects.

- Three theoretical tools:
 - 1. Feature geometry with animacy features (Harley and Ritter 2002; Toosarvandani 2023)
 - (17) $[\phi] \qquad 3.INAN.SG = [\phi]$ $[ANIM] [PL] \qquad 3.ANIM.SG = [\phi, ANIM]$ $[ANIM] [PL] \qquad 3.HUM.SG = [\phi, ANIM, HUM]$ $[HUM] \qquad ...$ $[PART] \qquad ...$
 - 2. Interaction and satisfication model of Agree (Deal 2015, 2022):
 - Probes have two specifications:
 - (a) Interaction (INT); features copied by the probe
 - (b) Satisfaction (SAT); features that make the probe stop
 - 3. Dynamic Interaction $[\phi\uparrow]$ (Deal 2022)
 - A goal's features can change [INT:] on a probe that agrees with it:
 - (a) Probe [INT: ϕ , SAT:-] Agrees with DP bearing [HUM[†]]
 - (b) This changes the probe specification to [INT:HUM, SAT:-]
- Example:
- (18) ✓ Ix-y-il nok' much nok' chan.
 PFV-A3-see CLF bird CLF snake
 'The snake saw the bird.'

ANIM A, ANIM P



- Now, if the Agent is inanimate and v first interacts with an anim Obj:
 - (19) * Ix-y-il nok' chab'in k'en kamera.
 PFV-A3-see CLF monkey CLF camera
 Int. 'The camera saw/filmed the monkey.' INAN A, ANIM P



- Dynamic Interaction with [ANIM↑] bleeds Agree with the Agent. If the Agent can't Agree with v, Set A (ERG) can't be derived :(.
- This system can explain the relative animacy restrictions and the points of microvariation within the family.
- If the object is...
 - (20) **Human** [HUM^{\uparrow},ANIM^{\uparrow}, ϕ]; the Agent must also be human.

A	Obj		А	Obj		А	Obj	
HUM	HUM	1	ANIM	HUM	X	INAN	HUM	X

(21) Animal $[ANIM\uparrow, \phi]$; the Agent must be animate (human or animal).

A	Obj		А	Obj		А	Obj	
HUM	ANIM	1	ANIM	ANIM	✓	INAN	ANIM	X

(22) **Inanimate** $[\phi/or trivially \phi\uparrow]$: no restrictions.

A	Obj		A	Obj		A	Obj	
HUM	INAN	1	ANIM	INAN	1	INAN	INAN	✓

- As for the microvariation w.r.t. **articulation of the scale**, we simply need to modify the kinds of features that matter, and which ones are dynamic.
 - > [HUM>NON.HUM] (Tsotsil) = only [HUM[†]] is dynamic.
 - > [ANIM>INAN] (Ch'ol) = only [ANIM \uparrow] is dynamic.
 - > Cajolá Mam (7 way distinction): [PART[↑], ELDER[↑], HUM[↑]...]
- See the Appendix on how local persons (which we think also bear human and animate features) are best treated in most Mayan languages.

4 Deriving variation in passive sentences

- Recall that Chuj and Ch'ol animacy restrictions diverge in passives:
- (23) ✓ Ix-b'o'-j-i ixim wa'il [_{OBL} yuj ix w-icham].
 PFV-make-PASS-IV CLF tortilla by CLF A1S-aunt
 'The tortillas were made by my aunt.' (Chuj: no restrictions)
- (24) * Tyi mejl-i waj [_{OBL} tyi k-ña'jel] PFV hacer+PASS-IV tortilla PREP A1-aunt Int. 'The tortilla was made by my aunt.' (**Ch'ol**: animacy restrictions)

Our proposal: keeping to a "one-head/two goals" analysis of hierarchy effects—there is variation within the family in whether:

- 1. T agrees only with passive Subj (Chuj; no hierarchy effects)
- 2. T agrees with both Obl Agent and passive Subj (Ch'ol, hierarchy effects)

Assumptions about Mayan passives

- We follow others (e.g., Coon et al. 2014; Coon 2017b, 2019) in assuming that Set B (ABS) in intransitives (passives included) comes from Agree with T.
 - (25) Set B (ABS) assignment in passive



- While T Agrees with the underlying Obj in both Ch'ol and Chuj, two ways T could vary in also Agreeing—or not—with the oblique Agent:
 - 1. Distinct syntactic position and probe accessibility, e.g.:

(26) Ch'ol: (27) Chuj:

$$\begin{bmatrix} T & OBL & Subj \end{bmatrix} \qquad \begin{bmatrix} OBL \end{bmatrix} \begin{bmatrix} T & Subj \end{bmatrix}$$

- 2. The internal composition of the oblique Agent is structurally distinct in both languages, e.g., it is a DP in Ch'ol but a PP in Chuj.
- We explore option 1 here, but there's empirical evidence for both options (see Coon et al. 2021, 291-2)

Ch'ol passives (hierarchy effects)

(28)

• By-phrase is generated in agent position, Spec,vP (Collins 2005, i.a.)



- T Agrees first with PP, then with the theme (if possible) (1 probe, 2 goals).²
- As above, [ANIM[†]] interacts dynamically
 - (29) Tyi il-än-ty-i li wiñik tyi x-'ixik. PFV see-DTV-PASS-IV the man PREP CLF-woman 'A woman was seen by the man.'



• If the OBL has [ANIM[†]] and not the theme, the theme cannot Agree with T; Set B is not derived (presumable Case assignment problem for the theme)

Chuj passives (no hierarchy effects)

• If oblique phrases in Chuj are first Merged outside the c-command domain of T, T will only find the Theme; no animacy restrictions.



 $^{^{2}\}phi$ -features are accessible on the by-phrase: either it's a PP that has agreed with an internal DP (Rezac, 2008), as we show here, or it's itself a DP (as per Coon et al. 2021 for Ch'ol).

- Independent evidence that PPs are lower in Ch'ol than Chuj in Royer 2023:
 - 1. Subjects can bind inside PPs in Ch'ol, but not in Chuj.
 - 2. PPs in Chuj vs Ch'ol have a distinct distribution: must be peripheral in Chuj but not Ch'ol, where V-O-PP-S is possible ((68)-(69) in Royer 2023).
- **In sum:** We can capture variation in animacy restrictions in Mayan passives by keeping to a one probe/two goals analysis of hierarchy effects.
- Several ways to work this out formally, but one way comes from varying the syntactic position of the oblique agent.
- 5 Mayan Set A and possessor-possessum hierarchy effects
- To capture the Mayan animacy hierarchy effect via Agree, we've followed the standard analysis for hierarchy effects via Agree: one probe/two goals:



Recall: @ generates Set A (ERG) in all relevant Mayan languages

- Across Mayan, Set A cross-references not only ergatives, but also possessors.
 - (32) [ix s-nun [_{POSS} waj Xun]] CLF A3-mother CLF Xun 'Xun's mother'
- **Proposal** (based on Deal 2010, Clem 2019): Mayan Set A (ERG/POSS) arises when a single probe on v/Poss Agrees with a *second* goal.

- **Consequence**: Set A in the nominal domain also results from Agree with two goals; the possessor gets Set A because it's second to agree with Poss⁰
 - Word order: the possessum comes first, across Mayan
 - Parallel to high-abs in vP the probe's first goal is raised



• **Prediction**: if this is the right analysis (and dynamic features are borne by DPs), we expect animacy restrictions in possessive constructions as well:



- This prediction is borne out in Chuj.
 - (34) a. ✓ te' s-pat heb' unin CLF A3-house PL child 'the children's house' (HUM p'sor, INAN p'sum)
 b. * heb' y-unin te' pat. PL A3-child CLF house
 - intended: 'the house's children'

(35)	a.	1	te'	s-pat	nok'	tz'i'
			CLF	A3-house	PL	child
		'tl	he do	g's house'		

- b. * nok' s-tz'i' te' pat. CLF A3-dog CLF house intended: 'the house's dog'
- (36) a. ✓ nok' s-tz'i' winh winak CLF dog CLF man 'the man's dog'
 b. * heb' s-winak nok' choi

(ANIM p'sor, INAN p'sum)

- (INAN p'sor, ANIM p'sum)
- (HUM p'sor, ANIM p'sum)
- b. * heb' s-winak nok' choj.
 PL A3-man CLF puma
 intended:³ 'the puma's men/people' (ANIM p'sor, HUM p'sum)
- Again, note lack of any restriction when DPs rank equally:

(37) a.	✓ s-kuxinu te' pat A3-kitchen CLF house 'the house's kitchen'	(INAN p'sor, INAN p'sum)
b.	✓ nok' y-une' nok' kaxlan CLF A3-child CLF hen 'the hen's chicks'	(ANIM p'sor, ANIM p'sum)
c.	✓ ix s-nun winh winak CLF A3-mother CLF man 'the man's mother'	(HUM p'sor, HUM p'sum)

• In sum: we find the exact same pattern as in Chuj actives:

P'SOR	P'SUM		P'SOR	P'SUM		P'SOR	P'SUM	
HUM	HUM	1	ANIM	HUM	X	INAN	HUM	X
HUM	ANIM	1	ANIM	ANIM	1	INAN	ANIM	X
HUM	INAN	1	ANIM	INAN	✓	INAN	INAN	1

³Intended given cultural concept of *moj spixan* (non-human entities that possess humans).

(INAN p'sor, HUM p'sum)

- Several kinds of repairs for different kinds of nouns, but for the ones above:
 - (38) a. y-unin-**al** te' pat A3-child-INAL CLF house 'the house's children'
 - b. s-tz'i'-**al** te' pat A3-dog-INAL CLF house 'the house's dog'
 - c. s-winak-il nok' choj
 A3-man-INAL CLF puma
 'the puma's men' (those whose "moj spixan" is a puma)
- Possessa all appear with -*Vl* suffix, an "inalienable" suffix; and Set A is preserved, which we could account in different ways:
 - 1. -Vl overrides ANIM and HUM features on the noun.
 - 2. -Vl overrides dynamic features on the noun.

6 Conclusion

We proposed a new analysis of animacy restrictions that accounts for points of uniformity and microvariation with the Mayan family.

(39) Main proposals:

- a. Hiearchy effects arise when *a single probe agrees with two goals*, which we explained via Int/Sat model of Agree (Deal 2015, 2022).
- b. Goals can bear *dynamic features*, e.g., [ANIM[↑]], altering the kinds of goals with which the probe can subsequently Agree.
- Uniformity in active sentences: Across Mayan, v Agrees with Obj first and Agent second (Coon et al. 2021)
 - A dynamic feature α on Obj bleeds further Agree with Agent if Agent does not bear α .

- Variation in articulation of the scale: Arises because there is variation wrt which features are dynamic (see appendix A on local pronouns).
- Variation in passives: The one probe/two goals analysis can be extended, if in some languages (e.g., Ch'ol) T Agrees with both the OBL agent and passive Subj, whereas in others (e.g., Chuj) T only Agrees with passive Subj.
- Extension to possessive constructions: Our analysis predicts hierarchy effects in possessive constructions, a prediction which we showed is borne out.
- Other extensions, e.g.:
 - 1. the status of local persons (see appendix A)
 - 2. other factors traditionally associated to "obviation", restrictions based on coreference, definiteness, and topicality (see appendix B).

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Appendices

A On the status of local persons

- For most Mayan languages, animacy hierarchy restrictions hold only when both arguments are 3rd person.
 - Local persons are outside the restriction, despite denoting humans:
 - (40) a. * Ix-y-il winh winak nok' chan. PFV-A3-see CLF man CLF snake 'The snake saw the man.' ANIM>HUM
 b. ✓ Ix-{in/ach/onh}-y-il nok' chan. PFV-B1S/B2S/B2P-A3-see CLF snake
 - 'The snake saw me/you/us.' ANIM>LOCAL PERSON
- We consider two classes of approaches to this fact:
 - 1. No Agree-visible animacy features on local persons
 - 2. Agree-visible animacy features on local persons, but not dynamic
- On theory 1, local persons either lack animacy features in the syntax (their semantics notwithstanding), or these features are shielded from Agree
 - (41) If local persons simply lack animacy features:
 - a. 1st person: [ϕ ,PART,SPKR]
 - b. 2nd person: $[\phi, PART]$
 - c. 3rd person: $[\phi]$, $[\phi,ANIM^{\uparrow}]$, or $[\phi,HUM^{\uparrow},ANIM^{\uparrow}]$
 - > The problem: this makes local persons like inanimates! They lack the features [ANIM] and [HUM] (as far as Agree can see)

- This makes a false prediction concerning local person subjects with animate objects. These combinations are well-formed:
 - (42) Ix-k-il nok' tz'i' pro. PFV-A1P-see CLF dog 1PL 'We saw the dog.' (Chuj)
 - We proposed that the animate object dynamically interacts, requiring an [ANIM] feature on the subject in order for the subject to Agree
 - We must therefore conclude from (42) that local persons *do* have an [ANIM] feature accessible to Agree
- Theory 2: local persons have animacy features, but not dynamic ones
 - (43) a. 1st person: $[\phi, PART, SPKR, HUM, ANIM]$
 - b. 2nd person: [φ,PART,HUM,ANIM]
 - c. 3rd person: $[\phi]$, $[\phi,ANIM^{\uparrow}]$, or $[\phi,HUM^{\uparrow},ANIM^{\uparrow}]$
- This theory predicts that local persons aren't outside the system they just don't have the same behavior for Agree as objects as 3rd persons do.
 - We expect that if the 2nd person were clearly non-human, it should be ruled out as subject with a human object.
 - (Hard to assess because e.g. dogs may well be honorary humans)
- Implications for macro-variation:
 - Aissen (1997) notes that Chamorro includes both 2nd and 3rd persons in its animacy hierarchies; Algonquian includes all persons.
 - We suggest that languages vary as to whether they confine their dynamic features to their third persons, extend them to 2nd persons, or extend them to all persons

B Obviation, topicality, and coreference

- Aissen (1997) and much subsequent work have related Mayan animacy restrictions to Algonquian patterns of obviation.
 - (44) Obviation scale:(local) > proximate > obviative
 - In Algonquian, direct voice is required whenever the subject is proximate and the object obviative.
 - Aissen's core thesis: in Tsotsil, active voice is required whenever the subject is proximate and the object obviative.
 - Otherwise, an inverse/passive is needed.
- While proximate vs obviative DPs are overtly distinguished in Algonquian, they are not in Mayan. So why connect the Mayan patterns to obviation? Three reasons:
 - 1. The same animacy effects hold in Algonquian languages: the obviation scale aligns with the animacy scale, i.e., for combinations of 3rd person animates/inanimates (and only for such combinations), the animate must be proximate (otherwise inverse voice is required).
 - 2. Proximates in Algonquian are generally more "topical/definite" than obviatives (see Oxford to appear and references therein), and Aissen (1999) argues that might also be the case for Tsotsil.
 - 3. Given additional assumptions, two constraints on the distribution of coreferential nominals can be made to follow, in particular:
 - (a) *Possessives*. Sentences of the type [x's $y \vee x]$ are not possible when x and y are third persons. (e.g. *Her_i friend helped her_i*)
 - (b) Attitudes. Sentences of the type [x V_{speech/attitude} [CP that y V x]] are also not possible when x and y are third persons. (e.g. *Maria_i said that Juan helped her_i*)
- We focus on possessives, but we believe our analysis can be extended to attitudes.

- Possessive coreference effects in Chuj and Ch'ol:
 - (45) * Ix-y-il waj Xun [s ix s-nun pro]. PFV-A3-see CLF Xun CLF A3-mother PRON Intended: 'His₁'s mother saw Xun₁.' (Chuj)
 - (46) * Tyi i-tyaj-a pro [s i-ñox'a pro] tyi PFV A3-find-TV PRON A3-husband PRON PREP Yermosaj.
 Villahermosa
 Intended: 'Her₁ husband found her₁ in Villahermosa.' (Ch'ol)
- Like for animacy effects in these languages, local persons don't count:

(47)	a.	Ix-in-y-il	ix	hin-nun.	
		PFV-B1S-A3-see	CLF	FAls-mother	
		'My mother saw me.'			(Chuj)
	b.	Tyi i-ts'äk-ä-y-o	ñ	k-alo'b-il.	
		PFV A3-cure-TV-EPEN-B1 A1-son-NML			
		'My son cured m	le.'	(Ch	'ol, Zavala 2007: 77)

• To capture these data, we take two steps. First, what we previously analyzed as an insatiable probe on *v* and Poss should instead be [SAT:PROX].



• This rules out structures with set A agreement and (i) proximate objects or (ii) proximate possessa—Agree would stop at the first goal and set A cannot be generated (for ERG or POSS).

- Second, we make two additional assumptions, which match parts of the analysis of Aissen (1997)
 - (49) *Obviation tracks reference* If two expressions co-refer, they must match wrt the feature

[PROX]. (Ideally this is derivable from a proper semantics from obviation features)

(50) Third person dissimilation

If there are two third persons in a clause, one must be proximate (i.e. bear the feature [PROX]).

- This rules out the generation of examples like (51), from above:
 - (51) * Ix-y-il waj Xun [_{SUBJ} ix s-nun *pro*]. PFV-A3-see CLF Xun CLF A3-mother PRON Intended: 'His₁'s mother saw Xun₁.' (Chuj)
 - Given set A agreement in the clause and the possessive DP, neither the object (*Xun*) nor the possessum ('mother') is proximate.
 - The pronominal possessor cannot be proximate because it is coreferential with a non-proximate (*Xun*)
 - This means that no argument is proximate, which violates Third Person Dissimilation
- Local persons are outside this generalization because the constraint is specifically *third person* dissimilation.
 - This is part of a broader pattern of dissimilation effects specifically in 3/3 contexts, within Mayan and beyond
 - E.g. in Tsotsil, agent focus is only used in 3/3
 - Could be related, as Aissen has suggested, to processing issues arising in a verb-initial, *pro*-drop language.