

I'm sticking with you

What phonology can tell us about the syntax of multiple agree

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Agreement in Multivaluation Constructions (AMC)
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Cross-linguistically co-occurring *subject (S)* and *object (O)* agreement can be expressed in several ways:

1. S and O agreement can be expressed via separate morphemes:

- The prefix marks **S agreement**
- The suffix marks **O agreement**

(1) **ne-** ɬʉ **-yəm**
3PL.S- see -1SG.O
'**They** saw **me**.'

Chukchi (Bobaljik 2000, p.20)

2. S and O agreement are expressed via a single *portmanteaux agreement* morpheme:

- No separate S/O agreement markers
- The suffix marks **S+O agreement**

(2) ɬʉ **-nin**
see -3SG.S>3SG.O
'**(S)he** saw **him/her/it**.'

Chukchi (Bobaljik 2000, p.19)

3. S and O agreement are expressed via a combination of separate and portmanteaux morphemes:

- The prefix marks **S agreement**
- The suffix marks **S+O agreement**

(3) **n-** zəl **-nen**
3PL.S- give -3.S>3SG.O
'**They** gave **it**.'

Itelmen (Bobaljik 2000, p.7)

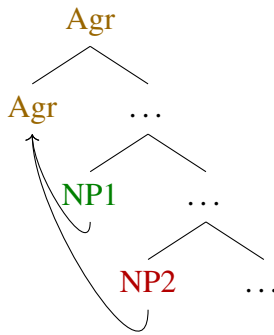
Q: Where are *portmanteau agreement* morphemes created?

A: Broadly speaking there are three options:

- **Syntax:** Bobaljik and Branigan (2006), Georgi (2013), Woolford (2016), Gluckman (2016), Oxford (2019), ...
- **Morphology:** Noyer (1992), Bobaljik (2000), Harbour (2003), Trommer (2010, 2006, 2007), Fenger (2018), ...
- **Phonology:** Harbour (2003)

(4) **Syntactic option:**

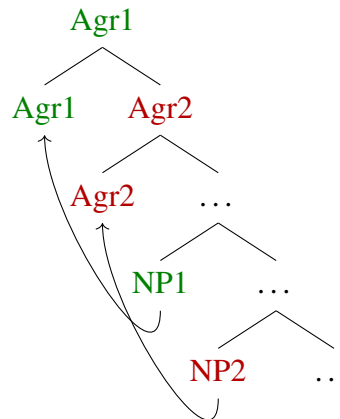
a. Syntax:



b. Morphology:

i. $Agr_{NP1, NP2} \rightarrow /z/$ ii. $Agr_{NP2} \rightarrow /x/$ c. Phonology: $/z/$ (5) **Morphological option:**

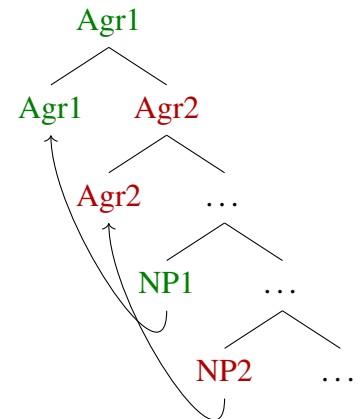
a. Syntax:



b. Morphology:

i. $Agr2 \rightarrow /z/ / Agr1$ ii. $Agr2 \rightarrow /x/$ c. Phonology: $/z/$ (6) **Phonological option:**

a. Syntax:



b. Morphology:

i. $Agr1 \rightarrow /y/$ ii. $Agr2 \rightarrow /x/$

c. Phonology:

 $/y/ + /x/ \rightarrow /z/$ • **Syntactic portmanteau:**

- Simple, always collects all features
- but, a ‘new’ syntactic mechanism
- Predicts portmanteaux-heavy agreement paradigm

• **Morphological portmanteau:**

- Requires an additional step,
- but, existing processes
- Predicts portmanteaux in small part of paradigm

• **Phonological portmanteau:**

- Requires an additional step,
- but, existing processes
- Portmanteaux are instantiations of regular phonology

• How can we distinguish between the three options? I examine this problem through two case studies:

1. Morphological micro-variation and double intransitive agreement:

*Itelmen vs. Chukchi (Chukotka-Kamchatkan)*2. Taking a closer look at the strongest case for multiple agree: *Kalaallisut (Inuit, Eskimo-Aleut)***Main takeaway:**

- All examined cases of portmanteaux agreement can be derived in the morphology or phonology, via independently required morphological and phonological processes
- Multi-valuation is not necessary for creating portmanteau agreement

1 Morphology is always needed

Itelmen and Chukchi (Chukotko-Kamchatkan) are two neighboring languages with portmanteau agreement:

- The portmanteau agreement markers are only different in a small part of the paradigm
- In order to derive this difference, whatever you do, *a morphological analysis is inescapable*

1.1 Two agreement markers

Before considering portmanteaux agreement, let us consider separate S and O agreement to form a baseline:

- Itelmen marks **S agreement** with the prefix and **O agreement** with the suffix.

(7) 2nd person O

- a. **t'**- əłčqu **-(y)in**
1SG.S- see -2SG.O
'I saw you'
- b. **n-** əłčqu **-(y)in**
3PL.S- see -2SG.O
'They saw you'

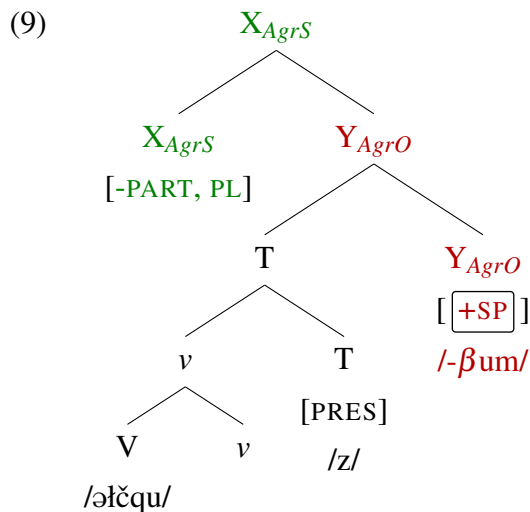
(8) 1st person O

- a. **q-** əłčqu **-βum**
2.IRR- see -1SG.O
'Look at me'
- b. **n-** əłčqu -z **-um**
3PL.S- see -PRES -1SG.O
'They see me'

(Bobaljik and Wurmbrand 2001, ex.5)

- Deriving (8b) (following Bobaljik 2000):

1. The complex verbal head forms via head-movement
2. Vocabulary Insertion (VI) proceeds inside out. First V, then *v*, then T, ... (Bobaljik 2000).
3. Consider the structure in (9) with the VI rules for Y_{AgrO} in (10).



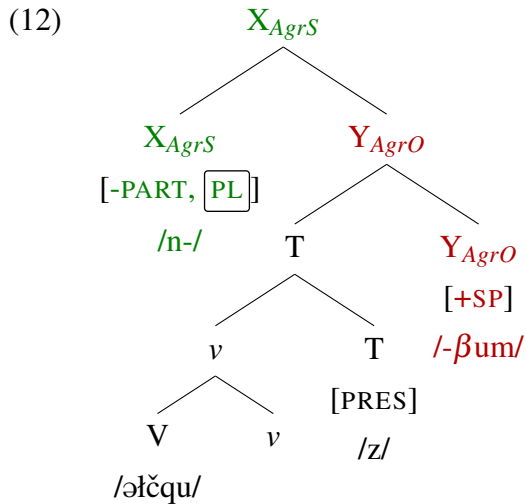
(10) VI rules for Y_{AgrO}

- a. $[+SP, PL] \leftrightarrow /-\beta u\eta m/$
- b. $[+SP] \leftrightarrow /-\beta um/$
- c. $[-SP, +PART, PL] \leftrightarrow /-sxen/$
- d. $[-SP, +PART] \leftrightarrow /-[y]in/$

(11) Person features:

| | 1 | 2 | 3 |
|------|---|---|---|
| PART | + | + | - |
| SP | + | - | - |

4. Next step: do the same for the highest node, X_{AgrS} , as shown in:



- (13) VI rules for X_{AgrS}
- $[+SP, PL] \leftrightarrow /nt-/$
 - $[+SP] \leftrightarrow /t-/$
 - $[-SP, +PART] \leftrightarrow \emptyset$
 - $[PL] \leftrightarrow /n-/$

1.2 Evidence from Microvariation

We can turn to portmanteaux agreement:

- Both Itelmen and Chukchi generally make use separate S and O agreement markers
- They both show portmanteaux agreement in the same context: 3.S > 3.O
- However, they do differ in how the portmanteaux morpheme fits in the broader agreement pattern:
 - Chukchi uses a “true” portmanteau agreement morpheme
 - Itelmen uses a portmanteau agreement morpheme + a separate S agreement morpheme
- **Conclusion:** morphological formation of portmanteaux agreement is unavoidable

Chukchi, like Itelmen, generally uses a S agreement prefix and an O agreement suffix, (14).

- Only with the 3>3 context, do we observe a single portmanteau agreement morpheme (15b).

(14) a. $tə$ -ʔu - $yət$
1SG.S- see -2SG.O
'I saw you.'

b. $ne-$ ʔu - $yəm$
3PL.S- see -1SG.O
'They saw me.'

Chukchi (Bobaljik and Branigan 2006, p.55)

(15) a. ʔu - nin
see -3SG.S>3SG.O
'(S)he saw him/her/it.'

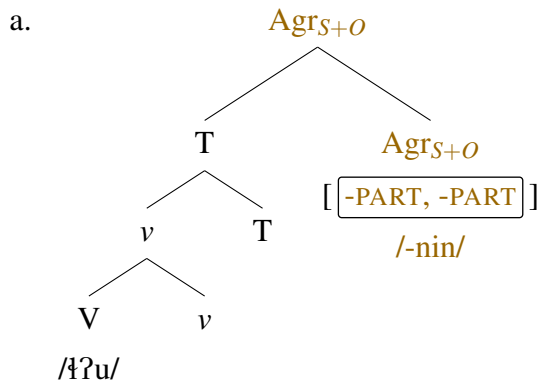
b. $tə-$ ʔu - $yʔen$
1SG.S- see -3SG.O
'I saw him/her/it.'

Chukchi (Bobaljik 2000, p.19)

The Chukchi paradigm can be analyzed in a number of ways, but broadly speaking there are two options:

- **Syntactic analysis:** collect all the features on one Agr (*Multivaluation*) and spell them out
- **Morphological analysis:** *Contextual allomorphy* of object agreement; subject agreement is zero

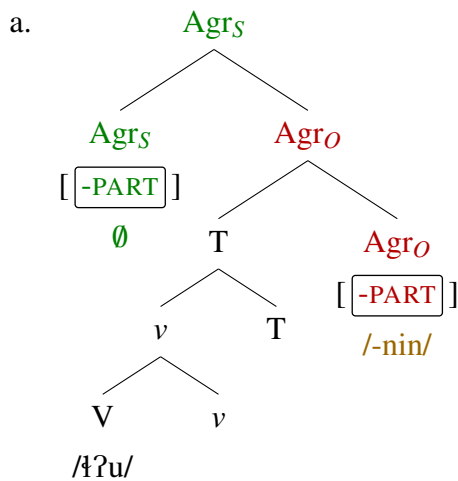
(16) ✓ **Multivaluation:** /ɬʔu-**nin**/ (Chukchi)



b. VI rules *AgrS+O*

- i. [-PART, -PART] ↔ /-nin/
- ii. [-PART] ↔ /-ɣʔen/
- iii. [-SP, +PART] ↔ /-ɣət/
- iv. [+SP] ↔ /-ɣəm/

(17) ✓ **Contextual Allomorphy:** /ɬʔu-**nin**/ (Chukchi)



b. VI rules for *AgrO*

- i. [-PART] ↔ /-nin/ / [-PART]_{AgrS}
- ii. [-PART] ↔ /-ɣʔen/
- iii. [-SP, +PART] ↔ /-ɣət/
- iv. [+SP] ↔ /-ɣəm/

c. VI rules for *AgrS*

- i. [-PART] ↔ ∅
- ii. [+SP] ↔ /tə-/
- iii. [-SP, +PART] ↔ /q-/

- To account for portmanteau vs. separate agreement in syntax, we either need to:
 - restrict multivaluation to the 3>3 context
 - always allow multivaluation, but split *Agr* in the morphology outside the 3>3 context

Looking at the neighboring language, Itelmen, the pattern is slightly different.

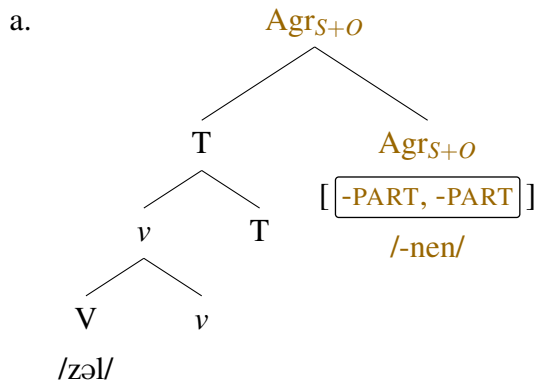
- Even with portmanteau agreement, *the S agreement prefix is present*, (18a).

(18) a. **n-** zəl **-nen**
 3PL.S- give -3.S>3SG.O
 ‘They gave it.’

b. **t’-** əłčqu -s **-čen**
 1SG.S- see -PRES -1.S>3SG.O
 ‘I see him.’

Itelmen (Bobaljik 2000, p.19)

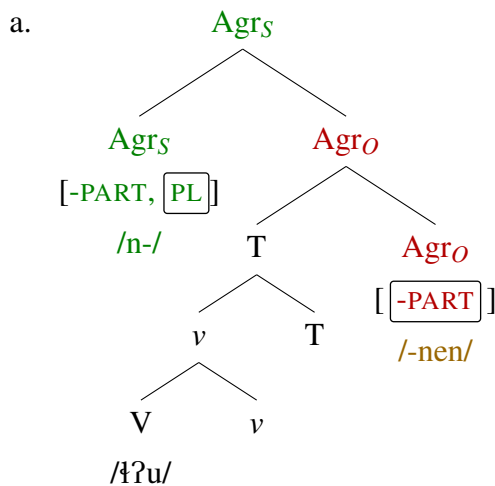
- The presence of the subject marker is crucial
- In this case, *multivaluation alone* can never produce the target forms, (19)
 - In order to get the prefix present, an additional { copying / fission } step is needed
- Derivation via *contextual allomorphy* of O agreement is straightforward:
 - The only change needed with respect to Chukchi is an overt morpheme for *AgrS*

(19) ✗ **Multivaluation:** /zəl-nen/ (Itelmen)b. VI rules for Agr_{S+O}

- i. $[-PART, -PART] \leftrightarrow /-nen/$
- ii. $[+SP] \leftrightarrow /-\beta um/$
- iii. $[-SP, +PART] \leftrightarrow /-[\gamma]in/$

c. VI rules for Agr_S

- i. $[PL] \leftrightarrow /n-/$
- ii. $[+SP] \leftrightarrow /t'-/$
- iii. $[-SP, +PART] \leftrightarrow /q-/$

(20) ✓ **Contextual Allomorphy:** /n-zəl-nen/ (Itelmen)b. VI rules for Agr_O

- i. $[-PART] \leftrightarrow /-nen/ / [-PART]_{AgrS}$
- ii. $[+SP] \leftrightarrow /-\beta um/$
- iii. $[-SP, +PART] \leftrightarrow /-[\gamma]in/$

c. VI rules for Agr_S

- i. $[PL] \leftrightarrow /n-/$
- ii. $[+SP] \leftrightarrow /t'-/$
- iii. $[-SP, +PART] \leftrightarrow /q-/$

- Itelmen and Chukchi differ in the presence or absence of a subject marker, but are very similar languages
 - Only a morphological difference in the agreement paradigm;
 - Portmanteau occurs in a small part of the paradigm
- Can be dealt with under a morphological approach

1.3 More evidence for morphological approach: Double intransitive agreement

Chukotko-Kamchatkan languages exhibit ‘double’ agreement in intransitives:

- Not only the prefix shows agreement for the subject, also the suffix does, (21).

(21) a. Itelmen:

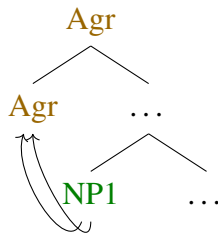
t- k'oł -k(ičen)
 1SG.S- come -1SG.S
 ‘I came.’

b. Chukchi:

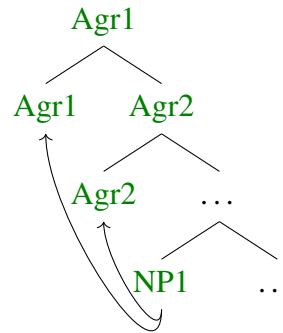
tə- kətyəntat -(yʔa)k
 1SG.S- run -1SG.S
 ‘I ran.’ (Bobaljik 2000, p. 5)

- Under a two Agr head approach, it means that each probe can probe only once and be done
- Under a single Agr head approach, the probe needs to probe multiple times for the same goal
 - One needs to think about how to model the exact same relationship twice;
 - Morphology is still needed to split out the morphemes to different sides of the verb

(22) Syntactic



(23) Morphological



2 Cross-linguistic comparison of paradigms with portmanteaux

- Chukotko-Kamchatkan languages could be an outlier with regards to portmanteaux
 - There is only portmanteau in a small part of the paradigm
- However, this seems to be the overarching pattern for most languages I looked at
 - Looked at languages that are classified as ‘portmanteaux-languages’ in the grammars/literature
 - Arapaho (Cowell and Moss Sr. 2008); Maniwaki (Oxford 2015); Hixkaryana (Derbyshire 1985); Nez Perce (Crook 1999)
 - That is, subject and object agreement is mostly expressed as separate markers.
- Table consists of the combinations that give rise to non-segmentable morphemes
 - Those in (...) are not classified as such in the language, but some segmentation could be possible
 - Only person contrasts, no number in the table
 - However, when number is included there’s more variation and less parallels

| Family | Language | 1>2 | 2>1 | 1>3 | 2>3 | 3>1 | 3>2 | 3>3 |
|---------------------|---------------|-----|-----|-----|-----|-----|-----|-----|
| Algonquian | Arapaho | | | | | ✓ | | |
| | Maniwaki | | | ✓ | ✓ | | | |
| Chukotko-Kamchatkan | Chukchi | | | (✓) | | | | ✓ |
| | Itelmen | | | (✓) | (✓) | | | ✓ |
| Carib | Hixkaryana | ✓ | | ✓ | | ✓ | ✓ | ✓ |
| | Surinam Carib | ✓ | ✓ | ✓ | | | | |
| | De'Kwana | ✓ | ✓ | | | | | |
| Sahaptian | Nez Perce | | | | | | | ✓ |

Table 1: Argument combinations that yield portmanteaux agreement (SG & exclusive 1 only)

- Portmanteaux are idiosyncratic:
 - No systematic feature combination gives rise to opaque markers
 - Feature collection and where features come from is important
- One observation by Georgi (2013), following description in Heath (1991): multi-valuation can be used to model inclusive markers.
 - Intransitive plurals are [1,2], and the same marker shows up in 1>2 or 2>1.

| π | EA | IA |
|-------|---------------|-----|
| 1 | \emptyset - | j- |
| 12 | kit- | k- |
| 2 | m- | aj- |
| 3 | n- | n- |

(a) Intransitives

| EA | IA | | | |
|----|----|----|-----|------|
| | 1 | 12 | 2 | 3 |
| 1 | - | - | k- | s- |
| 12 | - | - | - | kif- |
| 2 | k- | - | - | m- |
| 3 | j- | k- | aj- | n- |

(b) Transitives

Table 2: Surinam Carib (Gildea 1998)

- However, in all languages there is never a ‘clean’ pattern: there is always extra morphology (even in Surinam Carib)
 - 1>2 differs from 2>1
 - Additional morphemes from intransitives
 - Some places show S + O markers
- For example, in the neighboring language, De'Kwana there is a *k* marker which shows up in transitives, but with other morphology.

| π | EA | IA | EA | IA | 1 | 12 | 13 | 2 | 3 |
|-------|----------|--------------------|----|----|-------------|----|--------------------|----------|-----------------|
| 1 | w- | \emptyset (y-) | 1 | | - | - | - | mən- | w- |
| 12 | k- | k(i)- | 12 | | - | - | - | - | k- |
| 13 | (nñã:)n- | (nñã:) \emptyset | 13 | | - | - | - | nñã:mən- | nñã:n- |
| 2 | m- | ə(d)- | 2 | | kə- | - | nñã:kə- | - | kə/m- |
| 3 | | n- | 3 | | \emptyset | k- | nñã: \emptyset - | ə(d)- | n-/ \emptyset |

(a) Intransitives

(b) Transitives

Table 3: De'Kwana (Hall 1984, 1988:151/287/327)

- Conclusion: you never seem to just collect person features,
 - You can do this with case features (following Georgi 2013)
 - But again, *you always need morphology*, and this runs into problems with case-agreement mis-alignment
 - Silverstein-feature hierarchies are not only found in the syntax (see Trommer (2006, 2007), Woolford (2016) for arguments along this line)

- Languages that are classified as ‘portmanteaux-heavy-paradigms’ can be decomposed
- Portmanteaux occur in small parts of the paradigm

⇒ Portmanteaux are morphological

- Up next: The only seeming counterexample: Kalaallisut

3 A strong case for multivaluation? Evidence from Phonology

- A prediction that is made when portmanteaux = multivaluation: a portmanteaux-riddled-paradigm
 - Always collecting F from {NP1, NP2} predicts (without morphology) portmanteaux everywhere
- So, maybe the languages in the previous sections are not the right type of languages
 - Note that many of these languages *are* classified as fusional languages in descriptions
- This section: case that has been put forward by Woolford (2016) where this is the case: Kalaallisut (Inuit)
 - I show by looking at the phonology that the paradigm is in fact far more regular
 - Research is based on Fortescue (1984), and insights in Compton (2018), Yuan (2021)

3.1 The agreement paradigm in Kalaallisut

- Woolford (2016): Kalaallisut is a clear case of language with portmanteaux morphology, because 'The indicative mood is marked by a set of fused person/number inflections' (Fortescue 1984, 288)
 - Segmentation based on the intransitive paradigm, with nominative markers (Tab. 4a).
 - Ergative markers are not transparent, she argues.
 - Conclusion: phonology is so irregular that it is impossible for the learner to segment
 - All the parts that are not segmented are portmanteaux.

| π | # | Intransitives | | EA | IA | 1 | | 2 | | 3 | |
|-------|----|---------------|----------|----|----|------------|------------|----------|--------|---------|--------|
| | | nominative | ergative | | | SG | PL | SG | PL | SG | PL |
| 1 | SG | nga | ga | 1 | SG | – | – | vakkit | vas-si | vara | vakka |
| | PL | gut | vut | | PL | – | – | vatsigit | vas-si | var-put | va-vut |
| 2 | SG | tit | t | 2 | SG | varma | vatsi-gut | – | – | vat | vati-t |
| | PL | si | si | | PL | vas-si-nga | vas-si-gut | – | – | var-si | va-si |
| 3 | SG | vuq | n.g | 3 | SG | vaa-nga | vaati-gut | vaa-tit | vaa-si | vaa | vai |
| | PL | pput | n.g. | | PL | vaa-nga | vaati-gut | vaatsit | vaa-si | vaat | vaat |

(a) Intransitives

(b) Transitives

Table 4: Kalaallisut (Fortescue 1984, Woolford 2016)

- The challenge here is: is the phonology truly that opaque?
 - Methodology:
 - Take the surface forms given in the grammar
 - Look at the literature on clitic placement, and phonology, in this language family (note that the ERG 3rd ones are not given)
 - Conclusion: Most forms can be decomposed fairly straightforward
 - 1pl>2sg (*vatsigit*) and 2sg>1sg (*varma*) cannot be derived; two other forms are difficult

3.2 Step #1: Underlying forms and the challenge

- The complete list of person markers is given in table 5.
 - Based on Fortescue (1984), Dorais (1988), Woolford (2016), Compton (2016, 2018), Yuan (2018).
 - the ergative markers are the same as the genitive markers.
- These markers interact with the mood morpheme, which can show up as follows *vaB* or *va*
- Table 6 gives the underlying forms, and the surface forms as given in the grammar by Fortescue.
 - Thus there is a indicative mood marker (based on looking at the other mood paradigms with person markers)
 - And there is a combination of the ergative and nominative person markers

| π | # | ergative | nominative |
|-------|----|----------|------------|
| 1 | SG | ga | ŋa |
| | PL | vut | gut |
| 2 | SG | t | tit |
| | PL | si | si |
| 3 | SG | a / i | q |
| | PL | i / at | (i)t |

Table 5: Kalaallisut nominative and ergative markers

- The task is thus to get from the pretty colored forms to the surface forms without saying that they are actually un-decomposable (for the most part)
 - Result: only 1pl>2sg (*vatsigit*) and 2sg>1sg (*vaŋma*) cannot be derived; two other forms are a bit difficult

| EA π | IA π # | 1 | | 2 | | 3 | |
|-------------|------------------|------------------------|--------------------------|---------------------------|-----------------------|-----------------------|--------------------------|
| | | SG | PL | SG | PL | SG | PL |
| 1 | SG | – | – | va(ŋ)-ga-tit vakkit | va(ŋ)-ga-si vassi | va(ŋ)-ga-q vaŋa | va(ŋ)-ga-(i)t? vakka |
| | PL | – | – | va(ŋ)-vut-tit vatsigit | va(ŋ)-vut-si vassi | va(ŋ)-vut-q vaŋput | va(ŋ)-vut-(i)t? vavut |
| 2 | SG | va(ŋ)-t-ŋa vaŋma | va(ŋ)-t-gut vatsigit | – | – | va(ŋ)-t-q vat | va(ŋ)-t-(i)t vatit |
| | PL | va(ŋ)-si-ŋa vassiŋa | va(ŋ)-si-gut vassigit | – | – | va(ŋ)-si-q vaŋsi | va(ŋ)-si-(i)t vasi |
| 3 | SG | va(ŋ)-a-ŋa vaŋa | va(ŋ)-i-gut vaatigit | va(ŋ)-a-tit vaatit | va(ŋ)-i- si vaasi | va(ŋ)-a-q vaa | va(ŋ)-i-(i)t vai |
| | PL | va(ŋ)-at-ŋa vaŋŋa | va(ŋ)-it-gut vaatigit | va(ŋ)-at-tit vaatsit | va(ŋ)-it- si vaasi | va(ŋ)-at-q vaat | va(ŋ)-it-(i)t vaat |

Table 6: Kalaallisut (Fortescue 1984, Woolford 2016)

- By including the third person ergative markers, various forms are fully transparent

| EA | IA | π | 1 | | 2 | | 3 | |
|----|----|-------------|--------------|---------------|--------------|-------------|----------------|----|
| | | | SG | PL | SG | PL | SG | PL |
| 1 | SG | – | – | va(ʁ)-ga-tit | va(ʁ)-ga-si | va(ʁ)-ga-q | va(ʁ)-ga-(i)t | |
| | | – | – | vakkit | vassi | vaʁa | vakka | |
| 1 | PL | – | – | va(ʁ)-vut-tit | va(ʁ)-vut-si | va(ʁ)-vut-q | va(ʁ)-vut-(i)t | |
| | | – | – | vatsigit | vassi | vaʁput | vavut | |
| 2 | SG | va(ʁ)-t-ŋa | va(ʁ)-t-gut | – | – | va(ʁ)-t-q | va(ʁ)-t-(i)t | |
| | | vaʁma | vatsigit | – | – | vat | vatit | |
| 2 | PL | va(ʁ)-si-ŋa | va(ʁ)-si-gut | – | – | va(ʁ)-si-q | va(ʁ)-si-(i)t | |
| | | vassiŋa | vassigit | – | – | vaʁsi | vasi | |
| 3 | SG | va(ʁ)-a-ŋa | va(ʁ)-i-gut | va(ʁ)-a-tit | va(ʁ)-i-si | va(ʁ)-a-q | va(ʁ)-i-(i)t | |
| | | vaʁŋa | vaatigit | vaatit | vaasi | vaa | vai | |
| 3 | PL | va(ʁ)-at-ŋa | va(ʁ)-it-gut | va(ʁ)-at-tit | va(ʁ)-it-si | va(ʁ)-at-q | va(ʁ)-it-(i)t | |
| | | vaʁŋa | vaatigit | vaatsit | vaasi | vaat | vaat | |

Table 7: Kalaallisut, first step: morphological breakdown

3.3 Step #2: Regular phonology

- The phonological processes described are all regular, and are based on Richsel (1974), Fortescue (1984).

1. Assimilation:

- /i/ vowels assimilate to preceding /a/ sounds

(24) Mood -3SG -2PL (3SG.S>2PL.O)

Underlying form: va -i -si

Assimilation: va -a -si

Surface form: /vaasi/

- All /g/, /ʁ/ or /t/, or /s/ sounds assimilate to the preceding sound

2. Devoicing + Dissimilation

- Two voiced stops in a derived geminate: geminate devoices (/gg/ → /kk/)
- In geminate /tt/, second /t/ undergoes manner dissimilation (/t/ → /s/)

(25) Mood -3PL -2SG (3PL.S>2SG.O)

Underlying form: va -it -tit

Assimilation: va -at -tit

Dissimilation: va -at -sit

Surface form: /vaatsit/

3. Epenthesis:

insert /i/ in between /t/ and /g/

(26) First person plural internal arguments

| | 2PL.S>1PL.O | 3PL.S>1PL.O | 2SG.S>1PL.O |
|-------------------|--------------|---------------|--------------|
| Underlying form | vaC -si -gut | vaC -it -gut | vaC -t -gut |
| Epenthesis | — | vaC -iti -gut | vaC -ti -gut |
| Assimilation | vas -si -gut | va -ati -gut | vat -ti -gut |
| Dissimilation | — | — | vat -si -gut |
| Surface Structure | vassigut | vaatigut | vatsigut |

4. Deletion:

It is possible to delete one consonant in combination with a specific other consonant

- Delete /g/ when it is preceded by a /ʁ/
- Delete /ʁ/ when it is followed by a /t/

• What we end up with is the following picture:

- Note that many cases are not grey, even though they do have assimilation etc.
- Something about the morphology needs to be said

| EA | IA | π | 1 | | 2 | | 3 | |
|----|----|-------|-------------|--------------|--------------|-------------|------------|---------------|
| | | | SG | PL | SG | PL | SG | PL |
| 1 | | SG | — | — | va(ʁ)-ga-tit | va(ʁ)-ga-si | va(ʁ)-ga-q | va(ʁ)-ga-(i)t |
| | | PL | — | — | vakkit | vassi | vaʁa | vakka |
| 2 | | SG | va(ʁ)-t-ŋa | va(ʁ)-t-gut | — | — | va(ʁ)-t-q | va(ʁ)-t-(i)t |
| | | PL | vaʁma | vatsigut | — | — | vat | vatit |
| 3 | | SG | va(ʁ)-a-ŋa | va(ʁ)-i-gut | va(ʁ)-a-tit | va(ʁ)-i-si | va(ʁ)-a-q | va(ʁ)-i-(i)t |
| | | PL | vaʁŋa | vaatigut | vaatit | vaasi | vaa | vai |
| 3 | | SG | va(ʁ)-at-ŋa | va(ʁ)-it-gut | va(ʁ)-at-tit | va(ʁ)-it-si | va(ʁ)-at-q | va(ʁ)-it-(i)t |
| | | PL | vaʁŋa | vaatigut | vaatsit | vaasi | vaat | vaat |

Table 8: Kalaallisut, second step: Phonological breakdown

3.4 Step # 3: Morphology and phonology

- In many cases it does not seem like not all morphemes occur
 - There are reasons to believe that clitics can be reordered, or deleted.
- This section focuses on two such interactions

- Fortescue notes that there are phonological reasons for certain morphemes to be deleted
 - Certain affixes with a specific phonological shape are deleted
 - For now, I take this to be a case of morpho-phonology
 - However, it might be that this is phonology only, if we take into account the location of the affixes

1. In some cases nothing more needs to be said, for example in most third person IA contexts:

(27) **Absolutive deletion:**

| | Mood -3SG -3SG | Mood -3PL -3SG |
|-----------------|----------------|----------------|
| Underlying form | va -a -q | va -at -q |
| Abs deletion | va -a | va -at |
| Surface form | vaa | vaat |

2. In some cases the deletion does interact with the phonology:

(28) **Deletion and assimilation:**

| | Mood -1SG -2PL | Mood -1PL -2PL |
|-------------------|----------------|----------------|
| Underlying form | vaC -ga -si | vaC -vut -si |
| Erg deletion | vaC -si | vaC -si |
| Assimilation | vas -si | vas -si |
| Surface Structure | vassi | vassi |

3. Reordering of morphemes can also account for the (non)-interaction with phonology in the following cases:

(29) **Reordering, deletion, and phonology**

| | Mood -1sg -3sg | Mood -1sg -3pl |
|-------------------|------------------------|----------------|
| Underlying form | vaC -ga -q | vaC -ga -it |
| Clitic reordering | vaC -q -ga | — |
| Assimilation | va ^B -q -ga | vag -ga -it |
| Abs Deletion | va ^B -ga | vag -ga |
| Devoicing | — | vak -ka |
| Deletion | va ^B -a | — |
| Surface form | va ^B -a | vakka |

- This leads to the following picture of decomposable morphemes:

| EA | IA | π | 1 | | 2 | | 3 | |
|----|----|-------|------------------------|--------------------------|---------------------------|-----------------------|-----------------------|-------------------------|
| | | | SG | PL | SG | PL | SG | PL |
| 1 | | SG | | | va(ʙ)-ga-tit vakkit | va(ʙ)-ga-si vassi | va(ʙ)-ga-q vaʙa | va(ʙ)-ga-(i)t vakka |
| | | PL | | | va(ʙ)-vut-tit vatsigit | va(ʙ)-vut-si vassi | va(ʙ)-vut-q vaʙput | va(ʙ)-vut-(i)t vavut |
| 2 | | SG | va(ʙ)-t-ŋa vaʙma | va(ʙ)-t-gut vatsigit | | | va(ʙ)-t-q vat | va(ʙ)-t-(i)t vatit |
| | | PL | va(ʙ)-si-ŋa vassiŋa | va(ʙ)-si-gut vassigit | | | va(ʙ)-si-q vaʙsi | va(ʙ)-si-(i)t vasi |
| 3 | | SG | va(ʙ)-a-ŋa vaʙŋa | va(ʙ)-i-gut vaatigit | va(ʙ)-a-tit vaatit | va(ʙ)-i-si vaasi | va(ʙ)-a-q vaa | va(ʙ)-i-(i)t vai |
| | | PL | va(ʙ)-at-ŋa vaʙŋa | va(ʙ)-it-gut vaatigit | va(ʙ)-at-tit vaatsit | va(ʙ)-it-si vaasi | va(ʙ)-at-t? vaat | va(ʙ)-it-(i)t vaat |

Table 9: Kalaallisut, final breakdown: morphology and phonology

- Kalaallisut at first appears like a case of a portmanteaux-heavy paradigm
- However, a closer examination of the (morpho)-phonology reveals a segmentable the paradigm
- Crucially, the interplay of regular phonological rules can mask the underlying syntax

4 Conclusion

- I reviewed arguments for a multi-valuation approach to person portmanteaux agreement
 1. Morphology is always needed: evidence from Chukotko-Kamchatkan
 - There are combinations of **portmanteaux** + **separate subject markers**
 - Portmanteaux occur in idiosyncratic parts of agreement paradigms
 2. No evidence for portmanteaux-heavy agreement paradigm: Kalaallisut
 - Taking into account (morpho)-phonology yields a decomposable paradigm
- Multivaluation is not needed to account for portmanteaux agreement

References

- Bobaljik, J. D. (2000). The ins and Outs of Contextual Allomorphy. In K. K. Grohmann and C. Struijke (Eds.), *UMD Working Papers in Linguistics*, Volume 10, pp. 35–71. Maryland University.
- Bobaljik, J. D. and B. Branigan (2006). Eccentric Agreement and Multiple Case-Checking. In A. Johns, D. Massam, and J. Ndayiragije (Eds.), *Ergativity: Emerging Issues*. Springer.
- Bobaljik, J. D. and S. Wurmbrand (2001). Notes on Agreement in Itelmen. *Linguistic discovery* 1(1).

- Compton, R. (2016). Mutually conditioned mood and object agreement in Inuit. In C. Hammerly and B. Prickett (Eds.), *Proceedings of the North Eastern Linguistics Society (NELS) 46*, Volume 1, pp. 241.
- Compton, R. (2018). Left Periphery ϕ -Agreement and A-movement in Inuktitut. In S. Hucklebridge and M. Nelson (Eds.), *Proceedings of the North Eastern Linguistics Society (NELS) 48*.
- Cowell, A. and A. Moss Sr. (2008). *The Arapaho Language*. University Press of Colorado.
- Crook, H. (1999). *The phonology and morphology of Nez Perce stress*. Ph. D. thesis, University of California at Los Angeles.
- Derbyshire, D. C. (1985). *Hixkaryana and Linguistic Typology*, Volume 76. The summer institute of linguistics and the university of Texas at Arlington.
- Dorais, L.-J. (1988). *Tukilik: An Inuktitut grammar for all*. Quebec, QC: Inuit Studies Occasional Papers 2.
- Fenger, P. (2018). Multiple agreeing persons is not that special: restrictions on person portmanteaux. In A. Arani and M. Šereikaitė (Eds.), *University of Pennsylvania Working Papers in Linguistics*, Volume 24:1 article 9, pp. 1–10.
- Fortescue, M. (1984). *West Greenlandic*. London: Croom Helm.
- Georgi, D. (2013). A relativized probing approach to person encoding in local scenarios. *Linguistic Variation* 12(2), 153–210.
- Gildea, S. (1998). *On Reconstructing Grammar: Comparative Cariban Morphosyntax*. Number 18 in Oxford Studies in Anthropological Linguistics. New York: OUP.
- Gluckman, J. D. (2016). Decomposing Morphological Number in Local Contexts. In K. min Kim, P. Umbal, T. Block, Q. Chan, T. Cheng, K. Finney, M. Katz, S. Nickel-Thomson, and L. Shorten (Eds.), *Proceedings of the 33rd West Coast Conference of Formal Linguistics*, Somerville, MA. Cascadia Proceedings Project.
- Harbour, D. (2003). The Kiowa Case for Feature Insertion. *Natural Language and Linguistic Theory* 21, 543–578.
- Heath, J. (1991). Pragmatic Disguise in Pronominal–Affix Paradigms. In F. Plank (Ed.), *Paradigms: The Economy of Inflection*, pp. 75–89. Berlin: Mouton de Gruyter.
- Noyer, R. (1992). *Features, positions and affixes in autonomous morphological structure*. Ph. D. thesis, Massachusetts Institute of Technology, Cambridge, MA.
- Oxford, W. (2015). Variation in Multiple Agree: A syntactic connection between portmanteau agreement and inverse marking. Manuscript University of Manitoba, 10/11/2015.
- Oxford, W. (2019). Inverse marking and Multiple Agree in Algonquin. *Natural Language & Linguistic Theory* 37, 955–996.
- Richsel, J. (1974). *Topics in West Greenlandic Phonology*. Copenhagen: Akademisk Forlag.
- Trommer, J. (2006). Plural Insertion is Constructed Plural. In G. Müller and J. Trommer (Eds.), *Subanalysis of Argument Encoding in Distributed Morphology*, Volume 84 of *Linguistische Arbeits Berichte*. University of Leipzig.
- Trommer, J. (2007). On Portmanteau Agreement. Talk at the Harvard Leipzig Workshop on Morphology and Argument Encoding, Cambridge, MA.
- Trommer, J. (2010). The typology of Portmanteau Agreement. Paper presented at the DGfS-CNRS Summer School on Linguistic Typology, Leipzig.
- Woolford, E. (2016). Two types of Portmanteau Agreement: Syntactic and Morphological. In G. Legendre, M. Putnam, and E. Zaroukian (Eds.), *Optimality Theoretic Syntax, Semantics, and Pragmatics*. Oxford University Press.
- Yuan, M. (2018). *Dimensions of Ergativity in Inuit: Theory and Microvariation*. Ph. D. thesis, Massachusetts Institute of Technology.
- Yuan, M. (2021). Diagnosing object agreement vs. clitic doubling. An Inuit case study. *Linguistic Inquiry* 52, 153–179.