Copy affixes in Kiranti

Eva Zimmermann
University of Leipzig

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Replicative processes in grammar

UNIVERSITÄT LEIPZIG

(1) *Athpare (Ebert, 1997)*

    a.   lems–u–ŋ–e
             beat–3.P–1.A–Pst
             'I beat it'

    b.   lems–u–ŋ–tsi–ŋ–e
             beat–3.P–1.A–Ns–1.A–Pst
             'I beat them'

(2) *Washo (Winter, 1970; Yu, 2008)*

Base		Plural
suku?	'dog'	su**kuku**?
bɨk'ɨ	'grandmother's sister'	bɨ**k'ɨk'**ɨ
bokoŋ	'snore'	bo**koko**ŋ

➙ morpho-syntactic features realized by copying a prosodically defined portion of base segments

(3) *Hocank (Miner, 1993)*

Underlying	Surface	
ʃ–wapox	ʃ**awa**pox	'you stab'
ʃ–ruxuk	ʃ**uru**xuk	'you earn'
hipres	hip**ere**s	'know'

➙ a phonologically marked structure is avoided via doubling of a segment

Plan

1. Case Studies
1.1 Nasal Copying
1.2 Syllable Copying
1.3 Summary: Copying in Kiranti

2. Theoretical account

3. Conclusion

Case Studies

Criteria: the nature of the copying process

- trigger:
  - general phonotactic repair?
  - realization of morpho-syntactic features?

- size of the copied portion:
  - phonologically defined?
  - morphological unit (=only an affix)?

Kiranti languages (Tibeto-Burman, Eastern Nepal)

- verbal agreement:
    - person (1 (inclusive/exclusive), 2, 3)
    - number (Sg, Pl, Dual)
    - 'case': A (=subject of transitive verb), P (=object of transitive verb), and S (single argument of an intrans. verb)
- order of agreement suffixes:
  P(atient) $\gg$ A(gent) $\gg$ N(umber) $\gg$ P(er)s(on)*

*And 'reordering' of /ci/ in dual-3 contexts (=agent must be marked prominent, cf. Zimmermann (2015)).

Bantawa: Non-past positive paradigms (Doornenbal, 2009)
(underlying forms)

	1s	1de	1pe	1di	1pi	2s	2d	2p	3s	3d	3p
1s						kʰat-na	kʰat-na-ci	kʰat-na-nin	kʰat-u-ŋ	kʰat-u-ŋ-ci	kʰat-u-ŋ-ci
1de						kʰat-ni	kʰat-ni	kʰat-ni	kʰat-ci-u-ka	kʰat-ci-u-ci-ka	kʰat-ci-u-ci-ka
1pe						kʰat-ni	kʰat-ni	kʰat-ni	kʰat-u-m-ka	kʰat-u-m-ci-ka	kʰat-u-m-ci-ka
1di									kʰat-ci-u	kʰat-ci-u-ci	kʰat-ci-u-ci
1pi									kʰat-u-m	kʰat-u-m-ci	kʰat-u-m-ci
2s	ti-kʰat-ŋa	ti-kʰat-ni	ti-kʰat-ni						ti-kʰat-u	ti-kʰat-u-ci	ti-kʰat-u-ci
2d	ti-kʰat-ŋa-ci	ti-kʰat-ni	ti-kʰat-ni						ti-kʰat-ci-u	ti-kʰat-ci-u-ci	ti-kʰat-ci-u-ci
2p	ti-kʰat-ŋa-nin	ti-kʰat-ni	ti-kʰat-ni						ti-kʰat-u-m	ti-kʰat-u-m-ci	ti-kʰat-u-m-ci
3s	i-kʰat-ŋa	ni-kʰat-a-ci-ka	ni-kʰat-in-ka	ni-kʰat-ci	mi-kʰat	ni-kʰat	ni-kʰat-ci	ni-kʰat-in	kʰat-u	kʰat-u-ci	kʰat-u-ci
3d	i-kʰat-ŋa-ci	ni-kʰat-a-ci-ka	ni-kʰat-in-ka	ni-kʰat-ci	mi-kʰat	ni-kʰat	ni-kʰat-ci	ni-kʰat-in	i-kʰat-ci-u	i-kʰat-ci-u-ci	i-kʰat-ci-u-ci
3p	ni-kʰat-ŋa	ni-kʰat-a-ci-ka	ni-kʰat-in-ka	ni-kʰat-ci	mi-kʰat	ni-kʰat	ni-kʰat-ci	ni-kʰat-in	i-kʰat	mi-kʰat-u-ci	mi-kʰat-u-ci

1s	kon-ŋa
1de	kon-ci-ka
1pe	kon-in-ka
1di	kon-ci
1pi	kon-in
2s	ti-kon
2d	ti-kon-ci
2p	ti-kon-in
3s	kon
3d	kon-ci
3p	mi-kon

(4) *Some relevant affixes*

$$-u \quad \leftrightarrow \quad [+3,P]$$
$$-ka \quad \leftrightarrow \quad [+1,-2]$$
$$-ŋ \quad \leftrightarrow \quad [+1,+sg]$$
$$-m \quad \leftrightarrow \quad [-3,+pl,A]$$
$$-ci \quad \leftrightarrow \quad [-sg]$$

(Affixes not fully specified; theoretical account
where more specific markers block
less specific ones (e.g. Halle and Marantz, 1993; Harley and Noyer, 1999))

Bantawa: Non-past positive paradigms (Doornenbal, 2009)
(underlying forms)

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–ka	↔	[+1,–2]
–ŋ	↔	[+1,+sg]
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–ci	↔	[–sg]

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(underlying forms)

	1s	1de	1pe	1di	1pi	2s	2d	2p	3s	3d	3p
1s						kʰat-na	kʰat-na-ci	kʰat-na-nin	kʰat-u-■	kʰat-u-■-ci	kʰat-u-■-ci
1de						kʰat-ni	kʰat-ni	kʰat-ni	kʰat-ci-u-ka	kʰat-ci-u-ci-ka	kʰat-ci-u-ci-ka
1pe						kʰat-ni	kʰat-ni	kʰat-ni	kʰat-u-■-ka	kʰat-u-■-ci-ka	kʰat-u-■-ci-ka
1di									kʰat-ci-u	kʰat-ci-u-ci	kʰat-ci-u-ci
1pi									kʰat-u-■	kʰat-u-■-ci	kʰat-u-■-ci
2s	ti–kʰat-ŋa	ti–kʰat-ni	ti–kʰat-ni						ti–kʰat-u	ti–kʰat-u-ci	ti–kʰat-u-ci
2d	ti–kʰat-ŋa-ci	ti–kʰat-ni	ti–kʰat-ni						ti–kʰat-ci-u	ti–kʰat-ci-u-ci	ti–kʰat-ci-u-ci
2p	ti–kʰat-ŋa-nin	ti–kʰat-ni	ti–kʰat-ni						ti–kʰat-u-■	ti–kʰat-u-■-ci	ti–kʰat-u-■-ci
3s	i–kʰat-ŋa	ni–kʰat-a-ci-ka	ni–kʰat-in-ka	ni–kʰat-ci	mi–kʰat	ni–kʰat	ni–kʰat-ci	ni–kʰat-in	kʰat-u	kʰat-u-ci	kʰat-u-ci
3d	i–kʰat-ŋa-ci	ni–kʰat-a-ci-ka	ni–kʰat-in-ka	ni–kʰat-ci	mi–kʰat	ni–kʰat	ni–kʰat-ci	ni–kʰat-in	i–kʰat-ci-u	i–kʰat-ci-u-ci	i–kʰat-ci-u-ci
3p	ni–kʰat-ŋa	ni–kʰat-a-ci-ka	ni–kʰat-in-ka	ni–kʰat-ci	mi–kʰat	ni–kʰat	ni–kʰat-ci	ni–kʰat-in	i–kʰat	mi–kʰat-u-ci	mi–kʰat-u-ci

1s	kon-ŋa
1de	kon-ci-ka
1pe	kon-in-ka
1di	kon-ci
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2s	ti–kon
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      –u   ↔   [+3,P]

      –ka   ↔   [+1,–2]

      –ŋ   ↔   [+1,+sg]

      –m   ↔   [–3,+pl,A]

      –ci   ↔   [–sg]

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(underlying forms)

	1s	1de	1pe	1di	1pi	2s	2d	2p	3s	3d	3p
1s						kʷat–na	kʷat–na–ci	kʷat–na–nin	kʷat–u–ŋ	kʷat–u–ŋ–ci	kʷat–u–ŋ–ci
1de						kʷat–ni	kʷat–ni	kʷat–ni	kʷat–ci–u–ka	kʷat–ci–u–ci–ka	kʷat–ci–u–ci–ka
1pe						kʷat–ni	kʷat–ni	kʷat–ni	kʷat–u–m–ka	kʷat–u–m–ci–ka	kʷat–u–m–ci–ka
1di									kʷat–ci–u	kʷat–ci–u–ci	kʷat–ci–u–ci
1pi									kʷat–u–m	kʷat–u–m–ci	kʷat–u–m–ci
2s	ti–kʷat–ŋa	ti–kʷat–ni	ti–kʷat–ni						ti–kʷat–u	ti–kʷat–u–ci	ti–kʷat–u–ci
2d	ti–kʷat–ŋa–ci	ti–kʷat–ni	ti–kʷat–ni						ti–kʷat–ci–u	ti–kʷat–ci–u–ci	ti–kʷat–ci–u–ci
2p	ti–kʷat–ŋa–nin	ti–kʷat–ni	ti–kʷat–ni						ti–kʷat–u–m	ti–kʷat–u–m–ci	ti–kʷat–u–m–ci
3s	i–kʷat–ŋa	ni–kʷat–a–ci–ka	ni–kʷat–in–ka	ni–kʷat–ci	mi–kʷat	ni–kʷat	ni–kʷat–ci	ni–kʷat–in	kʷat–u	kʷat–u–ci	kʷat–u–ci
3d	i–kʷat–ŋa–ci	ni–kʷat–a–ci–ka	ni–kʷat–in–ka	ni–kʷat–ci	mi–kʷat	ni–kʷat	ni–kʷat–ci	ni–kʷat–in	i–kʷat–ci–u	i–kʷat–ci–u–ci	i–kʷat–ci–u–ci
3p	ni–kʷat–ŋa	ni–kʷat–a–ci–ka	ni–kʷat–in–ka	ni–kʷat–ci	mi–kʷat	ni–kʷat	ni–kʷat–ci	ni–kʷat–in	i–kʷat	mi–kʷat–u–ci	mi–kʷat–u–ci

1s	kon–ŋa
1de	kon–ci–ka
1pe	kon–in–ka
1di	kon–ci
1pi	kon–in
2s	ti–kon
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2p	ti–kon–in
3s	kon
3d	kon–ci
3p	mi–kon

(4)   *Some relevant affixes*

–u	↔	[+3,P]
–ka	↔	[+1,−2]
–ŋ	↔	[+1,+sg]
–m	↔	[−3,+pl,A]
–ci	↔	[−sg]

Nasal Copying

1. Suffix Doubling across /–ci/

(5)   *Bantawa: Some 3 object forms*

A\P	3s		3Ns	
1s	kʰat–u–ŋ	[kʰatːuŋ]	kʰat–u–ŋ–ci	[kʰatːuŋciŋ]
1pe	kʰat–u–m–ka	[kʰatːumka]	kʰat–u–m–ci–ka	[kʰatːumcimka]
1pi	kʰat–u–m	[kʰatːum]	kʰat–u–m–ci	[kʰatːumcim]
2p	ti–kʰat–u–m	[tikʰatːum]	ti–kʰat–u–m–ci	[tikʰatːumcim]

2. Not two independent suffixes/the same realized twice

(6)   *Alternative marker specifications/segmentations*

  a. $-\eta_1$ $\leftrightarrow$ [+l,+sg] $-m_1$ $\leftrightarrow$ [−3,+pl,A]

       $-\eta_2$ $\leftrightarrow$ [+l,+sg] / __+3,−sg $-m_2$ $\leftrightarrow$ [−3,+pl,A] / __+3,−sg

  b. $-\eta$ $\leftrightarrow$ [+l,+sg] / __+3,+sg $-m$ $\leftrightarrow$ [−3,+pl,A] / __+3,+sg

       $-\eta ci\eta$ $\leftrightarrow$ [+l,+sg] / __+3,−sg $-mcim$ $\leftrightarrow$ [−3,+pl,A] / __+3,−sg

  c. $-\eta$ $\leftrightarrow$ [+l,+sg] / __+3,+sg $-m$ $\leftrightarrow$ [−3,+pl,A] / __+3,+sg

       $-\eta \dots \eta$ $\leftrightarrow$ [+l,+sg] / __+3,−sg $-m \dots m$ $\leftrightarrow$ [−3,+pl,A] / __+3,−sg

- double realization of same feature in (6-a) and complication for affix order (P $\gg$ A $\gg$ N $\gg$ Ps elsewhere)
- absence of /–ci/ for the object is mysterious under (6-b)
- (6-c): a circumfix inside the suffix string?

➔ rather similar form and function but different morphemes

3. No general repair to avoid phonotactic markedness

Hypothesis:
An otherwise open final syllables is avoided.

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An otherwise open final syllables is avoided.

Problems:
- there is non-final copying (7-a) (plausible markedness avoidance?)
- no final coda-nasal is provided for /–ka/

(7)   *Bantawa: No copying for /–ka/*

a.

A\P	3Ns		
1pe	kʰat–u–m–ci–ka	[kʰatːumcimka]	*[kʰatːumcimkam]

b.

A\P	3s		
1pe	kʰat–u–m–ka	[kʰatːumka]	*[kʰatːumkam]

c.

A\P	1pe		
3	ni–kʰat–in–ka	[kʰatːinka]	*[kʰatːinkan]

4. No suffix doubling with other affixes

(8)   *Bantawa: Some 3s object forms*

A\P	3s		
1de	kʰat–ci–u–ka	[kʰatcuʔa]	*[kʰatcuʔac]
1pe	kʰat–u–m–ka	[kʰatːumka]	*[kʰatːumkam]

(9)   *Bantawa: 3–1pe forms*

A\P	1pe		
3	nɨ–kʰat–in–ka	[kʰatːinka]	*[kʰatːinkan]

5. No copying of stem segments

(10) *Bantawa: Some 3s object forms*

A\P		3s		
1de	$\parallel$	kʰat–ci–u–ka	[kʰatcuʔa]	*[kʰatcutʔa]
1di	$\parallel$	kʰat–ci–u	[kʰatcu]	*[kʰatcut]

(11) *Bantawa: Some intransitive forms*

1di	$\parallel$	kon–ci	[konci]	*[koncin]
2d	$\parallel$	tɨ–kon–ci	[tɨkonci]	*[tɨkoncin]
3d	$\parallel$	kon–ci	[konci]	*[koncin]

6. No copying of a non-adjacent segments

(12) *Bantawa: 1s–2d form*

A\P	2d		
1s	kʰat-na-ci	[kʰatnaci]	*[kʰatnacin]

(13) *Yamphu: 1s–2d, past form*

A\P	3Ns		
1de	kʰaks-a-u-ŋ-ji	[kʰaksuŋjiŋ]	
1pe	kʰaks-a-u-ŋ-ma-ji	[kʰaksuŋmaji]	*[kʰaksuŋmajim]

(14) *Limbu: Some 3Ns object forms, past negative*

A\P	3Ns		
1pe	mɛ-n-huʔr-mʔna-si	[mɛnhuʔmʔnasi]	*[mɛnhuʔmʔnasin]
2p	kɛ-n-huʔr-u-m-si-nɛn	[kɛnhuʔrumsimnɛn]	

Bantawa: 7. No copying of non-nasals?

. . . given the previous arguments that /–ci/ triggers copying of only adjacent affix-segments and given that it cannot copy its own onset, there are no contexts where copying of a non-nasal is expected.

(15)   *Some 3s object forms*

A\P	3s		No stem material copied	No copying of 'itself'
1de	kʰat–ci–u–ka	[kʰatcuʔa]	*[kʰatcutʔa]	*[kʰatcicʔa]
1di	kʰat–ci–u	[kʰatcu]	*[kʰatcut]	*[kʰatcicu]

Additional criterion: Copying of parts of a suffix

(16) *Bantawa: 1s object forms*

A\P	1s	
2d	ti-kʰat-ŋaŋ-ci	[tikʰatŋaŋciŋ]
3d	i-kʰat-ŋaŋ-ci	[ikʰatŋaŋciŋ]

Alternative:
-ŋa ↔ [+1,+sg,SP]
-ŋ ↔ [+1,+sg,AP]
➜ extended exponence

(17) *Puma: d–1s form*

A\P	2d	
2d	tʌ-cind-oŋ-ci	[tʌcindoŋcʌŋ]
3d	pʌ-cind-oŋ-ci	[pʌcindoŋcʌŋ]

Alternative:
-o ↔ [+1,+sg,P]
-ŋ ↔ [+1,+sg]
➜ extended exponence

(18) *Limbu: 1s–3, past negative form*

A\P	3Sg		3Ns	
1s	mɛ-n-huʔr-baŋ	[mɛnhuʔrbaŋ]	mɛ-n-huʔr-baŋ-si	[mɛnhuʔrbaŋsiŋ]

Alternative:

-ŋ ↔ [+1,+sg,A]   -ba ↔ [+1,+sg] / __+3,-sg(-pos,+pst)   ➜ extended exponence

Nasal copying: summary

1. morpheme-specific: triggered by /-ci/ (& its cognates)
2. only consonants that are directly adjacent to /-ci/ are copied
3. only adjacent affix-consonants are copied
   → 2.+3.: only nasal consonants are copied
4. parts of affixes are copied

	1.	2.	3.	4.
Bantawa	☺	☺	☺	☺
Puma	☺	☺	☺	☺
Limbu	☺	☺	☺	☺
Athpare	☺	☺	☺	ø
Chamling	☺	☺	ø	ø
Belhare	☺	☺	ø	ø
Chintang	☺	☺	ø	ø
Yakkha	☺	☺	ø	☹
Yamphu	☺	☺	ø	☹

(☺=evidence found,
ø=no (counter-)evidence,
☹=counterevidence)

Syllable Copying

Past and non-past surface paradigms for Athpare (Ebert, 1997)

	1s	1de	1pe	1di	1pi	2s	2d	2p	3s	3d	3p
1s						lem-n-e	lem-na-c-e	lem-na-n-e	lems-u-ŋ-e	lems-u-ŋ-ciŋ-e	lems-u-ŋ-ciŋ-e
1de						lem-n-e	lem-na-c-e	lem-na-n-e	lems-a-c-u-ŋ-e	lems-a-c-u-ŋ-e	lems-a-c-u-ŋ-e
1pe						lem-n-e	lem-na-c-e	lem-na-n-e	lems-u-m-m-e	lems-u-m-cim-m-e	lems-u-m-cim-m-e
1di									lems-a-c-u-e	lems-a-c-u-e	lems-a-c-u-e
1pi									lems-u-m-e	lems-u-m-cim-e	lems-u-m-cim-e
2s	a-lems-a-ŋ-e	a-lems-a-ci-ŋ-e	a-lems-i-ŋ-e						a-lems-u-e	a-lems-u-c-e	a-lems-u-c-e
2d	a-lems-a-ci-ŋ-e	a-lems-a-ci-ŋ-e	a-lems-i-ŋ-e						a-lems-a-c-u-e	a-lems-a-c-u-e	a-lems-a-c-u-e
2p	a-lems-i-ŋ-e	a-lems-a-ci-ŋ-e	a-lems-i-ŋ-e						a-lems-u-m-e	a-lems-u-m-cim-e	a-lems-u-m-cim-e
3s	lems-a-ŋ-e	lems-a-ci-ŋ-e	lems-i-ŋ-e	a-lems-a-c-e	a-lems-e	m-a-lems-e	m-a-lems-a-c-e	m-a-lems-i-e	lems-u-e	lems-u-c-e	lems-u-c-e
3d	lems-a-ŋ-e	lems-a-ci-ŋ-e	lems-i-ŋ-e	a-lems-a-c-e	a-lems-a-c-e	m-a-lems-e	m-a-lems-a-c-e	m-a-lems-i-e	lems-u-c-e	lems-u-c-e	lems-u-c-e
3p	o-lems-a-ŋ-e	o-lems-a-ci-ŋ-e	o-lems-i-ŋ-e	a-lems-a-c-e	a-lems-e	m-a-lems-e	m-a-lems-a-c-e	m-a-lems-i-e	o-lems-u-e	o-lems-u-c-e	o-lems-u-c-e

	1s	1de	1pe	1di	1pi	2s	2d	2p	3s	3d	3p
1s						lem-na-?a	lem-na-?a-ci	lem-na-?a-ni	lem-u-ŋ-tuŋ	lems-u-ŋ-ciŋ-ciŋ	lems-u-ŋ-ciŋ-ciŋ
1de						lem-na-?a	lem-na-?a-ci	lem-na-?a-ni	lem-c-u-cu-ŋa	lem-c-u-cu-ŋa	lem-c-u-cu-ŋa
1pe						lem-na-?a	lem-na-?a-ci	lem-na-?a-ni	lems-u-m-tum-ma	lems-u-m-cim-cim-ma	lems-u-m-cim-cim-ma
1di									lem-c-u-cu	lem-c-u-cu	lem-c-u-cu
1pi									lems-u-m-tum	lems-u-m-cim-cim	lems-u-m-cim-cim
2s	a-lem-ma-?a	a-lem-ci-ci-ŋa	a-lem-i-ti-ŋa						a-lems-u-tu	a-lems-u-ci-ci	a-lems-u-ci-ci
2d	a-lem-ci-ci-ŋa	a-lem-ci-ci-ŋa	a-lem-i-ti-ŋa						a-lem-c-u-cu	a-lem-c-u-cu	a-lem-c-u-cu
2p	a-lem-i-ti-ŋa	a-lem-ci-ci-ŋa	a-lem-i-ti-ŋa						a-lems-u-m-tum	a-lems-u-m-cim-cim	a-lems-u-m-cim-cim
3s	lem-ŋa-?a	lem-ci-ci-ŋa	lems-i-ti-ŋa	a-lem-ci-ci	a-lem-yuk	m-a-lem-yuk	m-a-lem-ci-ci	a-lems-i-ti	lems-u-tu	lems-u-ci-ci	lems-u-ci-ci
3d	lem-ci-ci-ŋa	lem-ci-ci-ŋa	lems-i-ti-ŋa	a-lem-ci-ci	a-lem-ci-ci	m-a-lem-yuk	m-a-lem-ci-ci	m-a-lems-i-ti	lem-c-u-cu	lem-c-u-cu	lem-c-u-cu
3p	o-lem-ŋa-?a	o-lem-ci-ci-ŋa	o-lems-i-ti-ŋa	a-lem-ci-ci	a-lem-yuk	m-a-lem-yuk	m-a-lem-ci-ci	m-a-lems-i-ti	o-lems-u-tu	o-lems-u-ci-ci	o-lems-u-ci-ci

Syllable copying in Athpare

- past marker /–e/; following all agreement suffixes
- non-past marker /–t/ preceding person agreement* and triggering copying of the affix-syllable preceding it

*Order P ≫ A ≫ N ≫ N-Pst ≫ Ps *but* the /–t/ must never be adjacent to the stem; reordering in, for example, /–ŋa/₊₁₊₂–t/.

Syllable copying in Athpare

(19) *Syllable copying triggered by /–t/*

a. *1–3 forms*

A\P	3s		3Ns	
1s	–u–ŋ–t	[uŋ.tuŋ]	–u–ŋ–tsi–t	[uŋ.tsiŋ.tsiŋ]
1de	–tsi–u–t–ŋa	[tsu.tsu.ŋa]	–tsi–u–t–ŋa	[tsu.tsu.ŋa]
1pe	–u–m–t–ŋa	[um.tumːa]	–u–m–tsi–t–ŋa	[um.tsim.tsimːa]
1di	–tsi–u–t	[tsu.tsu]	–tsi–u–t	[tsu.tsu]
1pi	–u–m–t	[um.tum]	–u–m–tsi–t	[um.tsim.tsim]

b. *Intransitive*

1s	–ŋa–t	[ŋa.ʔa]
1de	–tsi–t–ŋa	[tsi.tsi.ŋa]
1pe	–i–t–ŋa	[i.ti.ŋa]
1di	–tsi–t	[tsi.tsi]
1pi	–i–t	[i.ti]

Syllable copying in Athpare

- the maximal affix-syllable preceding /t/ is copied, including the onset
  (e.g. 1di.intr)
  /–tsi–t/ → tsi t tsi → [tsi.tsi]; *[tsi.ti]

  - *Phonology:* regular avoidance of vowel hiatus and /t+ts/ → [ts]

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- interaction with nasal copying (e.g. 1s–3Ns)
  . . . /–ŋ–tsi/. . . → [. . . ŋtsiŋ. . .]
  . . . [. . . ŋ.tsiŋ] + /–t/ → [. . . ŋ.tsiŋ.tsiŋ]

Summary: Copying in Kiranti

Summary

- morpheme-specific processes
- differences in what restricts the size of the copied portion:
    - phonologically restricted
    → nasal copying in Bantawa

Summary

- morpheme-specific processes
- differences in what restricts the size of the copied portion:
    - phonologically restricted
      ➜ nasal copying in Bantawa

    - sensitive to morpheme boundaries
      ➜ whole syllable copying in Athpare
      ➜ no partial affix copying in Yakkha & Yamphu

Theoretical account

One theoretical 'landscape' of copying

(Kawahara, 2007; Inkelas, 2008)

Phonological copying

(20)	*Hocank (Miner, 1993)*		
	Underlying	Surface	
	ʃ–wapox	ʃawapox	'you stab'
	ʃ–ruxuk	ʃuruxuk	'you earn'
	hipres	hiperes	'know'

Autosegmental spreading (e.g. Kawahara, 2007) or string-internal correspondence (e.g. Inkelas, 2008).

Morphologial reduplication

(21)	*Washo (Winter, 1970; Yu, 2008)*		
	Base		Plural
	sukuʔ	'dog'	sukukuʔ
	bɨk'ɨ	'grandmother's sister'	bɨk'ɨk'ɨ
	bokoŋ	'snore'	bokokoŋ

RED-triggered BR-correspondence (e.g. Kawahara, 2007) or morphological doubling (e.g. Inkelas, 2008).

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And Kiranti?

No!   ∼ fixed segmentism reduplication?

(Alderete et al., 1999; Nevins, 2005)

But: blocked if no phonologically adjacent affix-C is present!

Another theoretical 'landscape' of copying
(Saba Kirchner, 2007, 2010)

(22)   *Three types of reduplication*

Phonological	**Morphological**	**Syntactic**
Phonology: Fission		Syntax: Node spelled out twice

- copying is a general phonological repair process
- modeled as fission in correspondence theory violating Integrity
  (Struijke, 2000; Nelson, 2003, e.g.)
- one marked structure that copying can avoid: otherwise empty prosodic
  nodes (24)

Copying as phonological repair

(23) *Phonological reduplication*

$\int_1$ + $w_2a_3p_4o_5x_6$	*CC	Dep	Int
a. $\int_1 w_2a_3p_4o_5x_6$	*!		
b. $\int_1\vartheta w_2a_3p_4o_5x_6$		*!	
☞ c. $\int_1 a_3 w_2 a_3 p_4 o_5 x_6$			*

(24) *Morphological reduplication*

σ + $\overset{\sigma}{\triangle}$ $\overset{\sigma}{\triangle}$ b_1 i_2 k'_3 i_4	Max Flt	Dep	Int
a. $\overset{\sigma}{\triangle}$ $\overset{\sigma}{\triangle}$ b_1 i_2 k'_3 i_4	*!		
b. $\overset{\sigma}{\triangle}$ $\overset{\sigma}{\triangle}$ $\overset{\sigma}{\triangle}$ b_1 i_2 $ʔ$ ϑ k'_3 i_4		*!	
c. $\overset{\sigma}{\triangle}$ $\overset{\sigma}{\triangle}$ $\overset{\sigma}{\triangle}$ b_1 i_2 k'_3 i_4 k'_3 i_4			**

→ the same (phonological) copying mechanism

Nasal copying: μ affixation

- representation of /–ci/ contains an empty μ that must be filled with segments (25-a)
- only nasals are copied: no obstruents in the coda (25-b)
- only affix material is copied: Integrity sensitive to $_{Af}$ and $_{St}$
  (cf. the overviews in Urbanczyk (2011) or Trommer (2010))

(25) a. μ>S
          Assign a violation mark to every μ not dominating a segment.

      b. *P]$_\sigma$ (cf. Botma and van der Torre, 2000; van der Hulst, 2008)
          Assign a violation mark for every obstruent in coda position.

Nasal copying in OT

(26) *Nasal Copying in Bantawa*

μ u₁ + ŋ₂ + c₃ i₄ (μ μ)	μ>S	*P]σ	Dep S	Int_St	Max μ	Int_Af
a. u₁ ŋ₂ c₃ i₄	*!					
b. u₁ ŋ₂ c₃ i₄					*!	
c. u₁ ŋ₂ c₃ i₄ c₃		*!				*
d. u₁ ŋ₂ c₃ i₄ n			*!			
☞ e. u₁ ŋ₂ c₃ i₄ ŋ₂						*
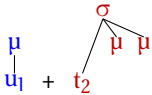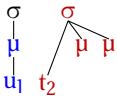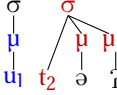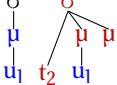
Syllable copying: σ affixation

- an empty σ must be filled with segments (27)
  (abbrev. for σ>μ and μ>S)

- the /t/ is underlyingly associated (as onset) to this syllable node, the copied syllable hence always follows it

- the σ dominated two μ's: if the preceding affix-syllable contains a coda, it is copied as well

(27)   σ>S
       Assign a violation mark to every σ not dominating a segment.

Syllable copying in OT

(28)   *Syllable Copying in Athpare*

	σ>S	Dep S	Cont	Max AL	*tʦ	Int$_{St}$	Unif	Int$_{Af}$
a.	*!							
b.		*!						
☞ c.								*

Syllable copying in OT

- that the whole affix /-ci/ is copied follows from Contiguity (29)
- vs. nasal copying in other languages where parts of morphemes are copied – (29) is low-ranked in those
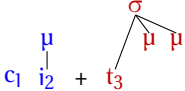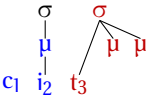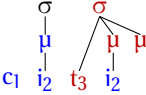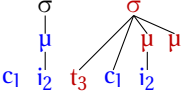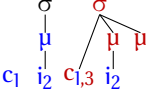
(29)   Contiguity (=Cont) (after Landman, 2002)
        For every input element X that is contiguous to Y and both belong to the same morpheme:
        Assign a violation mark for every x (corresponding to X) in the output that is not contiguous to an y (corresponding to Y).

Syllable copying in OT

(30)   *Syllable Copying in Athpare*

	σ>S	Dep S	Cont	Max AL	*[CC	Int$_{St}$	Unif	Int$_{Af}$
a.	*!							
b.			*!					*
c.					*!			**
☞ d.							*	**

And the locality of the copying process?

And the locality of the copying process?

- gradient Linearity is violated more often if more segments intervene between the copied segment and its copy – but it is violated in all optimal candidates; hence ranked below μ>S and Max-μ

(31) *Nasal Copying in Bantawa*

μ
|
n_1 a_2 +   μ μ
    |
    c_3 i_4
	μ>S	*P]$_\sigma$	Dep S	Int$_{St}$	Max μ	Lin	Int$_{Af}$

☞ a. μ μ | | n_1 a_2 c_3 i_4					*!		
☞ b. μ μ μ | | | n_1 a_2 c_3 i_4 n_1						***	*

The locality of the copying process

- Harmonic Grammar with weighted constraints: only a certain amount of reordering is allowed to supply the otherwise empty nodes with material
  (Legendre et al., 1990; Pater, to appear)

(32)   *Nasal Copying in Bantawa in HG*

μ $\quad$ μ μ n_1 a_2 + $\quad$ c_3 i_4	$\mu >S$ 9	$*P]_\sigma$ 9	Dep S 9	Int_{St} 9	Max μ 8	Lin 3	Int_{Af} 1	H
☞ a. $\quad$ μ $\quad$ μ n_1 a_2 c_3 i_4					-1			-8
b. $\quad$ μ $\quad$ μ μ n_1 a_2 c_3 i_4 n_1						-3	-1	-10
a. $\quad$ μ $\quad$ μ u_1 η_2 c_3 i_4					-1			-8
☞ b. $\quad$ μ $\quad$ μ μ u_1 η_2 c_3 i_4 η_2						-2	-1	-7

Conclusion

Further implications

- expected counterpart under a theory where prosodic nodes are affixed: templatic copying; attested in Chintang (Bickel et al., 2007) where v2 verbs subcatagorize for a disyllabic host

  (33) *Chintang recursive inflection (Bickel et al., 2007, 6)*
        kos-i-gond-i-ki-ŋa-niŋ
        walk-Pl-Amb-Pl-Npst-Ex-Neg
        'We (pl.excl) don't walk around'

- sensitivity to morphological boundaries (=Contig): affix doubling patterns as in Bole (triggered by final suffix; restrictions on which affixes can be doubled across which other affixes)

(34) *Bole affix doubling (Ryan and Schuh, under preparation, 2+3)*
      ŋgòr-án-tá-ŋ-gó
      tie-Pl.S-Fem.Sg.O-Pl.S-Compl
      'they tied her'

Summary

- Affix copying in Kiranti is another argument that the distinction into phonological copying and morphological doubling can not be absolute: it is an intermediate case

  (cf., for example, Haugen (2009) for a similar argument made for μ-affixation)

- assuming that morphological and phonological reduplication are the result of the same phonological process (Saba Kirchner, 2010) allows to account for such 'intermediate' cases where morpheme-specific copying is restricted/can be blocked by phonological factors

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