Perceptual features in Ticuna demonstratives

Amalia Skilton

University of California, Berkeley

Fieldwork Forum • October 17, 2017
Subsection 1

Why study demonstratives?
Universals

- All languages have nominal demonstratives -- words like English *this, that* (Diessel 1999:2)
- Most also have locative demonstratives -- English *here, there*
Variation

- Some languages have more demonstratives than others (Ticuna: 6, English: 2)
- Some languages have semantically compositional demonstratives, others don't (Yucatec Maya)
- Languages have very different contrasts among demonstratives
  - Small time: speaker-centered only (English) vs. speaker and addressee-centered (Turkish)
  - Big time: uphill/downhill (PNG languages), visibility

(Hanks 1990; Özyürek 1998; Diessel 1999)
Frequency

Without demonstratives, many utterances impossible to understand...
So what do they mean?

Preliminary: Demonstratives have two major categories of uses, endophoric and exophoric.

- **Exophoric**: Dem picks out referent from surround of discourse.
- **Endophoric**: Dem picks out referent from discourse representation.
So what do they mean?

Preliminary: Demonstratives have two major categories of uses, endophoric and exophoric.

- **Exophoric**: Dem picks out referent from surround of discourse.
- **Endophoric**: Dem picks out referent from discourse representation.

Traditional analysis: Exophoric Demonstratives = Space.

- Distance from speaker or addressee
- Location relative to speaker in absolute frame of reference (e.g. uphill/downhill)

(Fillmore 1973; Lyons 1977; Anderson and Keenan 1985; Diessel 1999)
Problem: Visibility

Many languages (my list: 31 and growing) are said to have visibility contrasts in exophoric demonstratives or deictic determiners.

- 21/31 in Americas (Davis and Saunders 1975; Hanks 1990; Matthewson 1996; Gillon 2009)
- But also 7 Austronesian languages (van Kranenburg 2016)
Problem: Visibility

Many languages (my list: 31 and growing) are said to have visibility contrasts in exophoric demonstratives or deictic determiners.

- 21/31 in Americas (Davis and Saunders 1975; Hanks 1990; Matthewson 1996; Gillon 2009)
- But also 7 Austronesian languages (van Kranenburg 2016)

Visibility is not a function of location in space, hence problem for Demonstratives = Space analysis.
Problem: Visibility

It's hard to know how seriously to take visibility.
- Some authors skeptical that visibility contrasts exist at all (Enfield 2003:96, Levinson 2004:192)
- Not covered in depth in descriptive work (exception: Hanks 1990:ch. 5)
- Not covered at all in theoretical work
Goals of this talk

I will argue that:

- The exophoric nominal demonstratives of Ticuna have a perceptual component.

- The perceptual component conveys the speaker's mode of perceptual access to the referent. This is not reducible to 'visibility.'

- The perceptual component is encoded.

In support of the position that:

- Exophoric deictics can encode perceptual and cognitive/attentional features, not just spatial ones. (Hanks 2011; Peeters and Özyürek 2016)
Roadmap

- Background on Ticuna language, data, and demonstrative system in general
- Perceptual features exist
- Perceptual features are encoded (time permitting: and how)
- Conclude
The Ticuna macrolanguage

Spoken by 41,500-69,000 people in Colombia, Brazil, and Peru; at least 75% in Brazil

Figure: Ticuna territory (map by Ministry of Transportation, Brazil)

- Classified as isolate/orphan (Carvalho 2009; Seifart and Echeverri 2014)
- Internal classification: at least 3 identifiable 'dialect' groups (Santos 2004; Montes 2004)
Fieldwork

Data in this talk: from 8 months of fieldwork in Cushillococha/Caballococha, Loreto, Peru, 2015-2017

- Cushillococha is a titled Ticuna community, pop. \(~3,000\)
- Caballococha is a multiethnic town, pop. \(~12,000\)
- The towns are one continuous populated area
- Most people who live in Cushillococha are dominant in Ticuna

No claims here about varieties spoken in other towns.
No prior work about semantics or pragmatics in any variety of Ticuna.
Field methods

Five kinds of data:

- Wilkins (1999) demonstrative questionnaire -- set up arrays, ask for demonstratives; consultant is in context
- Semantic elicitation per Matthewson (2004); consultant imagines context
- Staged discourses (e.g. monolingual interviews), audio- and video-recorded
- Spontaneous discourses (e.g. conversations), audio- and video-recorded
- Overheard speech
The nominal demonstrative inventory

All nominal demonstratives agree for noun class with the noun that they modify/replace.

Table: Nominal Demonstrative Inventory

<table>
<thead>
<tr>
<th>Lexical Item</th>
<th>Class I</th>
<th>Class II</th>
<th>Class III</th>
<th>Class IV</th>
<th>Class V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series 1</td>
<td>da³¹-ʔe²</td>
<td>da²-a²</td>
<td>da³¹-a¹</td>
<td>ja⁴-a²</td>
<td>ja⁴³-a²</td>
</tr>
<tr>
<td>Series 2</td>
<td>ji³¹-ʔe²</td>
<td>ji²-a⁴</td>
<td>ji³¹-a¹</td>
<td>je³-a²</td>
<td>je³-a²</td>
</tr>
<tr>
<td>Series 3</td>
<td>gu³¹-ʔe²</td>
<td>gu²-a⁴</td>
<td>gu³¹-a¹</td>
<td>je⁴-a²</td>
<td>je⁴-a²</td>
</tr>
<tr>
<td>Series 4</td>
<td>DNE</td>
<td>do²-ma⁴</td>
<td>do³¹-ma²</td>
<td>no⁴-ma²</td>
<td>DNE</td>
</tr>
<tr>
<td>Series 5</td>
<td>ji³¹-ʔe²ma⁴</td>
<td>ji²-ma⁴</td>
<td>ji³¹-ma²</td>
<td>je³-ma²</td>
<td>je⁴-ma²</td>
</tr>
<tr>
<td>Series 6</td>
<td>gu³¹-ʔe²ma⁴</td>
<td>gu²-ma⁴</td>
<td>gu³¹-ma²</td>
<td>je⁴-ma²</td>
<td>je⁴-ma²</td>
</tr>
</tbody>
</table>

I refer to demonstratives with the Class IV form: 'Series 1 ja⁴a²'
Nominal demonstrative uses

Only some of the demonstratives can be used in exophoric reference to individuals: Series 1, 2, 3, and 5.

<table>
<thead>
<tr>
<th>Lexical Item</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series 1 $n a^4 a^2$</td>
<td>exophoric to individuals</td>
</tr>
<tr>
<td>Series 2 $n e^3 a^2$</td>
<td>exophoric to individuals</td>
</tr>
<tr>
<td>Series 3 $n e^3 a^2$</td>
<td>exophoric to individuals</td>
</tr>
<tr>
<td>Series 4 $n o^4 m a^4$</td>
<td>exophoric to time periods and regions of space</td>
</tr>
<tr>
<td>Series 5 $n e^3 m a^2$</td>
<td>exophoric and endophoric to individuals</td>
</tr>
<tr>
<td>Series 6 $n e^4 m a^4$</td>
<td>endophoric to individuals</td>
</tr>
<tr>
<td></td>
<td>(remote past temporal meaning)</td>
</tr>
</tbody>
</table>

I will ignore Series 4 and 6 here (but ask me in Q&A).
Indexical meanings of Series 1-3

Series 1, 2, and 3 have a perceptual meaning component.

<table>
<thead>
<tr>
<th>Lexical Item</th>
<th>Meaning</th>
</tr>
</thead>
</table>
| **Series 1 $\mathrm{na}^4a^2$** | Speaker either sees or can touch referent  
Spatial: Immediate to speaker (body part, on body, handling, in reach) |
| **Series 2 $\mathrm{je}^3a^2$** | Speaker sees referent  
Spatial: Proximal to speaker |
| **Series 3 $\mathrm{je}^3a^2$** | Speaker sees referent  
Spatial: Distal to speaker |
Indexical meaning of Series 5

Series 5 $\eta e^3 ma^2$ is an odd demonstrative out.

- It is the only demonstrative with both exophoric and endophoric uses.
- It has two exophoric uses: one with a perceptual component, one without.

<table>
<thead>
<tr>
<th>Use</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Addressee-Centered</strong> Series 5</td>
<td>Perceptual: None. Any mode of access OK</td>
</tr>
<tr>
<td></td>
<td>Spatial: Immediate to addressee</td>
</tr>
<tr>
<td><strong>Invisible</strong> Series 5</td>
<td>Perceptual: Speaker does not see referent</td>
</tr>
<tr>
<td></td>
<td>Spatial: None. Any location OK (immediate to spkr, immediate to addr, prox to spkr, dist to spkr)</td>
</tr>
</tbody>
</table>
Section 3

Diagnosing the perceptual meanings
Evidence for perceptual meanings

Suppose morpheme X conveys visual mode of access. X could be a predicate marker (visual evidential) or an argument one (visible demonstrative or determiner).

Predictions:

- It should be **bad in all contexts** to use X in talking about entities that can never be seen (necessarily invisible). Sounds, smells, tastes, body sensations...

- For entities that can be seen (contingently invisible), acceptability of X should **depend on context**

If X is rejected for necessarily invisible entities, strong evidence it conveys specifically visual mode of access.
Evidence for perceptual meanings

Series 2 and 3 display the predicted properties
- Always bad for necessarily invisible referents
- Contingently invisible referents:
  - Good if speaker sees referent at moment of speech
  - Bad otherwise
Evidence for perceptual meanings

Series 1 is more complicated

- Bad for necessarily invisible referents, but not as bad
- Contingently invisible referents
  - Good if speaker sees referent
  - Not always bad otherwise
Series 2 and 3: Bad for necessarily invisible entities

Recall the spatial features of Series 2 and 3:

- Series 2: Proximal to speaker
- Series 3: Distal to speaker

It is never acceptable to use Series 2 or 3 to talk about a necessarily invisible entity, such as a smell. You must use Series 5 (invisible use) instead.
Series 2 and 3: Bad for necessarily invisible entities

(1) Context: You and I notice a bad smell on the breeze. You tell me it is the smell of gasoline. We cannot see any actual gasoline stain or container of gasoline. 

\[\text{gasolina} = e^1ma^3 \text{ ni}^{41}\tilde{r}^4.\]

Cited from: DGG 2017.2.82
Series 2 and 3: Bad for necessarily invisible entities

Judgments on (1):

- 4/4 consultants volunteered Series 5 $\eta e^3 ma^2$
- 4/4 consultants rejected Series 2 $\eta e^3 a^2$
- 3/4 consultants rejected Series 3 $je^3a^2$; 1/5 accepted
- 2/4 consultants accepted Series 1 $ja^4a^2$ (but comments suggest deferred reference); 2/4 rejected Series 1 $ja^4a^2$
Series 2 and 3: Bad for necessarily invisible entities

(2) Context: We hear a recorded song playing at the neighbor's place. We cannot see the radio that is playing the song. You tell me you like the song.

"ThatsongthatIhear(d)there, I like it."

Cited from: LWG 2017.2.86
Series 2 and 3: Bad for necessarily invisible entities

Judgments on (2):

- 3/5 consultants volunteered Series 5 $\eta e^3 ma^2$; 2/5 accepted
- 5/5 consultants rejected Series 2 $\eta e^3 a^2$
- 4/5 consultants rejected Series 3 $je^3 a^2$; 1/5 accepted
- 2/5 consultants volunteered Series 1 $na^4 a^2$; 2/5 rejected; 1/5 accepted
What (1) and (2) are not

The anomaly in (1) and (2) is:

- Not morphosyntactic -- Series 2 & 3 are OK in deferred reference situations
- Not due to spatial features -- or e.g. Series 3 je³a² should be good in (2)
- Not due to epistemic modality -- speaker can identify referent
- Not due to a general direct/indirect evidential contrast -- speaker directly perceives referent

Conclusion: Anomaly reflects perceptual features = Series 2 and 3 require visual mode of access.
Series 2 and 3: Bad for contingently invisible entities

There are 5/25 scenes of Wilkins (1999) where the referent is invisible to the speaker: scenes 1, 11, 15, 18, and 25. (Scene 10: impossible to make invisible)

- Referents were baskets, pots, etc.; contingently invisible
- Speaker knows where referent is but doesn't perceive it via any sense

Series 2 and 3 bad in all of these scenes: never volunteered*, usually rejected

(*1/8 speakers volunteered Series 3 in scene 25)
Wilkins (1999) Scene 1

\[ da^{31} a^{1} \ tso^{1} pi^{1} ta^{1} \ ri^{1} na^{4} \eta^{1} \]

\[ da^{31} a^{1} \ tso^{1} *pi^{1} ta^{1} \ ri^{1} na^{4} = \eta^{1} \]

Dnom1(III) 1SG *tooth(III) TOP 3.A = hurt(A)

'This tooth of mine, it hurts.' (DGG: 2017.1.163)
Wilkins (1999) Scene 11

'Isthispotyours?'(ECG:2017.2.45)

'Is this pot yours?' (ECG: 2017.2.45)
Wilkins (1999) Scene 15

\[ ku^{31}ri^3 \text{ ni}^{41}\text{n}^4 i^4 \text{ } \eta e^3ma^2 \text{ pe}^4\text{tʃi}^1 \]

\[ ku^{31}ri^3 \text{ ni}^{41} = \text{ i}^4 \text{ i}^4 \text{ } \eta e^3ma^2 \]

2SG.AL.POSS 3.I = COP(I) DET(IV) DNOM5(IV)

pe^4?tʃi^1

basket(IV)

'Is that basket yours?' (ECP: 2017.1.183)
Wilkins (1999) Scene 18

'\( \eta e^3 m^2 n^4 \text{pa}^4 \text{ri}^2 k^1 u^3 r^1 i^3 n^1 i^4 \)'

'\( \eta e^3 m^2 n^a \text{pa}^4 \text{ri}^2 \)'

\dnom\text{5(IV)}\text{DEF.POSS}*\text{straight.sided.container(IV)}\
\text{ri}^1\text{ku}^3\text{ri}^3\text{ni}^4\text{i}^4\
\text{TOP 2SG.AL.POSS 3.I} = \text{COP(I)}\

'That bucket, is it yours?' (SSG: 2017.1.186)
Wilkins (1999) Scene 25

`ma³ri³ ni³1ʔi³ ku¹dau²ʔi⁴ a¹ ji²ma² i³1a¹ne¹ a¹ Galilea`

ma³ri³ ni³1 =ʔi³ ku¹ = dau² =ʔi⁴
PERF 3 =ACC 2SG.A.SC= see(A) = SUB
a¹ ji²ma² i³1a¹ne¹ a¹ Galilea
DET(III) D NOM5(III) town(III) DET(III) G

'Have you been to that town, Galilea?'
(ABS: 2017.2.32)
Series 2 and 3: Bad for contingently invisible entities

Table: Consultant responses to Wilkins (1999) scenes with referent invisible to speaker

<table>
<thead>
<tr>
<th>Scene</th>
<th>Best</th>
<th>Ser 1</th>
<th>Ser 2</th>
<th>Ser 3</th>
<th>Ser 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ser 1 1</td>
<td>Best</td>
<td>Degraded</td>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>ŋa⁴a² (8/8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Ser 1 1</td>
<td>Best</td>
<td>Degraded</td>
<td>Degraded</td>
<td>Unclear</td>
</tr>
<tr>
<td></td>
<td>ŋa⁴a² (6/8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Ser 5 5</td>
<td>Bad</td>
<td>Degraded</td>
<td>Degraded</td>
<td>Best</td>
</tr>
<tr>
<td></td>
<td>ŋe³ma² (6/8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Ser 5 5</td>
<td>Degraded</td>
<td>Degraded</td>
<td>Degraded</td>
<td>Best</td>
</tr>
<tr>
<td></td>
<td>ŋe³ma² (8/8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Series 2 and 3: Bad for contingently invisible entities

Why is the judgment data on these scenes not binary?

- It is acceptable to use Series 2 and 3 for a contingently invisible referent if you are in motion toward the referent
- Part of larger pattern where motion goals treated as immediate for deictic purposes (deictic transposition)
- May influence speakers to accept Series 2 and 3 even in absence of motion
Series 2 and 3: Bad for contingently invisible entities

Why is the volunteered data not binary?

- 1 trial where speaker did not volunteer a demonstrative
- 3 trials where speaker volunteered a form with the clitic $=\tilde{a}^4 ma^4$ (coming soon)
Series 2 and 3 meet $=\tilde{\alpha}^4 ma^4$

The clitic $=\tilde{\alpha}^4 ma^4$ appears on various kinds of constituents besides nominal demonstratives:

- Locative adjuncts and predicates
- Other predicates
- Quantifiers

On nominal demonstratives, $=\tilde{\alpha}^4 ma^4$ has two uses:

- Contrast
- Licenses use of Series 1-3 demonstrative with contingently invisible referent
Introduction

Background

Data, 1/2

Data, 2/2

Conclusions

References

Series 2/3 = ã⁴ma⁴ good with contingently invisible referent

(3) Context: Wilkins (1999) scene 15

ji⁴a²ã⁴ma⁴ / gu⁴a²ã⁴ma⁴ pe⁴ʔʃi¹ ri¹ ku³¹ri³ ni⁴¹ʔĩ⁴

ji⁴a² = ã⁴ma⁴ / gu⁴a² = ã⁴ma⁴ pe⁴ʔʃi¹ ri¹
DNOM2(II) = Â⁴MA⁴ / DNOM2(II) = ã⁴MA⁴ basket(II) TOP
ku³¹ri³ ni⁴¹ = ĩ⁴
2SG.AL.POSS 3(I) = COP(I)

'That basket, is it yours?'

LWG: 2017.1.172, ji⁴a²ã⁴ma⁴ and gu⁴a²ã⁴ma⁴ both volunteered, in that order
Series $2/3 = \tilde{a}^4ma^4$ bad with necessarily invisible referent

(4) Context: You and I notice a bad smell on the breeze. You tell me it is the smell of gasoline. We cannot see any actual gasoline stain or container of gasoline. (Same as 1)

$\#\text{je}^3a^2\tilde{a}^4ma^4 / \check{\eta}e^3ma^2 p^a^31 a^1 ne^3\tilde{a}^4 \text{gasolina} = e^1ma^3 ni^41\tilde{a}^4$.

$\#\text{je}^3a^2 = \tilde{a}^4ma^4 / \check{\eta}e^3ma^2 p^a^43 = a^1 ne^1$

$\#\text{DNOM}3(IV) = \tilde{A}^4MA^4 / \check{\text{DNOM}}5(IV) \text{issue.smell = AREAL.SBJ}$

$= ?i^4 \text{gasolina} * e^1ma^3 ni^41 = i^4$

$= \text{NMLZ}(IV) \text{Sp:gasoline *vapor 3}.I = \text{COP}(I)$

'That smell is gasoline vapor.' (LWG: 2017.2.86)

$\text{je}^3a^2\tilde{a}^4ma^4$ OK only in deferred reference to contingently invisible object.
Perceptual features of Series 1 ɲa⁴a²

Series 1 ɲa⁴a² is not quite like Series 2 ṇe³a² and Series 3 Ḗe³a²:
- Series 1 has discourse deictic uses, 2 and 3 don't
- Series 1 can be used in deixis to time periods, 2 and 3 can't
Not specialized exclusively to exophoric deixis to individuals.
Series 1 bad for necessarily invisible referents

Series 1 is categorically bad in some necessarily invisible contexts.
Gas example above (1):

- 4/4 volunteer Series 5 $\eta e^3 ma^2$
- 2/4 accept Series 1 $na^4 a^2$, but suggest deferred reference
- 2/4 reject Series 1
Series 1 bad for necessarily invisible referents

Series 1 is not so bad in other necessarily invisible contexts. Smelling perfume:

- 5/5 volunteer Series 5 $\eta e^3ma^2$, but:
- 3/5 accept Series 1 $na^4a^2$, 1/5 marginally accepts, 1/5 rejects

Song example above (2):

- 3/5 volunteer Series 5 $\eta e^3ma^2$, 2/5 accept
- 2/5 volunteer Series 1 $na^4a^2$, 2/5 reject, 1/5 accepts

Song case is probably due to discourse deictic use of Series 1 $na^4a^2$. 
Series 1 bad for necessarily invisible referents

All spontaneous examples with necessarily invisible referents have Series 5:

(5) \(pe^3na^3i^5ga^1\tilde{e}^4\tilde{e}^3i^4\eta e^3ma^2\)

\[\begin{align*}
pe^3 &= na^3 = \tilde{i}^1ga^1 -\tilde{e}^4\tilde{e}^3i^4 \eta e^3ma^2 \\
2\text{PL.A} &= 3\text{OBJ.A} = \text{quiet(A) -CAUS DET(IV) Dnom(IV)}
\end{align*}\]

'Turn down that volume!' (OS 2017/08/25)
Series 1 and contingently invisible referents

Series 1 is acceptable for contingently invisible referents if:
- Referent is part of speaker's body - Wilkins (1999) scene 1
- Referent is inside speaker's close personal space - Wilkins (1999) scene 11

Otherwise degraded for contingently invisible referents, even if very close by (marbles)
Wilkins (1999) Scene 1

\[ da^{31} a^{1} tso^{1} pi^{1} ta^{1} ri^{1} na^{4} \eta^{1} \]

\[ da^{31} a^{1} \quad tso^{1} \ast pi^{1} ta^{1} \quad ri^{1} \quad na^{41} \eta^{1} \]

\[ \text{DNOM1(III) 1SG} \ast \text{tooth(III) TOP 3.A} = \text{hurt(A)} \]

'This tooth of mine, it hurts.' (DGG: 2017.1.163)
Wilkins (1999) Scene 11

\[ da^2a^2 \ pa^3ne^4ra^1 \ ri^1\tilde{e}^1\?na^5 \ ku^3ri^3 \ ni^41\tilde{r}^4 \]

\[ da^2a^2 \ pa^3ne^4ra^1 \ ri^1\tilde{e}^1\?na^5 \ ku^3ri^3 \]

D NOM1(II) metal.pot(II) ALT 2SG.AL.POSS

\[ ni^41 = \tilde{r}^4 \]

3.1 = COP(I)

'Isthis pot yours?' (ECG: 2017.2.45)
Can account for acceptability of Series 1 $na^4a^2$ with contingently invisible referents via **tactual access**

- Speaker can or does perceive referent via touch
- Includes both haptic touch and proprioception (awareness of own body)

Series 1 and contingently invisible referents

Evidence for the tactual access analysis:

(6)  Context: I am watching 5 boys fish with hook and line off of a concrete bridge. 4 older boys are on the bridge; a younger boy is running around on the creek bank underneath it. He casts a fishing line into the water. When a fish bites the line, he starts yelling, $dɨ¹ʔka⁴$, $da²a²$

$di¹ʔka⁴$ $da²a²$

PRES DNO M1(II)

'Hey, here it is!' (OS 2017/06/30)

The fish was under the water, strictly invisible, and several meters from the boy; not inside his close personal space.

Yet 4/4 speakers agreed: ✔Series 1 $da^{31}a^{1}$, #Series 5 $ji^{2}ma^{4}$
Postscript: Series 5

Recall that Series 5 has two uses:

- **Addressee-centered**
- **Invisible**

Addressee-centered use is not sensitive to perceptual features:

Invisible use is not sensitive to location in space:
Wilkins (1999) scene 1 (never volunteered but 7/7 acceptable) cf. 10, 15, 25
Wilkins (1999) Scene 16

\[ \eta e^3 m^2 n a^4 i p a^4 i^2 \, r i^1 \, k u^3 r i^3 \, n i^4 r i^4 \]

\[ \eta e^3 m^2 \quad n a^4 \quad *? p a^4 i^2 \]

DNOM5(IV) DEF.POSS *straight.sided.container(IV)

\[ r i^1 \quad k u^3 r i^3 \quad n i^4 r i^4 = r i^4 \]

TOP 2SG.AL.POSS 3.1 = COP(I)

'That bucket, is it yours?' (SSG: 2017.1.186)
Wilkins (1999) Scene 18

ηe³ma² na⁴pa⁴ʁi² ri¹ ku³¹ri³ ni⁴¹ʁi⁴

ηe³ma² na⁴ *?pa⁴ʁi²
dnom⁵(iv) def.poss *straight.sided.container(iv)
ri¹ ku³¹ri³ ni⁴¹ = i⁴
top 2sg.al.poss 3.i = cop(i)

'That bucket, is it yours?' (SSG: 2017.1.186)
## Summary: Perceptual features of Series 1-3

<table>
<thead>
<tr>
<th>Speaker sees ref</th>
<th>Speaker can touch ref</th>
<th>Acceptable demonstratives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Ser 1, 2, 3; addressee-centered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series 5</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>Ser 1, 2, 3; addressee-centered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series 5</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Ser 1; invisible (speaker's body parts)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series 5</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>Invisible Series 5</td>
</tr>
</tbody>
</table>
Isn't it confusing to have just one demonstrative for invisible referents?
No, because Ticuna also has other indexical resources:
  - Nominal demonstratives with $= \tilde{a}^4 ma^4$
  - Locative demonstratives
  - Bare nouns/nouns with only articles used indexically
  - Indexical locative descriptions

None of these have perceptual features, only the bare nominal demonstratives.
What is the status of the perceptual meanings?

The perceptual meanings of nominal demonstratives are projective

- They survive under the scope of negation and modals (among other operators)
- Unlike entailments and conversational implicatures

What type of projective content do they represent? (Tonhauser et al. 2013)
Tonhauser et al. (2013)

Exhaustive taxonomy of projective implications by two parameters:

- Strong contextual felicity constraint -- loosely, does something have to be true of the utterance context for the trigger (item with the implication) to be acceptable
- Obligatory local effect -- when the trigger is embedded in an attitude report, does it require that the attitude holder endorses the implication
Two parameters produce four classes of projective content for English and Paraguayan Guaraní:

<table>
<thead>
<tr>
<th>Content</th>
<th>SCF</th>
<th>OLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A / <em>too</em>: Alternative exists</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Class B / Demonstrative NP: N property implication</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Class C / Prejacent of <em>only</em></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Class D / Demonstrative NP: Demonstration implication</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
All of the Tonhauser et al. classes exist in Ticuna and their membership is similar.

<table>
<thead>
<tr>
<th>Content</th>
<th>SCF</th>
<th>OLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A / ( ta^1 ) 'too': Alternative exists</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Class B / Ser 3 ( je^3a^2 ) NP: N property implication</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Class C / Prejacent of ( =\tilde{i}ka^5 ) 'only'</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Class D / Ser 3 ( je^3a^2 ) NP: Salience implication</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

The visibility implication of Series 2 and 3 is in Class D. Also has unique properties that other Class D content may not.
Testing the visibility implication

Already know from Wilkins (1999) that the visibility implication has (better: is) a strong contextual felicity constraint.

- SCF: Referent is visible to speaker

Need to know: is implication projective, does implication have obligatory local effect
Testing the visibility implication: Projection

Family of sentences shows that visibility implication is projective.

(7) Context: There is a bag across the table from me. I know there is money in the bag, but I can't see it.

a. Atomic Sentence: #ji³¹ʔe² di³e³ru¹ ri¹ Bi³tu⁵a¹ri³ ti⁴ʔĩ⁴ '#That (DNOM2) money is Victoria's'

b. Negation: #ta⁴ma³ Bi³tu⁵a¹ri³ ti⁴ʔĩ⁴ ja⁴ ji³¹ʔe² di³e³ru¹ '#That (DNOM2) money is not Victoria's'

c. Polar Question: #Bi³tu⁵a³ri³ ti¹ʔĩ¹ʔɨ̃⁴ ja⁴ ji³¹ʔe² di³e³ru¹? '#Is that (DNOM2) money Victoria's?'

d. Epistemic Modal: #be¹ʔma²na⁴ Bi³tu⁵a¹ri³ ti⁴ʔĩ⁴ ja⁴ ji³¹ʔe² di³e³ru¹ '#It's possible that that (DNOM2) money is Victoria's'

e. Conditional Antecedent: e³ga⁴ Bi³tu⁵a¹ri³ ti¹ʔĩ⁴ gu² ja⁴ ji³¹ʔe² di³e³ru¹, ni³¹ʔna¹ ti³¹ʔĩ⁴ na¹ʔã³ '#If that (DNOM2) money is Victoria's, give it to her.'

(LWG: 2017.3.166; identical data for Series 3 DGG: 2017.3.177)
Testing the visibility implication: OLE

Data such as (8) show the visibility implication does not have obligatory local effect.

(8) Context: You and I have a mutual friend named E³mi⁵. You and I are walking down the street; E³mi⁵ is not with us. I point at a house and say, 

\[ E³mi⁵ \text{ ri}^1 \text{ na}^{43} \text{ gu}^2 \text{ na}^4 \text{ ri}^3 \text{ ni}^3 \text{ na}^4 \text{ tʃo}^1 \text{ ma}^1 \text{ ri}^1 \text{ gu}^2 \text{ a}^2 \text{ i}^4 \text{ pa}^4 \text{ ta}^3 \text{ gu}^2 \text{ tʃa}^1 \text{ pe}^{31} \text{ i}^4. \]

\[ E³mi⁵ \text{ ri}^1 \text{ na}^{43} = \text{ gu}^2 \text{ na}^4 \text{ ri}^3 = \text{ ni}^3 \text{ na}^4 \text{ tʃo}^1 \text{ ma}^1 \text{ ri}^1 \]

\[ E \text{ TOP} 3 = \text{ LOC} 3 \text{ ri} = \text{ think(ri)} \text{ COMP 1SG TOP gz} \text{ a}^2 \text{ i}^4 \text{ pa}^4 \text{ ta}^3 = \text{ gu}^2 \text{ tʃa}^1 = \text{ pe}^{43} = ?i^4 \]

\[ \text{ DNOM3(II)} \text{ house(III) = LOC 1SG.A.SC = sleep(A) = SUB} \]

'E³mi⁵ thinks that I live in that house.' (LWG: 2017.3.141)

Acceptable even though E³mi⁵ has no idea that the house is visible to me = Global effect.
(In fact the visibility implication always has global effect)
Testing the visibility implication: OLE

Compare to the alternative implication of ta\textsuperscript{1} 'too,' which does have obligatory local effect:

(9) Context: I have a brother and a sister. We live far from our mother, so she doesn't know what we do unless we tell.

a. tsau\textsuperscript{1}e\textsuperscript{3}a\textsuperscript{1} ri\textsuperscript{1} Di\textsuperscript{3}ti\textsuperscript{4}si\textsuperscript{3}a\textsuperscript{1}wa\textsuperscript{4} ta\textsuperscript{4}ʔũ\textsuperscript{43}, na\textsuperscript{2}ti\textsuperscript{4}ri\textsuperscript{2} tso\textsuperscript{31}ri\textsuperscript{3} ma\textsuperscript{3}ma\textsuperscript{5} ri\textsuperscript{1} ta\textsuperscript{4}ma\textsuperscript{3} ni\textsuperscript{31}ʔi\textsuperscript{3} ta\textsuperscript{4}kʷa\textsuperscript{1}.
   'My sister, she went to Leticia, but my mother, she doesn't know.'

b. #na\textsuperscript{2}ti\textsuperscript{4}ri\textsuperscript{2} na\textsuperscript{43}gu\textsuperscript{2} ta\textsuperscript{4}ri\textsuperscript{3}ʔi\textsuperscript{3}ni\textsuperscript{3} na\textsuperscript{4} tsau\textsuperscript{1}e\textsuperscript{3}ne\textsuperscript{2}e\textsuperscript{3} ri\textsuperscript{1} ta\textsuperscript{1} Di\textsuperscript{3}ti\textsuperscript{4}si\textsuperscript{3}a\textsuperscript{1}wa\textsuperscript{4} na\textsuperscript{1}ʔũ\textsuperscript{31}ʔi\textsuperscript{4}.
   #'She thinks that my brother, he also went to Leticia.' (LWG: 2017.3.140)

Unacceptable because my mother doesn't know about the alternative.
Testing the visibility implication: Interim summary

Visibility implication of Series 2 and 3:

- Imposes a strong contextual felicity constraint: referent must be visible in utterance context
  Cf. no constraints on utterance context for Class B or Class C implications

- Projects
  Cf. entailments and conversational implicatures do not project

- Doesn't impose an obligatory local effect
  Cf. Class A and C do have obligatory local effect

Therefore belongs to Tonhauser et al. (2013) Class D.
'The class D implications...tend to concern not facts about the external world that the interlocutors seek to describe, but facts about the discourse situation itself.'
What kind of facts about the discourse situation?
'The class D implications...tend to concern not facts about the external world that the interlocutors seek to describe, but facts about the discourse situation itself.'

What kind of facts about the discourse situation?

- **Salience of alternative with** *too* (Tonhauser et al. 2013:101): content of the discourse
- **Visibility implication**: actual surround of the discourse

---

**Tonhauser et al. (2013) on Class D**
Other properties of the visibility implication

The visibility implication is a constraint on the conditions that need to exist in the world for the item to be acceptable. It's not a constraint on the content of the discourse; it's also not a claim about the world. Therefore:

- Visibility implication cannot scope under modals
- Temporal interpretation of visibility implication is not free
Unlike Class A and B implications.
Scope relative to modals

(10) Class A: Additive implication of $ta^1$ 'too' can scope under conditional antecedent

$n̄e⁴ʔgu²ma³ Ma³ri³a³tʃu⁵wa⁵ na¹ʔũ⁴³gu² i⁴ Bi³tu⁵, ri¹ tʃo¹ma¹ ri¹ ta⁴ ta¹ n̄e⁵ma² tʃa³ʔũ⁴³.$

$n̄e⁴ʔgu²ma³ Ma³ri³a³tʃu⁵ =wa⁵ na¹ = ũ⁴³$

CONN Umariaçu = ALL 3.A.SC = come/go:SgS

= gu² i⁴ Bi³tu⁵, ri¹ tʃo¹ma¹ ri¹ ta⁴ ta¹

= SUB DET(IV) Victoria(IV) TOP 1SG TOP FUT too

n̄e⁵ma² tʃa³ = ũ⁴³

DLOC5:ALL 1SG.A = come/go:SgS

'If Victoria goes to Umariaçu, then I'll go too.' (LWG: 2017.3.154)
Scope relative to modals

(11) Class B: Property implication of demonstrative noun phrase can scope under conditional antecedent

a. ɲa⁴a² nãi³¹ ri¹ na⁴do⁴³ʔ o⁵tʃi².
'This wood, it's really soft.'

b. ku¹na³wãĩ³ʔku²ʔgu², ta²ʔu²ta⁴ma³ na⁴me⁴3 i⁴ nje³ma² mi³ra³pe³wa¹.
ku¹ = na³ = wãĩ³ʔ -ku²
2SG.A = 3.OBJ = cut.sawing(A) -DIR:inward:PlO = ?gu² ta²ʔu²ta⁴ma³ na⁴ = me⁴3 NEG + FUT 3.A = good(A) DET(IV) i⁴ nje³ma² mi³ra³pe³wa¹ DNOM5(IV) plank(IV)
'If you saw it, those planks will not be useful.'
(LWG: 2017.3.180)
Scope relative to modals

(12)  Class D: Visibility implication cannot scope under conditional antecedent

Context: There is a box containing some marbles across the table from you. You cannot see the marbles because the box is closed.

\[
\text{\(\eta\tilde{e}^4\text{gu}^2\text{ma}^3 \text{caja} \text{t}\text{\(i\)}^4 \text{wa}^4\text{na}^1\text{gu}^2, \text{ri}^1 \#\text{\(g\)}u^{31}\text{e}^2 / \#\text{j}\text{i}^{31}\text{e}^2 / \check{\text{j}}i^{31}\text{e}^2\text{ma}^3 \text{pe}^3\text{t}i^3\text{ka}^1\tilde{r}i^3 \text{t}\text{\(a\)}^3\text{dau}^2.}
\]

\[
\eta\tilde{e}^4\text{gu}^2\text{ma}^3 \text{caja} \; \text{t}\text{\(i\)}^4 \; \emptyset = \; \text{wa}^4 \; \text{?na}^1 = \text{gu}^2, \; \text{ri}^1
\]

CONN  Sp:box CNTF 3.SC.RI = \text{open(RI)} -DIR:open = \text{SUB TOP}

\#\text{\(g\)}u^{31}\text{e}^2 / \#\text{j}\text{i}^{31}\text{e}^2 / \check{\text{j}}i^{31}\text{e}^2\text{ma}^3 \text{pe}^3\text{t}i^3\text{ka}^1 = \tilde{r}i^3 \; \text{t}\text{\(a\)}^3 = \; \text{dau}^2

DNOM3(I) / DNOM2(I) / DNOM5(I) \text{marble(I)} = \text{ACC 1SG.A} = \text{see}

'If the box were open, I would see those marbles.'

(LWG: 2017.3.154)
Scope relative to modals

Likewise in English, the spatial implications of nominal demonstratives can't scope under modals:

(13) Context: There is a box containing a pair of shoes across the room from you.
    If Victoria brings me the box, I'll untie #these/✓those shoes.

Temporal interpretation

Noun phrase implications, visibility included, are propositions. They need a time to be interpreted.

- **Visibility:** Must be true at *utterance time*
- **Class B implications (and predicates):** Temporal interpretation *given contextually*
  
  Cf. Musan (1997); Enç (1981); Tonhauser (2007)

- *(Beyond the scope of this talk: Implications that must be true at topic time)*
Temporal interpretation

(14) Class B: For property implication of noun phrase, not necessary that UT = time of property

Context: All the political leaders in our community decided to become doctors in order to make more money. They will never be in politics again.

\[ gu^{5}\tilde{i}^{4}ma^{3}\ i^{4}\ a^{3}\tilde{e}^{1}\ga^{3}ki^{3}\ ri^{1}\ ny^{1}\ma^{5}\ ri^{1}\ du^{3}tu^{3}ru^{1}\ ni^{41}\tilde{i}^{4} \]

\[ gu^{5}\tilde{i}^{4}ma^{3}\ i^{4}\ a^{3}\tilde{e}^{1}\ga^{3}ki^{3}\ ri^{1}\ ny^{1}\ma^{5}\ ri^{1} \]

\[ \text{all(IV)}\quad \text{DET(IV)}\quad \text{chief(IV)}\quad \text{TOP now}\quad \text{TOP} \]

\[ du^{3}tu^{3}ru^{1}\ ni^{41}=\tilde{i}^{4} \]

\[ \text{doctor}\quad 3.1=\quad \text{COP(I)} \]

'Now all the political leaders are doctors.' (DGG: 2017.3.100)

\[ T_{NP} < UT = TT \]
Temporal interpretation

(15) Class B: For property implication of non-restrictive relative clause, not necessary that UT = time of clause

\[ K^w a^3 i^1 j a^4 w o^3 k a^1 i^1 m a^5 k i^3, i^5 n a^4 n a^3 m e^4 3 i^4 3 \]

\[ K^w a^3 i^1 j a^4 w o^3 k a^1 i^1 = m a^1 = k i^3, i^5 = K^w (II) D E T (II) c o w \]

\[ 3 . i . s c = k i l l - N M L Z (I I) I M P F = n a^4 = n a^3 = m e^4 3 - ? e^4 3 \]

\[ 3 . A = 3 . O B J = g o o d (A) - C A U S \]

'Juan, who killed the cow, is butchering it.' (YCG: 2017.3.185)

\[ T_{N R R C} < U T = T T \]
Temporal interpretation

(16) Class D: Referent must be visible at $UT$
Context (my actual actions in elicitation): I show you a bag of marbles. You clearly see the marbles in the bag; then I close the bag and place it on the other side of the table from you.

$\#gu^{31}e^2 \ pe^{43}ti^{3}ka^{3} \ Bi^{3}tu^{5}a^{1}ri^{3} \ ti^{41}\bar{i}^{4}$.

$\#gu^{31}e^2 \ pe^{43}ti^{3}ka^{3} \ Bi^{3}tu^{5} = a^{1}ri^{3} \ ti^{41} = \bar{i}^{4}$

DNOM3(I) marble(I) Victoria = AL.POSS 3.I(I) = COP(I)

'#$\text{That (DNOM3) marble is Victoria's.}'$ (DGG: 2017.3.177)

$T_{visibility} < UT = TT$
The takeaway: Visibility is different

The visibility implication constrains how the world must be in order for you, the speaker, to use Series 2/3.

- **Projection:** Present.
  - Not sensitive to entailment-canceling operators.
- **Strong contextual felicity constraint:** Present.
  - SCF cannot be satisfied via modal subordination: The constraint is on this world.
  - SCF must hold at utterance time: The constraint is on this world, now.
- **Obligatory local effect:** Absent.
  - Effect is always global: The constraint is on you, the speaker.
Implications that resemble visibility

- Spatial implications of demonstratives.
- In Tonhauser et al. (2013):
  - *too*: salience of alternatives
  - Focus: salience of alternatives
  - 'Demonstration implication' of demonstratives

I am not sure how modal and temporal behavior could be tested for the salience-related implications.
Conclusions: Deixis

- Some demonstratives have perceptual features.
  - Series 2 $\eta e^3 a^2$, Series 3 $j e^3 a^2$: Speaker sees referent
  - Series 1 $j a^4 a^2$: Speaker sees or can touch referent
- The perceptual features are not reducible to literal 'visibility' (role of touch).
- The perceptual features are not subordinate to spatial or modal features.

→ Exophoric deixis in (at least) Ticuna does not hinge on space.
Conclusions: Projective Content

- Tonhauser et al. (2013) taxonomy of projective content is validated for another language.
- Novel type of implication in Class D of taxonomy.
- Novel differences between Class D and other classes of projective content: modals, temporal interpretation.
- Deictic implications are different from non-deictic ones, but not irreconcilably different.
Thank you!

Many thanks to:

- **My official Ticuna consultants** Angel Bitancourt Serra, Ling Candido Serra, Yaneth Candido Guerrero, ECP, Marcelo Farías Caetano, Deoclesio Guerrero Gomez, Katia Salate Candido, Sotil Suarez Gonzalez, and LWG.

Special thanks to LWG for endless projection judgments.

- **My Ticuna friends** Hortensia, Magdalena, Betsabe, Mavis, Ursula, Keni, and others

- **Other Ticuna speakers** who allowed me to videotape them in action, talked to me, and otherwise made the research possible

Thanks also to:


All errors and omissions are my own.


Enfield, N.J. 2003. Demonstratives in space and interaction:


Özyürek, Aslı. 1998. An analysis of the basic meaning of Turkish demonstratives in face-to-face conversational


