A typological perspective on nominal concord

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1 Introduction: what is concord?

Nominal concord (hereafter just ‘concord’) is the process whereby modifiers in a nominal phrase inflect for morphosyntactic features of that nominal phrase.

• Common modifiers involved: demonstratives and adjectives

• Common features involved: gender, number, case

• In many cases, the noun also reflects these features ⇒ adjectives agree with the noun in common parlance.¹

(1) French (fra) concord (gender-number):

a. l-a plante vert-e
   the-F.SG plant(f).SG green-F.SG
   ‘the green plant’

b. l-e bâtiment vert
   the-M.SG building(M).SG green.M.SG
   ‘the green building’

(2) Estonian (ekk) concord (number-case):

a. kõigi-s nei-s raske-te-s küsimus-te-s
   all.PL-INE these.PL-INE hard-PL-INE question-PL-INE
   ‘in all these hard questions’

b. selle-ks vahapealse-ks perioodi-ks
   this-TRL in.between-TRL period-TRL
   ‘for this interim period’

(3) Wambaya (wmb) concord (gender-number-case):
   a.  *ninagiyawulija janyi-nka hubaji-wuli-ja*
       that.1.DU.DAT dog.1-DAT small-DU-DAT
       ‘those two small dogs (dative)’ (Nordlinger, 1998:73)
   b.  *bugayi alaji / buguwama jigama*
       big.1 boy.1 / big.111 yam.111

Concord is well-known in linguistics, perhaps due to its presence in well-studied Indo-European languages.

- Despite its celebrity, it is not well-studied (see Norris 2017 for a literature review).
- The Indo-European pattern is often taken as canonical (anecdotally), but we do not know whether this is fair. (…until now!)

1.1 The present study

The present study is the largest typological investigation of nominal concord to date, and the only study of its kind to focus on nominal concord (to my knowledge).\(^2\)

- The sample is WALS's 200-language sample, slightly pared down for balance as recommended by WALS, containing 174 genera (1 language per genus) from 105 families (Dryer and Haspelmath, 2013).

The study investigates concord on three lexical categories: demonstratives, cardinal numerals greater than one (hereafter just “numerals”), and adjectives.\(^3\)

- We (working with a team of students) gathered examples where these elements modify an overt noun in a continuous DP.
  - **Modifying an overt noun:** in some languages, free-standing elements have different inflectional possibilities than those that modify an overt noun (see, e.g., Diessel (2013)).
  - **Continuous DPs:** in some languages, inflectional possibilities in continuous DPs are different than those in discontinuous DPs (Clem and Dawson, 2018).

- We cast a wide net: e.g., if a language had a few adjectives distinguishing plural forms and those plural forms could be used attributively, we registered that as showing concord.

\(^2\)Other studies have included in them a subpart of the exploration done here. See especially Baker (2008); Nichols (1986, 1992); Plank (1994). I discuss the study of gender concord by Bayırlı (2017) below.

\(^3\)We looked only at numerals greater than one because the syntactic properties of one are unique/special in many languages. I regrettably did not collect any information on one as a means to compare one vs. more than one, so I do not have any data on that question.
1.2 General results (by region)

Concord is found in all six major linguistic regions, as shown in (4) below.

<table>
<thead>
<tr>
<th>Region</th>
<th>yes</th>
<th>%</th>
<th>no</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aus</td>
<td>11</td>
<td>100%</td>
<td>0</td>
<td>0%</td>
<td>11</td>
</tr>
<tr>
<td>Afr</td>
<td>23</td>
<td>79.3%</td>
<td>6</td>
<td>20.7%</td>
<td>29</td>
</tr>
<tr>
<td>NAm</td>
<td>21</td>
<td>61.8%</td>
<td>13</td>
<td>38.2%</td>
<td>34</td>
</tr>
<tr>
<td>Eur</td>
<td>26</td>
<td>53.1%</td>
<td>23</td>
<td>46.9%</td>
<td>49</td>
</tr>
<tr>
<td>SAm</td>
<td>12</td>
<td>44.4%</td>
<td>15</td>
<td>55.6%</td>
<td>27</td>
</tr>
<tr>
<td>Pap</td>
<td>10</td>
<td>41.7%</td>
<td>14</td>
<td>58.3%</td>
<td>24</td>
</tr>
<tr>
<td>All</td>
<td>103</td>
<td>59.2%</td>
<td>71</td>
<td>40.8%</td>
<td>174</td>
</tr>
</tbody>
</table>

- Concord is most common in Africa and Australia.
- It is rarer in Papunesia (and perhaps South America).
- Percentages in North America and Eurasia are quite close to the worldwide percentage.\(^4\)

1.3 Plan for today

- §2: Gender and its connection to concord in various forms
  - A strong one-way implication: \([\text{gender} \rightarrow \text{concord}]\)
  - But less evidence for reverse: \([\text{concord} \not\rightarrow \text{gender}]\) (but \([\text{concord} \rightarrow \text{number}]\)
  - Another strong one-way implication: \([\text{case concord} \rightarrow \text{number/gender concord}]\)
- §3: Adjectives vs. Demonstratives three ways
  - Tendency to show concord at all
  - Tendency to fail to show number concord
  - Tendency to show full or reduced concord (definitions given later)
  - Results: no clear differences; adjective concord and demonstrative concord are **both canonical**.

\(^4\)There is not uniform distribution in Eurasia. Concord is more common in Europe and Western Asia than in Eastern Asia. This may be ground for dividing Eurasia, but I have not yet explored this possibility carefully.
2 On grammatical gender and concord

There is an intuitive link between gender and concord, due (I surmise) to its exemplification with Indo-European and Bantu languages.

- Carstens (2000, 2001, 2011, 2018) has proposed that the properties of grammatical gender drive nominal concord (among possibly other things).
- Bayırlı (2017) discusses the connection between types of gender systems and adjective concord, proposing universals connecting the two.

In this section, I discuss the connection between gender and concord from a few different angles, focusing primarily on the generalizations discussed by Carstens and Bayırlı.

2.1 Concord implies number, but not gender

Among the 103 languages with concord, features appear with the following frequencies.

(5) Frequency of participation in concord systems by feature:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>58</td>
<td>56.3%</td>
<td>45</td>
<td>43.7%</td>
</tr>
<tr>
<td>⇒ Number</td>
<td>91</td>
<td>88.3%</td>
<td>12</td>
<td>11.7%</td>
</tr>
<tr>
<td>Case</td>
<td>30</td>
<td>29.1%</td>
<td>73</td>
<td>70.9%</td>
</tr>
<tr>
<td>Definiteness⁵</td>
<td>9</td>
<td>8.7%</td>
<td>94</td>
<td>91.3%</td>
</tr>
</tbody>
</table>

Number concord is clearly the most common form of concord, leading to a first Universal/Tendency of concord.

(6) Concord Universal/Tendency 1: If a language has concord, it will have number concord.

Among languages with concord in general, only 56.3% have gender concord.

- It seems unreasonable to suggest that gender or gender concord are a prerequisite for concord.

⁵This category is definitely unclear, and I essentially ignore it for this talk. Definiteness concord or agreement is best known from Afro-Asiatic languages and Germanic languages. In Germanic languages, the forms sometimes called definiteness agreement are not directly connected with definiteness as the name suggests (e.g., see Pfaff's (2014) discussion of Icelandic). If we found a grammar that described an alternation in form as connected to definiteness, we recorded it as such, but deep investigation of their usage may reveal that definiteness is not the correct analysis.
2.2 Gender strongly implies (gender) concord

The total sample of 174 languages contains 69 languages with gender systems (based on Corbett 2013a).

- Gender concord is present in 79.7% that have a nominal gender system.
- This suggests a strong affinity for concord among languages with grammatical gender.

(7) Percentage of languages with gender concord:

<table>
<thead>
<tr>
<th># Gender</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 genders</td>
<td>2</td>
<td>1.9%</td>
<td>101</td>
<td>98.1%</td>
<td>103</td>
</tr>
<tr>
<td>⇒ 2+ genders</td>
<td>55</td>
<td>79.7%</td>
<td>14</td>
<td>20.3%</td>
<td>69</td>
</tr>
<tr>
<td>2 genders</td>
<td>24</td>
<td>75%</td>
<td>8</td>
<td>25%</td>
<td>32</td>
</tr>
<tr>
<td>3 genders</td>
<td>14</td>
<td>82.4%</td>
<td>3</td>
<td>17.6%</td>
<td>17</td>
</tr>
<tr>
<td>4 genders</td>
<td>6</td>
<td>75%</td>
<td>2</td>
<td>25%</td>
<td>8</td>
</tr>
<tr>
<td>5+ genders</td>
<td>11</td>
<td>91.7%</td>
<td>1</td>
<td>8.3%</td>
<td>12</td>
</tr>
<tr>
<td>Uncategorized</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>100%</td>
<td>2</td>
</tr>
</tbody>
</table>

(8) Concord Universal/Tendency 2: If a language has a grammatical gender system, it likely has gender concord.

Thus, whatever it is that drives concord in language grammars, it clearly intersects with the place of grammatical gender.

- But this connection is likely one way: concord still occurs in 38.2% (44/115) of languages without grammatical gender in the sample.
- A version of Carstens’s (2000; 2001; 2011; 2018) approaches where gender facilitates concord could only be part of the story.
- Norris’s (2014) account, where concord is in part driven by feature percolation among nominal extended projections, is equally connected to gender and number.
   - But it does not have much to say about the absence of concord.

Bayırılı (2017) proposes two generalizations connecting gender to adjective concord; I focus on the one below in (9).

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6“How does a language lack nominal gender but have gender concord?” These are languages that were characterized by Corbett (2013a) as lacking nominal gender but with examples from grammars that are plausibly gender concord. The languages are Haida (hai), with an animacy-based system for demonstratives (but lots of what one might obliquely characterize as ‘optionality’), and Chukchi (ckt), where some isolated examples of “animate plural” demonstratives were found.
Idiosyncratic Gender implies Concord: if a language has an idiosyncratic gender system, then it has gender concord on adjectives (Bayırlı, 2017:41).

Bayırlı got his languages from Corbett (2013b), so there is significant overlap in our samples for this.

- Supported (in a way)! Every language in the sample with what Corbett (2013b) calls a “semantic and formal” gender system has gender concord (on some category).\(^7\)

However, gender concord on particular lexical categories has a few counterexamples.

- In languages where demonstratives and adjectives both show concord, gender concord is generally marked on both.

- There are 6 languages with gender concord on some category but not on demonstratives (which otherwise show concord in these languages).
  - Semantic gender system — 4: Lak (lbe), Abkhaz (abk), Wardaman (wrr), Nez Perce (nez)
  - Semantic and formal gender system — 2: Hindi (hin), Ingush (inh)

- There are 5 languages with gender concord on some category but not on adjectives (which otherwise show concord in these languages).
  - Semantic gender system — 4: Burushaski (bsk), Ket(ket), Nez Perce (nez), Chukchi (ckt)
  - Semantic and formal gender system — 1: Ju|’hoan (ktz)\(^8\)

Ingush: 5-6 genders, no gender concord on demonstratives:

\[
yz \quad \text{DEM.SG} \quad \text{person} / \quad yzh \quad \text{DEM.PL} \quad \text{people} / \quad yzh \quad \text{DEM.PL} \quad \text{child-PL}
\]

‘that person’ / ‘those people’ / ‘those children’ (Nichols, 2011)

Ju|’hoan: 5 genders, no gender concord on adjectives:

\[
jù \quad \text{person} / \quad jàn \quad \text{good} / \quad jù \quad \text{people(PL)} \quad \text{good-PL}
\]

‘a good person’ / ‘good people’ (Dickens, 2005)

➤ So, a version of Bayırlı's idiosyncratic gender universal in (9) where we consider gender concord on any category does not have any counterexamples in my sample.

- But Bayırlı’s original formulation, which was only concerned with adjectives, is counterexemplified by Ju|’hoan.

\(^7\)An important caveat: it is not always easy to determine whether a system is “purely semantic” vs. “semantic and formal.” Corbett (2013b) collapses strictly semantic and predominantly semantic systems, which do have some arbitrarinesses (just not as much as languages with “semantic and formal” assignment).

\(^8\)Bayırlı (2017:200) is aware of Ju|’hoan but claims that adjectives are incorporated to nouns in the language and therefore do not show concord. Based on examples he presents and further examples I gathered, it is not clear that adjectives are incorporated, and in any case, Bayırlı does not elaborate on what this means for Ju|’hoan.
2.3 Case concord and its connection to gender/number concord

Bayırlı (2017:18) also proposes the **Concord Hierarchy Generalization**, which makes the following predictions.

(12) Bayırlı’s Adjective Concord Hierarchy: case → number → gender; in other words...
   a. Number concord implies gender concord (for adjectives)
   b. Case concord implies number concord (for adjectives)
   c. (transitively) Case concord implies gender concord (for adjectives)

But Bayırlı’s sample for this is unbalanced: Out of 30 languages in the sample, 15 are Indo-European, and 26 are Eurasian. Does it hold up in a balanced sample?

2.3.1 Case concord overall

Overall, case concord is significantly rarer than gender and number concord, occurring in only 25% (28/112) of languages that have case (+ 2 languages that Iggesen (2013) characterizes as lacking case).9

- However, among those languages, Bayırlı’s (2017) implication from gender/number to case holds up well (though not absolutely).
- In my sample, case concord rarely occurs in languages without gender or number concord (13.3%; 4/30).
  - Kutenai (kut), Kayardild (gyd): lack gender, arguably lack number
  - Gooniyandi (gni): actually probably lacks case concord, but I found one example in McGregor’s (1990) grammar, so I counted it.
  - The only clear counterexample is Georgian (kat), as shown in (13).

(13) Nino gogo-s did(‘-eb) c’ign-eb-s iq’idi-s.

‘Nino will buy the girl big books.’ (Georgian, Fuchs 2018)

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9Iggesen (2013) characterizes Tagalog and Kutenai as having no morphological case. In Tagalog, there are case particles/words as well as separate forms for demonstratives depending on case. In Kutenai, demonstratives show concord in obviation, which I have categorized as similar enough to case to count, insofar as it connects a noun phrase to its grammatical role.
2.3.2 Case concord on individual lexical categories

In 4/17 (23.5%) languages with numeral case concord, numerals lack either/both gender/number concord: Martuthunira (vma), Evenki (evn), Wardaman (wrr), Nez Perce (nez).

\[(14)\] ilan-ma \hspace{1em} oro-r-vo
\hspace{1em} three-ACC.DEF \hspace{1em} reindeer-PL-ACC.DEF
\hspace{1em} ‘three reindeer (accusative)’ \hspace{1em} (Evenki, Nedjalkov (1997:282))

In 5/30 (16.7%) languages with demonstrative case concord, demonstratives lack either/both gender/number concord: Harar Oromo (hae), Tagalog (tgl), Wardaman (wrr), Ingush (inh), Nez Perce (nez).\textsuperscript{10}

\[(15)\] uq \hspace{1em} muo-cha \hspace{1em} boaqq-ii-cha \hspace{1em} naaxa
\hspace{1em} DEM.OBL \hspace{1em} like-OBL \hspace{1em} B.elder-PL-OBL \hspace{1em} people.ERG
\hspace{1em} ‘elders like them’ \hspace{1em} (Ingush, Johanna Nichols, p.c.)

Thus, when looking at concord systems in general, case concord rarely occurs alone.

- Among individual lexical items, there is still a strong tendency for case concord to occur with gender/number concord but there is a little bit more variation.

\[(16)\] Concord Universal/Tendency 3: If a language or lexical category within a language has case concord, it will have number concord (and if the language has gender, gender concord).

3 Concord by category: demonstratives versus adjectives

Anderson (1992:106) and Corbett (2006:40) suggest that adjective concord is the most canonical form.

- These assertions were not based on typological data (so far as I was able to tell).
- It is common (impressionistically) to exemplify concord via adjective concord.

Looking closely at the data from a variety of angles, the conclusion I have reached is that concord is \textit{roughly equally common on demonstratives and adjectives}.

\textsuperscript{10}In case there readers/audience members who are experts in Tagalog, I note that Tagalog would be best described as a language with a marginal concord system from a typological perspective, but based on our criteria, it had to be included. From a formal perspective, it might make more sense to characterize Tagalog as lacking concord. This is because it often shows up as a typologically rare language according to properties I have investigated.
3.1 General distribution of concord by category

The breakdown of concord across categories is presented below.

(17) Concord across categories among languages with concord:

<table>
<thead>
<tr>
<th>Categories</th>
<th>Lgs</th>
<th>Perc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only D</td>
<td>3</td>
<td>2.9%</td>
</tr>
<tr>
<td>Dem (at least)</td>
<td>87</td>
<td>84.5%</td>
</tr>
<tr>
<td>Dem</td>
<td>22</td>
<td>21.4%</td>
</tr>
<tr>
<td>Dem-Num</td>
<td>1</td>
<td>1.0%</td>
</tr>
<tr>
<td>Dem-Num-Adj</td>
<td>35</td>
<td>34.0%</td>
</tr>
<tr>
<td>Dem-Adj</td>
<td>29</td>
<td>28.2%</td>
</tr>
<tr>
<td>Adj (at least)</td>
<td>77</td>
<td>74.8%</td>
</tr>
<tr>
<td>Adj</td>
<td>11</td>
<td>10.7%</td>
</tr>
<tr>
<td>Dem-Num-Adj</td>
<td>35</td>
<td>34.0%</td>
</tr>
<tr>
<td>Dem-Adj</td>
<td>29</td>
<td>28.2%</td>
</tr>
<tr>
<td>Num-Adj</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Num (at least)</td>
<td>38</td>
<td>36.9%</td>
</tr>
<tr>
<td>Num</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Dem-Num</td>
<td>1</td>
<td>1.0%</td>
</tr>
<tr>
<td>Dem-Num-Adj</td>
<td>35</td>
<td>34.0%</td>
</tr>
<tr>
<td>Num-Adj</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Concord Lgs</td>
<td>103</td>
<td></td>
</tr>
</tbody>
</table>

Anderson’s and Corbett’s suggestion seems to hold up in an inclusive interpretation against the larger sample.

- **No difference!** Demonstrative concord is just as likely as adjective concord.
  
  - In raw numbers, demonstrative concord is more common, but this difference is likely not statistically significant.
  
  - 7 languages in the sample lack adjective concord but also lack a clear adjective category—these languages do not tell us anything about the frequency of adjective concord.
  
  - Removing those languages sets adjective concord frequency to 80.2% (77/96).

In fact, languages prefer to have concord on both demonstratives and adjectives (64/103, 62%) rather than just one or the other (36/103, 35%).

- The only 3 languages in the sample with concord that have neither demonstrative nor adjective concord are languages that only have concord on D⁰ or something D-like (Khoekhoe (naq), Ndyuka (djk), Alamblak (nmp)).

(18) **Concord Universal/Tendency 4:** If a language has concord, it is more likely that it will have concord on both adjectives and demonstratives than on just one or the other.
Concord on Demonstratives/Adjectives (and versus exclusive or):

<table>
<thead>
<tr>
<th>Categories</th>
<th>Lgs</th>
<th>Perc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dem&amp;Adj</td>
<td>64</td>
<td>62.1%</td>
</tr>
<tr>
<td>Dem-Num-Adj</td>
<td>35</td>
<td>34.0%</td>
</tr>
<tr>
<td>Dem-Adj</td>
<td>29</td>
<td>28.2%</td>
</tr>
<tr>
<td>⇒ EitherNotBoth</td>
<td>36</td>
<td>35.0%</td>
</tr>
<tr>
<td>DemNoAdj</td>
<td>23</td>
<td>22.3%</td>
</tr>
<tr>
<td>Dem</td>
<td>22</td>
<td>21.4%</td>
</tr>
<tr>
<td>Dem-Num</td>
<td>1</td>
<td>1.0%</td>
</tr>
<tr>
<td>AdjNoDem</td>
<td>13</td>
<td>12.6%</td>
</tr>
<tr>
<td>Adj</td>
<td>11</td>
<td>10.7%</td>
</tr>
<tr>
<td>Num-Adj</td>
<td>2</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

3.2 Number concord on demonstratives and adjectives

Number concord is the most common type; which category is most likely to show number concord?\(^{11}\)

- If demonstratives show concord for number more regularly than adjectives (or vice versa), we could take this as evidence that they are more basic in concord systems.

No difference! Number concord is absent on demonstratives almost exactly as often as it is absent on adjectives, as shown in (20).

(20) Presence of number concord on certain categories in number concord languages:

<table>
<thead>
<tr>
<th>Demonstratives</th>
<th>#</th>
<th>%</th>
<th>% w/ adj</th>
</tr>
</thead>
<tbody>
<tr>
<td>No concord</td>
<td>13</td>
<td>14.3%</td>
<td>19.5%</td>
</tr>
<tr>
<td>Number</td>
<td>75</td>
<td>82.4%</td>
<td>78.2%</td>
</tr>
<tr>
<td>⇒ No number</td>
<td>3</td>
<td>3.3%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjectives</th>
<th>#</th>
<th>%</th>
<th>% w/ adj</th>
</tr>
</thead>
<tbody>
<tr>
<td>No concord</td>
<td>17</td>
<td>18.7%</td>
<td>19.5%</td>
</tr>
<tr>
<td>No concord</td>
<td>17</td>
<td>18.7%</td>
<td>19.5%</td>
</tr>
<tr>
<td>No adjectives</td>
<td>4</td>
<td>4.4%</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>68</td>
<td>74.7%</td>
<td>78.2%</td>
</tr>
<tr>
<td>No number</td>
<td>2</td>
<td>2.2%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

Thus, evidence from number concord also points to adjectives and demonstratives being equally central to concord systems.

\(^{11}\)Also, see section 2.2 for discussion of adjectives and demonstratives lacking gender concord, which also occurs with very similar frequency.
3.3 Full vs. reduced concord in demonstratives and adjectives

In languages with multiple features involved in the concord system, we can define two types of exponence patterns.

- **Full Concord**: A category $C$ in a language $L$ shows Full Concord if for every feature $F$ in the concord system of $L$, $C$ expresses $F$. (e.g., Estonian, (21))

- **Reduced Concord**: A category $C$ in a language $L$ shows Reduced Concord if $C$ expresses concord AND for some feature $F$ in the concord system of $L$, $C$ does not express $F$. (e.g., Wambaya, (22))

(21) Full concord on all categories in Estonian (ekk):

\[ \text{kõigi-s nei-s raske-te-s küsimus-te-s} \]

all.PL-INE these.PL-INE hard-PL-INE question-PL-INE

'in all these hard questions' \hspace{1cm} (Norris, 2017)

(22) Reduced concord on adjective hubajiwulija ‘small’ in Wambaya (wmb):

\[ \text{ninagiya-wulija janyi-nka hubaji-wuli-ja} \]

that.I.DU.DAT dog.I.DAT small-DU-DAT

'those two small dogs (dative)' \hspace{1cm} (Nordlinger, 1998:73)

**No difference!** Adjectives and demonstratives are roughly equally as likely to show full concord.

(23) Full/reduced concord in demonstratives and adjectives

<table>
<thead>
<tr>
<th></th>
<th>Dem</th>
<th>Adj</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full</td>
<td>42</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>48.3%</td>
<td>53.2%</td>
</tr>
<tr>
<td>$\Rightarrow$ Reduced</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>34.5%</td>
<td>35.1%</td>
</tr>
<tr>
<td>One</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>17.2%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>77</td>
</tr>
</tbody>
</table>

Thus, from these three different angles, there is apparently no strong difference between the behavior of demonstratives and adjectives in concord systems.

4 Conclusion

In this talk, I discussed some of the results of a typological study of nominal concord (and its absence) in 174 languages.

- Languages with gender have an affinity for concord, but the implication is only one way (gender $\rightarrow$ concord) and **not absolute**.
  - Whatever drives concord (formally/functionally) must be at least partially independent from gender.
– Does concord help in preservation of gender systems? We could investigate languages that lost grammatical gender and see when/if they lost concord.

• More often than not, case concord co-occurs with gender and/or number concord. This is strongest when looking at the concord system as a whole.
  – This supports a view whereby the mechanism for case concord is dependent on the mechanism for gender/number concord in some way.
• Adjective concord and demonstrative concord are both canonical.
  – Formal analyses of concord should extend equally well to demonstratives and adjectives.

I proposed the following Concord Universals/Tendencies:

(6) **Concord Universal/Tendency 1**: If a language has concord, it will have number concord.

(8) **Concord Universal/Tendency 2**: If a language has a grammatical gender system, it likely has gender concord (see also Bayırlı 2017).

(16) **Concord Universal/Tendency 3**: If a language or lexical category within a language has case concord, it will have number concord, and if the language has gender, gender concord (see also Bayırlı 2017).

(18) **Concord Universal/Tendency 4**: If a language has concord, it is more likely that it will have concord on both adjectives and demonstratives than on just one or the other.

Two tasks for future work:

• We are still collecting data—if you'd like to contribute, see the forthcoming survey on my website.

• It is now time to explore more seriously the ramifications of this study for linguistic theory (not just in theories of concord, but in any domains that intersect with concord).
  – Case concord: Why does it piggyback on number (and gender) concord? And why is it comparatively rare?
  – The order of morphemes on categories in concord is often the same as the order of morphemes on the noun (e.g., Adj-num-case, N-num-case): What does that reveal about the structure of features and the mechanism(s) of agreement?

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References


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A  Errata

Burushaski does not (clearly) have case concord

In the original version of this talk, I classified Burushaski (bsk) as showing case concord (on demonstratives).

• After looking carefully at the data again, I have changed my mind.

• This reduces the number of languages with case concord from 31 to 30 (this has been corrected in the current version of the handout).

B  Types of concord systems

In this appendix, I provide the types of concord systems that I identified in the sample.

• Since definiteness concord occurred so infrequently, these classifications ignore definiteness concord.

• Only one language in the sample had definiteness concord and nothing else: Brahui (brh).

• Removing Brahui brings the total number of concord languages to 102.

B.1  Indeterminate systems (52/102; 51%)

The simplest systems of concord involve only one lexical category, only one feature, or both (i.e., one category shows concord for just one feature).
These systems could be generated by any kind of concord system that can generate a more complicated system.

Thus, I dub them *INDETERMINATE* systems, because they are compatible with multiple conceivable analyses.

**B.1.1 Minimal systems: single feature, single category (24/102; 23.5%)**

Languages where only one category shows category in one feature have minimal concord; hence, I call them *MINIMAL* systems.

- In Malagasy *(plt)*, the only category in the language that shows number concord is the demonstrative (*Keenan and Polinsky, 1998:567*).


a. *io tranjo io*
   this house this
   ‘this house’

b. *ireo tranjo ireo*
   these,PL house these,PL
   ‘these houses’

**B.1.2 Single feature, multiple categories (17/102; 16.7%)**

In some languages, the concord system involves only one feature, but that feature is marked on multiple categories.

- In these languages, lack of expression of that particular feature means that a category is tagged as not showing concord at all.

- For example, in a language with only number concord, we cannot identify categories that show concord but just happen to fail to show number concord.

- In Ngiti *(niy)*, there is only number concord, and demonstratives and some adjectives participate.

(25) a. *ádràngbà ngba / ádràdrà nzo*
   big,SG child,SG / big,PL children,PL
   ‘a big child’ / ‘big children’

b. *yà dza / kà dza*
   this,SG house / this,PL house
   ‘this house’ / ‘these houses’

*(Ngiti, Kutsch Lojenga 1994:345)*
B.1.3 Multiple features, single category (11/102; 10.8%)

Conversely, in some languages, the concord system involves only one category, but that category shows concord for multiple features.

- In these languages, if the single category does not show concord for a particular feature, then we just say the language lacks concord for that feature.

- For example, in a language with only demonstrative concord, we cannot identify features that are active in the concord system but just happen to fail to be expressed by the demonstrative.

- In Yuchi (yuc), demonstratives show concord for gender and number.
  - There are three inanimate genders, marked by ci, fa, 'e.
  - These genders are neutralized in the plural (to ha).

(26) Yuchi (Linn, 2001:399)

a. ne-ci k'as'etichya-ci / 'a-fa yutigots'ane-fa  
   this-CI car-CI / that-FA bedroom-FA  
   ‘this car’ / ‘that bedroom’

b. ne-ha yapo'etiti ha / 'a-ha senetha ha  
   this-PL orange PL / that-PL fork PL  
   ‘these oranges’ / ‘those forks’

B.2 Multiple features + multiple category systems (50/102; 49%)

The most familiar languages in the literature on concord have systems involving multiple features and multiple categories.

- Because these systems are more complex, they are not compatible with the same range of conceivable analyses as indeterminate systems.

B.2.1 Uniform systems: 27/102, 26.5%

In some languages, the concord system involves multiple features, and every element that shows concord reflects all features in the system.

- Because concord is uniformly marked on each category, I dub these systems UNIFORM CONCORD.
  - Using the terminology from section 3.3, every category shows full concord in a uniform system.

- Many of the familiar European and African concord systems are of this type, but there are also other languages of this type.
• For example, in Bukiyip (ape), adjectives, numerals, and demonstratives show both gender and number concord.

   a. égü-dak nebe-gali trag
      cl3SG-this big-cl3SG truck
      ‘this big truck’
   b. bwi-yech lowas
      two-cl13PL trees
      ‘two trees’

B.2.2 Mixed systems: 23/102; 22.5%

Finally, in some languages with concord, the system involves multiple features and multiple categories, but the features are not all expressed by all categories.

• Rather neutrally, I dub these systems MIXED CONCORD (as opposed to uniform concord).
  – Using terminology from section 3.3, mixed systems are those where at least one category shows reduced concord.

• We saw an example earlier from Ingush (inh), where features are distributed in the following way.
  – Demonstratives: number, case
  – numerals: gender and number (some), case (some)
  – adjectives: gender and number (some), case (most/all)

(15) uq muo-cha boaqq-ii-cha naaxa
    DEM.OBL like-OBL B.elder-PL-OBL people.ERG
    ‘elders like them’
    (Ingush, Johanna Nichols, p.c.)