Wao Terero lexical suffixes: Realization at the lexical semantic-discourse interface

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Wao Terero is a linguistic isolate spoken in the Amazonian region of Ecuador. The language has a lexical suffix system (Sapir, 1911). Suffixes are associated with collections of polysemous meanings, which do not always have an underspecified core. The suffixes behave like classifiers in some constructions. In discourse, intrinsic polysemous meanings interact with varied extrinsic, discourse roles. Using a proof theoretic framework, I model this system of complex multistratal realization in a manner compatible with Word and Paradigm (WP) morphology (Robins, 1959). Data is from ongoing fieldwork.

Lexical Meanings

Plant terms demonstrate semi-productive lexical suffix uses with nouns.

	chonta	**manioc**	**arazá**
type	*tree*	*plant*	*fruit*
plant (we)	tewe	kewe	mingikawe
leaf (yabo)	teweñabo	keweñabo	mingikayabo
fruit (mo/ka)	tewemo		mingika
starch (ne?)		kene	

Nominal usage is not always compositional. The stems below have no independent meaning.

wadepo	onompo	wipo
future, year	hand, fingers	canoe, boat

Independent nominal occurrences of *po* may seem unrelated until polysemy in other constructions is considered.

	time	**hand**	**boat**
nantapobopa		'my hand hurts'	
ñenepo		big.CLF	big.CLF
manipone	in.this.CLF	in.this.CLF	in.this.CLF

Constructions may exhibit a subset of meanings.

Discourse Meanings

Proffered

An "out of the blue" negation blocks a coreference reading in (1).

(1)# *epẽ-de okã-wẽ$_i$ de ãpa. okã-wẽ$_i$*
river-LOC short-CLF exist.NEG short-CLF
okõ-de ĩpa.
house-LOC COP
'There are no short (log) in the river. Short (log) are at the house.'

Non-proffered

When a referent is clearly entailed by the context, the descriptive adjectival content is non-proffered.

(2) *wĩĩ giita-bõ dipebẽ ino ĩ-damãĩ*
NEG small-CLF left side COP-NEG
ĩpa. giita-bõ tobẽ ĩdo ĩpa
COP small-CLF right side COP
'The small (fruit) isn't on the left. The small (fruit) is on the right.'

Mixed case

In (3b), *obatawẽ-po* is bad if it is considered to co-refer to the boat seen by (A). A followup using picture aids determines whether what (A) saw can be what (B)'s father owns.

(3) **Context** A man (A) walks up from the river and tells another man (B) that he saw a boat. (B) asks if it is red.

a. *A: obatawẽ-po ĩ-dãbãĩ ĩpa*
red-CLF COP-NEG COP
'It wasn't red (boat)'

b. *B: (# obatawẽ-po) boto bẽpo ki ĩpa*
red-CLF 1 father POSS COP
'(# Red (boat))/it is my father's.'

Lexical Proof Morphology (LP)

LP interfaces with Linear Categorial Grammar (Mihaliček and Pollard, 2012).

Form-Paradigm **Sign-Paradigm**

⟨base, ñene, ÑENE⟩
⟨po, ñenepo, ÑENE⟩

s_1 ⟨ñene, N, EXISTS B⟩
s_2 ⟨ñene, N, ιB⟩
s_1 ⟨ñenepo, N, EXISTS C-AND-B⟩
s_2 ⟨ñenepo, N, ι(C-AND-B)⟩
s_3 ⟨ñenepo, N, B(ιC)⟩
s_1 ⟨$\lambda\phi$.ñenepo · ϕ, N, EXISTS ...⟩
s_2 ⟨ñenepo, N, ι(H-AND-B)⟩
...

LP is a multi-tiered paradigm theory. Rules, labeled s_n allow for realizational proofs between tiers, represented by lines.

Form-Paradigm

- phonologically contrastive
- **mcat**, similar to Sadler and Spencer (2001) m-features
- **mform**, a string

Sign-Paradigm

- lexical entries in Linear Categorial Grammar (LCG)
- **pheno** ≈ HPSG PHON
- **tecto** ≈ HPSG SYN

mcat	**mform**	**lexeme**	**pheno**	**tecto**	**semantics**
base	ñene	ÑENE	$\lambda\phi$.ñene · ϕ	N ⊸ N	$\lambda x.big\ x$

Mapping

Inflectional realization is a mapping between paradigms. Natural deduction-style rules specify valid mappings.

$$\frac{\langle \text{mc, mf, lx}\rangle \quad \text{mc} \leq \kappa \quad \text{meaning(mc,lx,s)}}{\left\langle \lambda t(\lambda\phi.\text{t} \cdot \phi)\text{mf}, \text{N} \multimap \text{N}, \lambda P_{(e\to t)\to(e\to t)}.(\lambda x.Px)s \right\rangle} \quad \text{(I)}$$

- A form-entry must be provided.
- Application is constrained by an **order on mcats**.
- *meaning*, a relation between mcats, lexemes and semantic terms s.
- Rule application will fail if s does not have the type $(e \to p) \to (e \to p)$.

$$\frac{\langle \text{base, ñene, ÑENE}\rangle \quad \text{base} \leq \kappa \quad \text{meaning(base, ÑENE, big)}}{\langle \lambda\phi.\text{ñene} \cdot \phi, \text{N} \multimap \text{N}, \lambda x.\text{big}\ x\rangle}$$

Representing Meaning

LP interfaces with the dynamic semantic theory DyCG (Martin and Pollard, 2012)

Representations for ÑENEPO, 'big (canoe'

proffered	**non-proffered**	**mixed**
EXISTS CANOE-AND-BIG	ι(CANOE-AND-BIG)	BIG(ι(CANOE))

$\vdash$ BIG = (dyn$_1$ big) = $\lambda nkc.$(big $[n]$) and $(k(c + \text{big}\ [n]))$

The *dyn$_i$* function **lifts static semantic terms into dynamic semantics**. The i is for the number of entity arguments required. n is a discourse referent. c is the context and k is something composed with BIG.

$\vdash$ EXISTS B = $\lambda kc.$exists $\lambda x.$(b x) and$(k(\text{append}(c, x) + \text{b}\ x))$

EXISTS **adds a discourse referent** to the context.

$$\vdash \iota(\text{BIG}) = \text{def}(c, \text{BIG})$$

ι **retrieves an antecedent**.

The *meaning* Relation

The *meaning* relation is inductively defined, with numerous clauses. These clauses may be represented as natural deduction rules.

$$\frac{\text{mc} \leq_{\text{class}} \text{Rel(lx,ls,mc,ms,R)}}{\text{meaning(mcat,lexeme,R(ls,ms))}} \quad \text{(II)}$$

Rel is similar to the treatment of compounds in construction morphology (Booij, 2010). It is defined in cases where some triple of a lexeme meaning, a category meaning and a relation between them holds.

$\vdash$ Rel(ÑENE, big, po, canoe-ish, $\lambda xy.x$ and y) (IIIa)
$\vdash$ Rel(ÑENE, big, po, hand-ish, $\lambda xy.x$ and y) (IIIb)
$\vdash$ Rel(ÑENE, big, po, canoe-ish, $\lambda xy.\langle x, y\rangle$) (IIIc)

Given these meanings, we can define s_1 (**proffered**).

$$\frac{\text{mc} \leq \text{class}\ \ \text{meaning(mc,lx,s)}}{\langle \text{mf, N}, \lambda P_{e\to t}.(\text{EXISTS dyn}_1\ P)s\rangle} \quad \text{(IV)}$$

Rule s_3 (**mixed**) is slightly more complex.

$$\frac{\text{mc} \leq \text{class}\ \ \text{meaning(mc,lx,s)}}{\left\langle \text{mf, N}, \lambda P_{(e\to t)\times(e\to t)}.(\text{mix}\ P)s\right\rangle} \quad \text{(V)}$$

$\vdash$ mix $=_{\text{def}} \lambda x.(\text{dyn}_1\ \pi_1 x)\iota(\text{dyn}_1\ \pi_2 x)$ (VI)