A (morpho)phonological typology of demonstratives: A case study in sound symbolism

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We propose a (morpho)phonological typology of proximal and distal demonstratives based on their (phonological) form.

Only the "basic" distal ('that') and proximal ('this') demonstratives are considered.
- E.g. close-to-addressee and medials are not considered.

Moreover, we are interested only in their spatial uses (e.g., temporal uses are not discussed).
The starting point was noticing that /i/ is common in proximal demonstratives, while /a/ is often found in distal demonstratives.

In the beginning, we only considered phonology, but later morphology was added since we noticed that length plays a role as well.

Our findings lend more support to earlier studies that have also found phonemic correspondences between demonstratives.

One of the suggested reasons is that /i/ is associated with smallness (small distance, see e.g. Ohala 1984, Finnish: *pikkiriikkinen* ’very small, itsy-bitsy’ vs. *suuri* ’big’)

Earlier studies have not taken consonants into account, or no systematic correspondences have been found

- See e.g. Johansson & Zlatev (2013)
Data

- 266 languages
- The sample is not very systematic, but it comprises languages from all over the globe (European languages are in the minority)
- In most cases, classifying a language into a certain type was easy, but there were also more problematic cases
  - For example, does Vitu’s *kua ~ kena* belong to Distance or Length?
(Former) Typology

1. Vowel type
   - Proximal demonstratives front and/or high vowel (/i,e/)
   - Distal demonstratives back and/or low vowels (/u, o, a/)

   Betta Kurumba: i vs. a

2. Consonant type
   - Front (e.g. coronal) consonants proximal demonstratives
   - Back (e.g., velar and uvular) consonants distal demonstratives

   Hinuq: hado vs. hago
3. Length type
- Distal demonstratives longer in form than proximal demonstratives
  Oko: one vs. onebe

4. Varia
- A variety of strategies different from Types 1-3, e.g. counter-examples to Types 1-3 (e.g., back vs. front vowel): The Reverse Type with phoneme distance, Reverse Length
  Emerillon əŋ vs. wiŋ
(Former) Typology: Distribution

- Vowel: 55%
- Consonant: 6%
- Length: 8%
- Varia: 31%

Legend:
- Vowel
- Consonant
- Length
- Varia
New Typology

- In order to simplify things, we have taken a new approach: binary division

  1) **Distance** = Types 1 & 2, front/back phonemes
     - Clearly distinguishable phoneme distance or feature (front-back/high-low)
       - Kentner Bremen 2019: Size-sound and length re. iconicity of repetition
       - See also Johansson & Carling (2015) reverse-motivated in e.g. Georgian *didi* ’large’ and *p’at’ara* ’small’
     - Includes former ’Reverse Type’ from Varia

Betta kurumba *i* vs. *a*
Hinuq *hado* vs. *hago*
Emerillon *aŋ* vs. *wɨŋ*
○ 2) **Length** = Type 3
  - If small distance but clear length difference, length
    
    *Vitu kua vs. kena*

○ 3) **Varia**
  - Does not match either criteria
    
    *Yurakare ana vs. naa (2 vs. 1 syllables – length?)*
Type 1: Distance Type

- In most examples of this type, proximal demonstratives have a front and/or high vowel (/i, e/)
- Distal demonstratives are characterized by back and/or low vowels (/u, o, a/)
- See, e.g. Traunmüller’s (1994) classification:
  - Proximal /i/ 92%, /e/ 72%, /a/ 26%, /u/ 25%, /o/ 12%
  - Distal /o/ 88%, /u/ 75%, /a/ 74%, /e/ 18%, /i/ 8%
- The relevant distinguishing vowel is either in the first or the second syllable (on the stressed syllable, determined by the prosody of a given language?)
Type 1: Distance Type

- In some languages, front (e.g. coronal) consonants appear on proximal demonstratives, while back (e.g., velar and uvular) consonants are typical of distal demonstratives
  - Coronals have been noted to front the vowel quality so the choice is convenient regarding iconicity (Flemming 2003: 335-336)
- This type is not considered by Traunmüller as his typology was focused on vowels
- Even though the sample is small, the Reverse Type is characterized by large consonant inventories (they, e.g., have ejectives)
Type 1: Distance Type

• Important to consider language-specific phonological systems: systems of contrast, use of distinctive features, phonemic frequencies etc. regarding iconicity (compare Manuel 1999)

• Compare Carling & Johansson (2015) studying systematic change diachronically in IE instead of synchronically: more data of the emergence of sound symbolism language-specifically, balancing out possibly ’sound symbolically poor’ languages’ data

→ Study of universals
Examples

Finnish: \( tæmæ \) vs. \( tuo \)
Betta Kurumba: \( i \) vs. \( a \)
Rajbanshi: \( i-dʌ \) vs. \( u-dʌ \)
Urim: \( ti \) vs. \( pa \)
Euchee: \( ne’ \) vs. \( a \)
Nubi: \( we’de \) vs. \( na’de \)
Hup: \( núp \sim n’îp \) - Reverse Type (Distance)
Hinuq: \( hado \) vs. \( hago \)
Bunaq: \( bari \) vs. \( baqi \)
Wayana: \( mē(s)i \) vs. \( mēk(i) \)

- The phonemic distance between front and back vowel needs to be significant enough
Type 2: Length Type

- In Type 2, distal demonstratives are longer in form than proximal demonstratives
- This may be due to a clear additional element (Oko), or the distal demonstrative is just longer formally

- Question: how much longer is 'length'?
  Drehu la vs. lai
Examples

Oko: one vs. onebe
Rotokas: roo/oo/vao vs. roari/oari/vari
Makalero: ere/uere vs. umere
Bao’an tu: ənə vs. nokə
Sheko: hàà vs. yī
Typology: Distribution

1. Distance Type 169/266
2. Length Type: 77/266
3. Varia: 20/266
Typology: Distribution

Distance: 64%
Length: 29%
Varia: 7%
The occurrence of the first type can be explained by iconicity: front and/or high phonemes occur on proximal and back/low phonemes on distal demonstratives.

In other words, proximal demonstratives are produced in the front or high parts of the vocal tract, while distal ones are produced more back and lower.

This strategy reflects the nature of their non-linguistic referents.
In Type 2 (Length), three things may be considered:

1. Distal demonstratives are marked
2. Proximal demonstratives are more frequent, might cause phonetic erosion
3. Iconicity (the longer form makes distal demonstratives more distant conceptually)

• Varia is now reduced to 7% from 31%
Case study: Transparency in sound symbolism

- We tested the demonstratives of 30 languages with students of Seppo Kittilä’s class *Semantics and pragmatics*
- In total, 29 students participated
- The students had to write down the demonstrative they thought represents the proximal demonstrative of the given language (by writing down either A or B)
- The demonstratives were given in a random order
• Language: Alyawarra

• A  nhinha

• B  nhaka
Examples

- Language: Amele
- A  ou
- B  i
No systematic correspondences between form and meaning were found (in 8 of the 30 cases, either demonstrative got less than 10 "points")

The majority got the correct demonstrative in 17/30 cases (including all instances of Reverse Types)

The clearest example was *ta* vs. *nai* of Southern Dong, where 26 wrote down *ta* (which is incorrect)

The clearest correctly guessed instance was represented by Kiowa (*e* vs. *oy*, 25 vs. 4)
Results/Case Study

- Length seemed to be the single most decisive factor, all of these cases were named correctly (even though not with a great majority in any case):

  - *la* (19) vs. *lai* (10) (Drehu)
  - *one* (18) vs. *onebe* (11) (Oko)
  - *co=cwa* (20) vs. *co=cwain* (9) (Wari’)

In total 57 vs. 30
As regards distance, there is a lot of variation
- 25 vs. 4 for Kiowa (e vs. oy)
- 11 vs. 18 for Malayalam (ii vs. aa)

In general, distance plays a less significant role (106 vs. 68 for vowel distinctions and 53 vs. 44 for consonant distinctions in the clear cases)

Provides evidence that (size-)distance is not transparent (compare Imai Lund 2019 on English/Japanese)
Finnish distinction is based on distance, not length.

Provides evidence for the language-specific nature of the differences (length is seen as a more decisive feature of proximity than distance) – or does it prove that length is universal, even though language-specifically it is in reverse?
Conclusions & Future questions

- It seems more economical to limit the typology to two distinctions: distance and length
- The majority of the languages in the sample seem to follow this division (including (former) Varia)
- A further study regarding the differences especially in the Distance Type (the so-called Reverse Types) needs to focus on language-specific features in the phonological systems
  - Are e.g. 'consonantal' languages more prone to Reverse Type vowel marking?
  - In some cases, it might be beneficial to see the diachronic development of the demonstratives (compare Carling & Johansson 2015)
Questions and problems

- How does the expression of spatial relations affect the nature of demonstratives (e.g. languages that express space by compass points)?
- The role of tones? At the moment not considered
- The role of the speakers’ native tongue should be tested (the same test we had, e.g., with speakers of English or Swedish)
- The role of voicing and aspiration (aspiration makes sounds longer) needs to be further considered (a few in Varia)
  - How long codes for ’Length’?
Example problematic cases

Vitu: *kua vs. kena*
Keres: *duwa vs. he’e*

- Both represent Reverse Type regarding vowel distance (back – front)
- Keres also represents Reverse Length Type while Vitu does not
- Does this matter? Which type does Vitu represent? More knowledge needed for which is the distinctive feature regarding the language
Final words

- Iconicity plays a role in 246/266 of languages = 92.5%.
- The first type is clearly the most frequent of all the types (front/back phoneme; distance).
- Regardless, the length type is the most consciously recognised according to the case study.
- Much of former Varia fits the new categories.
- In some cases, language-specific phoneme contrasts etc. must still be checked to categorise them.
Final words

- Many languages in Length also code distals with high vowels and proximals with lower ones
  
  \textit{Vitu kua vs. kena}

- Likewise, many languages which code the distinction with vowels, also use reinforcing consonant qualities
  
  \textit{Molalla ni vs. qa}

- In other words, many languages seem to want to ”play it safe” regarding the auditory information given
  
  (compare Ohala 1981 on listener perception regarding language variation)
Thanks for *this* and *that*!

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Main references

- Johansson, Niklas & Gerd Carling. The de-iconization and rebuilding of iconicity in spatial deixis: An Indo-European case study. *Acta Linguistica Hafniensia* 47.1. 4-32.