

# Lexical affixes in Wao Terero depend on context for properties associated with the lexical-grammatical dichotomy

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# What do Wao Terero lexical suffixes contribute to the notion of lexical versus grammatical linguistic content?

The lexical-grammatical dichotomy has proven difficult to measure in a consistent manner across languages, or even within any single language.

There is also major disagreement among linguists concerning what should be considered lexical or grammatical.

# Are there diagnostics that unambiguously measure the grammatical-lexical contrast?

I explore a measure of grammaticality that relies on relative discourse status.

Boye and Harder (2012) and Boye (2023) propose that categorically grammatical items have conventionally secondary discourse status, while lexical items are capable of having primary status.

# I extend the diagnostics of Boye and Harder for measurements of fine-grained morphological meanings.

I utilize the negation diagnostic borrowed from the literature on *proffered content* to measure the discourse primary status of meanings.

Proffered content is what is asserted in an assertion, and is the non-presupposed content of questions and commands (Roberts, 2012).

I demonstrate that based on that measure, the discourse status of Wao Terero lexical suffixes is not item specific but context specific.

In realizational terms, the same morph may be licensed in either a lexical or grammatical context.

This means that morphemes are not categorically either lexical or grammatical.

There are theories that emphasize a dichotomy, such as Distributed Morphology (Bobaljik, 2017), where some morphological forms are grammatically licensed, while others are strictly associated with lexical  $\sqrt{\text{roots}}$ .

This does not predict the distribution of Wao Terero lexical suffixes in all their uses.

Data is drawn from my fieldwork with Wao Terero speakers.

Wao Terero is a linguistic isolate spoken in the Ecuadorian Amazon.



Some fieldwork consultants in my office in Puyo, Ecuador.

# I begin with an overview of data.

My goals are the following:

- The examples allow for an understanding of the data used in later diagnostics.
- Lexical suffixes and their uses are shown to be correctly classified in my description.
- Additional argumentation relevant to grammatical status provides convergent data points that lend strength to the validity of the discourse-based diagnostics.



# I use a number of non-standard glossing conventions.

These are largely to focus attention on aspects of examples that are key to arguments made in this work.

- (PLANT): Bound stems with little or no independent meaning have labeled glosses placed in parentheses. The label does not represent a meaning. They are de-emphasized in size and color.
- LS.PLANT: For lexical suffixes generally. They are annotated with a label, which is de-emphasized and does not, necessarily, correspond to a semantic interpretation.
- CLF.PLANT: For classifier uses of lexical suffixes.

# Lexical suffixes have a wide distribution.

The suffixes occur on most parts of speech, including:

- nouns,
- verbs,
- adjectives,
- demonstratives,
- numerals,
- quantifiers,
- and question words.

I leverage this diversity to make a comparison of their lexical versus grammatical uses across categories.

# Lexical suffixes in Wao Terero are a closed class.

Documentation is ongoing. The longest list of affixes includes 80 (Fiddler, 2011)<sup>1</sup>. I find at least 33 of these to be questionable for various reasons. Whatever the precise size of the class, there is no productive means of adding to it.

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<sup>1</sup>The list is taken from an unpublished manuscript by Catherine Peeke.

On nominals, lexical suffixes are associated with nominal meanings that are sometimes compound-like.

- (1) a. *kẽ-wẽ*  
(MANIOC)-LS.PLANT  
‘manioc plant/stalk/stem’
- b. *kẽ-dẽ*  
(MANIOC)-LS.FOOD  
‘manioc tuber’
- c. *kẽ-wẽ-yabo*  
(MANIOC)-LS.PLANT-LS.LEAF  
‘manioc leaf’

Described by Peeke (1968) as *classifiers*, nominal uses demonstrate a distribution consistent with lexical suffixes in other languages (Haeberlin, 1974).

For nominals, lexical suffixes are not in competition.

(2) *kẽ-wẽ-yabo*

(MANIOC)-LS.PLANT-LS.LEAF

‘manioc leaf’

This might imply they are more like common nouns in compounds, which do not compete and are considered lexical.

Some nominal stems are bound and contribute little to meanings.

These will prove key in demonstrating certain aspects of the lexical-grammatical status of the suffixes.

There are two types of interest.

First, there are stems that occurs with only a particular affix, limiting the affix meaning.

- (3) *di-ka*  
(STONE)-LS.FRUIT  
'stone'

The *-ka* affix is associated with multiple meanings. With *di-* it may only be interpreted as 'stone'.

Second, there are stems that occur with a number of affixes, limiting the affix meaning.

(4) a. *õdõ-boka*

(BODY)-LS.EAR

‘ear’

b. *õdõ-po*

(BODY)-LS.HAND

‘hand’

c. *õdõ-yabe*

(BODY)-LS.BACK

‘back (of body)’

The *-po* suffix, in particular, has a range of uses, including ‘hand’, ‘forelimb’, ‘canoe’, and ‘grape-like cluster’.



On other parts of speech lexical suffixes often have a classifier function.

- (5) a. *a-wẽ*                      *pa-wẽ-ta-bo-pa*  
(PLANT)-LS.PLANT   cut-CLF.PLANT-PST-1-DECL

‘I was cutting trees.’

- b. *bãdĩ-ka*              *di-ka*                      *a-bo-pa*  
DEM-CLF.FRUIT (STONE)-LS.FRUIT   see-1-DECL

‘I see this stone.’

As evidence of classifier status, one sees characteristic “doubling”, where the affix constrains felicitous arguments of the host but does not *saturate* the argument (Mithun, 1986; Rosen, 1998).

# The classifier function is unlike grammatical agreement.



- (6) a. *bãdĩ-pa*                      *dĩ-ka*                      *a-bo-pa*  
DEM-CLF.BOARD (STONE)-LS.FRUIT see-1-DECL

‘I see this stone. (when the stone is flat)’

- b. *bãdĩ* *dĩ-ka*                      *a-bo-pa*  
DEM (STONE)-LS.FRUIT see-1-DECL

‘I see this stone.’

Unlike grammatical agreement, classifier use shows *semantic* concord, and is not obligatory.

# Classifiers exhibit abstract meanings not found in nominal settings.

- ka head-related, fruit, stone, *round*
- pa wooden, board, projectile, *flat*
- we pole, plant, branch, tree, *long and cylindrical*

(7) a. #/\**kẽ-dẽ-ka*  
(MANIOC)-LS.FOOD-LS.FRUIT

‘round manioc tuber’

b. *bãdĩ-ka*                      *kẽ-dẽ*  
DEM-CLF.FRUIT (MANIOC)-LS.FOOD

‘this (round) manioc tuber’

On verbs, adjectives, and demonstratives, lexical suffixes are always in competition.

- (8) a. *yědẽ-po*                      *õdõ-po-gõ*                      *a-bo-pa*  
big-CLF.HAND (BODY)-LS.HAND-LS.THORN see-1-DECL  
‘I see a big finger.’
- b. \**yědẽ-po-gõ*                      *õdõ-po-gõ*                      *a-bo-pa*  
big-CLF.HAND-CLF.THORN (BODY)-LS.HAND-LS.THORN see-1-DECL  
‘I see a big finger.’

Competition, even when the semantics might motivate the occurrence of multiple items, is a grammatical characteristic.

In adjectives, demonstratives and other parts of speech, person marking and lexical suffixes are in competition.

- (9) a. *yědẽ-gade*                      *ĩ-dã-pa*  
big-CLF.STOMACH COP-3.F-DECL  
‘She is fat.’
- b. *yědẽ-dã* *ĩ-dã-pa*  
big-3.F COP-3.F-DECL  
‘She is fat.’
- c. \**yědẽ-gade-dã*                      *ĩ-dã-pa*  
big-CLF.STOMACH-3.F COP-3.F-DECL  
‘She is fat.’

# How do we measure the grammatical versus lexical status of the suffixes?

The following discussion of diagnostics has three goals.

- The definitions and diagnostics provided by Boye and Harder (2012) are presented.
- Issues with the original diagnostics are discussed.
- The negation diagnostic for proffered content is described.

The Boye and Harder provide the following definitions of lexical and grammatical meaning.

- LEXICAL MEANING: Lexical meaning is by convention capable of being discursively primary.
- GRAMMATICAL MEANING: Grammatical meaning is by convention discursively secondary.

There are two proposed symptoms of secondary status.

- NONFOCALIZABILITY AS SYMPTOM OF GRAMMATICAL STATUS: Grammatical expressions cannot be assigned discursively primary status by focalizing expressions. (Boye and Harder, 2012, p. 14)
- NONADDRESSABILITY AS SYMPTOM OF GRAMMATICAL STATUS: Grammatical expressions cannot be assigned discursively primary status by being addressed in subsequent discourse. (Boye and Harder, 2012, p. 15)



The issue with the tests for these symptoms is that they also serve as word-hood and constituency tests.

Nonaddressability is one half of the notion of an *anaphoric island*, and exists in various definitions of lexical integrity (Simpson, 1991).

“[S]uch an entity is a sentence part which cannot contain an anaphoric element whose antecedent lies outside the part in question and *which cannot contain the antecedent structure for anaphoric elements lying outside.*” (Postal, 1969, p. 205)

The domain of the word is argued to have this characteristic.<sup>2</sup>

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<sup>2</sup>See Harris (2006) for arguments for non-English counter examples.

# Nonfocalizability diagnostics are also biased toward whole word forms.

The proposed diagnostics focus on English, such as cleft constructions, and occurrence within the scope of particles such as *only*, *just*, or *even*. These are only appropriate for items that are not bound.

There is a narrow focus test but using this to focus sub-word components is considered meta-linguistic.

As a measure of discourse primary status, negation diagnostics behave similarly to the Boye and Harder diagnostics for many items.

(10) It is not the case that Fluffy, a cat, saw birds.

A common noun may be discourse secondary in some contexts, where it is not canceled under negation.

(11) It is not the case that a cat saw dogs.

But a common noun is *capable* of being primary, and may be canceled. This indicates that its meaning is lexical.

Tense, number, gender, etc. cannot be canceled in this way. This indicates that they are conventionally secondary, and therefore grammatical.

The negation diagnostic differs in its ability to target fine grained meanings.

Boye and Harder (2012) consider pronouns to be lexical due to focalizability.

- (12) a. A: Is that him?  
b. B: No, it isn't him. He is at home.

Placing *him* within the scope of negation does not cancel gender, number, the familiarity of the referent, nor the target of the referent. Therefore, these meanings of the pronoun, are non-proffered.

This does not contract Boye and Harder's claim.

The diagnostic adds nuance. A pronoun is a mixture of lexical and grammatical meanings.

“The proffered content of a pronoun is just a variable whose semantic value in a particular context is always given in the same way, via a contextually specified function assigning values to variables.” (Roberts, 2004, p. 504)

# It is now time to test Wao Terero constructions.

There are three parts to this.

- The grammatical status of classifiers will be demonstrated.
- It will be established that sometimes lexical suffix meanings may be proffered.
- An argument is made as to why this is different than common nouns in English.

To test whether classifiers are proffered content, I utilize a "true, false, nonsense" paradigm.

- (13) **context:** Given the image, are the following statements true, false or nonsense?



- a. T *gĩtã-ka*                      *eibe*    *ĩ-pa*  
small-CLF.FRUIT    above    COP-DECL

‘The small one is above.’

- b. F *yědẽ-ka*                      *eibe*    *ĩ-pa*  
big-CLF.FRUIT    above    COP-DECL

‘The big one is above.’

# Improper classifier use results in infelicity.

- (14) **context:** Given the image, are the following statements true, false or nonsense?



- a. # *gĩtã-wě*                      *eibe*    *ĩ-pa*  
small-CLF.PLANT above COP-DECL

‘The small one is above.’

- b. # *yědě-wě*                      *eibe*    *ĩ-pa*  
big-CLF.PLANT above COP-DECL

‘The big one is above.’



# Negation does not cancel classifier meanings.



(15)

- a. F *gĩtã-ka*                      *eibe*    *ĩ-dãbai*    *ĩ-pa*  
small-CLF.FRUIT    above    COP-NEG    COP-DECL

‘The small one is not above.’

- b. T *yẽdẽ-ka*                      *eibe*    *ĩ-dãbai*    *ĩ-pa*  
big-CLF.FRUIT    above    COP-NEG    COP-DECL

‘The big one is not above.’

Reference is felicitous and is not canceled despite being under the scope of negation.

Classifiers meanings appear to be grammatical.

I have yet to discover any means of directly negating a classifier.

# Are nominal uses also grammatical?

Compound-like constructions are difficult. *Strawberry* is not really related to ‘straw’, and is only a type of *berry*.

Demonstrating that these can be negated independently is not informative for the idiomatic compound.

# Negation can be tested with "meaningless" stems.

I do not perform in depth diagnostics on these because the result is fairly obvious.

- (16) a. *di-ka*                      *a-dābai* *ĩ-bo-pa*  
(STONE)-LS.FRUIT see-NEG COP-1-DECL

‘I don’t see a stone.’

A meaning of *-ka* is ‘stone’. The stem *di-* does not add anything but a restriction on possible meanings in *di-ka*. One of the meanings of *-ka* was primary in this construction.

Body-parts meanings can generally become primary with *õdõ*.

- (17) a. *õdõ-po*                      *a-dãbai* *ĩ-bo-pa*  
(BODY)-LS.HAND see-NEG COP-1-DECL  
'I don't see a hand.'

# Does this mean that classifiers are lexical, despite their grammatical behavior?

According to Boye and Harder (2012), lexical meanings are *capable* of being discourse primary.

There is no uniform grammatical convention for changing discourse status that applies to the class as a whole.

- There are only some meaningless stems, like *di-*. Not all suffixes have such a stem available to “promote them”.
- Only some meanings are represented in these contexts, such as body-part meanings with *ōdō-*.
- Some meanings appear to be only available with classifier uses, such as the ‘round’ meaning of *-ka*.

This is different than nouns in English.

- (18) a. The cats/communications/charges accomplished the goal.
- b. I saw cats/communications/charges.

Uniformly across the category of common nouns, the same patterns in relative discourse status occurs in the same grammatical environments, without any restriction on an item's nominal polysemy.

# Labeling the affixes as inherently grammatical or lexical has issues.

There are two points to support this.

- A mixed labeling within the class is redundant.
- Labeling the items within the class, uniformly, results in meaning gaps between context types.



It would be extremely redundant for some suffix meanings to have a homophonous lexical duplicate.

Proposing a lexical ‘rock’ *-ka* when there is a classifier *-ka*, which also has a ‘rock’-related meaning is redundant. Each such lexical morpheme would share a meaning and a form with a grammatical duplicate.

Proposing that all suffixes are lexical and may be converted or embedded in classifier structures does not account for all classifier meanings.

Not all lexical suffix meanings occur with nominals. Fewer of these are demonstrably capable of being discourse primary.

Lexical Meanings		Converted to Grammatical
√ka ‘stone’	→	[ <sub>CLF</sub> √ka] ‘stone’
√ka ‘fruit’	→	[ <sub>CLF</sub> √ka] ‘fruit’
√ka X	?	[ <sub>CLF</sub> √ka] ‘round’

Where does the ‘round’ meaning come from?

Proposing the opposite conversion direction would predict that the meaning *round* occurs in lexical uses.

Categorizing affixes as inherently grammatical or lexical does not predict the behavior of Wao Terero lexical suffixes.

This is not to say that a theory like DM, which requires such a categorization, does not allow for analyses of Wao Terero data. Popular theories tend to be very flexible and capable of handling diverse phenomena.

The point is that such an analysis would not fall out of a theory's morpheme categorization strategy. A potential analysis might be possible *despite* the strategy.

I propose an alternative explanation to the Wao Terero data.

A simple explanation for such a mixed distribution is that lexical and grammatical meanings are in the licensing context, and are not rigid properties of the affixes themselves. This may help explain phenomena in other languages where the behavior of some items is ambiguous.

The proposal is consistent with realizational principles.

The realizational claim is that morphs, the phonological content of a morpheme, are not rigidly paired with meanings. Instead, they are licensed according to information that is available in a grammatical-semantic context.

The notion that morphs are blind to the lexical-grammatical dichotomy is a conservative extension of existing ideas.

The extension of realization analyses to lexical meanings has already been argued for elsewhere (Harley, 2014). It is only one step further to propose that some morphs may then be licensed in either a lexical or grammatical context.

# How would such a system work formally?

This is a topic of my dissertation. Unfortunately, it involves a lot of details that I couldn't fit into a 20 minute talk.

# A final note on lexical and grammatical as categories.

Measuring discourse primary versus discourse secondary status can be performed in an unambiguous fashion.

It may be the case that some are unconvinced of the validity of the measure in relation to grammaticality.



Without a rigid measure we are back to square one.

If there is no consensus, perhaps it is not possible to clearly differentiate the categories.

In that case it makes still less sense to label morphemes as inherently either lexical or grammatical.






# Thank you!

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