Morpho-Semantics of Verbal Reduplication: the Case of Mauritian

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1 Verbal Reduplication in Mauritian

☞ Mauritian exhibits different types of verbal reduplication:

- Syntactic level: iteration, contrastive or prototypical redup. and predicate doubling.

- Morphological level: attenuative redup.

- Phonological level: dodo 'sleep', titit/sisit 'sit', nana 'eat'.

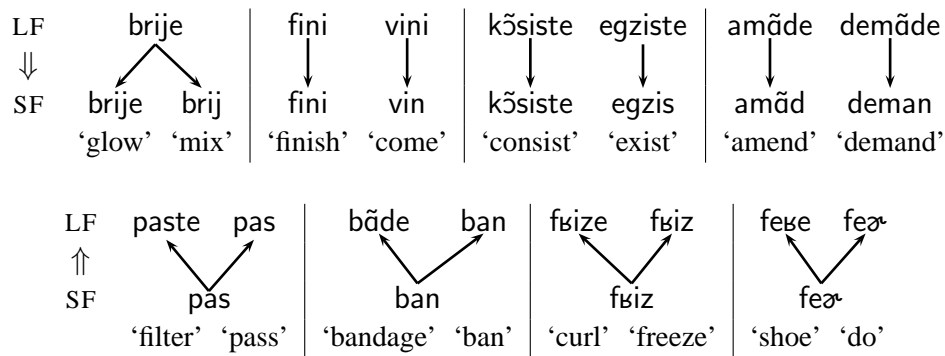☞ We here focus on morphological reduplication.

1.1 Empirical Background

1.1.1 Mauritian morphology

- Mauritian shows a verb form alternation, the long form (LF) and the short form (SF), among which 30% are syncretic.

- This morphological alternation seems to be the remnants of French inflectional morphology. However, unlike French, Mauritian shows no inflection w.r.t. tense, mode and aspect or to number and person.

    (1)   a.   Mo/to/li/nou/zot   manz kari.
    1SG/2SG/3SG/1PL/2/3PL eat.SF curry
    'I/you/he/she/they eat(s) curry.'

    b.   Mari/Zan manz kari.
    Mary   eat.SF curry
    'Mary eats curry.'

    c.   Mo ti   manz kari.
    1SG PST eat.SF curry
    'I ate curry.'

    d.   Mo pou manz kari.
    1SG IRR eat.SF curry
    'I will eat curry.'

☞ The alternation is not phonologically predictable: neither form is predictable form the other (Henri, 2010; Bonami & Henri, 2010).

LF ⇓ SF	brije → brije / brij	fini ↓ fini	vini ↓ vin	kɔ̃siste ↓ kɔ̃siste	egziste ↓ egzis	amɑ̃de ↓ amɑ̃d	demɑ̃de ↓ deman
	'glow' 'mix'	'finish'	'come'	'consist'	'exist'	'amend'	'demand'

LF ⇑ SF	paste pas ↘ ↙ pas	bɑ̃de ban ↘ ↙ ban	fʁize fʁiz ↘ ↙ fʁiz	feʁe feɚ ↘ ↙ feɚ
	'filter' 'pass'	'bandage' 'ban'	'curl' 'freeze'	'shoe' 'do'

- **Deriving the SF form the LF:**
  * Verbs with a LF in -e tend to drop the final vowel when it is preceded by a single consonant.
  * -e never drops after a branching onset.
  * Both situations are found when the verb penultimate syllable has a nonempty coda (kɔ̃siste vs. egziste) or when the single consonant is a glide (brije'mix' vs. brije 'glow').
  * Almost all verbs with a LF in -i are syncretic, but there are two exceptions (soɚti and vini), which are not phonologically distinguishable from syncretic verbs (resp. paɚti and fini).
  * Only verbs with a final consonant in the LF are uniformly syncretic.

- **Deriving the LF form the SF:**
  * verbs with a vowel-final SF are always syncretic.
  * verbs with a consonant-final SF may have a syncretic LF, a LF in -e or a LF in -i: brize vs friz, arete vs aparet, mine vs vini, poɚte vs soɚti

☞ The more predictive cell is the LF since the relation from the LF to the SF is simpler. We thus consider the LF to be the base form (Bonami & Henri, 2010).

1.1.2 Distribution

The two forms appear in contexts that do not form a natural class (Henri & Abeillé, 2008; Henri, 2010).

Syntax

- The SF is triggered by nonclausal complements (2).

(2) a. Mo ti   manz/*manze kari.
         1SG PST eat.SF/LF   curry
         'I ate curry.'

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     b.   Sa   stati la   dat/*date depi   lepok lager.
           DEM statue date.SF/LF from   period war
           'This statue dates back from the war period.'

- It also appears with predicative APs (3-a) and locative goals (3-b).

- Verbs with a clausal complement take a SF only if another nonclausal complement precedes it (3-c).

(3)   a.   Nou res/*reste malad.
           1PL stay.SF/LF sick
           'We are still sick.'
    b.   Li   pe   mars   lor disab.
           3SG.M PROG walk.SF on sand
           'He is walking towards the sand.'
    c.   Mari inn demann/*demande [ar   tou dimounn] [kiler   la   ].
           Mary PERF ask.SF/LF   with all people   what_time DEF
           'Mari asked everyone what time it was.'

- Finally note that the postverbal argument of unaccusative verbs counts as a complement (4)

(4)   Inn ariv/*arive enn aksidan.
       PRF arrive.SF/LF INDF accident
       'There has been an accident.'

- Conversely, the LF appears when the verb has no complement, (5-a), the complement is extracted (5-b), or it is clausal (5-c).

(5)   a.   Mo ti   manze/*manz.
           1SG PST eat.LF/SF
           'I ate.'
    b.   Tibaba   ki   mo mama ti   veye/*vey   toule zour.
           little_baby COMP POSS mother PST look_after.LF/SF every day
           'It's little babies that my mother looked after every day.'
    c.   Mari inn demande/*demann [kiler   la] [ar   tou dimounn] .
           Mary PERF ask.SF/LF   what_time DEF   with all people
           'Mari asked everyone what time it was.'

- Adjuncts also trigger the LF.

(6)   Li pe   marse lor disab.
       3SG PROG walk.LF on sand
       'He is walking on the sand.'

- The alternation is **not** phonologically conditioned: a complement that is not adjacent to the verb still triggers the SF.

(7) Nou res/*reste toultan malad.
    1PL stay.SF/LF always sick
    'Lit. We remain always sick.'

Discourse

- Interestingly, the LF may appear with a nonclausal complement under certain discursive conditions, precisely in counter-oriented moves (deferments, counter-implicative and counter-propositional moves).

  ☞ In such contexts, the LF is analyzed as an exponent of Verum Focus (Henri et al., 2008; Henri, 2010).

(8) Mo ti krwar Mari pa MANZE/*MANZ kari poul!
    1SG PST think Mary NEG eat.LF/SF curry chicken
    'I thought Mary DIDN'T eat chicken curry!'

Morphology

☞ Both forms are used in lexeme formation processes, in particular, in "attenuative reduplication" (Baker, 2003).

1.2 Types of reduplication

1.2.1 Syntactic level

- Predicate doubling (9) and iteration (10). We examine iteration because of its direct relevance to the matter at hand. Iteration may give rise to a durative (10-b), a cumulative (10-c) or a pluractional (10-a) reading.

(9) Ala galoupe (ki) Mari galoupe la.
    PART run.LF that Mary run.LF DEF
    What a runner Mary is!

(10) a. Zan nek sant sega, sant sega enn lazourne.
          John like.SF sing.SF sega sing.SF sega
          John merely sings the sega, sings the sega all day.
      b. Mo'nn get sa po fler la tonbe, tonbe, tonbe depi lao.
          1SG'PERF watch.SF DEM pot flower DEF fall.LF, fall.LF, fall.LF from up
          I have watched this flower pot fall, fall, fall from upstairs.
      c. Mari anvi dormi, dormi, dormi.
          Mary want.SF sleep.LF, sleep.LF, sleep.LF
          Mary wants to sleep, sleep, sleep.

- Prototypical or contrastive reduplication (Ghomeshi et al., 2004): restricted to a prototypical or an intensive reading.

	conj.	N of copies	base form	reduplicant	aspectual type
Iteration	*ek* 'and'	n	SF/LF	SF/LF	activities /accomplishment
Contrastive Red.	*me* 'but'	1	LF	LF	any (?)

(11) Zan kontan sante   sante.
John like.SF sing.LF sing.LF
John likes to really sing

☞ These types are probably available crosslinguistically (at least for iteration and prototypical reduplication).

– Both prototypical reduplication and iteration show properties that distinguishes them from "attenuative" reduplication.

∗ They can both be coordinated- additive in one case (12) and adversative in the other (13).

(12) Li sante (ek)   sante (ek)   sante.
3SG (and) sing.SF (and) sante.SF sante.SF
He keeps singing (and) singing (and) singing.

(13) Sa boug la sante me sante!
DEM man DEF sing.LF but sing.LF
This man sings but sings! (=He sings so well)

∗ The verb is always LF with prototypical reduplication while with iteration, verb form is correlated to syntactic constraints established above.

∗ Iteration allows more than two copies while contrastive reduplication is restricted to only two copies.

1.2.2 Morphological level

• We compare the above-mentioned types with "attenuative" reduplication, a very productive lexeme formation process.

☞ Not syntactic: has properties of a simple verb.

☞ Not iconic: has different interpretations associated with a weakening effect.

(14) a. Zan kontan sant-sante.
John like.SF sing-sing.LF
John likes to hum.
   b. Zan kontan sant-sant   sega.
John like.SF sing-sing.SF sega
John likes to hum the sega.
   c. Mo'nn   dormi-dormi.
1SG'PERF sleep-sleep.LF
I have slept sporadically

2 Morphology of AR

2.1 Why is it morphology?

Interestingly, reduplicated verbs show a morphotactic import: The SF is the concatenation of two copies of the base's SF, whereas its LF is the concatenation of the base's SF with the base's LF = It can be argued that the reduplicant is SF because it analyzes the base as a complement. **But the phenomenon is not syntactic**.

☞ If this was the case then we would have problems determining what kind of verbal complement a verb like *manze* would take since it is not a raising or a control verb. The base does not have properties of a phrasal complement since it does not allow any marking (possible with modals).

(15)   a.   Zan ti paret pe sante.
             John PST seem PROG sing.LF
             John seemed to be singing.
    b.   Zan ti paret touzour pe sante.
             John PST seem always PROG sing.LF
             John always seemed to be singing.

(16)   a.   *Zan sant toultan sante.
             John sing.SF always sing.LF
    b.   *Zan sant souvan sante.
             John sing.SF often sing.LF
    c.   *Pol ti manz pe manz poul.
             Paul PST eat.SF PROG eat.SF chicken

- They can be iterated like simple verbs.

(17)   a.   Mari pas so letan manz-manze, manz-manze mem.
             Mary pass.SF 3SG.POSS time eat-eat.LF eat-eat.LF still
             Lit. Mary spends her time only nibbling, nibbling.
    b.   Zan sant-sante (ek) sant-sante (ek) sant-sante.
             John sing-sing.LF and sing-sing.LF and sing-sing.LF
             = John is always humming.

- The base and its reduplicant cannot be coordinated.

(18)   *Mari manz ek manze.
          Mary eat.SF and eat.LF

- With iteration or contrastive reduplication, all occurrences of the verb bears final-syllable high tone while with attenuative reduplication only the last syllable of the base bears the high tone.

(19)   a.   Li nek sant-santé.

b.　Li santé, santé, santé
　　　c.　*Li nek sánt-santé

- **It is not phonology**: the reduplicant is not phonologically predictable but corresponds to the SF.

- There is moreover, no restrictions with respect to syllable structure.

regular verb	reduplicated verb	syllable structure
reste	res-reste	CVC-CVCCV
manze	manz-manze	CVC-CVCV
balie	balie-balie	CVCVV-CVCVV
amene	amenn-amene	VCVC-VCVCV
pak	pak-pak	CVC-CVC
zwe-zwe	zwe-zwe	CCV-CCV

Table 1: Syllable structure of reduplicated verbs

2.2 Distinctive properties

- They obey same syntactic constraints as regular verbs. They are SF when the verb is followed by a (non-clausal) complement (20-b) and are LF with no complements (20-a), an extracted (21-a) or clausal one (21-b) or when followed an adjunct (22-b).

(20)　a.　Zan　kontan sant-sant　　sega.
　　　　John like.SF sing-sing.SF sega
　　　　John likes to hum the sega.
　　　b.　Zan　kontan sant-sante.
　　　　John like.SF sing-sing.LF
　　　　John likes to hum.

(21)　a.　Ki　sa　　bann madam la　inn　koup-koupe?
　　　　what DEM PL　　woman DEF PERF cut-cut.SF
　　　　What have these women chopped?
　　　b.　Mo'nn　　　　atann-atann ki　li　vini　　pou mo　　　ale.
　　　　3SG.NOM'PERF wait-wait.LF that 3SG come.LF for　1SG.NOM go.LF
　　　　I have waited a bit that he comes for me to go.

(22)　a.　Li　pe　　mars-marse　lor laplaz.
　　　　3SG PROG walk-walk.LF on　beach
　　　　He is walking on the beach.
　　　b.　Li　pe　　mars-mars　　lor laplaz.
　　　　3SG PROG walk-walk.SF on　beach
　　　　He is walking onto the beach.

- As with regular verbs, reduplicated verbs are still SF even when they are non-adjacent to their complement (23).

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(23) Sa   lisyen la   mord-mord toultan sa   sofa la   so   lipye.
      DEM dog   DEF   bite-bite.SF toultan DEM sofa DEF 3SG.POSS leg
      This dog always nibbles this sofa's legs.

- They allow any type of subject: pronominal or non-pronominal, singular or plural and they can be marked by TAM markers.

- They can be coordinated with factorization of the subject or TMA markers if any (24)

(24) [[Bann garson] [inn [[bwar-bwar   labier] ek [get-get
      PL   boy   PERF drink-drink.SF beer   and watch-watch.SF
      televizion]]]$_{vp}$]$_s$ ziska katrer dimatin.
      TV   until four   morning
      The boys have sipped beer and watched television sporadically until four in the morning.

- They can also be negated, whether in coordinated structures or not with the negator scoping over both conjuncts (25-b), or in non-coordinated structures (25-a)

(25) a. Mo   pa   manz-manze tout lazourne mwa!
          1SG.NOM NEG eat-eat.LF   all day   1SG.ACC
          I do not nibble all day!
      b. [[Bann garson] [pa'nn   [[bwar-bwar   labier] ek [get-get
          PL   boy   NEG'PERF drink-drink.SF beer   and watch-watch.SF
          televizion]]]$_{vp}$]$_s$ ziska katrer dimatin.
          TV   until four   morning
          The boys haven't sipped beer and watched television sporadically until four in the morning.

- They can stand alone as answers to a question as in (26-a).

(26) a. SPEAKER A: Ki   to   pou fer?
                     what 2SG.NOM IRR do.LF
                     What are you doing?
      b. SPEAKER B: res-reste!
                     stay-stay.LF
                     Stay for a while!

- One difference with regular verbs however, is the fact that they cannot be exponents of verum focus as illustrated in (27-b) (pragmatic incoherence)

(27) a. SPEAKER A: Zan nek manz-manz poul. (John just nibbles chicken.)
      b. SPEAKER B: *Be non. Zan pa   MANZ-MANZE poul!
                     But no. John NEG eat.SF-eat.LF   chicken, 3SG fill-up.LF
                     No, John doesn't NIBBLE chicken, he fills himself up.

☞ Note that strictly intransitive verbs, which in syntax do not show any alternation, may show a morphologically alternating SF in their reduplicated form (28-b)-(28-a).

(28)   a.   Zan **ronf**-ronfle   lor sez.
                John snore.SF-snore.LF on chair
                John snores sporadically on the chair.
           b.   Pol pe   **tranm**-tranble.
                Paul PROG shiver.SF-shiver.LF
                Paul is sporadically shivering.

LF	briz-brize	aret-arete	min-mine	aport-aporte	resikle-resikle	mɔ̃tre-mɔ̃tre	brij-brije	brije-brije
SF	briz-briz	aret-aret	min-min	apoɚt-apoɚt	resikle-resikle	mɔ̃tre-mɔ̃tre	brij-brij	brije-brije
TRANS.	'somewhat break'	'stop sporadically'	'somewhat undermine'	'bring sporadically'	'recycle once in a while'	'somewhat show'	'somewhat mix'	'somewhat glow'

LF	sãti-sãti	paɚti-paɚti	soɚt-soɚti	vin-vini	LF	kuveɚ-kuveɚ	feɚ-feɚ	friz-friz
SF	sãti-sãti	paɚti-paɚti	soɚt-soɚt	vin-vin	SF	kuveɚ-kuveɚ	feɚ-feɚ	friz-friz
TRANS.	'smell sporadically'	'leave once in a while'	'go out once in a while'	'come once in a while'	TRANS.	'somewhat cover'	'somewhat do'	'freeze once in a while'

Table 2: Sample paradigms of Reduplicated verbs

To summarize:

	conj.	N of copies	base form	reduplicant	aspectual type
Iteration	*ek* 'and'	n	SF/LF	SF/LF	activities /accomplishment
Contrastive Red.	*me* 'but'	1	LF	LF	any (?)
Attenuative Red.	no	1	SF/LF	SF	scalar predicates

2.3 AR: a case of compounding?

- Following (Fabb 2001) we argue that reduplication is a compounding process, because each part of the resulting word corresponds to an independently attested word.

- Examples of the phenomenon can be found in languages which can be typologically different. For example, in Yoruba (Kabore, 1998: see below) or Italian (Masini & Thornton, 2008).

Italian

- Lexical process which yields action nouns (Masini & Thornton, 2008).

  ☞ The change in grammatical category is a good argument in favor of such an analysis.

(29)
fuggifuggi	lit.run_away.run_away	'rush,stampede'
pigiapigia	lit.push.push	'rush,stampede'
copiacopia	lit.copy.copy	'generalized copying'

- Reduplication is however a peculiar type of compounding

  ☞ They are not recursive

  (30)   a.   She's a high voltage grid systems supervisor.
             b.   Un porte tue-mouche
             c.   *manz-manz-manze

  ☞ constituency is not conclusive (cf. see above)

  ☞ predicate-argument structure might be an argument, but no semantic parallel (or at least it should be understood as an iteration??)

  (31)   a.   She is a good book-keeper = She is good at keeping books.
             b.   Li   pe   manz-manz so   zong = ?
                  3SG PROG eat-eat.SF   3SG.POSS nail
                  She is nibbling her nails.

2.3.1 Cross-linguistics comparison

Mandarin Chinese

- marks plurality (collectivity or distributivity) in the nominal domain.

  (32) ren^2ren^2 (de^0) xin^1li^3 $chong^1man^3$-le^0 xi^3yue^4
          man-man of   heart   fill.SUFF   joy
          Everyone's heart was filled with joy.

- marks "attenuation" or illocutionary force in the verbal domain. (Paris, 2007)

(33) chang^{2}chang^0
taste-taste
taste a bit.

- Reduplication of classifiers (cf.reduplication of nouns).

African Languages In African languages (Yoruba, Mùuré, Fulfulde, Soninke, Sān, among others) reduplication is a derivational process creating new lexemes (Kabore, 1998):

- Yoruba : creation of adverbs from impersonal verbs (compounding)

(34) yóo   wá dájú-dájú
FUT^{10}+3SG.MASC come surely
He will surely come.

- Mùuré : semantic value similar to Mauritian reduplicated verbs.

(35) pùg-puge
sweep-sweep
sweep carelessly.

☞ At the semantic level, reduplication in those languages can express

  – repetition and a continuous process

(36) O warwarinii (Hausa)
he come.ac
He came several times.

  – Multiplicity

(37) fèrèsè ńláńlá (Yoruba)
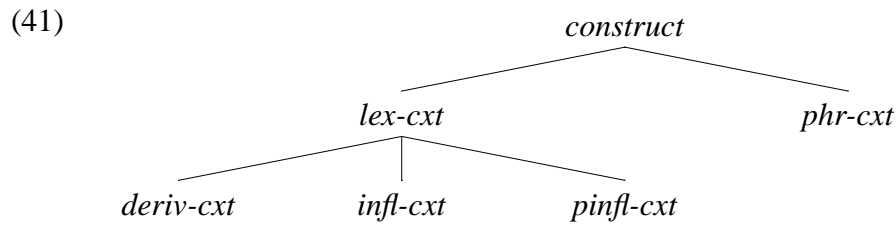window big-big
Big windows.

  – Weakening effect

(38) à   sárállé sárállé yà. (Soninke)
3SG shiver shiver FOC.
He is shivering slightly.

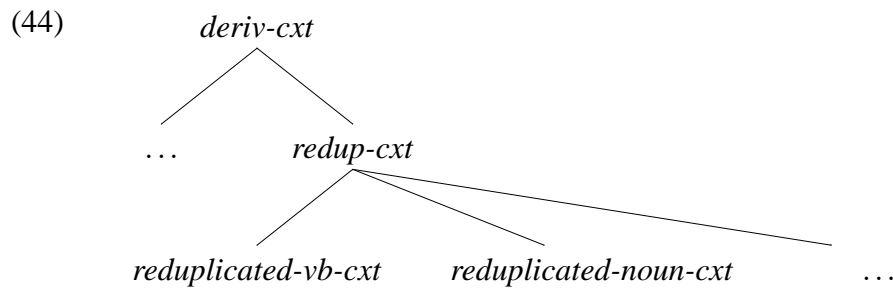 – …

2.4   The rules for AR

(39)

12
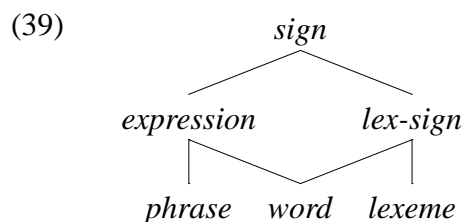
(40)
$$
\begin{bmatrix}
sign \\
\text{PHON} \quad phonological\text{-}object \\
\text{FORM} \quad morphological\ object \\
\text{SYN} \quad syntactic\text{-}object \\
\text{SEM} \quad linguistic\text{-}meaning \\
\text{CNTXT} \quad context\text{-}object
\end{bmatrix}
$$

(41)

```
                        construct
                   ____/         \____
               lex-cxt              phr-cxt
          ___/    |    \___
    deriv-cxt  infl-cxt  pinfl-cxt
```

(42)
$$
\begin{bmatrix}
construct \\
\text{MTR} \quad\quad sign \\
\text{DTRS} \quad\quad nelist(sign)
\end{bmatrix}
$$

(43) $lex\text{-}cxt \Rightarrow \begin{bmatrix} \text{DTRS} \quad list(lex\text{-}sign) \end{bmatrix}$

(44)

```
    deriv-cxt
   /        \
 …         redup-cxt
          /    |      \___
reduplicated-vb-cxt  reduplicated-noun-cxt   …
```

(45) $deriv\text{-}cxt: \begin{bmatrix} \text{MTR} \quad lex\text{-}sign \\ \text{DTRS} \quad nelist(lex\text{-}sign) \end{bmatrix}$

(46)

```
         verbal
         [AUX]
        /      \
complementizer  verb
              [VFORM]
```

(47)

```
       vform
      /     \
   long     short
```
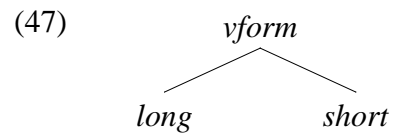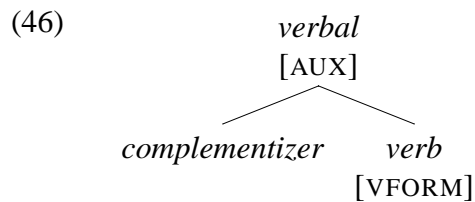
x	$F_{shorten}(x)$
reste	res
demande	demann
briye	briye
sorti	sort
vini	vinn
tranble	tranm
…	
otherwise	
x	$\langle x \ominus e \rangle$

(48) *vb-alt-cxt* $\Rightarrow$
$$
\begin{bmatrix}
word \\
\text{FORM} & \langle x \ominus \text{'e'} \rangle \\[4pt]
\text{SYN} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} verb \\ \text{VFORM} & short \\ \text{BASIC} & + \\ \text{LID} & \boxed{1} \\ \cdots \end{bmatrix} \end{bmatrix} \\[4pt]
\cdots \\[4pt]
\text{DTRS} & \left\langle \begin{bmatrix} word \\ \text{FORM} & \langle x \rangle \\ \text{SYN} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} verb \\ \text{VFORM} & long \\ \text{BASIC} & + \\ \text{LID} & \boxed{1} \\ \cdots \end{bmatrix} \end{bmatrix} \end{bmatrix} \right\rangle
\end{bmatrix}
$$

(49) *redup-vb-cxt* $\Rightarrow$
$$
\begin{bmatrix}
word \\
\text{FORM} & \langle x \oplus y \rangle \\[4pt]
\text{SYN} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} verb \\ \text{VFORM} & \boxed{1} \\ \text{BASIC} & - \\ \text{LID} & frame \\ \cdots \end{bmatrix} \end{bmatrix} \\[4pt]
\cdots \\[4pt]
\text{DTRS} & \left\langle \begin{bmatrix} word \\ \text{FORM} & \langle x \rangle \\ \text{SYN} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} verb \\ \text{VFORM} & short \\ \text{BASIC} & + \\ \text{LID} & \boxed{2} \\ \cdots \end{bmatrix} \end{bmatrix} \end{bmatrix}, \begin{bmatrix} word \\ \text{FORM} & \langle y \rangle \\ \text{SYN} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} verb \\ \text{VFORM} & \boxed{1} \\ \text{BASIC} & + \\ \text{LID} & \boxed{2} \\ \cdots \end{bmatrix} \end{bmatrix} \end{bmatrix} \right\rangle
\end{bmatrix}
$$

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3 Semantics

- Attenuative Reduplication conveys a diminished interpretation of the predicate

- We represent this through the use of scales[1]

- The relevant scales can be of different types

    - inherent to the predicate

    - given by aspectual interpretation

    - ...

- less intense with gradable predicates.

  (50) a. Mo'nn   ennjoy-ennjoy konser la apre mo'nn   ale.
            1SG'PERF enjoy-enjoy.SF concert DEF then 1SG'PERF go.LF
            I have somewhat enjoyed the concert then I left.
        b. Avan mo   bien dekouver so   zwe mo ti pe
            before 1SG.POSS well discover.SF 3SG.POSS game 1SG PST PROG
            krwar-krwar   li.
            believe-believe.SF 3SG
            Before I got to know the real him, I was somewhat believing him.

- less frequent with punctual predicates ; iterativity and/or distributive

  (51) a. Mari perdi-perdi pasians ena fwa.
            Mary lose-lose-SF patience have time
            Mary loses her temper once in a while.
        b. Mo   zip pe   tom-tonbe.
            1SG.POSS skirt PROG fall-fall.LF
            My skirt keeps falling.

  (52) Bann aksidan ariv-arive.
        PL   accident happen-happen-LF
        Accidents happen once in a while.

- unachieved event with incremental theme predicates ; pluractional

  (53) a. Zan inn ranz-ranz   so   lakaz.
            John PERF build-build.SF 3SG.POSS house
            John has somewhat build his house.
        b. Mari ti pe   manz-manz enn banann talerla.
            Mary PST PROG eat-eat.SF   IND banana earlier
            Mary was nibbling a banana earlier.

- shorter duration; cumulative effect; non-iterative

---

[1]This section is largely inspired by Kennedy & Mc Nally (2005) work on adjectives.

(54) a. Fouzer la inn pous-pouse apre li'nn seti.
fern DEF PERF grow-grow.LF then 3SG.PERF stunted
The fern has somewhat grown then got stunted.

b. Sima la inn dirsi-dirsi.
cement DEF PERF harden-harden.LF
The cement has somewhat harden

3.1 Attenuation and Pluractionality

Verbal AR is not necessarily pluractional (cf. (Tovena & Kihm, 2008)):

(55) Lisien la inn mord-mord Lemmy.
dog the PERF bite-bite.SF Lemmy
The dog lightly bit Lemmy
The dog nibbled Lemmy

In some cases, a pluractional interpretation is impossible:

(56) Fouzer la inn pous-pouse.
Fern the PERF grow-grow.LF
The fern somewhat grew
* The fern grew by little bursts of growing

3.2 Adjective Reduplication

Before turning to verbs, we study the reduplication of adjectives. The interpretation of verbal reduplication is biased by aspectual interpretations, a point we will be turning to later on:

(57) a. #Laport la ferme-ferme.
door the closed-closed
The door is somewhat closed

b. Zan inn ferm-ferm laport.
John PERF close-close.SF door
John repeatedly and infrequently closed the door

3.2.1 Scales

The basic semantics for a gradable predicate is as in (58).

(58) $[\![\text{adj}]\!] : \lambda d \lambda x.\text{adj}'(x) = d$

Unmodified gradable adjectives combine with a "*null morpheme*" *pos* to derive a property of individuals:

(59) $[\![\text{pos}]\!] : \lambda G \lambda x.\exists d[\text{standard}(d)(G)(C) \wedge G(d)(x)]$

Gradable predicates are associated to scales. The degree argument of the adjective belongs to one of these scales. A scale is made up of:

1. A set of degrees that represent measurement values

2. A dimension Δ that indicates the kind of measurement

3. An ordering relation R

Example:

- *hot* and *cold* share the same dimension (temperature), the same set of degrees (the values that can be given to temperature), but differ by their orderings (this is characteristic of antonym pairs)

A scale can be *open* or *closed*:

- A closed scale has a minimal and a maximal element: *full, invisible, closed*...

- An open scale lacks a minimal, a maximal element or both: *long, expensive, old, wet, pure*.

3.2.2 Absolute and Relative Predicates

Scalar predicates can be of two types:

1. **Relative** predicates need a contextually given standard to be evaluated:

   (60) a. The mission to Mars is expensive.
         b. In Paris, a coffee is expensive.

2. **Absolute** predicates come with their own conventionally fixed standard:

   (61) a. The glass is full.
         b. The table is wet.

   Absolute predicates can be either *partial* or *total*:

   - **Partial** predicates hold as long as a minimal degree of the property is possessed by the argument of the predicate

     (62) a. The table is wet.
           b. The cloth is torn.

   - **Total** predicates hold only if the argument of the predicate possesses the highest degree of the property:

     (63) a. The glass if full.
           b. The table is dry.

We use two tests to determine whether an absolute adjective has a maximum or a minimum standard:

1. *"Partiality" entailments*: Provided an adjective *adj* is indeed absolute, an assertion of the form *x is partially/half adj*:
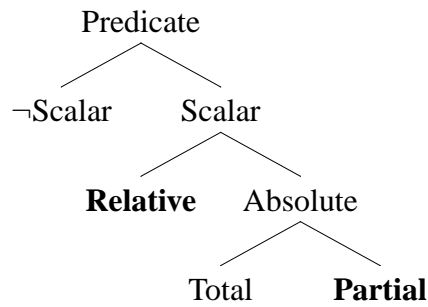
Predicate
```
        Predicate
        /      \
    ¬Scalar   Scalar
              /    \
        Relative  Absolute
                  /    \
               Total  Partial
```

Figure 1: Predicate Hierarchy

Minimum standards : entails that *x* is *adj*:

(64)   a.   The door is half/partially open. ⊨ The door is open.
       b.   The table is partially wet. ⊨ The table is wet.

Maximum standards : entails that *x* is *not adj*:

(65)   a.   The plant is partially dead. ⊨ The plant is not dead.
       b.   The glass is partially full. ⊨ The glass is not full.

2. *Comparatives*: Provided the adjective is indeed absolute:

Minimum standards : entailment to the unmarked form for the stronger argument:

(66)   The floor is wetter than the countertop. ⊨ The floor is wet.

Maximum standards : entailment to the negation of the unmarked form for the weaker argument:

(67)   The floor is drier than the countertop. ⊨ The countertop is not dry.

3.3 Empirical Observations

Non-gradable adjectives cannot be reduplicated

(68)   *Latab la anbwa-anbwa.
       table the wooden-wooden
       This table is somewhat wooden

Relative adjectives can be reduplicated, no matter what:

(69)   a.   Larivier la fon-fon   sa kote la.
         river   the deep-deep this side the
         The river is kinda deep on this side.
       b.   Zan enn tipti-tipti   garson.
         John is   small-small boy

John is kinda small.

Absolute adjectives can be reduplicated iff. they are partial predicates:

(70)   a.   Latab la mouye-mouye.
                   table the wet-wet
                   The table is sort of wet
        b.   Enn landrwa tapaz-tapaz.
                   this place   noisy-noisy
                   This place is sort of noisy

(71)   a.   #Laport la ferme-ferme.
                   door   the closed-closed
                   The door is somewhat closed
        b.   #Bar la drwat-drwat.
                   Rod the straight-straight
                   The rod is sort of straight.

3.4   Reduplication in comparatives

Reduplication is possible in comparatives:

(72)   a.   Sa tifi la pli tipti-tipti   ki   sann la.
                   this girl the more small-small than this   the
                   This girl is more smallish than that one
        b.   Lemmy pli   kontan sant-sante   ki   Ronnie.
                   Lemmy more love.SF sing-sing.LF than Ronnie
                   Lemmy likes to hum more than does Ronnie

3.5   Hypothesis

- Reduplication conveys that the predicate holds of its subject at a degree less than the usual standard:[2]

  (73) $[\![\text{adj-adj}]\!] : \lambda d \lambda x. \exists d_0[\text{standard}(d_0)([\![\text{adj}]\!])(C) \wedge \text{adj}'(x) = d \wedge d < d_0]$

- In the case of unmodified adjectives the above representation combines with *pos*:

  (74) $[\![\text{pos}]\!]([\![\text{adj-adj}]\!]) = \exists d[\text{standard}(d)([\![\text{adj-adj}]\!])(C) \wedge \exists d_0[\text{standard}(d_0)([\![\text{adj}]\!])(C) \wedge \text{adj}'(x) = d \wedge d < d_0]]$

- We (cleverly) assume that the standard for reduplicated adjectives is the same as for the non-reduplicated ones:

---

[2]Thus, the lambda-term functor associated to the AR construction is as follows:

(i) $\lambda P \lambda d \lambda x. \exists d_0[(\lambda Q.\text{standard}(d_0)(Q)(C))P \wedge ((P)d)x \wedge d < d_0]$

(75) $\forall d \, \text{standard}(d)(\llbracket \text{adj-adj} \rrbracket)(C) = \text{standard}(d)(\llbracket \text{adj} \rrbracket)(C)$

Relative Adjectives have a contextually fixed standard, (74) should be interpretable without too much fuss

Partial Adjectives denote properties of the following form:

(76) $\llbracket \text{AdjP}_P \rrbracket : \lambda x. \exists d [d > \min(S_A) \wedge m_A(x) = d]$

i.e. d is standard for *adj* iff. d is greater than the minimum of the scale associated with *adj*. Combined with (74) this gives:

(77) $\exists d [\text{standard}(d)(\llbracket \text{adj-adj} \rrbracket)(C) \wedge \exists d_0 [d_0 > \min(S_{\text{adj}}) \wedge \text{adj}'(x) = d \wedge d < d_0]]$

Given (75), this amounts to say that:

- $d > \min(S_{\text{adj}})$
- $d \in [\min(S_{\text{adj}}), d_0[$
- $d_0 > \min(S_{\text{adj}})$

which is a consistent set of constraints.

Total Adjectives denote properties of the following form:

(78) $\llbracket \text{AdjP}_P \rrbracket : \lambda x. \exists d [d = \max(S_A) \wedge m_A(x) = d]$

i.e. d is standard for *adj* iff. d is equal to the maximum of the scale associated with *adj*. Combined with (74) this gives

(79) $\exists d [\text{standard}(d)(\llbracket \text{adj-adj} \rrbracket)(C) \wedge \exists d_0 [d_0 = \max(S_{\text{adj}}) \wedge \text{adj}'(x) = d \wedge d < d_0]]$

Given (75), this amounts to say that:

- $d = \max(S_{\text{adj}})$
- $d \in [\min(S_{\text{adj}}), \max(S_{\text{adj}})[$

which is **not** a consistent set of constraints: this accounts for the non-reduplicability of of total adjectives.

3.6 That was for adjectives

Verbal reduplication is more diverse than with adjectives. The scale affected can:

- be inherent to the verb (akin to adjectives)

- come from aspectual coercion

Sometimes no scale is available: reduplication is then impossible.

	EVENTS		STATES
	atomic	extended	
	ACHIEVEMENT	ACCOMPLISHMENT	
+conseq	rekonet, gagn lekours arive, perdi vini, ale, deboute . . .	ranz enn lakaz manz enn samousa rod enn travay sant enn sante zwe monopoli . . .	ete, resanble, paret, konsiste, konpran, kontan, kone, reste, . . .
	SEMELFACTIVE	ACTIVITY	
-conseq	tape, mase, terne, . . .	manze, galoupe dormi, zwe piano naze, koze, . . .	

Table 3: Event types

3.6.1 Overview

Vendler classification:

Activity/accomplishment: reduplicate, because they are scalar predicates

States: reduplicate if there is a "given scale", usually aspectual

Achievement: cf. states

Semelfactives: are pluractional, i.e. they have an inherent scale of frequency

3.6.2 Sketch of Formalization

- The reduplication construction must be able to pick up a scale associated with the reduplicated predicate

- We must devise a proper interface with aspectual modification (cf. Bonami (2002))

- Comments welcome.

3.6.3 Remaining Issues

(80) a. #Zan kontan-kontan Lemmy.
          John love-love.SF   Lemmy
      b. #Zan deteste-deteste Lemmy.
          John hate-hate.SF   Lemmy

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