The Syntax of Iteration

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1 Introduction

Reduplication is a morphophonological reflex of the syntactic configuration of iteration, which is triggered by a head/complement relation that expresses quantity. This 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 kolmokol(-an) Ali. kol-m-vpolkol(-an)
H RED.AV.hit-AN A
‘Hasan hit Ali several times.’

2.2 Is it iconic? No

(3) Hopi:
dual: N-vit maana 'girl' maanavit '2 girls'
plural: σ saqa 'ladder' sasaqa '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)
reciprocals (‘repeated events with participants reversed’):
Yami, Tzeltal, Pacoh, Dyirbal, …

(6) Madurese reciprocals (Davies to appear)
Ali biq Hasan kolpokol-an. kol-√pokol-an
A and H RED hit-AN
‘Ali and Hasan hit each other.’

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)

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>(7)</td>
<td>a.</td>
<td>The butterfly fluttered from flower to flower.</td>
<td>b. Jon washed plate after plate for hours after the party.</td>
<td>c. The careful artist completed the mosaic tile by tile.</td>
<td>d. Eric can drink mug upon mug of coffee in a single hour.</td>
</tr>
<tr>
<td>(8)</td>
<td>a.</td>
<td>cup after cup of coffee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b.</td>
<td>cup of coffee after cup of coffee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c.</td>
<td>cup after steaming cup of coffee</td>
<td></td>
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<tr>
<td></td>
<td>d.</td>
<td>steaming cup after steaming cup of coffee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e.</td>
<td>steaming cup of coffee after steaming cup of coffee</td>
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</table>

❖ 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)

```
    #P
   /---
 Spec   #'
   /   /
 #    NP
 /   /   
 after NP PP
 /   /   
 AP NP -- cup of coffee
 steaming NP -- cup
```

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- for intransitive (adds nothing additional to argument structure)
  an- for transitive (adds external argument to argument structure)

Ex: m-i-√sitrika X hides m-an-√sitrika Y hide X
    (misitrika)        (manitrika)

(14) Lexical causative:
m + an + √

(15) Productive causative:
m + an + f + stem

(16)  stem                     productive causative
  a. m-isitrika   'X hide'     m-amp-isitrika  'Z make X hide'
  b. m-anitrika   'Y hide X'    m-amp-anitrika  'Z make Y hide X'
  c. m + an + f + an + sitrika
     m + PC + E + LC + root
(17) VP1
   NP       V'1
       V1   (Event Phrase)  ================
   an-
   E   VP1  stem
   f-
   stem
   (i) an + √
   (ii) i + √

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

(18) Reciprocal
   m + i + f + stem

m - an - √sitrika 'X hide Y' m - i - f - an - √sitrika 'X and Y hide each other'
(manitrika) (mifanitrika)

(19) VP1
   NP       V'1
       V1   (Event Phrase)  ================
   i-
   E   VP1  stem
   f-
   stem
   (i) an + √

Like Pi's embedding:
semantically empty (#/?/?/??) head takes XP complement to be iterated
Pi: # 'after, upon' selects NP (to be iterated)
here: 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
  - distributive plurals (one by one, etc): Turkish, Sierra Aztec, Twi
  - indefinite pronouns (whoever): Sundanese, Javanese, Ngbandi
  - repeated events: Tzeltal, Thai, Twi, Ewe, Sundanese, Rotuman
  - reciprocals ('repeated events with participants reversed'):
    - Yami, Tzeltal, Pacoh, Dyirbal
- amount of emphasis
  - more:
    - Turkish, Agta, Thai, Ewe, Tagalog, Sundanese
  - diminution (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 seen related to any of the non-derivational 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) Sudanese (from Moravcsik: 325)

\n\rV\text{was} 'to be afraid' \hbox{Nar}V\text{was} 'to frighten'
\rV\text{was} 'to be angry' m\text{manas/mapanas} 'to anger'

(21) Arabic (from Fassi-Fehri 1987:6)

(reduplication of the second consonant of the base form)

\text{fa}h\text{am-tu-hu} \quad \text{d-darsa}
\text{caus.understand-I-him} \quad \text{the lesson} \quad '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. \text{jawwala} \quad \text{r-rajul-a} \quad "He made the man take a walk.'
\text{caus.walked.3ms} \quad \text{the-man-acc}

b. \text{jawwala} \quad \text{r-rajul-u} \quad 'The man took a lot of walks.'
\text{caus.walked.3ms} \quad \text{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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