Exploring nominal reference in the field: Diagnostics plus results from Bulu

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Acknowledgements

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Semantic descriptions from fieldwork

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**Result:** Unclear theoretical significance
Semantic descriptions from fieldwork: Example from Bulu

Background on Bulu

- Bantu
- Cameroon
- 800,000 speakers (Lewis et al., 2013)
- Original fieldwork in Columbus, OH: January 2013-present

An example from Bates (1926: 27) "-te is used with nouns to indicate a thing or person that has just been mentioned, or, at least, that has been in mind. It is often merely equivalent to the or the thing we were speaking of &c."
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An example from Bates (1926: 27) *Handbook of Bulu*

“-te is used with nouns to indicate a thing or person that has just been mentioned, or, at least, that has been in mind. It is often merely equivalent to the or the thing we were speaking of &c.”
Imprecision in Bates’ description

-te optional in a “definite” context:

(1) Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

màŋgájín mòt á ṣàp ânɳòʔé mòtè (tè) àmbò ábòʔò éfùmùlù ěsì 1s.pst.see man LOC farm yesterday man te was wearing white hair ‘I saw a man at the farm yesterday. The man had white hair.’
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1S.PST.see man LOC farm yesterday man TE was wearing white hair
‘I saw a man at the farm yesterday. The man had white hair.’

-te unacceptable in “definite” context:

(2) Context: Abondo is sitting on a bus when a man he does not know sits down beside him. The man says:

viʔâŋ (♯tè) wáfaj dën
sun TE shines today
‘The sun is bright today.’
What are the theoretical implications of Bates’ characterization of the Bulu data for theories of nominal reference?
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Theoretical significance unclear
Gather data based on theoretically founded diagnostics (guidelines for developing elicitation questions; see e.g. the Afranaph project at www.africananaphora.rutgers.edu, Matthewson 2012, Tonhauser et al. 2013, *inter alia*)
Solution to imprecision and unclear theoretical significance

- Gather data based on theoretically founded diagnostics (guidelines for developing elicitation questions; see e.g. the Afranaph project at www.africananaphora.rutgers.edu, Matthewson 2012, Tonhauser et al. 2013, *inter alia*)

- Create precise, predictive characterizations with clear theoretical significance
Overview

1. Introduction

2. Theoretical basis for diagnostics
   - Familiarity
   - Uniqueness

3. Diagnostics for nominal reference
   - Diagnostics for Familiarity
   - Diagnostics for Uniqueness

4. Conclusions
Theoretical basis for diagnostics

The theory supplies a set of dimensions with respect to which cross-linguistic comparisons can be made.
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**Informational theory of definiteness**

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**Informational theory of definiteness**


Use of a definite noun phrase (NP) presupposes

- **Familiarity**: that there is a corresponding discourse referent (DR) in the context.
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**Informational theory of definiteness**


Use of a definite noun phrase (NP) presupposes

- **Familiarity**: that there is a corresponding discourse referent (DR) in the context.
- **Uniqueness**: that this DR is unique among the DRs in the context in bearing the descriptive content of the NP.
Antecedent DR introduced by linguistic material in prior discourse.
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(3) John was walking in the forest. Suddenly, he saw a deer.

**The deer** ran away.
Weak familiarity

- Antecedent DR not introduced by linguistic material in prior discourse.
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- Existence (and uniqueness) of antecedent DR entailed by context.
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Weak familiarity 1: perceptual accessibility

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Weak familiarity 2: global/situational familiarity and uniqueness

(5) Context: The interlocutors live in a village with one mayor. The mayor went to the capital.
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Weak familiarity 2: global/situational familiarity and uniqueness

(5) Context: The interlocutors live in a village with one mayor. The mayor went to the capital.

Weak familiarity 3: contextual existence entailment

(6) John bought a book. The author was Mexican.
**Novelty** (the complement of familiarity): no antecedent DR
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\[(7)\]

\begin{itemize}
  \item a. John was walking in the forest. Suddenly, he saw the deer.
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\end{itemize}
Informational Uniqueness

Semantic uniqueness

(8) Last week, I climbed \{the/*a\} tallest mountain in West Virginia.
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(10) Context: Jill and Sara are birdwatching. Currently, within their field of vision there are a robin and a thrush. They have already noticed and commented on both of them. Jill says:

a. \{The/\#a\} robin is building a nest in that tree.
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Semantic uniqueness entails informational uniqueness, but not the reverse.
Developing diagnostics and applying them to Bulu -te
Following Tonhauser et al. (2013), diagnostics should be
Diagnostics for nominal reference

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- easy to use
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- theoretically founded
- cross-linguistically applicable
- easy to use
- based on implication/entailment judgments, not introspection or commentary (Matthewson, 2004)
Diagnostic 1: Strong familiarity

- Create a context with two discourse participants, A and B, where A has an interest in property $P$. 

  Context: Sara (A) is a photographer who is making a book of pictures of white-haired men. Fred (B) says to Sara:

  Create a discourse with two sentences, uttered by B.

  S1 has an expression that introduces a unique DR with property $Q$, and predicates property $R$ of it.

  S1: *I saw a man at the farm yesterday.*

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Create a context with two discourse participants, A and B, where A has an interest in property $P$.

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  - Create a discourse with two sentences, uttered by B.

    S1 has an expression that introduces a unique DR with property $Q$, and predicates property $R$ of it.

    S1:  màŋájín mòt á fùp âŋgòʔé
         1S.PST.see man LOC farm yesterday
         ‘I saw a man at the farm yesterday.’
S2 contains the target expression with a noun denoting property $Q$ and where property $P$ is predicated of the denotation of the target expression.
Diagnostic 1: Strong familiarity

S2 contains the target expression with a noun denoting property $Q$ and where property $P$ is predicated of the denotation of the target expression.

(1) **Context:** Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

$mànqájín mòt á fùp âŋgòʔé mòtè tè àmbé  ámbə̀ ábèʔò éfùmùlù ésì 1s.pst.see man LOC farm yesterday man TE was wearing white hair

'I saw a man at the farm yesterday. The man had white hair.'
### Properties predicated so far

<table>
<thead>
<tr>
<th>Sentence</th>
<th>DR</th>
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<tbody>
<tr>
<td>S1</td>
<td>$i$</td>
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<tr>
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Empirical question: $i = j$  

Answer: If $R(j)$, then yes.  

I.e. If $j$, the man with white hair, was seen at the farm yesterday, then yes.
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màngájín mòt á fùp âŋgò?é mòtè tè âmbé ábè?è épìmùlù èsì
1s.PST.see man LOC farm yesterday man TE was wearing white hair
‘I saw a man at the farm yesterday. The man had white hair.’

Eliciting the implication/entailment judgment:
Diagnostic 1: Strong familiarity

(1) Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

‘I saw a man at the farm yesterday. The man had white hair.’

Eliciting the implication/entailment judgment:

- Ask the consultant if the discourse is acceptable.
(1)  Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

‘I saw a man at the farm yesterday. The man had white hair.’

Eliciting the implication/entailment judgment:

- Ask the consultant if the discourse is acceptable.
- If yes, ask the consultant whether A has an interest in the individual with property $R$. 

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- Ask the consultant if the discourse is acceptable.
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Researcher: “Does Sara (A) want to take a picture of the man that Fred saw at the farm yesterday?”
Consultant: “Yes.”
Diagnostic 1: Strong familiarity

(1) Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

I saw a man at the farm yesterday. The man had white hair.'

Eliciting the implication/entailment judgment:

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  Researcher: “Does Sara (A) want to take a picture of the man that Fred saw at the farm yesterday?”

  Consultant: “Yes.”

The target expression ($mòtè tè$) has a strongly familiar DR as its antecedent.
Applying Diagnostic 1 (strong familiarity) to NPs with \textit{\textendash}te

Empirical generalizations:

Example context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

"I saw a man at the farm yesterday. The man had white hair."
Applying Diagnostic 1 (strong familiarity) to NPs with $-te$

Empirical generalizations:

- NPs with $-te$ can have strongly familiar DRs as antecedents.

Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

'I saw a man at the farm yesterday. The man had white hair.'
Empirical generalizations:

- NPs with -te can have strongly familiar DRs as antecedents.
- -te is not obligatory for NPs with strongly familiar DRs as antecedents.

(11) **Context:** Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

màŋgájín mòt á fùp âŋgòʔé mòt àmbó ábèʔè éfùmùlù ēsì 1s.PST.see man LOC farm yesterday man was wearing white hair ‘I saw a man at the farm yesterday. The man had white hair.’
Diagnostic 2: Perceptual accessibility

- Create a context with interlocutors A and B and a perceptible individual C with property $P$ in which C has not been mentioned by either interlocutor.

Abondo (B) and Masungmayang (A) are sitting together at an outdoor cafe when suddenly they hear a massive explosion (C) in the construction site across the street. ($P = \text{noise}$)

Create a sentence to be uttered by A with a target expression that mentions C in terms of $P$.

Masungmayang says:

(12) ‘That noise was loud.’
Create a context with interlocutors A and B and a perceptible individual C with property $P$ in which C has not been mentioned by either interlocutor.

*Abondo (B) and Masungmayang (A) are sitting together at an outdoor cafe when suddenly they hear a massive explosion (C) in the construction site across the street.*

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**Masungmayang says:**

(12) $\text{éĎžù tē dźábà Ńgùl}$
  
  noise TE was  strong

  ‘That noise was loud.’
Diagnostic 2: Perceptual accessibility

- If the uttered sentence is judged to be acceptable, then the target expression can have a weakly familiar DR as antecedent.

Context: Abondo (B) and Masungmayang (A) are sitting together at an outdoor cafe when suddenly they hear a massive explosion (C) in the construction site across the street. Masungmayang says: ‘That noise was loud.’
If the uttered sentence is judged to be acceptable, then the target expression can have a weakly familiar DR as antecedent.

If not, then it may be the case that the target expression cannot have a weakly familiar DR as antecedent.
Diagnostic 2: Perceptual accessibility

- If the uttered sentence is judged to be acceptable, then the target expression can have a weakly familiar DR as antecedent.
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(12) Context: Abondo (B) and Masungmayang (A) are sitting together at an outdoor cafe when suddenly they hear a massive explosion (C) in the construction site across the street. Masungmayang says:

é́dʒù te dʒábà ŋùl
noise TE was strong

‘That noise was loud.’
Applying Diagnostic 2 (perceptual accessibility) to NPs with $-te$

- A: researcher
- B: consultant
- C: a ring
- $P$: ring
- target expression: **élòndó te** ‘ring TE’

(13) **Context:** Earlier in the elicitation session, the researcher placed a ring on the table between himself and the consultant without discussing it. Later, he asked if it was possible to utter the target expression in the context of the elicitation session.

$#váʔáma \underline{élòndó te}$

pass/give.me ring  TE

Intended: ‘Pass me the ring.’
Applying Diagnostic 2 (perceptual accessibility) to NPs with $-te$

Empirical generalization:
Empirical generalization:

- NPs with -te can have weakly familiar, perceptually accessible DRs as antecedents if those DRs are also salient.
Identify an entity (A) with property $P$ whose existence and uniqueness are entailed in the larger cultural context. 

$A = \text{the moon}$

Create a context in which $A$ has not been mentioned previously.

Last night there was a particularly beautiful full moon ($A$). This morning, when you go out to the mailbox, you see your neighbor.

Create a sentence with the target expression where the noun denotes property $P$.

You say:

(14) #ŋgònə tɛ ëmbá ábɛŋ, ŋgà
    moon TE was beautiful wasn’t.it

Intended: ‘The moon was beautiful, wasn’t it?’
Diagnostic 3: Weakly familiar due to global/situational familiarity

- Ask the consultant for the acceptability of the uttered sentence
  - If the uttered sentence is judged to be acceptable, then the target expression can have a weakly familiar DR as antecedent.
  - If not, then it may be the case that the target expression cannot have a weakly familiar DR as antecedent.

(14) Context: Last night there was a particularly beautiful full moon (A). This morning, when you go out to the mailbox, you see your neighbor. You say:

#ŋonè tè èmbá ábəŋ, ŋą
moon TE was beautiful wasn’t it

Intended: ‘The **moon** was beautiful, wasn’t it?’
Applying Diagnostic 3: (global/situational familiarity) to NPs with \( -te \)

- \( P: \) moon
- target expression: ŋgonè te ‘moon TE’

(15) Context: Last night you had a stargazing party with your neighbors and there was a particularly beautiful full moon. This morning, when you go out to the mailbox, you see your neighbor. You say:

ŋgonè te èmbá ábàj, ŋgà moon TE was beautiful, wasn’t it

‘The moon was beautiful, wasn’t it?’
Applying Diagnostic 3 (global/situational familiarity) to NPs with $-te$

Empirical generalization:

- NPs with $-te$ can have weakly familiar, globally/situationally familiar DRs as antecedents if those DRs are also salient.
Diagnostic 4: Weakly familiar due to contextual entailment/bridging

- Identify a culturally appropriate entity (A) with property $Q$ whose existence entails the existence of another, relationally unique entity (B) with property $P$.
  
  A: a *tree*
  
  B: its *trunk*

- Create a discourse with two sentences.
  
  - The first sentence introduces A with property $Q$.

(16) **Context: Maliki is telling me about what he does at his house. He cuts down trees, he digs up stumps, he mows the grass, he plants bushes, he rakes leaves, he digs up rocks, etc. I say:**

ãŋgɔ̀%fè màŋáʃík élè
Yesterday 1s.PST.cut.down tree
‘Yesterday, I cut down a *tree.*’
Diagnostic 4: Weakly familiar due to contextual entailment/bridging

Discourse cont.

- The second sentence contains the target expression describing B in terms of property $P$.

(17) Context: Maliki is telling me about what he does at his house. He cuts down trees, he digs up stumps, he mows the grass, he plants bushes, he rakes leaves, he digs up rocks, etc. I say:

Yesterday I cut down a tree. The stump was big.

Ask the consultant to judge the acceptability of the discourse.

- If the discourse is judged to be acceptable, then the target expression can have a weakly familiar DR as antecedent.
- If not, then it may be the case that the target expression cannot have a weakly familiar DR as antecedent.
Diagnostic 4: Weakly familiar due to contextual entailment/bridging

Acceptable without -te

(18)  Context: Maliki is telling me about what he does at his house. He cuts down trees, he digs up stumps, he mows the grass, he plants bushes, he rakes leaves, he digs up rocks, etc. I say:

Yesterday 1s.pst.cut.down tree stump was big
‘Yesterday, I cut down a tree. The stump was big.’
Applying Diagnostic 4: (contextual existence entailment) to NPs with \(-te\)

- \(Q\): tree
- \(P\): stump
- target expression: \(\text{ékùt étè} \) ‘stump TE’

(19) Context: Sara is a photographer and she is making a book of pictures of tree stumps. Fred says to Sara: ‘Yesterday, I cut down a tree.’

\(\text{ékùt étè énà ànán} \)
stump TE is big

‘The \text{stump} \) is big.’
Applying Diagnostic 4 (contextual existence entailment) to NPs with $-te$

Empirical generalization:

- NPs with $-te$ can have weakly familiar, contextually entailed DRs as antecedents if those DRs are also salient.
Diagnostic 5: Novel DRs

- Construct a discourse context with two interlocutors A and B who are strangers to one another.

The woman says:

(20) "I want one too."

Intended: 'A woman bought a banana here. I want one too.'
Diagnostic 5: Novel DRs

- Construct a discourse context with two interlocutors A and B who are strangers to one another.

  Context: Abondo (A) works in a store. A woman (B) he has never seen before enters the store, comes up to the counter.

The woman says:

(20) #\textit{m`ing´ $a$ \textit{woman} t`e \textit{te} $\v a$ \textit{bought} \textit{\`odZ`oi \textit{banana} \textit{\textit{m` af` $a$ \textit{m` aj`i \textit{I.want.one.too}}}}\text{Intended: 'A woman bought a banana here. I want one too.'}

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Construct a discourse context with two interlocutors A and B who are strangers to one another.

Context: Abondo (A) works in a store. A woman (B) he has never seen before enters the store, comes up to the counter.

Create a sentence with the target expression, where the noun in the target expression denotes property $P$. The sentence must be able to be said “out of the blue” by B in the context created.

The woman says:

(20) m`ing´ a woman t` e te ` ak´ @k` us bought ´ odZ`oi banana ´ @v´ a here m´ af` @m` aj`i I.want.one.too

Intended: 'A woman bought a banana here. I want one too.'
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The woman says:

(20) #mìngá tè àkèkùs ódʒòi óvá máʃùmàjì
two woman TE bought banana here I.want.one.too

Intended: ‘A woman bought a banana here. I want one too.’
Ask the consultant to judge the acceptability of A uttering the sentence to B.
Diagnostic 5: Novel DRs

- Ask the consultant to judge the acceptability of A uttering the sentence to B.
  - If the utterance is judged to be acceptable, then the target expression can introduce novel DRs.

Context: Abondo (A) works in a store. A woman (B) he has never seen before enters the store, comes up to the counter. The woman says:

```
# m`ing´ a
woman
t` e
tak´ @k` us
bought
´ odZ`oi
banana
´ @v´ a
here
m´ af` @m` aj`i
I.want.one.too
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Intended: 'A woman bought a banana here. I want one too.'
Diagnostic 5: Novel DRs

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Context: Abondo (A) works in a store. A woman (B) he has never seen before enters the store, comes up to the counter. The woman says:

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Intended: 'A woman bought a banana here. I want one too.'
Diagnostic 5: Novel DRs

• Ask the consultant to judge the acceptability of A uttering the sentence to B.

• If the utterance is judged to be acceptable, then the target expression can introduce novel DRs.

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(21) Context: Abondo (A) works in a store. A woman (B) he has never seen before enters the store, comes up to the counter. The woman says:

#mìngá tè àkákùs ódʒòi óvá máfəmàjì

woman TE bought banana here I.want.one.too

Intended: ‘A woman bought a banana here. I want one too.’
Minimally different example without -\textit{te}

(22) Context: Abondo works in a store. A woman he has never seen before enters the store, comes up to the counter, and says

\textbf{mìngá àkókùs ódžòi óvà máfêmàjì}
woman bought banana here I.want.one too

‘A \textbf{woman} bought a banana here. I want one too.’
Empirical generalization:
Empirical generalization:

- NPs with -te cannot introduce novel DRs.
Create a minimal pair of discourses with two sentences.
Diagnostic 6: Unique DRs

- Create a minimal pair of discourses with two sentences.
  - The first sentence in D1 introduces two DRs with property $P$. 
  - The first sentence in D2 introduces one DR with property $P$. 

Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

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(23) **Context:** Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

mànğájín bòtè bábàj á fùp àŋgòʔé
1s.pst.see men two LOC farm yesterday
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màngájín böta bàbàj á fùp ángò?é
1s.pst.see men two loc farm yesterday
‘I saw two men at the farm yesterday.’

(1′) **Context:** Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

màngájín mòt á fùp ángò?é
1s.pst.see man loc farm yesterday
‘I saw a man at the farm yesterday.’
Diagnostic 6: Unique DRs

- The second sentence contains the target expression with a noun that denotes property $P$.

(24) Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

#màngájín bòtè bóbàj á fùp âŋgòʔé mòtè tè àmbé ábàʔò èfùmùlù 1s.pst.see men two LOC farm yesterday man TE was wearing white èsì hair

Intended: ‘I saw two men at the farm yesterday. The man had white hair.’
The second sentence contains the target expression with a noun that denotes property $P$.

(24) Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

$màŋgájín bòtə bəbəjá á fùp âŋgòʔé mòtə tè âmbé ábèʔè ēfùmûlù 1s.pst.see men two LOC farm yesterday man TE was wearing white èsì hair

Intended: ‘I saw two men at the farm yesterday. The man had white hair.’

(1) Context: Sara is a photographer and she likes to take pictures of white-haired men. Fred says:

$màŋgájín mòt á fùp âŋgòʔé mòtə tè âmbé ábèʔè ēfùmûlù èsì 1s.pst.see man LOC farm yesterday man TE was wearing white hair

‘I saw a man at the farm yesterday. The man had white hair.’
Ask the consultant if the discourses are acceptable: If D1 is judged to be unacceptable and D2 is judged to be acceptable, then the target expression has a unique DR as antecedent.
The use of -te requires a familiar antecedent.
Towards precise empirical generalizations

- The use of *-te* requires a familiar antecedent.
- The use of *-te* requires a unique antecedent.
Towards precise empirical generalizations

- The use of -te requires a familiar antecedent.
- The use of -te requires a unique antecedent.
- The use of -te includes an additional salience requirement.
Towards precise empirical generalizations

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- The use of -te requires a unique antecedent.
- The use of -te includes an additional salience requirement.

These generalizations are testable and predictive.
NPs with -te are definite in the sense of Roberts (2003), but with additional pragmatic constraints related to the salience of their antecedents (c.f. Roberts (2005) on pronouns).
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Future work includes

- characterizing the salience requirement precisely and
Theoretical significance

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- Future work includes
  - characterizing the salience requirement precisely and
  - determining its typological and theoretical significance.
Conclusions

Using theoretically grounded nominal reference diagnostics makes it possible to

[Add additional content related to the conclusions if available.]
Using theoretically grounded nominal reference diagnostics makes it possible to

- precisely determine conditions relevant for the use of -te.
Conclusions

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- precisely determine conditions relevant for the use of -te.
- situate the meaning of -te within a well-defined theory of nominal reference
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- precisely determine conditions relevant for the use of \(-te\).
- situate the meaning of \(-te\) within a well-defined theory of nominal reference
- determine how to further investigate the meaning of \(-te\) to understand its implications of the meaning of \(-te\) for theories of definiteness and nominal reference (future work)
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Using theoretically grounded nominal reference diagnostics makes it possible to

- precisely determine conditions relevant for the use of -te.
- situate the meaning of -te within a well-defined theory of nominal reference
- determine how to further investigate the meaning of -te to understand its implications of the meaning of -te for theories of definiteness and nominal reference (future work)
- replicate the process for nominal forms in other languages (future work - hopefully not just ours)


