1 Alignment in ditransitives

Outline and claims

Alignment in ditransitives

Like (in)transitives, ditransitives show different alignment patterns in case and agreement. Not all combinations are attested.

Explaining the gap

This gap is not accidental. It follows from locality, hierarchical syntactic structure and the case hierarchy.

“Exceptional” patterns have different causes

Information structure (IS) and φ-features seem to allow violations of the locality of agreement: these patterns provide evidence for relativised agreement.

Indirective or direct object alignment

(1) a. Lát-ja [p a kutyá-t].
see-3SG.SBJ>3OBJ the dog-ACC
'S/he sees the dog.'

b. [r Neked] ad-ja [t a kutyá-t].
you.SG.DAT give-3SG.SBJ>3OBJ the dog-ACC
'S/he gives you the dog.'
Monotransitive, (1a):

Ditransitive, (1b):

Secundative or primary object alignment

(2) a. *Ciq’aamqal-nim pee-tw’ehek’yk-se-Ø [ₚ *picpic-ne*].
   dog-ERG 3/3-chase-IPFV-PRS cat-ACC
   ‘The dog is chasing the cat.’
   [Nez Perce]
   (Deal 2013: 396)

b. *Beth-nim hi-neec-’ni-Ø-ye [ₚ *lepit picaloo-na*] [ₚ *hipt*].
   Beth-ERG 3.SBJ-OBJ.PL-give-PFV-REM.PST two kitten-ACC food.NOM
   ‘Beth gave the two kittens food.’
   [Nez Perce]
   (Deal 2019: 393)

Mixed alignment: neutral case, secundative agreement

(3) a. *Ləmma [ₚ *gənzəb-u-n*] sərrək’-ə-w.
   ‘Lemma stole the money.’
   [Amharic]
   (Baker 2012: 261)

b. *Ləmma [ₚ *Aster-in*] [ₚ *his’an-u-n*] asaj-at.
   ‘Lemma showed Aster the baby.’
   [Amharic]
   (Baker 2012: 258)
Mixed alignment: indirective case, secundative agreement

(4) a. \(\text{Ləmma} [\text{p} \ gənzəb-u-n] \text{ sərrək'-ə-w.} \)  
   \(\text{Lemma.m} \text{ money.m-def-acc} \text{ rob-3.m.sbj-3.m.obj} \)  
   'Lemma stole the money.'

b. \(\text{Ləmma} [\text{r} \ l-Almaz] [\text{t} \ tarik-u-n] \text{ nəggər-at.} \)  
   \(\text{Lemma.m} \text{ dat-Almaz.f} \text{ story.m-def-acc} \text{ tell-3.m.sbj-3.f.obj} \)  
   'Lemma told Almaz the story.'

(5) \(\text{WCO effect due to movement of } T \text{ over } R \) (Amharic, Baker 2012: 266)

\(\text{*Nərs-wa} [\text{t} \text{ his'an}] [\text{r} \text{ lə-innat-u}] \text{ t-əstaj-at-all-atfīf.} \)  
\(\text{nurse-def.f} \text{ baby} \text{ dat-mother-3.m.poss} \text{ 3.f.sbj-show-3.f.obj-aux-3.f.sbj} \)  
'The nurse showed a baby\(_i\) to its\(_i\) mother (e.g., shortly after the delivery).'

2 Explaining the gap

Assumptions about ditransitives

Assumption 1 The agreeing head c-commands both \(R\) and \(T\)
Assumption 2 \(R\) c-commands \(T\), cf. (5) and (6) (Barss & Lasnik 1986, Harley 2002, …)

<table>
<thead>
<tr>
<th></th>
<th>Secundative/neutral case</th>
<th>Indirective case</th>
</tr>
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<tbody>
<tr>
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</tr>
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<td>Indirective agreement</td>
<td>✗</td>
<td>✓ (Hungarian)</td>
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</tbody>
</table>
2 EXPLAINING THE GAP

(6) _R_ binding pronoun in _T_ (Nez Perce, Deal 2013: 397)

\[ P._{nim}_i \text{ pee-kiwyek-Ø-e} \quad [\_R \text{ Elwit’et-ne}_j ] \quad [\_T \text{ ’ip-nim}_i/j \text{ hip}_t \; ] \].

P._-ERG 3/3-feed-PFV-REM.PST Elwit’et-ACC 3SG-GEN food.NOM

‘Pinoocj fed Elwit’etj herj/hisj food.’

Assumptions: Morphological case and agreement

**Assumption 3** Interaction of m-case and agreement follows the case hierarchy

- In IC, if the verb cannot agree with DAT object: **indirective agreement**
- If the verb can agree with DAT object: **secundative agreement** (Table 1)

→ **Case hierarchy**: NOM/ABS > ACC/ERG > DAT > OBL > …


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</tbody>
</table>

**Table 1** Variation in accessibility of _R_’s m-case in IC

- In SC/NC, ABS/ACC must be accessible: **secundative agreement** (Table 2)

→ **Case hierarchy**: NOM/ABS > ACC/ERG > DAT > OBL > …

→ Indirective agreement, i.e. with _T_, should be impossible (due to locality)

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<td>✓ (Amharic)</td>
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<tr>
<td></td>
<td>✓ (Hungarian)</td>
</tr>
</tbody>
</table>

**Table 2** No variation in accessibility of _R_’s m-case in SC/NC

**Ruling out secundative case and indirective agreement**

✓ These assumptions rule out secundative case and indirective agreement

\[ v' \]

\[ [ \_u \phi \quad \phi_R ] \]

\[ v' \]

\[ \text{AppPlP} \]

\[ \text{DP}_R \]

\[ \text{APPl'} \]

\[ \text{VP} \]

\[ \text{DP}_T \]

✓ Agree with _R_.

✗ Agree with _T_ impossible.

4
Empirical support

- Structural explanation makes the right predictions
- Sample of 77 genera (99 languages), see Figure 5, p. 6
  - ICIA: 10 Ls, ICSA: 19 Ls, SCSA: 16 Ls, NCSA: 54 Ls

✔ Secundative or neutral case always allow secundative agreement

3 Apparent exceptions

Skipping accessible goals

⚠ In some languages, \( R \) is skipped under certain conditions and the verb agrees with \( T \) — even though \( R \)'s case is accessible for agreement.

- 17 of 99 languages (13 of 77 genera) in my sample show such alternations

♀ Lexical properties of the predicate can determine agreement alignment
♀ Competition between objects in person and/or information structure
♀ Probe on Appl instead of \( v \)?
♀ Movement of \( T \) over \( R \)?

Lexical properties determine agreement alignment

Across languages, predicates differ in whether they allow double object constructions (DOCs) and prepositional dative constructions (PDCs)

- Cross-linguistically common (Malchukov et al. 2010: 48–56)

⚠ Unexpected patterns involve variation in agreement, but not case alignment

(7) a. \( \text{Markus-w} \quad [T \quad pr \quad kati] \quad [R \quad nson] \quad b-mae-y. \)
    Markus-ERG tree leaf.ABS 1SG.DAT 1SG.OBJ-give-SBJ.HOD
    'Markus gave me the money (earlier today).'</nolabel>

b. \( \text{Markus-w} \quad [T \quad ngko] \quad [R \quad jon-en] \quad b-re-y. \)
    Markus-ERG 1SG.ABS John-DAT 1SG.OBJ-send-SBJ.HOD
    'Markus sent me to John (earlier today).'</nolabel> (Carroll 2016: 149)

- Also in Burushaski (Baker 2015) and Chukotko-Kamchatkan (Meľčuk 1988)
Figure 5  Areal distribution of languages in sample
Information structure determining agreement alignment

In Itelmen (Chukotko-Kamchatkan), salience determines object agreement.


\[
\text{i kma [r onna-nk] [T bαtč] t-zəl-nen.}
\]

and I him-DAT knife 1SG.SBJ-give-3SG.OBL

‘And I gave the knife to him.’

b. Context: *Where is the knife?*

\[
\text{qeɬnu [r zlatumx-enk] t-zəl-čen?}
\]

really brother-DAT 1SG.SBJ-give-1SG.SBJ>3SG.OBJ

‘Didn’t I give it to my brother?’ (Bobaljik & Wurmbrand 2002: 17)

Also in some Bantu languages? (van der Wal to appear)

Person determining agreement alignment

In Alutor, Chukchi, Koryak (Chukotko-Kamchatkan), person determines agreement

- *give* agrees with the higher object on 1 > 2 > 3 ...  
- ... or with T if both are 3 (Alutor/Chukchi) or both are 1/2 (Koryak)

(9) a. Secundative agreement with 1SG R

\[
\text{əlləɣ-a ə-ina-jal-i [r ɣamək-əŋ] [T ɣatta]}
\]

father-ERG 3SG.SBJ-1SG.OBJ-give-3SG.SBJ 1SG-DAT 2SG.ABS

‘Father gave you as a wife to me.’

b. Indirective agreement with 1SG T

\[
\text{əlləɣ-a ə-ina-jal-i [r ɣamək-əŋ] [T ɣamma]}
\]

father-ERG 3SG.SBJ-1SG.OBJ-give-3SG.SBJ 2SG-DAT 1SG.ABS

‘Father gave me as a wife to you.’ (Mel’čuk 1988: 294–295)

4 Analysing “exceptions”

Lexical properties and agreement alignment

Identical case-marking need not reflect identical semantics (cf. DOM=DAT)

- Is DAT the syncretic expression of “true” DAT and more oblique (PP) arguments?
- Ngkolmpu *give* selects R, *send* selects GOAL: both spelled out as DAT?
- Testable via the syntactic behaviour of DAT arguments
- Distinct behaviour of agreeing and non-agreeing DAT would support syncretism
- Baker (2015) suggests this for Burushaski, Rezac (2011) for Basque
Object agreement with interaction and satisfaction

- Person and agreement (a)symmetries can be analysed using relativised probing
  - One such approach: Deal’s (2015) interaction and satisfaction
  - Interaction (INT) features value a probe, but do not halt probing
  - Satisfaction (SAT) features halt a probe, are a subset of INT

Itelmen object agreement

Itelmen v can probe δ-/A’-features (cf. van Urk 2015, Miyagawa 2017, Baier 2018)


\[
\begin{align*}
i & \quad \text{kma } [r \text{ onna-nk }] [t \text{ βət̂] t-əl-nen}. \\
\text{and 1SG him-DAT knife 1SG.SBJ-give-3SG.OBL}
\end{align*}
\]

‘And I gave the knife to him.’

b. Context: *Where is the knife?*

\[
\begin{align*}
\text{qeɬnu } [r \text{ zlatumx-enk }] t-əl-čen? \\
\text{really brother-DAT 1SG.SBJ-give-1SG.SBJ>3SG.OBJ}
\end{align*}
\]

‘Didn’t I give it to my brother?’

(11) a. INT = {δ+φ}, SAT = {δ} 

v probes, finds DP_R 
DP_R has δ+φ ∈ INT, SAT 

v is valued and stops

✓ v does not probe DP_T, (10a)

b. INT = {δ+φ}, SAT = {δ} 

v probes, finds DP_R 
DP_R has no F ∈ INT, SAT 
v continues, probes DP_T 
DP_T has δ+φ ∈ INT, SAT

✓ v is valued, stops, (9b)
Alutor/Chukchi/Koryak object agreement

In Alutor, Chukchi, and Koryak, person determines agreement (with give)

(12) a. əlləɣ-a ə-na-jəl-i [ᵣ yəmək-əŋ] [ᵣ] yətta [₂₂ .₃₃ .₄₄ .₅₅ .₆₆ .₇₇ .₈₈ .₉₉ ] [Alutor]
father-ERG 3SG.SBJ-1SG.OBJ-give-3SG.SBJ 1SG-DAT 2SG.ABS
'Father gave you as a wife to me.'

b. əlləɣ-a ə-na-jəl-i [ᵣ yəmək-əŋ] [ᵣ] yəmmə [₁₁ .₃₃ .₄₄ .₅₅ .₆₆ .₇₇ .₈₈ .₉₉ ]
father-ERG 3SG.SBJ-1SG.OBJ-give-3SG.SBJ 2SG-DAT 1SG.ABS
'Father gave me as a wife to you.'

c. əlləɣ-a ə-lə-nina-wwi [ᵣ ənək-əŋ] [ᵣ] sininkina-wwi [₁₁ .₃₃ .₄₄ .₅₅ .₆₆ .₇₇ .₈₈ .₉₉ ]
father-ERG 3SG.SBJ-give-3.OBJ-PL he-DAT his-PL.ABS
ŋavakka-wwi ]
daughter-PL.ABS
'Father gave his daughters as wives to him.' (Mel’čuk 1988: 294–295)

(13) a. 

b. 

\[ \text{INT} = \{\varphi\}, \text{SAT} = \{1\} \]
\( \nu \) probes, finds \( R \)
\( R \) has \( \varphi \in \text{INT} \)
\( \nu \) continues, probes \( T \)
\( T \) has \( \varphi \in \text{INT}, \text{SAT} \)
\( \checkmark 1 > 2, 1 \text{ values } \nu, (12b) \)

\[ \text{INT} = \{\varphi\}, \text{SAT} = \{1\} \]
\( \nu \) probes, finds \( R \)
\( R \) has \( \varphi \in \text{INT} \)
\( \nu \) continues, probes \( T \)
\( T \) has \( \varphi \in \text{INT} \)
\( ? 3 = 3, \nu \text{ chooses last } \varphi?, (12c) \)
The INT/SAT model allows probes to agree several times

- \( \phi \)-features of different arguments can be ordered \( \langle \phi_R, \phi_T \rangle \) (cf. Deal 2015)
- For Alutor, Chukchi, and Koryak, I assume that ...
- ... generally the higher \( \phi \)-feature values \( v_1 > v_2 > v_3 \)

\( \Delta \) But what about 3–3 configurations like (12c)?

**Dealing with 3–3 configurations**

If both \( R \) and \( T \) are third person, \( R \) should be the only target

\( \Delta \) It is the \( T \) that controls agreement, however (e.g. Alutor (14), repeated from (12c))

(14) \( \text{əlləɣ-a} \) əŋək-əŋ 3SG.SBJ-GIVE-3.OBJ-PL he-DAT

\( [T \ \text{sininkina-wwi yavakka-wwi}] \) 3SG.PLABS daughter-PL.ABS

'Father gave his daughters as wives to him.' (Mel’čuk 1988: 294–295)

? Probe chooses last target? No: overgenerates!

? Appl probes, not \( v \)? No: overgenerates!

? Movement of \( T \) over \( R \)?

Abramovitz (2019): wh-direct objects (DOs) in Koryak move through Spec\( v \)P

(15) a. \( [T \ \text{jej-}u_i] \) \{ \( yə\)-nan / * yatcei \} \( t_i \) valom-na-w, 3SG.ERG 2SG.ABS hear-3.OBJ-3PL

əno ñewŋəto-na-k j-ə-ʨim-aw-nin \( t_i \)


‘What all did you hear that Hewngyto broke?’


j-ə-ʨim-aw-nin \( [T \ kojŋ-no] \)


‘I heard that Hewngyto broke cups.’

\( \checkmark \) In (15a), \( jeju \) ‘what’ must move through Spec\( v \)P to trigger ERG

**“Apparent” exceptions**

? Why are these only apparent exceptions?

- In Itelmen, Alutor, Chukchi etc. non-local agreement is only an option
- Agreement with \( T \) across \( R \) requires something additional: \( \phi \)-features, TOP, ...?
• In Alutor, Chukchi, and Koryak, movement could reverse structural relations
 φ-features and Top introduce asymmetry: relativised minimality/probing
 ✔ No language only allows agreement with T across an accessible r

A possible extension to differential, asymmetric object agreement

Bresnan & Mchombo (1987) argue that OMs in Chichewa are sensitive to topicality

(16) a. *Alenje a-ku-phík-il-á [BEN anyani ] [T zitúmbůwa ]. [Ch.]
2.hunters 2.SM-PRES-cook-APPL-FV 2.baboons 8.pancakes
‘The hunters are cooking (for) them (the baboons) some pancakes.’

b. Alenje a-ku-wá-phík-il-á [T zitúmbůwa ] ([BEN anyâni ]).
2.hunters 2.SM-PRES-2.OM-cook-APPL-FV 8.pancakes 2.baboons
‘The hunters are cooking (for) the baboons some pancakes.’

c. *Alenje a-ku-zí-phík-il-á [BEN anyâni ] ([T zitúmbůwa]).
2.hunters 2.SM-PRES-8.OM-cook-APPL-FV 2.baboons 8.pancakes
(Mchombo 2004: 80, 83)

✔ INT/SAT can account for both symmetric and asymmetric object agreement

(17) a. 

(17) b. 

v

INT = {δ+φ}, SAT = {φ}

V

T

v probes, finds BEN
BEN has no feature ∈ INT
v is unvalued and stops
v does not probe T

✔ No OM, (16a,c)
5 Analogues in monotransitives

A gap in monotransitives

Moravcsik (1978), Bobaljik (2008) point out an analogous gap in monotransitives

- In ERG-ABS languages, not all ERG subjects can agree
- In NOM-ACC languages, the subject always agrees

<table>
<thead>
<tr>
<th>Accusative case</th>
<th>Ergative case</th>
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<tbody>
<tr>
<td>Accusative agreement</td>
<td>✔ (English, Finnish)</td>
</tr>
<tr>
<td>Ergative agreement</td>
<td>✗</td>
</tr>
</tbody>
</table>

- Bobaljik (2008), Coon (2017), Coon & Parker (2019) have analyses of the gap

? Are there apparent exceptions to the monotransitive generalisation?

Exceptions to Moravcsik/Bobaljik’s generalisation: person

Verbs can agree with SBJ or OBJ, based on their person

(18) a. \( ni\-wa:\text{bam-a-ina:n} \) [Algonquin]
   1-see-3.OBJ-1PL
   ‘We see her.’

b. \( ni\-wa:\text{bam-igw-ina:n} \)
   1-see-INV-1PL
   ‘She sees us.’ (Oxford 2019: 964)

✔ Inverse agreement, generally, can represent “apparent” exceptions in person

Exceptions to Moravcsik/Bobaljik’s generalisation: IS

In Dzamba theme inversion, the verb agrees with a topical OBJ

(19) a. Agreement with \( A \), SVO order [Dzamba]
   \( [\text{A Omwana }] \text{ a-tom-aki } [\text{F imukanda }] \).  
   1.child 1.SM-send-PFV 5.letter
   ‘The child sent a letter.’

b. Agreement with \( P \), OVS order
   \( [\text{F Imukanda }] \text{ mu-tom-aki } [\text{A omwana }] \).
   5.letter 5.SM-send-PFV 1.child
   ‘The letter, the child sent it.’ (Henderson 2011: 743)

⚠ But: theme inversion is not very productive?

♀ Are Dinka and some Austronesian languages of this type (cf. van Urk 2015)?
6 Conclusions

Conclusions and outlook

• Case and agreement in ditransitives do not vary freely
  ✔ With secundative or neutral case, secundative agreement is always possible
  ✔ Locality, case, person, and information structure determine controllers
  ✔ Parallels between higher (T) and lower (v) agreement domains
  ✔ Solid typological evidence compatible with R c-commanding T

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Abbreviations

1 = first person, 2 = second person, 3 = third person, A = agent-like argument of a canonical transitive verb, ABS = absolutive, ACC = accusative, APPL = applicative, AUX = auxiliary, BEN = benefactive, CAUS = causative, DAT = dative, DEF = definite, DO = direct object, DOC = double object construction, DOM = differential object marking, EP = epenthetic vowel, ERG = ergative, F = feminine, FV = final vowel, GEN = genitive, HOD = hodiernal past, IA = indirective agreement, IC = indirective case, INT = interaction features, INV = inverse, IPFV = imperfective, IS = information structure, M = masculine, NC = neutral case, NOM = nominative, OBJ = object, OBL = oblique, OM = object marker, P = patient-like argument of a canonical transitive verb, PDC = prepositional dative construction, PFV = perfective, PL = plural, POSS = possessive, PRS = present, PST = past, R = recipient-like argument of a ditransitive verb, REM = remote, S = single argument of a canonical intransitive verb, SA = secundative agreement, SAT = satisfaction features, SBJ = subject, SC = secundative case, SG = singular, SM = subject marker, T = theme- or patient-like argument of a ditransitive verb, TOP = topic, VB = verbaliser?, WCO = weak crossover.

References

REFERENCES


A Appendix

Modelling indirective case and indirective agreement

In ICIA languages, the verb can only agree with ACC/ABS T, not DAT R

Modelling indirective case and secundative agreement

If DAT arguments can control agreement, the verb will agree with R rather than T

Modelling secundative case and secundative agreement

In SC, R’s case is the same as T’s: R can control agreement, but not T
Accessibility and the case hierarchy

Only certain (morphological) cases are accessible for agreement in each language

- Accessibility follows a hierarchy or sequence (Caha 2009, 2013, Harðarson 2016)
- Effects of the case hierarchy are also found in other domains (see e.g. Smith et al. 2019, Zompi 2019)

(20) **Cumulative case decomposition** (Caha 2009, 2013)
\[
\text{NOM/ABS} = \{A\} \subset \text{ACC} = \{A, B\} \subset \text{GEN} = \{A, B, C\} \subset \text{DAT} = \{A, B, C, D\} \subset \ldots
\]

(21) **Blocking of agreement** (Bárány 2015: 230, 2017: 161)
If a given set $\kappa$ of case features includes a feature $[\alpha]$ which blocks agreement, any superset of $\kappa$ will block agreement as well. Sets not including $[\alpha]$ do not block agreement.

List of languages (genera; families)

**Orange** languages have some form of non-local agreement.

**ICIA (10 languages/10 genera)** Gorwaa (Southern Cushitic; Afro-Asiatic), Hungarian (Ugric; Uralic), Khwarshi (Avar-Andic-Tsezic; Nakhr-Daghestanian), Mekens (Tupari; Tupian), Moksha (Mordvin; Uralic), Puinave (Puinave; Puinave), Tiri (Cariban; Caribian), Ughele (Oceanic; Austronesian), Xavante (Ge-Kaingang; Macro-Ge), Yanomama (Yanomam; Yanomam)

**ICSA (19 languages/16 genera)** Alutor (Northern Chukotko-Kamchatkan; Chukotko-Kamchatkan), Amharic (Semitic; Afro-Asiatic), Arrambo (Tonda; Yam), Bantawa (Mahakiranti; Sino-Tibetan), Burushaski (Burushaski; Burushaski), Chukchi (Northern Chukotko-Kamchatkan; Chukotko-Kamchatkan), Gidar (Biu-Mandara; Afro-Asiatic), Ika (Arhuacic; Chibchan), Itelmen (Southern Chukotko-Kamchatkan; Chukotko-Kamchatkan), Jingulu (Jin-
gulu; Mirndi), Kanuri (Western Saharan; Saharan), Komnzo (Morehead and Upper Maro Rivers; Yam), Koryak (Northern Chukotko-Kamchatkan; Chukotko-Kamchatkan), Kwomtari (Kwomtari; Kwomtari-Baibai), Mauwake (Madang; Trans-New Guinea), Menya (Angan; Trans-New Guinea), Ngkolmpu (Morehead and Upper Maro Rivers; Yam (Morehead-Maro)), Podoko (Chadic; Afro-African), Yauyos Quechua (Quechuan; Quechuan)

SCSA (16 languages/12 genera) Aguaruna (Jivaroan; Jivaroan), Awa Pit (Barbacoan; Barbacoan), Greenlandic (West) (Eskimo; Eskimo-Aleut), Jaqaru (Aymaran; Aymaran), Kham (Mahakiranti; Sino-Tibetan), Khany (Eastern) (Ugric; Uralic), Khanty (Northern) (Ugric; Uralic), Kwaza (Kwaza; Kwaza), Mansi (Northern) (Ugric; Uralic), Nez Perce (Sahaptian; Sahaptian), Nlaka’pamux (Interior Salish; Salishan), Selkup (Samoyedic; Uralic), Squamish (Central Salish; Salishan), Tundra Nenets (Samoyedic; Uralic), Wari’ (Chapacua-Wanham; Chapacua-Wanham), Yup’ik (Central) (Eskimo; Eskimo-Aleut)

NCQA (54 languages/45 genera) Alabamak (Sepik Hill; Sepik), Apurinâ (Purus; Arawakan), Bagirmi (Bongo-Bagirmi; Central Sudanic), Barai (Koiarian; Trans-New Guinea), Beja (Beja; Afro-Asiatic), Bembe (Bantu; Niger-Congo), Bininj Gun-Wok (Gunwinygu; Gunwinyguan), Cheyahuia (Balsapuerto) (Cheyahuia; Cahuapan), Chimariko (Chimariko; Hokan?), Chintang (Mahakiranti; Sino-Tibetan), Cree (Plains) (Algonquian; Algic), Huichol (Corachol; Uto-Aztecan), Itonama (Itonama; Itonama), Jaminjung (Jaminjungan; Mirndi), Jumjum (Western Nilotic; Nilotic), Keres (Laguna/Western) (Keresan; Keresan), Ket (Yeniseian; Yeniseian), Koralup (Kesawai) (Madang; Trans-New Guinea), Kunama (Kunama; Kunama), Lango (Nilotic; Eastern Sudanic), Maba (Maban; Maban), Malakmalak (Northern Daly; Northern Daly), Mapudungun (Araucanian; Araucanian), Mawng (Iwaidjan; Iwaidjan), Minki (Misumalpan; Misumalpan), Mooré (Gur; Niger-Congo), Mosétén (Mosetan; Mosetan), Motuna (East Bouganville; East Bouganville), Movima (Movima; Movima), Murle (Surmic; Eastern Sudanic), Nabak (Finisterre-Huon; Trans-New Guinea), Nahuatl (Huasteca) (Aztec; Uto-Aztecan), Nahuatl (Orizaba) (Aztec; Uto-Aztecan), Nandi (Nilotic; Eastern Sudanic), Nasioi (East Bouganville; East Bouganville), Oaxaca Chontal (Lowland) (Tequistlatecan; Tequistlatecan), Ojibwa (Central) (Algonquian; Algic), Palauan (Palauan; Austronesian), Pima Bajo (Tepiman; Uto-Aztecan), Pipil (Nawat) (Aztec; Uto-Aztecan), Púrepecha (Tarascan; Tarascan), Sentani (Sentani; Sentani), Tahuia (Madang; Trans-New Guinea), Teop (Oceanic; Austronesian), Turkana (Nilotic; Eastern Sudanic), Tzotzil (Mayan; Mayan), Wambaya (Wambayan; Mirndi), Wampis (Jivaroan; Jivaroan), Waray (Warayic; Gunwinyguan), Wichi (Mataguayo; Matacoan), Yakha (Mahakiranti; Sino-Tibetan), Yukulta (Tangkic; Tangkic), Yurok (Yurok; Algic), Zulu (Bantu; Niger-Congo)

NB: the total number of genera in the sample is smaller than summing genera per alignment type because languages from the same genus can be in different categories (e.g. Ugric in ICIA and SCSA).