# The Syntax of Iteration

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# 1 Introduction

Reduplication

is a morphophonological reflex of the syntactic configuration of iteration is triggered by a head/complement relation which expresses quantity can be satisfied in the syntax (i) by content in Spec (either overtly or covertly)

(ii) by head movement

# 2. Iteration in phonology: Reduplication

- 2.1 As iteration
- (1) from Moravcsik (1978) repeated events: Tzeltal, Thai, Twi, Ewe, Sudanese, Rotuman, ...
- (2) Madurese (Davies to appear) Hasan <u>kol</u>mo<u>kol</u>(-an) Ali. H RED.AV.hit-AN A 'Hasan hit Ali several times.'

kol-m- $\sqrt{pokol(-an)}$ 

# 2.2 Is it iconic? No

(3) Hopi:

dual: N-vit	maana	'girl'	maanavit	'2 girls'
plural: $\sigma_{\mu}$	saaqa	'ladder'	sasaaqa	'ladders' (more than 2)

- (4) Tagalog:
   magkita 'see one another (two or more actors)'
   magkitakita 'see one another (more than two actors)'
- Reduplication is *many* not *two*
- 2.3 As reciprocals
- (5) from Moravcsik (1978) <u>reciprocals</u> ('repeated events with participants reversed'): Yami, Tzeltal, Pacoh, Dyirbal, ...
- (6) Madurese reciprocals (Davies to appear)

# 1/Travis

Ali biq Hasan <u>kolpokol</u>-an. A and H RED.hit-AN 'Ali and Hasan hit each other.' kol-√pokol-an

N.B. -an is obligatory and Topic morphology is dropped (for future work)

- Reduplication is used for iteration (many not two)
- Reduplication is used for reciprocals

# 3. Iteration in syntax

- **3.1** As iteration (Pi, 1995)
- (7) a. The butterfly fluttered from *flower to flower*.
  - b. Jon washed *plate after plate* for hours after the party.
  - c. The careful artist completed the mosaic *tile by tile*.
  - d. Eric can drink *mug upon mug of coffee* in a single hour.
  - e. In fairy tale after fairy tale, good triumphs over evil.
- 3.2 Similarity to reduplication
- different domains can be reduplicated (can this all be movement??)
- (8) a.  $\underline{cup}$  after  $\underline{cup}$  of coffee
  - b. <u>cup of coffee</u> after <u>cup of coffee</u>
  - c. <u>cup</u> after steaming <u>cup</u> of coffee
  - d. steaming cup after steaming cup of coffee
  - e. steaming cup of coffee after steaming cup of coffee
- must copy from rightward host
- (9) \* steaming cup after cup of coffee
- ➢ is sensitive to constituency
- (10) [ [ steaming cup ] of coffee]\* cup of coffee after steaming cup of coffee

Interesting further fact: are allowed (must be?) determinerless

- (11) a.\* I drank cup of coffee.
  - b. I drank cup after cup of coffee.
  - c.\* I drank the/a cup after the/a cup of coffee.

(12) Pi's structure (stacking)



# Linearization:

A stack is linearized by raising constituents in the stack to a higher specifier position

N.B. Like conjunctions, but NOT iconic (i.e. two doesn't mean two)

# 3.3 As reciprocals

If reduplication is used for iteration, iteration is used for reciprocals, and syntactic embedding is ALSO used for iteration, we expect to find cases of syntactic embedding for reciprocals.

(13)	Malagasy Transitivity alternation: <i>i</i> - for intransitive <i>an</i> - for transitive	(adds nothing additional to a (adds external argument to a	argument structure) argument structure)
Ex:	m- <b>i</b> -√sitrika X hides (misitrika)	m- <b>an</b> -√sitrika Y hide X (manitrika)	
(14)	Lexical causative: m + an + $$		
(15)	Productive causative: m + an + f + stem		
(16)	<u>stem</u> a. m-isitrika 'X hide' b. m-anitrika 'Y hide X'	<u>productive causative</u> m- <b>amp</b> -isitrika m- <b>amp</b> -anitrika	'Z make X hide' 'Z make Y hide X'
	c. $m + an + f + an + m + PC + E + LC + m$	- sitrika - root	



productive causative is a V (an-) that takes an EP complement (f + stem)

(18) Reciprocal m + i + f + stem



#### Like Pi's embedding:

seman	tically empty (#?/P?/V	?) head take	es XP complement to be iterated
Pi:	# 'after, upon'	selects	NP (to be iterated)
here:	<i>i</i> -	selects	EP (to be iterated)

#### What is this iteration?

Quantity head is semantically empty (construction supplies meaning?) It selects something (NP, EP) to be iterated The head has a feature that must be checked It may be checked by Spec, Head (English iteratives) (is this movement??): [steaming cup] after [steaming cup of coffee] Head movement (Madurese iteratives, reciprocals) Overt morpheme in head (Malagasy reciprocals): covert reduplication?

## 4. What is reduplication?

4.1 It's an affix like any other affix: Marantz (1982)

At first glance, reduplication seems a rare bird among morphological processes, an exotic curiosity. Struck by the apparent novelty of reduplication, previous investigators have treated reduplication as a special case – and were confronted with problems as a result. Beginning with the assumption that reduplication is minimally different from processes we are accustomed to, I have not only constructed an elegant account of reduplication and its properties but have also been able to illuminate important issues in phonology and morphology. When we recognize that the same theory must cover the duckbill platypus as well as the house cat, we gain a deeper understanding of both the platypus and the cat. Marantz (1982:480)

# 4.2 It's different from other affixes

#### i. Form

parasitic on root can vary in position (Tagalog inner aspect morpheme) can vary in what domain it targets

### ii. Meaning

There is no *a priori* reason why reduplication, or any other form device of language, should serve as the expression of some meanings rather than as that of others. Nonetheless, as pointed out by a number of linguists, the particularly (sic) meanings associated with reduplication strikingly recur across languages.

Moravcsik (1978:316)

# On one hand ...

Increased quantity:

quantity of referents

Plural: Samoan, Papago, Amharic

'all', 'every': Pacoh, Yoruba, Tagalog, Mandarin <u>distributive plurals</u> (one by one, etc): Turkish, Sierra Aztec, Twi, <u>indefinite pronouns</u> (whoever): Sundanese, Javanese, Ngbandi <u>repeated events</u>: Tzeltal, Thai, Twi, Ewe, Sudanese, Rotuman <u>reciprocals</u> ('repeated events with participants reversed'):

Yami, Tzeltal, Pacoh, Dyirbal

 $\diamond$  amount of emphasis

more:

Turkish, Agta, Thai, Ewe, Tagalog, Sundanese <u>diminution</u> (small, a little):

Agta, Nez Perce, Thompson

attenuation (rather, somewhat):

Quileute, Swahili, Thai, Mandarin, Tagalog

# On the other ...

There is, however, an equally large and indeed disparate set of examples of derivational meanings that cannot be see related to any of the nonderivational meaning categories surveyed above. ... no explanatory or predictive generalization about the meanings of reduplicative constructions can be proposed Moravcsik (1982:325)

# In spite of this ...

## **Speculation 1:**

Under most circumstances reduplication is an underspecified iterative head which gets the meaning of 'quantity (of some sort)'

# 5 Causative puzzle

### 5.1 Reduplication also encodes causatives

(20)	Sudanes	se (from Moravcsik: 325)		
	rVwas	'to be afraid'	NarVrVwas	'to frighten'
	panas	'to be angry'	mamanas/mapanas	'to anger'

(21) Arabic (from Fassi-Fehri 1987:6) (reduplication of the second consonant of the base form)

fa <b>hh</b> am-tu-hu	d-darsa	
caus.understand-I-him	the lesson	'I made him understand the lesson.'

If V movement to higher (empty) head were to create a V-VP structure in l-syntax, according to Hale and Keyser, we would expect a causative construction

# **Speculation 2:**

Under rarer circumstances, when this underspecified head triggers head movement, it may take on the categorial signature of the moved element, and if this configuration has meaning, the construction will get that meaning.

# 5.2 Ambiguities of reduplication

(22) Arabic (from Fassi-Fehri 1987:34)
a. jawwala r-rajul-a 'He made the man take a walk.' caus.walked.3ms the-man-acc
b. jawwala r-rajul-u 'The man took a lot of walks.' caus.walked.3ms the-man-nom

# 6 Conclusions and speculations

- Syntactic iteration is created by a semantically empty underspecified head with reduplicating properties
- This head can be checked by (copied) material in its Spec or moved material in its head

Reduplication can occur either overtly or covertly into Spec

Since the head is underspecified, it can take the category of the head that moves into it creating a causative structure (V selecting VP)

# References

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