Perceptual features in Ticuna demonstratives

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Section 1

Why study demonstratives?
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Universals:
- All languages have demonstratives (Diessel 1999:2)
- Key (spoken) language tool for joint attention
- Syntactic/semantic reflex of embodiment
Why study demonstratives?

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- All languages have demonstratives (Diessel 1999:2)
- Key (spoken) language tool for joint attention
- Syntactic/semantic reflex of embodiment

Diversity:
- Number of demonstratives (Ticuna: 6, English: 2)
- Morphological and syntactic properties
- Semantic contrasts
What do demonstratives 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 set of referents introduced in discourse.
What do demonstratives 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 set of referents introduced in discourse.

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)*
Many languages are said to have visibility contrasts in exophoric demonstratives or deictic determiners.

- My current list: 34 languages with explicit visibility claims in published sources
- 23/34 in Americas
- But also 7 Austronesian languages (van Kranenburg 2016)

Problem: Visibility is not a function of distance/location in absolute space.  
(Recognized since at least Anderson and Keenan 1985; Diessel 1999)
Problem: Visibility

It's hard to know how seriously to take visibility.

- Some authors skeptical that visibility contrasts exist at all
- Most empirical studies with visibility claims don't go into detail
- Even with details, hard to distinguish visibility from other indexical meaning components (Enfield 2003:96)
  - Visibility entails: direct evidentiality
  - Visibility is implicated by: identifiability/strong epistemic modality (Levinson 2004:192)
Goals of this talk

I will argue that:

- 3 of the exophoric nominal demonstratives of Ticuna (a language of Peru, Brazil, and Colombia) have a perceptual component.
- The perceptual component conveys the speaker's mode of perceptual/sensory access to the referent.
- 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
- Conclude
The Ticuna language

- **Isolate/orphan** (Carvalho 2009) spoken by 41,500-69,000 people in Colombia, Brazil, and Peru
- **At least 3 identifiable dialect groups** (Montes 2004)
Fieldwork

Data in this talk: from 8 months of my own fieldwork in Cushillococcha/Caballococcha, Loreto, Peru, 2015-2017

- Cushillococcha is a titled Ticuna community
- Caballococcha is a multiethnic town
- The towns are one continuous populated area, pop. \(\sim 15,000\)
- Most people who live in Cushillococcha 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:

1. Wilkins (1999) demonstrative questionnaire -- set up arrays, ask for demonstratives; consultant is *in* context. (8 speakers)
2. Semantic elicitation per Matthewson (2004); consultant imagines context (5 speakers)
3. Staged discourses (e.g. monolingual interviews), audio- and video-recorded
4. Spontaneous discourses (e.g. conversations), audio- and video-recorded
5. Overheard speech

Elicitation was monolingual and bilingual (with Spanish)
Ticuna has 5 semantically based noun classes. All nominal demonstratives agree for noun class with the noun that they modify/replace.

Numbers represent lexical tones.

**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>ɲa⁴-a²</td>
<td>ɲa⁴³-a²</td>
</tr>
<tr>
<td>Series 2</td>
<td>ɟi³¹-ʔe²</td>
<td>ɟi²-a⁴</td>
<td>ɟi³¹-a¹</td>
<td>ɲe³-a²</td>
<td>ɲe⁴-a²</td>
</tr>
<tr>
<td>Series 3</td>
<td>gu³¹-ʔe²</td>
<td>gu²-a⁴</td>
<td>gu³¹-a¹</td>
<td>ɟe⁴-a²</td>
<td>ɟe⁴³-a²</td>
</tr>
<tr>
<td>Series 4</td>
<td>DNE</td>
<td>do²-ma⁴</td>
<td>do³¹-ma²</td>
<td>ɲo⁴-ma²</td>
<td>DNE</td>
</tr>
<tr>
<td>Series 5</td>
<td>ɟi³¹-ʔe²ma⁴</td>
<td>ɟi²-ma⁴</td>
<td>ɟi³¹-ma²</td>
<td>ɲe³-ma²</td>
<td>ɲe⁴-ma²</td>
</tr>
<tr>
<td>Series 6</td>
<td>gu³¹-ʔe²ma⁴</td>
<td>gu²-ma⁴</td>
<td>gu³¹-ma²</td>
<td>ɟe⁴-ma⁴</td>
<td>ɟe⁴³-a²</td>
</tr>
</tbody>
</table>

I refer to demonstratives with the Class IV form: 'Series 1 ɲa⁴a²'
Nominal demonstrative uses

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

Table: Nominal Demonstrative Uses

<table>
<thead>
<tr>
<th>Lexical Item</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series 1 $na^4a^2$</td>
<td>exophoric to individuals</td>
</tr>
<tr>
<td>Series 2 $ne^3a^2$</td>
<td>exophoric to individuals</td>
</tr>
<tr>
<td>Series 3 $je^4a^2$</td>
<td>exophoric to individuals</td>
</tr>
<tr>
<td>Series 4 $no^4ma^4$</td>
<td>exophoric to time periods and regions of space</td>
</tr>
<tr>
<td>Series 5 $ne^3ma^2$</td>
<td>exophoric and endophoric to individuals</td>
</tr>
<tr>
<td>Series 6 $je^4ma^4$</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: Series 4 not for individuals, Series 6 only endophoric
Spatial meaning components

All of the exophoric demonstratives have at least one use with a spatial component.

<table>
<thead>
<tr>
<th>Lexical Item</th>
<th>Spatial Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series 1 $\eta a^4a^2$</td>
<td>Immediate to speaker (body part, on body, handling, in reach)</td>
</tr>
<tr>
<td>Series 2 $\eta e^3a^2$</td>
<td>Inside perimeter with speaker</td>
</tr>
<tr>
<td>Series 3 $\eta e^4a^2$</td>
<td>Distal to speaker</td>
</tr>
</tbody>
</table>

Series 5 has two exophoric uses:

- **Addressee-Centered Use:** Immediate to addressee
- **Invisible Use:** No spatial component
Section 3

Perceptual meanings exist
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
- Other referents:
  - Good if speaker sees referent at moment of speech
  - Bad otherwise (i.e. also bad if contingently invisible)

Series 1 is more complicated
- Bad for necessarily invisible referents, but not as bad
- Good for some contingently invisible referents
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 gasoline stain or container of gasoline.

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

'That smell, it's gasoline vapors.' (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 $\eta e^4 a^2$; 1/4 accepted
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.

#ŋe³a² / #je⁴a² / √ŋe³ma² wi³ja³e³ i⁴ ŋe⁵ma² ni³¹ʔi³
tʃa¹ʔĩ³nɨ²ʔɨ̃⁴rɨ¹tʃo³¹ʔrɨ³me⁴³ni⁴¹ʔi⁴

#ŋe³a² / #je⁴a² / √ŋe³ma² wi³ja³e³ i⁴
#DNOM2(IV) / #DNOM3(IV) / √DNOM5(IV) song(IV) DET(IV)
ŋe⁵ma² ni³¹ =ʔi³ tʃa¹ = i³ni² =ʔi⁴ ri¹
DLOC5:ALL 3 = ACC 1SG.A = hear(A) = NMLZ(IV) TOP
tʃo³¹ʔri³ me⁴³ ni⁴¹ = i⁴
1SG.AL.POSS good(noun) 3.I = COP(I)

'That song that I hear there, I like it.' (LWG 2017.2.86)
Series 2 and 3: Bad for necessarily invisible entities

Judgments on (2):

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

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

- Not morphosyntactic
- Not due to spatial features
- Not due to epistemic modality
- Not due to a general direct/indirect evidential contrast

Conclusion: Anomaly reflects perceptual features = Series 2 and 3 require visual mode of access.
<table>
<thead>
<tr>
<th>Introduction</th>
<th>Background</th>
<th>Percept meanings exist</th>
<th>Percept meanings are encoded</th>
<th>Conclusions</th>
<th>References</th>
</tr>
</thead>
</table>

**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.

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

Series 2 and 3 bad in all of these scenes: never volunteered, usually rejected.
Wilkins (1999) Scene 1

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

\[
da^{31}a^1 \ t\jo^{1} + pi^{1}ta^{1} \ ri^{1} \ na^4 = \eta^4
\]

DNOM1(III) 1SG + tooth(III) TOP 3.A = hurt(A)

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

<table>
<thead>
<tr>
<th>SPKR</th>
<th>ADDR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ da^2 a^2 \text{pane}^4 \text{ra}^1 \text{ri}^1 \tilde{e}^1 \text{na}^5 \text{ku}^{31} \text{ri}^3 \text{ni}^{41} \tilde{n}^4 \]

\[ \begin{align*}
\text{da}^2 & \text{a}^2 \quad \text{pa}^3 \text{ne}^4 \text{ra}^1 \\
\text{ri}^1 & \tilde{e}^1 \text{na}^5 \quad \text{ku}^{31} \text{ri}^3 \\
\text{DNOM}1(II) & \text{metal.pot}(II) \quad \text{ALT} \quad 2\text{SG.AL.POSS} \\
\text{ni}^{41} & = \tilde{i}^4 \\
3.i & = \text{COP}(I)
\end{align*} \]

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

\( ku^3 ri^3 \, ni^{41} \, \tilde{i}^4 \, i^4 \, \eta e^3 ma^2 \, pe^4 tsi^1 \)

\( ku^3 ri^3 \, ni^{41} = \tilde{i}^4 \, i^4 \, \eta e^3 ma^2 \)

2SG.ALP 3.I = COP(I) DET(IV) DNom5(IV)

\( pe^4 tsi^1 \)

basket(IV)

'Is that basket yours?' (ECP: 2017.1.183)
wilkins (1999) scene 18

\[ \eta e^3 ma^2 na^4 \eta pa^4 i^2 ri^1 ku^3 i^3 ni^4 i^4 \]

\[ \eta e^3 ma^2 \quad na^4 \]
DNOM5(IV) DEF.POSS
\[ + \eta pa^4 i^2 \quad ri^1 \quad ku^3 i^3 \]
+ straight.sided.container(IV) TOP 2SG.AL.POSS
\[ ni^4 i = i^4 \]
3.I = COP(1)

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

ma³ri³ ni³¹ʔi³ ku¹dau²ʔi⁴ a¹ ji³¹ma² ñ³¹a¹ne¹ a¹ Galilea

ma³ri³ ni³¹ =ʔi³ ku¹ = dau² =ʔi⁴
PERF 3 = ACC 2SG.A.SC = see(A) = SUB
a¹ ji³¹ma² ñ³¹a¹ne¹ a¹ Galilea
DET(III) Dnom5(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 $na^4a^2$</td>
<td>Best</td>
<td>Degraded</td>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td>1</td>
<td>Ser 1 $na^4a^2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Ser 1 $na^4a^2$</td>
<td>Best</td>
<td>Degraded</td>
<td>Degraded</td>
<td>Unclear</td>
</tr>
<tr>
<td>15</td>
<td>Ser 5 $ne^3ma^2$</td>
<td>Bad</td>
<td>Degraded</td>
<td>Degraded</td>
<td>Best</td>
</tr>
<tr>
<td>18</td>
<td>Ser 5 $ne^3ma^2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Ser 5 $ne^3ma^2$</td>
<td>Bad</td>
<td>Bad</td>
<td>Degraded</td>
<td>Best</td>
</tr>
</tbody>
</table>

'Bad': 7/8 or 8/8 rejected, 'degraded': 4-6/8 rejected
Series 2 and 3: Bad for contingently invisible entities

Why is the judgement 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
  \[ = \text{ã}^4ma^4 \]
Series 2 and 3 meet $=\tilde{\alpha}^4ma^4$

The clitic $=\tilde{\alpha}^4ma^4$ appears on various kinds of constituents besides nominal demonstratives:
- Locative adjuncts and predicates
- Other predicates
- Quantifiers

On nominal demonstratives, $=\tilde{\alpha}^4ma^4$ has two uses:
- Contrast
- Licenses use of Series 1-3 demonstrative with contingently invisible referent
Series $2/3 = \tilde{a}^4ma^4$ good with contingently invisible referent

(3) $ji^2a^4\tilde{a}^4ma^4 / gu^2a^4\tilde{a}^4ma^4 pe^4t\hat{\imath}i^1 ri^1 ku^{31}ri^3 ni^{41}\tilde{r}^4$

$ji^2a^4 = \tilde{a}^4ma^4 / gu^2a^4$
$DNOM2(II) = \tilde{A}^4MA^4 / DNOM2(II)$
$= \tilde{a}^4ma^4 pe^4t\hat{\imath}i^1 ri^1 ku^{31}ri^3$
$= \tilde{A}^4MA^4$ basket(II) TOP 2SG.AL.POSS
$ni^{41} = \tilde{i}^4$
$3(I) = COP(I)$

'That basket, is it yours?'
LWG: 2017.1.172
Perceptual features of Series 1 $\eta a^4 a^2$:

- 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
- $\rightarrow$ Not specialized exclusively to exophoric deixis to individuals

Another difference from Series 2/3: Perceptual features of Series 1 are not solely about vision.
Series 1 is bad for necessarily invisible referents

Series 1 is bad in some necessarily invisible contexts, but not in others.

- Gas example above (1):
  - 4/4 volunteer Series 5 $\eta e^3 ma^2$
  - 2/4 accept Series 1 $\eta a^4 a^2$, but suggest deferred reference
  - 2/4 reject Series 1

- But cf. song example above (2):
  - 3/5 volunteer Series 5 $\eta e^3 ma^2$
  - 2/5 volunteer Series 1 $\eta a^4 a^2$, 2/5 reject, 1/5 accepts

→ However: Conversational examples always have Series 5 (invisible).
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
Wilkins (1999) Scene 1

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

\[ da^{31}a^{1} \ \ t\text{fau}^{1} + pi^{1}ta^{1} \ ri^{1} \ na^{4} = \eta^{1} \]

DNOM1(III) 1SG + tooth(III) TOP 3.A = hurt(A)

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

The referent is just in front of Addr, and visible to Spkr (but not within Spkr’s reach).

"Is _ your book/radio?"

"I like book/radio."

"Do you want to borrow _ book?"

• Does it make a difference if Addr already has attention on object vs. attention being drawn?

• Must Spkr point?

• What if object was more visible?

Referent object is just behind the Spkr. The Addr is at some distance away, but can readily see object (although it is well out of arm’s reach). The Spkr knows where the object is; even if she/he cannot see it. The Spkr never turns to look at the object.

"Is _ your book/radio?"

"I like book/radio."

"Do you want to borrow _ book?"

• Does it make a difference if Addr already has attention on object vs. attention being drawn?

• Must Spkr point?

• Does it make a difference if object has been mentioned before?

• Does it make a difference if Addr already has attention on object vs. attention being drawn?

 spar da²a² pa³ne⁴ra¹ ri¹ʔna⁵ ku³¹ri³ ni⁴¹ʔnì⁴

DNOM1(II) metal.pot(II) ALT 2SG.AL.POSS

ni⁴¹ = ñì⁴

3.1 = COP(I)

'Isthispotyours?' (ECG: 2017.2.45)
Series 1 and contingently invisible referents

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:

(4) I am watching 5 boys fish with hook and line off of a 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, \textit{di}¹ʔka⁴, \textit{da}²a²

\textit{di}¹ʔka⁴ \textit{da}²a²
PRES DNOM1(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. But 4/4 adult speakers agreed: ✔Series 1 \textit{da}²a²
Recall that Series 5 has two uses:

- **Addressee-centered use**
  Not sensitive to perceptual features

- **Invisible use**
  Not sensitive to location in space -- acceptable both for my own teeth and for referents 10 + km away

Is it a coincidence that addressee-centered and invisible overlap? Conversational data suggests not
### Summary: Perceptual features of Series 1-3 and 5

<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 Series 5</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>Ser 1, 2, 3; addressee-centered Series 5</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Ser 1; invisible Series 5 (speaker's body parts)</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>Invisible Series 5</td>
</tr>
</tbody>
</table>

- **Percept meanings exist**
- **Percept meanings are encoded**
- **Conclusions**
- **References**
Section 4

Perceptual meanings are encoded
Status of perceptual meanings

What kind of meaning do the perceptual meanings of demonstratives represent?

- Entailments
- Conversational implicatures
- Other types of content (presuppositions, conventional implicatures)

The stakes: Are the perceptual meanings of demonstratives the same as the meaning of open-class sensory words like *visible*?
Projection

The perceptual meanings of nominal demonstratives are projective.
If a sentence $S$ with a nominal demonstrative is unacceptable for perceptual reasons, then all of the 'family of sentences' related to $S$ are also unacceptable.

- Negation of $S$
- Polar question realization of $S$
- Conditional with $S$ as antecedent
- Possibility modal with $S$ as complement

This means the perceptual meanings are not entailments (entailments don't project) or conversational implicatures (calculated from entailments).
Status of perceptual meanings

Types of projective content (Tonhauser et al. 2013):

- Classical presuppositions -- existence presupposition of pronouns
- 'Informative'/'Strong' presuppositions -- implication of $=ĩ^1ka^5$ 'only' that prejacent is true
- Conventional implicatures -- non-restrictive relative clauses; content of definite descriptions; honorifics

The visibility meanings are most like conventional implicatures on semantic tests. But they are not exactly like them -- i.e. Series 3 is not just English that + English visible
Status of perceptual meanings

Two important differences between perceptual meanings and (other) conventional implicatures.

- Perceptual meanings cannot scope under modals
  - Familiar types of conventional implicatures can
- Perceptual meanings have rigid temporal interpretation
  - Familiar types of conventional implicatures have contextually determined temporal interpretation
(5) Regular conventional implicature: Property implication of definite description (with anaphoric demonstrative) can scope under conditional antecedent

a. ɲa⁴a² nār³¹ ri¹ na⁴do⁴³ʔo⁵tʃi².
   'This wood, it's really soft.'

b. ku¹na³wãĩ³ʔku²ʔgu², ta²ʔu²ta⁴ma³ na⁴me⁴³ i⁴ ηe³ma² mi³ra³pe³wa¹.
   ku¹ = na³ = wãĩ³ʔ -ku² = ?gu²
   2SG.A = 3.OBJ = cut.sawing(A) = SUB -DIR:inward:PlO
   ta²ʔu²ta⁴ma³ na⁴ = me⁴³ i⁴ ηe³ma² mi³ra³pe³wa¹
   NEG + FUT  3.A = good(A) DET(IV) DNOM5(IV) plank(IV)

'If you cut it, the planks will not be useful.' (LWG: 2017.3.180)
Scope relative to modals

(6) Perceptual meaning: 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.

ŋẽ⁴ʔgu²ma³ caja tʃi⁴ wa⁴ʔna¹gu², ri¹ #gu³¹ʔe² / #ji³¹ʔe² pe³ti³ka¹ʔi³ tʃa³dau².

ŋẽ⁴ʔgu²ma³ caja tʃi⁴ Ø = wa⁴ -ʔna¹ = gu², ri¹
CONN Sp:box CNTF 3.SC.RI = open(RI) -DIR:open = SUB TOP
#gu³¹ʔe² / #ji³¹ʔe² pe³ti³ka¹ =ʔi³ tʃa³ = dau²
#Dnom3(I) / #DNOM2(I) marble(I) = ACC 1SG.A = see

Attempted: (If the box were open, I would see those visible marbles.) (LWG: 2017.3.154)
Temporal interpretation

(7) Regular conventional implicature: 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.

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

\[ gu^5 \tilde{n}^4 ma^3 i^4 \underbrace{a^3 \tilde{e}^1 ?ga^3 ki^3} \underbrace{ri^1 nyu^1 ?ma^5 ri^1 du^3 tu^3 ru^1 ni^41 = \text{all(IV)}} \]
\[ \text{DET(IV) chief(IV) TOP now TOP doctor 3.I = } \tilde{n}^4 \]
\[ \text{COP(1)} \]

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

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

(8) Perceptual meaning: 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.

\[ \text{Attempted: (That visible marble is Victoria's.) (DGG: 2017.3.177)} \]

\[ T_{visibility} < UT = TT \]
Conclusions: Deixis and Space

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

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

- Perceptual meanings are projective content.
  - Like presuppositions and conventional implicatures
- But have important differences from other types of projective content: scope relative to modals, temporal interpretation.
  → Deictic meanings are different from non-deictic ones, but not irreconcilably different.
Thank you!

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All errors and omissions are my own.


Isn't it confusing to have just one demonstrative for invisible referents? No, because Ticuna also has other indexical resources:

- Nominal demonstratives with $=\tilde{a}^4ma^4$
- Locative demonstratives
- Indexical locative descriptions ('near me/you')
Invisible/addressee-centered bridging contexts

U says to M: $\overline{ji^{31}?e^{2}ma^{4}}$, $\overline{ti^{31}?t^{3} na^{1}ja^{1}?u^{2}}$

$\overline{ji^{31}?e^{2}ma^{4}}$ $\overline{ti^{31}}$ $= ?t^{3}$
DNOM5(I) 3(I) = ACC
na$^{1}$ = $\overline{ja^{1}?u^{2}}$
IMP.A = get(A)

'There it is
(invisible/near you),
grab it!'
Series $2/3 = \tilde{a}^{4}ma^{4}$ bad with necessarily invisible referent

(9) 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)

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

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

$\#DNOM3(IV) = \tilde{A}^{4}MA^{4} / \check{D}NOM5(IV)$ issue.smell = AREAL.SBJ

$= \tilde{i}^{4}$ gasoline + $e^{1}ma^{3} ni^{41} = \tilde{i}^{4}$

$= NMLZ(IV)$ Sp:gasoline + vapor 3.1 = COP(I)

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

$je^{4}a^{2}\tilde{a}^{4}ma^{4}$ OK only in deferred reference to contingently invisible object.