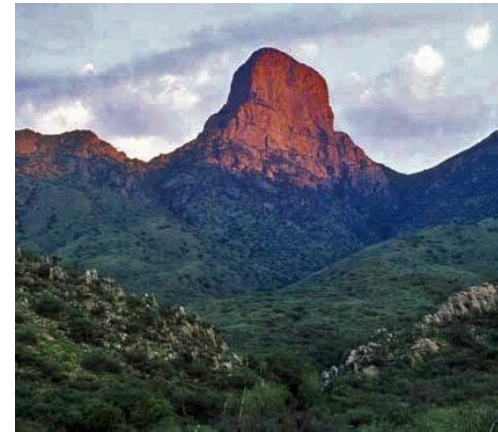


Non-isomorphism across the Interfaces: Evidence from Cushitic

Enrico Higginbotham

23/09/2026



COLLEGE OF SOCIAL
& BEHAVIORAL SCIENCES

Linguistics

The Puzzle

- Oromo, Somali, and Dhaasanac (Lowland East Cushitic; Ethiopia, Kenya, and Somalia) verbal agreement points in two directions at once:
 1. **In person agreement**, the 1st and 3rd persons pattern together against the 2nd (1+3 vs. 2)
 2. **In plural marking and aspectual allomorphy**, the 2nd and 3rd persons pattern together against the 1st (2+3 vs. 1)

Thus, leading to **contradictory geometries in a privative system ...**

Paradigms: Perfective, Imperfective, Impfv. Subjunctive, Autobenefactive

Person	Perfective <i>mur</i> “cut”	Imperfective <i>mur</i> “cut”	Subjunctive <i>mur</i> “cut”	Autobenefactive <i>bit</i> “buy”
1SG	mur-e	mur-a	mur-u	bit-at-d-u
2SG	mur-t-e	mur-t-a	mur-t-u	bit-at-t-u
3SG.M	mur-e	mur-a	mur-u	bit-at-u
3SG.F	mur-t-e	mur-t-i (Arabic)	mur-t-u	bit-at-t-u
1PL	mur-n-e	mur-n-a	mur-n-u	bit-at-n-u
2PL	mur-t-an-i	mur-t-Ø-u	mur-t-an-i	bit-at-t-an-i
3PL	mur-an-i	mur-Ø-u	mur-an-i	bit-at-an-i

Some key observations:

- 1PL has *-n* plus elsewhere aspect.
- 2PL/3PL preserve independent plural morphology or diagnostics for it.
- The autobenefactive shows 1SG can be but 1PL is still *-n*.

The comparative extension

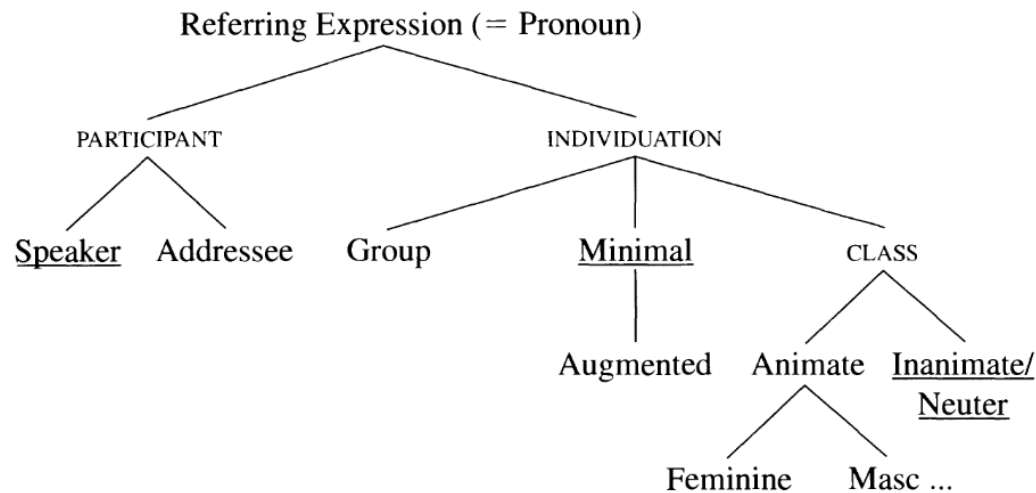
Person	Formali imperfective: <i>hees</i>	Formali imperfective: <i>hees</i>	Segmentation	Gloss
1SG		heesaa	hees-aa	'I sing'
2SG		heestaa	hees-t-aa	'you sing'
3SG.M		heesaa	hees-aa	'he sings'
3SG.F		heestaa	hees-t-aa	'she sings'
1PL		heesnaa	hees-n-aa	'we sing'
2PL		heestaan	hees-t-aa-n	'you.PL sing'
3PL		heesaan	hees-aa-n	'they sing'

Other facts about Lowland East Cushitic

- Oromo is a marked-nominative language
- Discussed by Baker (2015) to justify his reverse Dependent Case condition
- Construction with 2 nominatives (similar to Arabic construct state), but hanging topics are in **the absolutive**
- Maria Koulina recently proposed that marked nominative cases are really ergatives in disguise, assigned in Spec, VoiceP
- Nilotic languages don't have passives, **Oromo does have true passives and you still get nominative!**

Harley & Ritter (2002) feature geometry

- I adopt the feature geometry from Harley & Ritter (2002):



Toward a morphosemantic account

1SG = [RE-PART-SPKR _{i,c} , INDIV _i]	1PL = [RE-PART _{i,c} -SPRKR _{i,c} , INDIV _i -GROUP _{i,c}]
2SG = [RE-PART _{i,c} -ADD _c , INDIV _i]	2PL = [RE-PART _{i,c} -ADD _c , INDIV _i -GROUP _{i,c}]
3SG = [RE, INDIV _i]	3PL = [RE, INDIV _i -GROUP _{i,c}]

Index = receives semantic interpretation

Concord = active at PF for VI

Index, but not Concord = interpreted at LF, not active at PF (not copied by Agree)

Concord, but not Index = interpretation retreats to the first available Index feature that entails it. Active at PF

Valency-manipulating operations in Oromo: The morpheme *-at*

- Allomorphs? *-at* and *-a(a)t* are attested sparingly in Rayya Oromo (Kumssa 2024).
Most description only give short *-at*

...to only report the semantic operations without considering cultural and pragmatic factors. The valency-decreasing operations in Oromo are the passives with *-am-* suffix, the anticausatives with *-at-* suffix, the inchoatives with *-a(a)t-*, *-a(a)h-* and *-o(o)m-* suffixes and the impersonal inflections of syntactic constructions. The findings revealed how these

- *-at* occurs before any ϕ -feature agreement.

(4) *dal-at-d-e* give.birth-**at**-1sg-PFV

‘I was born’

(5) *dik'-at-n-e*

-at-1pl-PFV

-*at* can follow or precede derivational morphology

- -*at* does not need to attach directly to the root. In (6), it follows the causative -*is*. The beneficiary is the causer:

(6) *sii-n buna danf-is-at-t-e.*
she-NOM coffee boil-CAUS-**at**-3SG.F-PFV
'She boiled coffee for her own benefit.'

- -*at* can also precede the causative. Contrast (7) and (8) by the indirect causative *siis*. When it does, the **embedded EA** is the **beneficiary**:

(7) *Tolaan hucc'uu bit-at-e.*
Tolaa-NOM clothes buy-**at**-PFV
'Tolaa bought clothes for Tolaa's benefit.'

(8) *Margaan Tolaa hucc'uu bit-at-siis-e.*
Margaa-NOM Tolaa clothes buy-**at**-CAUS-PFV
'Margaa made Tolaa buy clothes for Tolaa's benefit.'

-*at* participates in multiple argument structures

- | | | | |
|------|----|--|---------------------------|
| (28) | a. | <i>gub-uu</i> (+ d.o.)
'to burn (s.o. / s.th.)' | [BS] [TR] [2B] |
| | b. | <i>gub-at-uu</i>
'to burn' | [ATS] [ANTIC] [INTR] [1A] |
| (29) | a. | <i>d'aab-uu</i> (+ d.o.)
'to stop (s.b.)' | [BS] [TR] [2B] |
| | b. | <i>d'aab-at-uu</i>
'to stop' | [ATS] [ANTIC] [INTR] [1A] |
| (30) | a. | <i>d'al-uu</i> (+ d.o.)
'to give birth (s.o / s.th.)' | [BS] [TR] [2B] |
| | b. | <i>d'al-at-uu</i>
'to be born' | [ATS] [ANTIC] [INTR] [1A] |

-at has to be low

- Oromo independently allows multiple causative stacking:

(9) *Kamaal nam-ičč-aan gurbaa sibiila dab-si-siis-e.*

Kemal man-DEF-DAT boy iron bend-**CAUS-CAUS-**
3SG.M.PFV

‘Kemal made the man make the boy bend the iron.’

- *-at* can embed multiple times under multiple causatives. Scope considerations determine the beneficiary of each *-at*

Multiple causatives and multiple *-at*

<i>Complex Middle of Causativized Middle [MS-CS2-MS]</i>	<i>Causativized Complex Middle [MS-CS2- MS-CS2]</i>
(9) a. <i>kad'-ač-čiiŋ-at-uu</i>	<i>kad'-ač-čiiŋ-ač-čiiis-uu</i>
'to cause to beg for oneself'	'to cause s/b to beg s/th for their own benefit'
b. <i>arg-ač-čiiŋ-at-uu</i>	<i>arg-ač-čiiŋ-ač-čiiis-uu</i>
'to cause to find for oneself'	'to cause s/b to find s/th for their own benefit'
c. <i>god'-ač-čiiŋ-at-uu</i>	<i>god'-ač-čiiŋ-ač-čiiis-uu</i>
'to cause to dress for oneself'	'to cause s/b to dress s/th for their benefit'
d. <i>uff-ač-čiiŋ-at-uu</i>	<i>tuff- ač-čiiŋ-ač-čiiis-uu</i>
'to cause to wear for oneself'	'to cause s/b to wear s/th for their benefit'
e. <i>ba'-ač-čiiŋ-at-uu</i>	<i>bit- ač-čiiŋ-ač-čiiis-uu</i>
'to cause to carry for oneself'	'to cause s/b to carry s/th for their benefit'

<i>Complex Middle Derivation in CS3-MS pattern [V-si-siis-at-]</i>	<i>Complex causativization in CS3-MS-CS2 pattern [V-si-siis-at-siis-]</i>
(10)a. <i>kor-si-siif-at-uu</i>	<i>kor-si-siif-ač-čiiis-uu</i>
to cause (for oneself) s/b to cause s/b else to climb s/th'	'to cause s/b to cause s/b else to climb s/th for their own benefit'
b. <i>tum-si-siif-at-uu</i>	<i>tum-si-siif-ač-čiiis-uu</i>
'to cause (for oneself) s/b to cause s/b else to beat s/th or s/b'	'to cause s/b to cause s/b else to beat s/th for their benefit'
c. <i>č'uf-si-siif-at-uu</i>	<i>č'uf-si-siif-ač-čiiis-uu</i>
'to cause (for oneself) s/b to cause s/b else to close s/th'	'to cause s/b to cause s/b else to close s/th for their benefit'
d. <i>seen-si-siif-at-uu</i>	<i>seen-si-siif-ač-čiiis-uu</i>
'to cause (for oneself) s/b to cause s/b else to enter s/th'	'to cause s/b to cause s/b else to enter s/th for their benefit'
e. <i>ban-si-siif-at-uu</i>	<i>ban-si-siif-ač-čiiis-uu</i>
'to cause (for oneself) s/b to cause s/b	'to cause s/b to cause s/b else to open s/th

-at is not just reflexive

- These examples show that it doesn't yield a **reflexive** reading (i.e., "I did X to myself"), but instead they trigger a benefactive reading (i.e., "I did X for my benefit")

In 14 the reflexive goal is overtly expressed in *mata ko*, but the purpose of such an action (whether performed in a therapeutic or ritual context) is incontrovertibly for the subject's benefit, and it is claimed that this benefactive component of meaning is to the fore, and beyond doubt this is the case in 14a, where *mata muč'a* is a goal external to the agent. Thus 14a is no longer a reflexive clause and in view of the identity of verb form (and the comparability of other clause constituents) the claim that reflexivity is marginal to the interpretation of 14 would be strengthened.

- Oromo: 14. *Ani mata ko ḍaḍa dibaḍe.*
I head my butter I-anoint-a-ben.-pf
I anointed my head with butter (for my own benefit).
14a. *Ani mata muč'a ḍaḍa dibaḍe.*
I head boy-of butter I-anoint-a-ben.-pf
I anointed the boy's head with butter (for my own benefit).

Why is *autobenefactive* what stuck?

- In Classical Greek, transitive middles receive a **subject-reflexive beneficiary interpretation**, to the extent that this *is* the Middle Voice for This same interpretation is the most productive of *–at* suffixed verbs in Oromo

Oromo: 11a. *Ani of hāde.*
I self I-shave-pf
I shaved myself.
11b. *Ani hādaḍe.*
I I-shave-a-ben.-pf
I got shaved (for my own benefit).
11c. *Ani ofin hādaḍe.*
I self-emph I-shave-a-ben.-pf
I myself shaved (myself) (for my own benefit).

Similarly both 12a and 12b are reflexive, but are distinguished, in this case, by the volitional nature of the action in 12b.

Oromo: 12a. *Ini mastāwotin of ilāle.*
he mirror-instrum self he-see-pf
He saw himself in the mirror.
12b. *Ini mastāwoti keč of ilālate.*
he mirror in self he-see-a-ben.-pf
He looked at himself in the mirror.

The bottom line about *-at*

- The co-indexing between arguments clearly relates to the scope relations of *-at*.
- I haven't worked out the entire sequence (because this is not a paper about causatives and applicatives), but the bottom line is this:
- Functional projects introduce an additional argument. *-at* coindexes that argument.
- *-at* cannot be structurally high, at least not as high as Asp. When it is adjacent to 1SG morphology, it triggers allomorphy.
- Subject agreement is structurally higher than it, so the 1SG allomorphy cannot be structurally conditioned

An alternative segmentation

- Last time, we discussed alternative segmentations
- Comparatively, I think there is good reason to believe the forms should be segmented differently:

(10) *mur-t-a-ni*

cut-2-PFV-PL

- The claim is that *-t* realizes PERSON, while the final *-ni* realizes PLURAL; the aspectual vowel intervenes between them.
- Closely related Lowland East Cushitic languages show the same asymmetry: **2nd-person morphology precedes aspect, while plural morphology in 2PL/3PL follows aspect. By contrast, 1PL n occurs before aspect.**

An alternative segmentation

Saho:

Faak ‘open’

(Tewolde 2016: 85–87)

Person	Form	Gloss
1SG	faak-e	root-PFV
2SG	fak-t-e	root-2-PFV
3SG.M	faak-e	root-PFV
3SG.F	fak-t-e	root-3F-PFV
1PL	fak-n-e	root-1PL-PFV
2PL	fak-t-e-n	root-2-PFV-PL
3PL	faak-e-n	root-PFV-PL

An alternative segmentation

Somali:

Keen ‘bring’

(Appleyard 1991:24)

Person	Form	Natural segmentation
1SG	keen-aa	root-IPFV
2SG	keen-t-aa	root-2-IPFV
3SG.M	keen-aa	root-IPFV
3SG.F	keen-t-aa	root-3F-IPFV
1PL	keen-n-aa	root-1PL-IPFV
2PL	keen-t-aa-n	root-2-IPFV-PL
3PL	keen-aa-n	root-IPFV-PL

Segmentation (again)

- Last week, I proposed an alternative segmentation based on comparative evidence: **ROOT-PERSON-ASPECT-NUMBER**
- We were right the first time. Most importantly, **there are noted diachronic reasons for the difference between Cushitic languages** (Banti 2004; Kießling 1995)
- Diachronic story: **Banti reconstructs an inflected person/number base** (2PL **-tin*, 3PL **-in*) followed by a **vocalic TAM formative**: **-a* non-past, **-e*/**-aa* past, and possibly **-u* for the source of the Oromo subjunctive.
- **Subsequent vowel assimilation and lenition** could then turn **-t-i-n-e* into **-t-ee-n**, producing the Somali-type **PERSON-TAM-NUMBER** order, while Oromo retains the older base + formative structure.

More evidence for segmentation

- Evidence from Oromo dialectal variation and nominalization supports this conclusion: some varieties level the paradigm, some don't

(29) Some Oromo forms of *deemuu* ~ *adeemuu* “go”
Gujjii Oromo

made it particularly easy for 2p. *-tan(i)* and *-tane* and 3p. *-an(i)* and *-ane* to merge into a single set of endings for the 2p. and 3p. This new pattern with a single set of endings in the 2p. and 3p. of the affirmative non-past and past tenses spread then analogically also to the subjunctive, where the older endings *-tan-u* and *-an-u* were however retained in several dialects, e.g., in Western and Shewa Oromo and in the southernmost Waata dialect described by Heine (1981:42), that is spoken by several communities of former hunter-gatherers along the southern coast of Kenya.

3f.	deemti	deemte	deemtu
1p.	deemna	deemne	deemnu
2p.	deemtan(i)	deemtan(i)	deemtan(i)
3p.	deeman(i)	deeman(i)	deeman(i)

Evidence from converbs

Person	Progressive / Imperfective	Perfect / Perfective
1SG	deem-aa=n jira	deem-ee=n jira
2SG	deem-aa jirta	deem-t-ee jirta
3SG.M	deem-aa jira	deem-ee jira
3SG.F	deem-aa jirti	deem-t-ee jirti
1PL	deem-aa jirra	deem-n-ee jirra
2PL	deem-aa jirtu	deem-t-an-ii jirtu
3PL	deem-aa jiru	deem-an-ii jiru

Anti-Agreement effects: Berber and Somali

- Shlonsky (2014) [from Ouhalla (1993)] notes AA **effects in Berber and Somali**. AA goes by different names in the descriptive tradition:
 - Berber = the *participle*
 - Somali = the *reduced* form (opp. *extended* form)
- Baier (2018) accounts for this in terms of Impoverishment:

Delete φ in the presence of an A' feature
- Shlonsky (2014) argues that it is **from a failure of Subj^0 to project**

Anti-Agreement effects: Oromo

- Oromo is also subject to AA effects (noted in Baier (2018)). Default 3s.m. agreement is triggered in:
- New subjects:

(11) [In answer to Intaltiin ifi gurbaan maal godhan? ‘What did the girl and boy do?']

Intal-t-ii-n *hoolaa bit-t-e.*
girl-FEM-SU-**TOPIC** sheep buy-FEM-PAST
‘The girl bought a sheep.’ (Clamons et al. 1999:61)

(12) [from the beginning of a story]

Intala takka-á *hoolaa bit-e.*
girl one.FEM-SU sheep buy-PAST
‘A girl bought a sheep.’ (Clamons et al. 1999:62)

Anti-Agreement effects: Oromo

- Oromo is also subject to AA effects (noted in Baier (2018)). Default 3s.m. agreement is triggered in:

- Focused subjects with *-tu*:

(13) *issan-tu hoolaa bit-Ø-e*
they-FOC sheep buy-Ø-PFV
'It is they who bought a sheep.' (Yimam 1988:382)

- *wh*-subjects:

(14) *saree t-ami bashoo ariy-aa jir-a?*
dog.F F-which cat chase-PROG AUX-3.M.SG
'Which dog is chasing a cat?' (Feleke 2024)

- Past negative inflection also neutralizes agreement, not present negatives
- **Not** in subject relatives (unlike Berber)

Some issues for Shlonsky (2014)

- Shlonsky (2014) argues that AA effects stem from Subj^0 's failure to project.
- This applies to varieties of Berber that still display ROOT-NUMBER. He splits the phi-probe: PERSON on Subj and NUMBER on T
- This is fine for Berber: PERSON is a **prefix**. The linear order is WYSIWYG
- Problematic for Oromo. Say Subj^0 is the only probe $\rightarrow$ it is higher than T and Asp
- So, if the new segmentation is correct, how can Asp "split" the phi-exponents

Other facts about Oromo

- Oromo is a marked-nominative language
- Discussed by Baker (2015) to justify his reverse Dependent Case condition
- Construction with 2 nominatives (similar to Arabic construct state), but hanging topics are in **the absolutive**
- Maria Koulina recently proposed that marked nominative cases are really ergatives in disguise, assigned in Spec, VoiceP
- Nilotic languages don't have passives, **Oromo does have true passives and you still get nominative!**

[ADD] as a concord feature?

- Bobaljik & Sauerland (2023) argue that [ADD] cannot be a primitive feature
- **The **you* generalization** (Zwicky 1977): In languages without an inclusive/exclusive distinction, a group containing both the author and addressee is expressed as **1st person**, never as 2nd person.
- If [AUTHOR] and [ADDRESSEE] are equally primitive, **inclusive reference satisfies both features**, so nothing in the feature system itself explains why 1st person always wins. An additional hierarchy AUTHOR>ADDRESSEE>OTHER is needed

[ADD] as a concord feature?

- They instead take [AUTHOR] and [PARTICIPANT] as the primitive semantic features. [AUTHOR] entails [PARTICIPANT]
- **Second person is derived by exhaustifying PARTICIPANT against AUTHOR:**
 $\text{exh}_{\{\text{AUTHOR}\}}(\text{PARTICIPANT})$
- **Inclusive 1st person is built by cumulatively combining AUTHOR with exhaustified PARTICIPANT:** $\text{AUTHOR} \sqcup \text{exh}_{\{\text{AUTHOR}\}}(\text{PARTICIPANT})$
- Exhaustification therefore derives the 1st > 2nd asymmetry from entailment rather than stipulating a person hierarchy.

Deriving number via alternatives

- Nevins (2007, 2011) argues that **singular** is the absence of **plural**.
- I have to be very careful about the denotation of anything [PLURAL] or [GROUP]
- Baerman (2005) and Baerman & (2011) note the following generalization (from Ackema & Neelman (2019))

Our starting point in exploring the person system is a generalization about the pattern of syncretisms found in the morphological realization of person. The relevant generalization was noted by Baerman et al. (2005: 59) and Baerman & Brown (2011) and is given in (4)

(4) 1–2 and 2–3 syncretisms are far more common than 1–3 syncretisms.

- The goal of the paper is to reconcile the semantic and morphological observations, answering this question: **How can**

Some background: Scalar implicature

- From the SEP:

“Implicature” denotes either (i) the act of meaning or implying one thing by saying something else, or (ii) the object of that act.
- Typically divided in: **conversational** and **conventional**
- **Conversational**: ‘Some (**but not all**) students passed the exam,’ ‘Do you want chicken or pasta–(**or both**)?’
- **Conventional**: ‘Robert isn’t smiling, **but** he is happy,’ ‘Mary is a linguistics; **therefore**, she knows the IPA’

Conversational and conventional implicatures

- **Conversational** implicatures depend on the features of the conversational context and are not determined by the conventional meaning of the sentences uttered
- **Conventional** implicatures are determined by the meaning of the sentence used

Properties of Implicatures

- **Cancellability:** It is possible to cancel the implicature without contradiction
- **Calculability:** the hearer can work out the implicature by reasoning from what was said (plus conversational principles)
- **Defeasibility:** additional information can also cancel the implicature without contradiction
- **Reinforceability:** you can express the implicature directly without contradiction or redundancy

Scalar implicatures

- Some linguistic expressions (intuitively) stand on a scale from stronger to weaker: ⟨all, some but not all, some⟩, ⟨and, or ⟩, ⟨must, should, may ⟩
- All $\models$ some, and $\models$ or, must $\models$ should $\models$ may
- The hearer infers that a stronger alternative is false
- ‘Some students passed’

Asserted = $\exists x[\text{student}(x) \wedge \text{passed}(x)]$

Implicated = $\dots \wedge \neg \forall x[\text{student}(x) \rightarrow \text{passed}(x)]$

Deriving Implicatures

- Scalar implicatures are **generalized conversational implicatures**
- They don't require a **specific conversational context to be generated**
- Simply **negating all stronger alternatives** does not get us there.
- This is known as the **Symmetry Problem**
- Two competing views: the Neo-Gricean perspective and the grammatical view

The Symmetry Problem

- S = 'John read some of the books'
- Asserted = $\exists x[\text{book}(x) \wedge \text{read}(J)(x)]$
- Implicated = $\exists x[\text{book}(x) \wedge \text{read}(J)(x)] \wedge \neg \forall x[\text{book}(x) \rightarrow \text{read}(J)(x)]$
- Alt_1 = 'John read all of the books'
- Alt_2 = 'John read some but not all of the books' = $S \wedge \neg \text{All}$
- They partition the domain $S = \text{Alt}_1 \vee \text{Alt}_2$ (*All or some, but not all*)
- **Suppose naively:** "Negate every relevant alternative that is stronger than the assertion"

The Symmetry Problem

- **First negation attempt:** S [is asserted] $\wedge \neg(S \wedge \neg All)$
- By De Morgan's law: $S \wedge (\neg S \vee All)$
- Distribute: $(S \wedge \neg S) \vee (S \wedge A)$
- $(S \wedge \neg S)$ is a contradiction
- We are left with: $S \wedge A$
- And since *All* entails *Some*, $S \wedge \neg(S \wedge \neg All) = All$
- So, negating *Some*, *but not all* leads you back to *All*

The Symmetry Problem

- Conversely, negating *All* leads exactly back to *some, but not all*
- *Some* is asserted: S
- *All* is negated: $\neg All$
- Negating *All*: $S \wedge \neg All$
- So, negating *All* leads you right back to *Some, but not all*
- Deriving scalar implicatures cannot **simply be negating all stronger alternatives**

Competing views

- **Neo-Gricean:**

Implicatures are derived from the **whole utterance**

- **Grammatical:**

Implicatures are calculated **locally via an exhaustification operator**
exh

It can apply inside embedded constituents

Can account for **embedded implicatures, Hurford disjunctions, and free-choice effects**

exh in Bobaljik & Sauerland (2023)

$$[[\text{exh}_{\text{Alt}}]]^w = \lambda P \in D_{\text{et}} \lambda x \in D_e [P(x)(w) \wedge \forall Q \in \text{Alt} [\neg Q(x)(w) \vee (\forall x (P(x) \rightarrow Q(x)))]]$$

- Exhaustification applied to a predicate P creates a new predicate with stronger truth conditions than the original predicate P depending on the alternative predicates in the set Alt .
- The exhaustified predicate $\text{exh}_{\text{Alt}} P$ is true only if P is true and all predicates Q in Alt are false (i.e. Q is excluded), with the exception of predicates Q that are fully entailed by P

A morphosemantic account

- Given the feature geometry in Harley & Ritter (2002), is it possible to derive [MINIMAL] via exhaustification?
- This is indeed possible giving [GROUP] the following denotation:

$$[[\text{GROUP}]] = \lambda x \in D_e. \exists y [y \sqsubset x]$$

A predicate of individuals that returns true for an individual x iff there is a y that is a mereological subpart of x and is distinct from x

A morphosemantic account

- The computation of an expression's structural alternatives is constrained by **structural complexity** rather than semantic strength alone.
- For Katzir (2007), the structural alternatives of an expression α are structures obtained from α through **deletion, contraction, or replacement** without increasing structural complexity.
- NULL (i.e., deletion and contraction) of a node is **always** an alternative. We can make NULL and INDIVIDUATION **co-extensional**

Extending *exh* to number

- INDIVIDUATION is not the absence of structure (i.e., **not** contraction and deletion). It is a structural alternative to GROUP.
- But we can consider it a predicate of entities that is **tautologically true** of every entity in the domain: $\lambda x \in e. T$ (same as NULL, but we want it to do morphological work)
- The extension of the predicate for any world w is the entire domain of entities D_e in w .
- It contains both atomic and non-atomic individuals. That is:

$\{i, u, o, iu, iuo, uo, io\}$

Extending *exh* to number

- GROUP is a function that returns the subset of individuals **that contain a proper subpart**
- So, GROUP is strictly stronger than INDIVIDUATION: $\text{GROUP} \subset \text{INDIVIDUATION}$
- *Exh* of GROUP outputs only those entities in D_e that have a proper mereological subpart (i.e., non-atomic $\{iu, iuo, uo, io\}$) because $\text{GROUP} \subset \text{GROUP}$. **It doesn't exhaust itself.**
- However, *exh* applied to the denotation of [INDIVIDUATION] negates the stronger alternative [GROUP]

β -reduction

- $\llbracket \text{Exh}_{\{\text{GROUP}, \text{INDIVIDUATION}\}}(\text{INDIVIDUATION}) \rrbracket$
= $\lambda x [\text{INDIVIDUATION}(x) \wedge \neg \text{GROUP}(x)]$
= $\lambda x [\top \wedge \neg \exists y [y \sqsubset x]]$
= $\lambda x [\neg \exists y [y \sqsubset x]]$
- This is true of only of individuals that **have no proper subpart** (i.e., atomic individuals $\{i, u, o\}$)

Integration with the morphology

1SG = [RE-PART-SPKR_{i,c}, INDIV]

2SG = [RE-PART_{i,c}-ADD_c, INDIV]

3SG = [RE, INDIV]

1PL = [RE-PART_{i,c}-SPRKR_{i,c}, INDIV-GROUP]

2PL = [RE-PART_{i,c}-ADD_c, INDIV-GROUP]

3PL = [RE, INDIV-GROUP]

Index = receives semantic interpretation

Concord = active at PF for VI (and copied by Agree)

Index, but not Concord = interpreted at LF, not active at PF (not copied by Agree)

Concord, but not Index = interpretation retreats to the first available Index feature that entails it. Active at PF (and copied by Agree)

Parasitic Features

- Trommer (2016) suggests that (putative) morphomic patterns can be captured in DM via **parasitic-feature insertion**
- And analyzes Dhaasanac through relational markedness + parasitic-feature insertion ([+2] is marked wrt [-1], [-2] is unmarked), but there's a different way to think about it...
- [] → [B] / [__, RE-PARTICIPANT-ADDRESSEE]
- [] → [B] / [__, FEMININE]
- [] → [B] / [__, RE-PARTICIPANT, INDIVIDUATION-GROUP]

Vocabulary Items

- $[] \rightarrow \emptyset$
- $[B] \rightarrow t$
- $[B] \rightarrow t$
- $[RE-PART-SPKR, INDIV-GROUP] \rightarrow n$
- $[INDIV-GROUP] \rightarrow an$ (Oromo)
- $[INDIV-GROUP] \rightarrow n$ (Somali)

Extending to Dhaasanac and Somali

- I think this analysis has some comparative weight:
- [ADDRESSEE] is not dependent on morphological clusivity (contra McGinnis 2005). I'm not sure if this is an advantage on its own; however, the **you* generalization is preserved.
- Dhaasanac (Western Omo-Tana; Somalia): inclusive/exclusive distinction in first person. Paradigms exhibit **interlocking A/B syncretism**
- Somali: marks a clusivity distinction in **the pronominal system**, not in the verbal system. The exponents are cognate with Oromo

Clusivity Distinctions

- All three languages morphologically privilege second-person reference
- The extent to which inclusive/exclusive distinctions are maintained, however, varies

Language	2nd person exponent	Clusivity
Oromo	-t	none
Somali	-t	pronominal system only
Dhaasanac	B-series	Pronouns and Verbal Agreement

Clusivity Distinctions

- B&S (2023) distinguish the inclusive by non-Boolean conjunction of [AUTHOR] and [PARTICIPANT]
- Exhaustification of the inclusive alternative against [AUTHOR] derives the exclusive interpretation
- $\llbracket \text{inclusive} \rrbracket = \lambda x \exists y, z \in D_e [y \sqcup z = x \wedge \text{SPEAKER}(y) \wedge [\text{PARTICIPANT}(z) \wedge \neg \text{SPEAKER}(z)]]$

Somali and Dhaasanac clusivity

- 1PL.INCL does not require [GROUP]
- Why? Because [AUTHOR' (z)] $\wedge$ [PARTICIPANT' (y)] for $y \sqcup z = x$ already satisfies $\exists y [y \sqsubset x]$
- So, [GROUP] is not *semantically* necessary in the derivation of the 1PL.INCL (given the present analysis)
- Languages differ in whether there is positive morphological evidence for [GROUP] in the particular representation