Feature Gluttony in the Guarani inverse

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29 APR 2023
WSCLA 26

1 Preliminaries

- Paraguayan Guaraní (Guarani) has an inverse/direct agreement system (Velázquez-Castillo 1991, 2002; Payne 1994; Woolford 2016; Zubizarreta and Pancheva 2017) in which the verb agrees with the highest ranking argument on the Person Hierarchy (PH) as defined in (1).[1]

  (1) **Person Hierarchy:** 1st person > 2nd person > 3rd person

- In an intransitive clause with only one argument, the verb agrees fully with the subject as in (2) (all data, unless otherwise noted, is based on original fieldwork in Coronel Oviedo Paraguay).

  (2) a. che **a**-guata
  I **1.SUBJ**-walk
  'I walk.'

  b. che **a**-sapukai
  I **1.SUBJ**-shout
  'I shouted.'

- In transitive clauses with a 1st person subject/object the verb will always surface with 1st person agreement, either as subject agreement (3a) or object agreement (3b).

  (3) a. che **ai**-pỹtỹvõ Tamara-pe
  I **1.SUBJ**-help Tamara-DOM
  'I helped Tamara.' (1>3: subject agreement)

  b. nde/Romi/ha'e **chei**-pytyvõ (chéve)
  you/Romi/she **1.OBJ**-help (me)
  'you/Romi/she helped me.' (2/3>1: object agreement)

- *Direct* and *inverse* configurations may be classified as follows (Béjar 2003; Béjar and Rezac 2009):

> ⇒ **Direct configuration (subject agreement):** one in which the subject is at least as high as the object on the PH (1): Subject ≥ Object (hierarchy conforming).
>
> ⇒ **Inverse configuration (object agreement):** one in which the object is higher than the subject on the PH (1): Object > Subject (hierarchy violating).

- The crucial distinction between the direct/inverse in Guarani is that in the direct (2) and (3a), a single person probe agrees with a single DP (4), while in the inverse (3b) the probe agrees with both (5) (Béjar and Rezac 2003; Coon and Keine 2021).[2]

  (4) [TP T [vP DP [VP V DP]]] → *No Gluttony, direct morphology*

  (5) [TP T [vP DP [VP V DP]]] → *Gluttony, inverse morphology*

[1] I refer to this as an inverse/direct system but it is also referred to as "hierarchical agreement" (Silverstein 1976; Nichols 2001). Some consider this an extension of the active stative system in Guarani (Velázquez-Castillo 1991, 2002; Estigarribia 2020) however I set that system aside for the present analysis.

[2] The idea that two accessible DPs found in the domain of a Probe is also mentioned elsewhere Anagnostopoulou (2003); Béjar and Rezac (2003); Arregi and Nevins (2007); Preminger (2014); Stegovec (2020).

- Adopting the terminology from Coon and Keine (2021), I refer to this as "Gluttony" which is the result of double Agree. This gives rise to a special Probe structure in which the Probe contains features from two DPs.

(6) **Gluttonous Probe**

$$\text{P(robe)} = \left[\left[\text{X} \right]_{\boxed{\text{DP}_1}}, \left[\begin{array}{c} \text{X} \\ | \\ \text{Y} \\ | \\ \text{Z} \end{array} \right]_{\boxed{\text{DP}_2}} \right] \longrightarrow \textit{Special requirements on morphology}$$

- These Gluttonous Probes impose special requirements in the morphology. If these requirements cannot be met, it gives rise to ineffability/ungrammaticality.
- However, following Coon and Keine (2021), if a language is able to meet these special requirements, then these special probes do not give rise to ineffability.[3]

[3] The authors note that syncretism can rescue Gluttonous Probes in certain languages and speculate that portmanteaux may also receive a similar explanation Coon and Keine (2021).

⁕ Proposal

- **Central claim:** following Coon and Keine (2021) in that not *all* Gluttony is bad, these inverse agreement markers in Guarani are the morphological realization of a Gluttonous Probe which agreed with two DPs.
- In the rest of this talk, I introduce a strictly agree-based analysis of these facts in Guarani adopting the Feature Gluttony terminology and many ingredients of Coon and Keine (2021)'s analysis.
- The major contribution of this work is a new analysis of an existing pattern supported by novel fieldwork performed in Paraguay and an extension of the Gluttony framework to an entirely separate phenomenon than the PCC (Perlmutter 1970; Bonet 1991).

2 The data

2.1 The direct pattern

- Direct agreement is exemplified in (7) where the verb agrees with the subject in person and number except in local direct scenarios (1>2) as in (7f) where the verb also agrees with the object.

(7) **Direct configurations → subject agreement:**

a. che **ai**-põtõvõ Tamara-pe/ha'e-kuera-pe
I **1.SUBJ**-help Tamara-DOM/he-PL-DOM
'I helped Tamara/them.' (1>3/3.PL: agreement with subject)

b. nde **rei**-pytyvõ Juam-pe/ha'e-kuera-pe
you **2.SUBJ**-help Juan-DOMhe-PL-DOM
'You helped Juan/them.' (2>3/3.PL: agreement with subject)

c. ha'e **oi**-pytyvõ Juam-pe
S/he **3.SUBJ**-help Juan-DOM
'S/he helped Juan.' (3>3: agreement with subject)

d. ore **roi**-pỹtỹvõ Tamara-pe/ndéve
we.EXCL **1.EXCL.SUBJ**-help Tamara-DOM/you
'We (excl.) helped Tamara/you.' (1.EXCL>3/2.SG: agreement with subject)

e. peẽ **pe**-pytyvõ Juam-pe/ha'e-kuera-pe
y'all **2.PL.SUBJ**-help Juan-DOM/s/he-PL-DOM
'Y'all helped Juan/them.' (2.PL>3/3.PL: agreement with subject)

f. che **roi**-pytyvõ (ndéve)
I **1>2PORT**-help (you.OBJ)
'I helped you.' (1>2: portmanteau agreement)

g. ore **poroi**-pytyvõ peẽ-me
we.EXCL **1PL>2PL.PORT**-DIR-see y'all-DOM
'We (excl.) helped y'all.' (1PL>2PL: portmanteau agreement)

- Direct agreement also surface in intransitive constructions as exemplified in (8).[4]

(8) **Direct agreement in intransitives:**

a.	b.	c.
che **a**-karu	nde **re**-ñañi	ha'e **o**-ke
I **1.SUBJ**-eat	you **2.SUBJ**-run	s/he **3.SUBJ**-sleeps
'I eat/ate.'	'You run/ran.'	'S/he sleeps.'

[4] This system of direct/inverse is not to be confused with active/stative. There are intransitives which have the "inverse agreement" marker but these have been analyzed as stative intransitives (Velázquez-Castillo 2002).

✻ The direct pattern

- Direct agreement surfaces when the Subject is at least as high as the Object on the PH: 1>2, 1>3, 2>3, 3>3.
- The verb agrees with the subject in person and number. In local direct scenarios (1>2) the verb also agrees with the object in number.
- The direct markers also surface in intransitives.

2.2 The inverse pattern

- The inverse is shown in (9). The verb agrees with the object in person and number.

(9) **Inverse configurations → object agreement:**

a. Romi/ha'e **chei**-pytyvõ (chéve)
Romi/she 1.SG.OBJ-help (me.OBJ)
'Romi/she helped me.' (3>1: agreement with object)

b. nde **chei**-pytyvõ (chéve)
you 1.SG.OBJ-help (me.OBJ)
'You helped me.' (2>1: agreement with object)

c. Tamra/ha'e **ndei**-pytyvõ (ndéve)
Tamara/she 2.SG.OBJ-help (you.OBJ)
'Tamara/She helped you.' (3>2: agreement with object)

d. Romi/ha'e/haikuai **orei**-pỹtỹvõ (oréve)
Romi/she/they **1.EXCL.OBJ**-help (us)

'Romi/she/they helped us.' (3/3.PL>1.EXCL: agreement with object)

e. nde/peẽ **orei**-pỹtỹvõ (oréve)
you/y'all **1.EXCL.OBJ**-help (us)

'You/y'all helped us.' (2/2.PL>1.EXCL: agreement with object)

f. Juam/haikuaai **pende**-pytyvõ (peẽ-me)
Juan/they **2.PL.OBJ**-help (y'all-DOM)

'Juan helped y'all.' (3/3.PL>2.PL: agreement with object)

- Crucially, the inverse is *required* here and failure to agree with the highest ranking argument results in ungrammaticality (10).

(10) a. *ha'e **oi**-pytyvõ (chéve)
s/he 3-help (me.OBJ)

Intended: 'S/he helped me.' (3>1: agreement with subject)

b. *nde **re**-pytyvõ (chéve)
you 2.SG.SUBJ-help (me.OBJ)

Intended: 'You helped me.' (2>1: agreement with subject)

c. *ha'e **o**-pytyvõ (ndéve)
s/he 3-help (you.OBJ)

Intended: 'S/he helped you.' (3>2: agreement with subject)

✻ The inverse pattern

- Inverse agreement surfaces when the object outranks the object on the hierarchy.
  - 2>1, 3>1, 3>2, etc.
- Further, inverse agreement is *required* when the object outranks the subject. Failure to agree with the higher ranking object results in ungrammaticality.

2.3 Putting it all together

- All of the possible person combinations including all the singular/plural variants are shown in (11).

(11) **Person combinations and agreement**

	1.SG Agent	1.EXCL	1.INCL	2.SG	2.PL	3.SG	3.PL
1.SG Patient	✗	✗	✗	1.SG (9b)	1.SG (54a)	1.SG (9a)	1.SG (54d)
1.EXCL	✗	✗	✗	1.EXCL (9e)	1.EXCL (9e)	1.EXCL (9d)	1.EXCL (9d)
1.INCL	✗	✗	✗	✗	✗	1.INCL (54c)	1.INCL (54b)
2.SG	1>2.SG(7f)	1>2.SG	✗	✗	✗	2.SG (9c)	2.SG (54e)
2.PL	1>2.PL(53a)	1>2.PL (7g)	✗	✗	✗	2.PL (9f)	2.PL (9f)
3.SG	1.SG (7a)	1.EXCL (7d)	1.INCL (53c)	2.SG (7b)	2.PL (7e)	3.SG (7c)	3.SG (53f)
3.PL	1.SG (7a)	1.EXCL (53e)	1.INCL (53c)	2.SG (7b)	2.PL (7e)	3.SG (53f)	3.SG (53h)

- The shaded cells represent the inverse and unshaded the direct. Both sets line up perfectly with our classification of the direct/inverse above.[5]

[5] There are a total of 32 possible combinations of persons in the paradigm (7*7 - the 17 impossible scenarios marked with ✗). Those not shown may be found in the appendix.

2.4 The direct/inverse marker in Guarani

- Another signal of the inverse in Guarani, in addition to the person morphology, is a direct inverse marker on particular vowel initial roots.

- Known as *tri-forme* roots (Zubizarreta and Pancheva 2017; Estigarribia 2020), these vowel initial roots surface with three different initial consonants: *t* for nominals, *h* for verbs with subject agreement, and *r* for verbs with object agreement.

- The three cases are exemplified with the root *echa* relating to seeing things in (12).

(12) **Tri-forme root *echa*:**

a. *t-echa*: sight, noun

b. *h-echa*: see, verb (subject agreement)

c. *r-echa*: see, verb (object agreement)

- The verb *pytyvõ* 'to help' is not a tri-forme root, but *echa* is. As we observe, the *r* shows up in the inverse because of object agreement and the *h* otherwise.[6]

[6] In addition, the direct marker *h* surfaces in the intransitive versions of these verbs like *che a-h-echa* 'I see'.

(13) **Tri-forme roots and the inverse:**

a. che a-**h**-echa Juam-pe
I 1.SUBJ-**DIR**-see Juan-DOM
'I see Juan.' (direct agreement: *h*)

b. che ro-**h**–echa (ndéve)
I 1>2PORT-**DIR**-see (you)
'I see you.' (direct agreement: *h*)

c. Juan/nde che-**r**-echa (chéve)
Juan/you 1.SG.OBJ-**INV**-see (me.OBJ)
'Juan/you saw me.' (inverse agreement: *r*)

- The distribution of the *r/h* aligns perfectly with the direct and inverse table from above. Below is a condensed version of that table.

(14) **Person combinations and *r/h* alternations:**

	1st (SG or PL) Agent	2nd (SG or PL)	3rd (SG or PL)
1st (SG/PL)Patient	✗	**-r-**	**-r-**
2nd (SG/PL)	**-h-**	✗	**-r-**
3rd (SG/PL)	**-h-**	**-h-**	**-h-**

- In the literature, these are not traditionally treated or referred as "direct/inverse" markers. However, I consider their perfect alignment with the direct/inverse agreement morphology to be non coincidental.

⁕ The empirical facts thus far

- Direct configurations are ones in which the subject is at least as high as the object on the PH. 1>2/3, 2>3, and 3>3.
  - The verb in the direct agrees with the subject in person and number and the *h* form surfaces.
- Inverse configurations are those in which the object is higher than the subject on the PH. These are cases like 2>1, 3>2, 3>1.
  - The verb in the inverse agrees with the object in person and number and the *r* form of the inverse markers surfaces.
- The only direct agreement marker sensitive to the object's number is the portmanteaux in local scenarios of 1>2 and 1>2PL.

3 Analysis

3.1 Gluttony

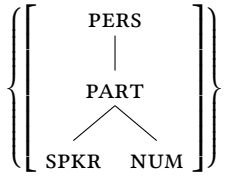
- The analysis adopted here is a strictly *agree* based analysis building on the framework of Feature Gluttony from Coon and Keine (2021).

⁕ DP feature geometries, 3rd persons do not bear number

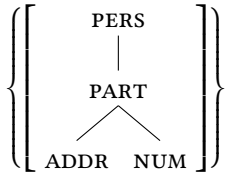
- The feature geometries of DPs are also complex with certain features entailing others (Harley and Ritter 2002; Béjar 2003).

(15) **Feature geometry of DPs in Guarani**

a. **1st person**



b. **2nd person**



c. **3rd person**

- The motivation for this particular geometry, in which NUM entails PART comes from the fact that third persons never control number agreement in Guarani as evidenced in (16).

(16) a. ha'e/ha'e-kuera o-ke
he/they-PL 3.SUBJ-sleep
'He/they sleep.'

b. ha'e oi-pytyvõ chupe/chupe-kuera
s/he 3.SUBJ-help him/him-PL
'He helped him/them.'

c. ha'e-kuera oi-pytyvõ chupe
he-PL 3.SUBJ-help him
'They helped him.'

- While Number is encoded semantically on third persons, it is not a syntactically active feature available for agreement. Not unlike cases in English with number mismatch: *the committee is reviewing your application.*

⁕ Articulated Probes

- Probes are articulated into segments following Harley and Ritter (2002); Béjar (2003). Each segment may agree separately with a different DP.

(17) **Fully-articulated π Probe**

$$\begin{bmatrix} u\text{PERS} \\ | \\ u\text{PART} \\ | \\ u\text{SPKR} \end{bmatrix}$$

⁕ Definition of Agree

- Secondly, I adopt the following definition of Agree (Deal 2015; Béjar and Rezac 2009; Coon and Keine 2021).

(18) **Agree:**
A probe segment [*u*F] agrees with the closest accessible DP in its domain that bears [F]. If Agree is established, the hierarchy of segments containing [F] is copied over to the probe, valuing and thus removing [*u*F].

- Two things are important here: i) each segment searches independently (Béjar and Rezac 2009) and ii) the *entire* geometry is copied over (Deal 2015).

⇒ Another critical assumption is that once a DP has been agreed with, it is no longer avaailable for further agreement (Georgi 2013; Kalin and van Urk 2015; Oxford 2017; Paparounas and Salzmann 2023).

- Finally, I claim that the agreement Probe involved in Guarani is high in the structure, on T/Infl, and cannot be low on *v*. Based on observations from causatives (19).

(19) **In a structure with multiple *v*'s, the Probe must see all of them:**

a. ha'e che-mbo-h-echa chupe
s/he 1.OBJ-CAUS-DIR-see him
'She made me see him.' ($3_{EA}>1_{causee}>3_{IA}$)

b. ha'e ne-mbo-h-echa chupe
s/he 2.OBJ-CAUS-DIR-see him
'She made you see him.' ($3_{EA}>2_{causee}>3_{IA}$)

c. che ro-mbo-h/*r-echa-uka ndéve
I PORT-CAUS-DIR/*INV-see-CAUS you
'I made him see you.' ($1_{EA}>3_{causee}>2_{IA}$)

- If causatives are derived by stacking multiples *v* heads which each introduce an

EA as in (20) (Hale and Keyser 1993, 2002; den Dikken 1995; Pesetsky et al. 1995; Harley 2008), then the question arises of which pair-wise comparison is made by the syntax?

(20) **Causative struture with multiple *v*Ps and EAs:**

[$_{vP}$ EA [$_{vP}$ Causee [$_{VP}$ V IA]]]

- The data in (19) surfaces with the portmanteau *ro-* representing features of the highest EA and the lowest DP. This suggests that there is no pair-wise distinction between EA>Causee or Causee>EA that could determine this morphology.
- By placing the Probe high in the structure on T/Infl (following the Guarani literature (Woolford 2016; Zubizarreta and Pancheva 2017)) all arguments are visible to the Probe.

⁕ Defining Gluttony

- With these basic ingredients, a Gluttonous configuration is one in which a less-specified DP c-commands a more-specified DP which results in multiple segments on the Probe being valued by different DPs (21).

(21) [$_{XP}$ X$_{[ux[uy[uz]]]}$ [$_{vP}$ DP$_{[x]}$ [$_{VP}$ V DP$_{[x, y, z]}$]]] ⟶ *Gluttony*

- The Probe, having agreed with both DPs, will carry a set of set of features.

(22) **Gluttonous Probe from double Agree:**

$$X = \left[\left\{\left(\left\{ [\,x\,]_{\boxed{DP_1}}, \begin{bmatrix} x \\ | \\ y \\ | \\ z \end{bmatrix}_{\boxed{DP_2}} \right)\right\}\right]$$

⟶ *Special requirements on morphology*

- If the Probe only agrees with one DP (23), then this does not give rise to Gluttony.

(23) [$_{XP}$ X$_{[ux[uy[uz]]]}$ [$_{vP}$ DP$_{[x, y, z]}$ [$_{VP}$ V DP$_{[x]}$]]] ⟶ *No Gluttony*

(24) **non-Gluttonous Probe from single Agree:**

$$X = \left[\left\{\left(\left\{ \begin{bmatrix} x \\ | \\ y \\ | \\ z \end{bmatrix}_{\boxed{DP_1}} \right)\right\}\right]$$

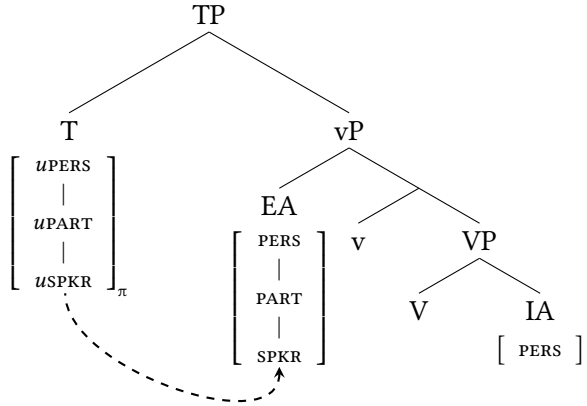
⟶ *No special requirements on morphology*

- Recall that these Gluttonous Probes impose particular requirements on the morphology. Namely, that you must have a vocabulary item to express the set of features on the Probe.
- While most languages are not equipped with such vocabulary items, Guarani is and the inverse person agreement morphology are morphological manifestations of Gluttonous Probes.

3.2 Applying the analysis to Guarani

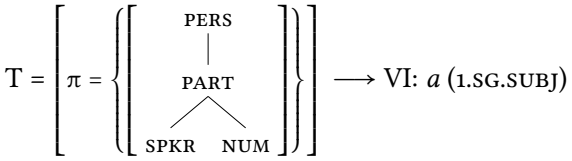
- Equipped with the theoretical ingredients, consider a direct configuration like 1>3 in which the 1st person subject marker *a* appears as well a the *h* form.
- Here a π Probe will search the structre for the closest c-commanded DP and agree with it. In this case, all of the features are valued by a single DP (*u*PERS,*u*PART,*u*SPKR).

(25) **1 > 3 direct = No Gluttony**



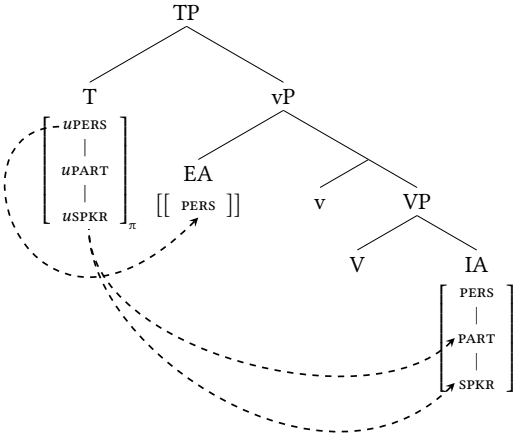
- The Probe will copy over the entire feature geometry of the DP, including number, and as a result will carry the following features in (26).

(26) **Features in 1>3 direct:**



- Compare this to a 3>1 inverse configuration in which the segments on the Probe are valued by two different DPs (27)—i.e. a Gluttonous configuration.

(27) **3 > 1 inverse = Gluttony**



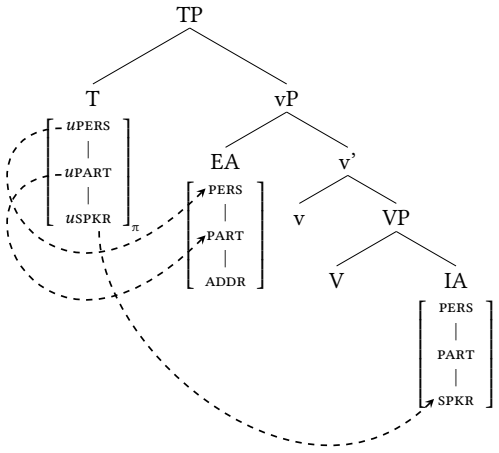
- The Probe had its separate features, (*u*PERS,*u*PART,*u*SPKR) valued by different DPs. *u*PERS by the 3rd person subject, and *u*PART and *u*SPKR by the object. This gives rise to Gluttony and the Probe will carry a set of set of features as in (28).

(28) **Features in 3>1 inverse:**

$$\mathrm{T} = \left[\pi = \left\{ \left[\ \textsc{pers}\ \right], \left[\begin{array}{c}\textsc{pers}\\ |\\ \textsc{part}\\ \diagup\ \diagdown\\ \textsc{spkr}\quad \textsc{num}\end{array}\right]\right\}\right] \longrightarrow \text{VI: } \textit{che}\ (\textsc{1.sg.obj})$$

- In a 2>1 inverse construction, the Probe will agree with all of the features of both DP, as as well (29) because the Probe will not stop probing unless it finds *u*SPKR.

(29) **2 > 1 inverse = Gluttony**



- Once again the Probe copies the entire geometry from both DPs and thus results in a Gluttonous Probe with a set of set of features (30).

(30) **Probe in 2>1 inverse:**

$$\mathrm{T} = \left[\pi = \left\{\left[\begin{array}{c}\textsc{pers}\\ |\\ \textsc{part}\\ \diagup\ \diagdown\\ \textsc{spkr}\quad \textsc{num}\end{array}\right], \left[\begin{array}{c}\textsc{pers}\\ |\\ \textsc{part}\\ \diagup\ \diagdown\\ \textsc{addr}\quad \textsc{num}\end{array}\right]\right\}\right] \longrightarrow \text{VI: } \textit{che}\ (\textsc{1.sg.obj})$$

- Configurations like 2>3 and 3>2 will play out similarly, and so I skip their derivations to simply show the features the Probe copies over in (31) for the direct and (32) for the inverse.

(31) **Probe in 2>3 direct:**

$$\mathrm{T} = \left[\pi = \left\{\left[\begin{array}{c}\textsc{pers}\\ |\\ \textsc{part}\\ \diagup\ \diagdown\\ \textsc{addr}\quad \textsc{num}\end{array}\right]\right\}\right] \longrightarrow \text{VI: } \textit{re}\ (\textsc{2.sg.subj})$$

(32) **Probe in 3>2 inverse:**

$$\mathrm{T} = \left[\pi = \left\{\left[\ \textsc{pers}\ \right], \left[\begin{array}{c}\textsc{pers}\\ |\\ \textsc{part}\\ \diagup\ \diagdown\\ \textsc{addr}\quad \textsc{num}\end{array}\right]\right\}\right] \longrightarrow \text{VI: } \textit{nde}\ (\textsc{2.sg.obj})$$

- Finally, in 3>3 configurations, the Probe will only copy the [PERS] feature from the 3rd person subject and result in the following features.[7]

(33) $\pi = \{[\ \textsc{pers}\ ]\} \Leftrightarrow o$

[7] Recall here than for all cases of 1st/2nd person agreement # features are also copied over but not for 3rd persons as they do not have a number feature for the Probe to copy.

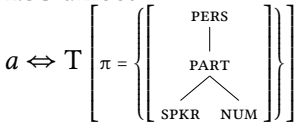
3.3 Vocabulary Items

- Assuming a Late Insertion model of morphology (Halle and Marantz 1993, 1994; Marantz 1997) in which phonological features are assigned to a bundle of syntactic features at the morphological interface, I will now lay out the Vocabulary Insertion (VI) rules for each case of agreement.

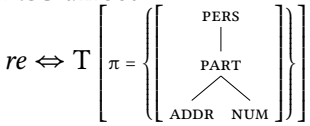
- The direct VIs are rather easy to define: it's simply the features that will spell out as the correct person marker, as in (34).[8]

(34) **Direct VIs**

a. **1.SG direct**



b. **2.SG direct**



[8] Recall that intransitives show direct agreement and this follows from this analysis because there is no Gluttony in intransitives.

- 3rd persons are just the spell out of a [PERS] feature. This also appears as the expletive agreement with weather verbs.[9]

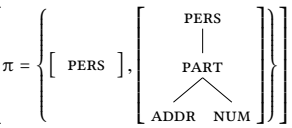
(35) **3 subject agreement**

o ⇔ T [π = {[PERS]}]

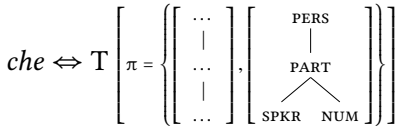
[9] *o-ky* 'It rains'.

- To encode the inverse in the VIs, I propose that any additional feature on the Probe, outside of what's necessary to spell out the person marker, triggers the inverse morphology.[10]

(36) **2nd person inverse**



(37) **1st singular inverse**



[10] We must remain agnostic to the contents of the additional features for 1st person object agreement because in the inverse there is no morphological reference to the subject.

- Put simply, in these rules, inverse marking is the morphological realization of a Gluttonous Probe. We need not make reference to the difference between the inverse VI in a 3>1 and a 3>2 configuration because even though the Probe ends up having different features.

3.4 Deriving the *r/h*

- The final piece of the puzzle is the *r/h* alternation which I claim is the morphological realization of a *v* adjacent to a Gluttonous Probe on T.

- The adjacency may be either linear or hierarchical, either way this predicts that if anything intervenes between T and *v*, the *r* will not surface. This plays out with the causatives in (38) which block the *r* from surfacing.

(38) **Causative bleed *r* in inverse**

a. ha'e che-mbo-h/*r-echa chupe
s/he 1.OBJ-CAUS-DIR/*INV-see him
'She made me see him.' ($3_{EA}>1_{causee}>3_{IA}$)

b. ha'e ne-mbo-h/*r-echa chupe
s/he 2.OBJ-CAUS-DIR/*INV-see him
'She made you see him.' ($3_{EA}>2_{causee}>3_{IA}$)

c. che ro-mbo-h/*r-echa-uka ndéve
I PORT-CAUS-DIR/*INV-see-CAUS you
'I made him see you.' ($1_{EA}>3_{causee}>2_{IA}$)

d. ha'e ne-mbo-h/*r-echa-uka chupe
he 2.OBJ-CAUS-DIR/*INV-see-CAUS him
'He made him see you.' ($3_{EA}>3_{causee}>2_{IA}$)

- Therefore, the elements must be adjacent and the adjacent presence of a Gluttonous T forces the *r* form to surface. Below is the VI rule for the *r* form of the tri-forme roots. I consider the *h* to be the default or Elsewhere case.

(39) **VI rule for *r/h* alternation:**
/r/ $\leftrightarrow$ *v* / $[\pi : \{X, Y\}]_T$ ___
/h/ $\leftrightarrow$ *v* / elsewhere

- As far as I have been able to tell through extensive fieldwork, there is no element which may occur in between the *r/h* and T which does not bleed the *r* form in the inverse. However there very well may be. In that case, there must be further explanation as to why some morphemes are transparent and others are blockers.

⁕ Summing up

- The pattern in Guarani may be analyzed under a Feature Gluttony model of agree following the proposal that inverse agreement is the morphological realization of a Gluttonous Probe.
- Furthermore, the *r/h* alternation which is strongly dependent on inverse person agreement can be derived as the exponence of a *v* adjacent to a Gluttonous Probe on T.
- This analysis groups inverse configurations with instances of double Agree and direct configurations with instances of single agree.
- In addition to the transitive data, this analysis also successfully explains the intransitive data and why direct morphology surfaces because there is only one argument.

4 Extensions

- There are two more aspects of the Guarani inverse which receive an explanation under this analysis. The first is the portmanteau in local direct scenarios and the second are facts about ditransitives introduced in the final section.

4.1 The portmanteau

- The facts are restated here. In 1>2, the agreement targets the person and number of the subject and object.

(40) **Portmanteau in local direct**

a. che **roi**-pytyvõ (ndéve)
I **1>2PORT**-help (you.OBJ)
'I helped you.' (1>2: portmanteau agreement)

b. ore **poroi**-pytyvõ (peẽ-me)
we.EXCL **1PL>2PL.PORT**-DIR-see (y'all-DOM)
'We (excl.) helped y'all.' (1PL>2PL: portmanteau agreement)

c. che **poroi**-pytyvõ (peẽ-me)
I **1SG>2PL.PORT**-DIR-see (y'all-DOM)
'I helped y'all.' (1SG>2PL: portmanteau agreement)

- It sure looks like this might be a case of a Gluttonous Probe because the VI appears to spell out the features of two arguments.
- However, I conclude that these are actually cases of the direct, not the inverse. Evidenced by the surfacing of the *h* form of the tri-forme root.

(41) a. che ro-**h**-echa (ndéve)
I 1>2.SG.PORT-**DIR**-see (you)
'I saw you.' (portmanteau: *h*)

b. che poro-**h**-echa (peẽ-me)
I 1>2.PL.PORT-**DIR**-see (y'all-DOM)
'I saw y'all.' (portmanteau: *h*)

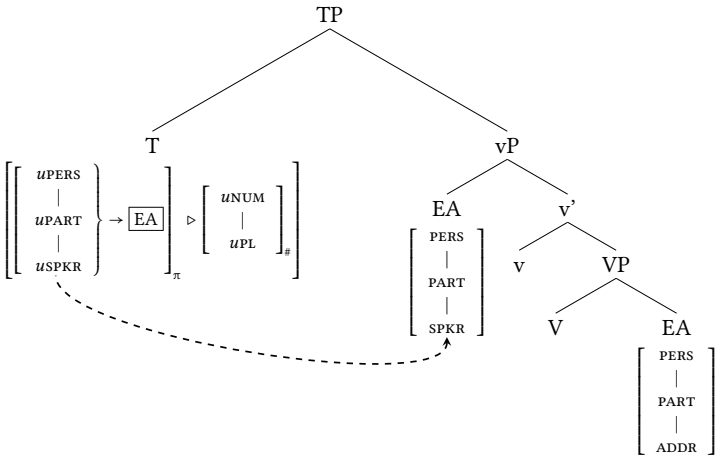
- There is no portmanteau with 3rd person objects because they never control number agreement. This means that there is only object agreement in the direct when the object is *able* to be agreed with in number.
- Because of this, I claim that the portmanteau is actually the result of a secondary # Probe in Guarani which searches the structure *after* the π Probe (Béjar 2003; Béjar and Rezac 2009; Coon and Keine 2021).

(42) **Fully articulated # Probe in Guarani**

$$\begin{bmatrix} u\text{NUM} \\ | \\ u\text{PL} \end{bmatrix}$$

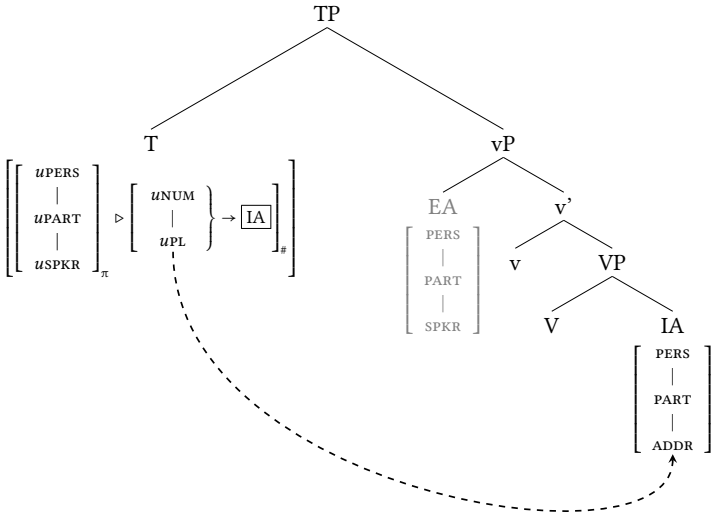
- The derivation for 1>2 is shown below.

(43) **1>2 π Probe only agrees with EA**



- Here, the π Probe searches and has all of its features valued by the EA (it also copies over its number features). Next, as shown in (44), the # Probe searches and agrees with the IA.

(44) **1>2 # Probe agrees with IA → portmanteau**



- The π Probe will now have all of the features of the EA, and the # Probe those of the IA. Crucially, this is not a Gluttonous Probe, per our definition. Instead, the head T hosts two Probes which were fully valued by separate DPs.

(45) **Features in 1>2.SG:**

$$\text{T} = \left[\pi = \left\{ \left[\begin{array}{c} \text{PERS} \\ | \\ \text{PART} \\ \diagup\ \diagdown \\ \text{SPKR} \quad \text{NUM} \end{array} \right] \right\} \triangleright \ \# = \left\{ \left[\begin{array}{c} \text{PERS} \\ | \\ \text{PART} \\ \diagup\ \diagdown \\ \text{ADDR} \quad \text{NUM} \end{array} \right] \right\} \right] \Leftrightarrow \textit{ro}$$

- The portmanteau is thus not the realization of a Gluttonous Probe on T, but rather two separate Probes agreeing individually with both DPs. We therefore do not need to modifiy out *r/h* rule because neither Probe on T is Gluttonous in the portmanteau configurations.

5 Agreement in ditransitive clauses

- There is one more empirical fact about Guarani that remains puzzling. That is, that the inverse becomes *optional* in ditransitives. Consider the following examples in (46) in which inverse agreement with the object in a hierarchy violating configuration becomes optional. [11]

(46) a. ha'e **nde**-me'ẽ chéve (ndéve)
3 **2.OBJ**-give to.me to.you
'He gave you to me' (3>1>2: agreement with DO)

b. ha'e **o**-me'ẽ chéve ndéve
3 **3.SUBJ**-give to.me to.you
'He gave you to me' (3>1>2: agreement with subject)

c. ha'e **che**-mẽ'ẽ Arturo-pe (chéve)
3 **1.OBJ**-give Arturo-DOM to.me
'S/he gave me to Arturo' (3>3>1: agreement with DO)

d. ha'e **o**-mẽ'ẽ Arturo-pe chéve
3 **3.SUBJ**-give Arturo-DOM to.me
'S/he gave me to Arturo' (3>3>1: agreement with subject)

- Here, the verb appears to have the *option* to agree with the Direct Object which is in stark contrast to the required inverse agreement in monotransitives. Clearly, there is something special that is present in the structure of ditransitives, which is blocking agreement between the verb and DO.

- Agreement with the indirect object is always impossible as demonstrated in (47).

(47) a. Laure o-me'ẽ chéve Isa-pe
Laure 3.SUBJ-give to.me Isa-DOM
'Laure gave Isa to me.'

b. *Laure che-me'ẽ Isa-pe
Laure 1.OBJ-give Isa-DOM
Intended: 'Laure gave Isa to me.'

- I take the difference between monotransitives and ditransitives to be the presence of an Applicative head which introduces the IO.

- Furthermore, if we assume that ApplP is a phase following McGinnis (2001); Citko (2014), this explains the lack of agreement with the DO in specific constructions.

(48) $[_{XP}\ X_{[u\pi[u\text{PART}[u\text{SPKR}]]]}\ [_{vP}\ DP_{[\pi]}\ [_{ApplP}\ IO_{[\pi]}\ Appl\ \big(\ [_{VP}\ V\ DO_{[\pi,\ \text{PART},\ \text{SPKR}]}\ ]\ ]\ ]\ ]\ \Rightarrow X{:}\{\pi\} \Rightarrow o$

- However if the DO undergoes optional Object Shift out of the ApplP as in (49), then it will be available for the π Probe to agree with and will give rise to Gluttony.

(49) $[_{XP}\ X_{[u\pi[u\text{PART}[u\text{SPKR}]]]}\ [_{vP}\ DP_{[\pi]}\ [_{ApplP}\ DO_{[\pi,\ \text{PART},\ \text{SPKR}]}\ IO_{[\pi]}\ Appl\ \big(\ [_{VP}\ V\ \cancel{DO}\ ]\ ]\ ]\ ]\ \Rightarrow X{:}\{\{\pi\},\ \{\pi,\ \text{PART},\ \text{SPKR}\}\} \Rightarrow che$

[11] Speakers were provided with the context of a "boyfriend auction" (Keine et al. 2022) in which women in the audience bid on dates with boyfriends.

6 Conclusion

- Today I have motivated a strictly agree-based analysis of the direct/inverse agreement pattern in Guarani.
- Adopting a Feature Gluttony analysis of agree, I propose that the inverse markers are the morphological realization of a Gluttonous Probe that agreed with two DPs.
- While Feature Gluttony was originally proposed to handle the PCC and later intervention effects for movement, the inverse/direct agreement pattern in Guarani receives an elegant extension of the framework.
- My analysis hinges on the claim from Coon and Keine (2021) that not all Gluttony is bad which predicts that in some corner of the Guarani grammar Gluttony may give rise to ineffability. This is exactly what we see with person restrictions in causative constructions (50).

(50) **Person restrictions 1>2 causatives**

a. che ro-mbo-h-echa ndéve
I 1>2.PORT-CAUS-DIR-see you
'I made him see you.' (1>3>2: portmanteau)

b. che ro-mbo-h-echa ichupe
I 1>2.PORT-CAUS-DIR-see him
'I made you see him.' (1>2>3: portmanteau)

c. *ha'e ro-mbo-h-echa ndéve
he 1>2.PORT-CAUS-DIR-see you
Intended: 'He made me see you.' (*3>1>2: ineffable)

- In cases like (50c), the Probe has agreed with three arguments and the π Probe is gluttonous. While the # Probe is not, this gives rise to ineffability due to morphological conflict.
- In order to say something like (50c) 'He made me see you', they use an entirely different structure as in (51).[12]

(51) **Repair for ineffable person combinations**
ha'e rupive che ro-h-echa (ndéve)
he made I 1>2.PORT-DIR-see (you)
'He made me see you.' (3>1>2: allowed with *rupive*)

- The same holds for 2nd persons which exhibit a similar person restriction in causatives and is repaired in the same way with *rupive*.

(52) **Person restrictions on 2>1 in causatives**

a. nde che-mbo-h-echa ichupe
you 1.OBJ-CAUS-DIR-see him
'You made me see him.' (2>1>3: 1st person inverse)

b. *nde che-mbo-h-echa chéve
you 2.PORT-CAUS-DIR-see me
Intended: 'You made him see me.' (2>3>1: ineffable)

c. nde rupive ha'e che-r-echa (chéve)
you made him 1.OBJ-INV-see (me)
'You made him see me.' (2>3>1: allowed with *rupive*)

[12] According to Estigarribia (2020), this verb/word means 'by means of' and there are very few examples in the grammar. However, it seems productive as you may either say *che amoky* 'I made it rain' or *che rupive oky* 'I made it rain'. The Spanish translation of *rupive* is more like *hice que x pasara* and the *mbo* is simply *hice*.

- The ungrammaticality of these particular sentences is one of ineffability due to Gluttony. The Probes in these cases will have agreed with three DPs, which imposes unfulfillable requirements in the morphology.

Acknowledgements: Firstly, a huge thank you is in order for all of our Guarani collaborators because without them this project would not be in the shape it's in now. In particular, Elvira Martinez, Laure Galeano, Irma Olevar, and Maria Gomez, among others. They were all a joy to work with and eliciting PCC paradigms requires a unique level of patience that few possess! We would also like to thank the flia. Acosta Torres of Coronel Oviedo for their generous hospitality during our in-situ fieldtrip to Oviedo. A special thanks to Stefan Keine for overseeing this project since its inception, and to Ethan Poole and Harold Torrence for their invaluable input in this project. I'd also like to thank the audience at UCLA SynSem and WSCLA 26 for their thoughtful feedback and recommendations.

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7 Appendix

7.1 Data for direct

(53) a. che poro-pytyvõ peẽ-me
I 1>2.PL.PORT-help (y'all-DOM)
'I helped y'all'. (1>2.PL: portmanteau)

b. ore roi-pytyvõ (ndéve)
we.EXCL 1.EXCL-help (you)
'We (excl.) helped you.' (1.EXCL>2.SG: agreement with subject)

c. ñande jai-pytyvõ Romi-pe/ichupe
we.INCL 1.INCL-help RomiDOM/him
'We (incl.) helped Romi/he.' (1.INCL>3: agreement with subject)

d. ñande jai-pytyvõ ha'e-kuera-pe
we.INCL 1.INCL-help he-PL-DOM
'We (incl.) helped them.' (1.INCL>3/3.PL: agreement with subject)

e. ore roi-pytyvõ ha'e-kuera-pe
we.EXCL 1.INCL-help he-PL-DOM
'We (excl.) helped them.' (1.EXCL>3/3.PL: agreement with subject)

f. ha'e oi-pytyvõ chupe-kuera
s/he 3.SUBJ-help him-PL
'He helped him/them.' (3>3.PL: agreement with subject)

g. ha'e-kuera oi-pytyvõ chupe
he-PL 3.SUBJ-help him
'They helped him.' (3.PL>3: agreement with subject)

h. ha'e-kuera oi-pytyvõ chupe/chupe-kuera
s/he-PL 3.SUBJ-help him/him-PL
'They helped him/them.' (3.PL>3.PL: agreement with subject)

7.2 Data for inverse

(54) a. peẽ **chei**-pytyvõ (chéve)
y'all **1.OBJ**-help (me)
'Y'all helped me.' (2.PL>1.SG: agreement with object)

b. ha'e-kuera **ñande**-pytyvõ (ñandéve)
he-PL **1.INCL.OBJ**-help (us)
'They helped us.' (3.PL>1.INCL: agreement with object)

c. Juam **ñande**-pytyvõ (ñandéve)
Juan **1.INCL.OBJ**-help (us)
'Juan helped us.' (3>1.INCL: agreement with object)

d. ha'e-kuera **chei**-pytyvõ (chéve)
he-PL **1.OBJ**-help (me)
'They helped me.' (3.PL>1.SG: agreement with object)

e. ha'e-kuera **ndei**-pytyvõ (ndéve)
he-PL **2.OBJ**-help (you)
'They helped you.' (3.PL>2.SG: agreement with object)

7.3 An existing analysis Zubizarreta and Pancheva 2017

- Some have analyzed these inverse/direct agreement patterns (including in Guarani specifically Zubizarreta and Pancheva (2017)) as involving syntactic movement of the object above the subject.

- However, through extensive fieldwork on the Guarani inverse, I have found no evidence of such movement. Consider first the base line sentences in (55) in which the existential quantifier *peteĩ* 'a/one' can take scope over a universal quantifier (55a), but also can be a scope bearing element in the object position (55b).

(55) a. peteĩ mbo'e-hara oi-pytyvõ opavave mitã-me
a teacher 3.SUBJ-help every girl-DOM
'A teacher helped every girl.' (∃ > ∀)

b. opavave mbo'de-hara oi-pytyvõ peteĩ mitã-me
every teacher 3.SUBJ-help a girl-DOM
'Every teacher helped a girl.' (∀ > ∃, ∃ > ∀)

- Consider the examples in (56) in which there is no difference in scope interpretation of the two sentences that differ only in inverse/direct.

(56) a. peteĩ ij-aty-gua ore-pytyvõ opavave-pe (ore-ve)
one 3.POSS-group-from 1.EXCL.OBJ-help every-DOM (us-DOM)
'One of them helped every one of us.' (direct: ∃ > ∀, *∀ > ∃)

b. peteĩ ore-aty-gua oi-pytyvõ opavave-pe mitã-nguera
one 1.EXCL.POSS-group-from 3.SUBJ-help every-DOM girl-PL
'One of us helped every girl.' (inverse: ∃ > ∀, *∀ > ∃)

- If in (56b) the IA had moved over the EA, we might excpect there to be a difference in the scope reading of the sentence, but there is not. While the scope facts are not conclusive, the lack of evidence of movement opens the door to a strictly agree-based analysis of this pattern.