**Reduplication without segments: verb doubling as a prosodic repair**

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Reduplication is very common crosslinguistically, with reduplicative morphemes often (though not always) expressing arguably iconic meanings such as plurality or iteration. Reduplication also often occurs, however, as a form of prosodic repair, for example to augment words that would otherwise fall below a threshold of word minimality (McCarthy and Prince, 1993, 1995, et seq.).

Similar patterns are found above the word level, cases where a verb appears to be reduplicated in order to provide an otherwise unsupported clitic with a host. I argue in this paper that such instances of reduplication provide evidence for a post-syntactic model of linearization framed in terms of ranked and violable constraints, but one in which linearization nonetheless occurs prior to the insertion of phonological material, i.e. prior to Vocabulary Insertion in the model of Distributed Morphology (Halle and Marantz, 1993, 1994; Harley and Noyer, 1999). This is necessary in order to allow phonological mismatches between the copy and its original, while still accounting for the data using the model of Correspondence Theory (McCarthy and Prince, 1995).

**Data:** Ingush (Peterson, 2001) and Breton (Jouitteau, 2010, 2012) both exhibit contexts in which a finite verb can be duplicated to provide a preverbal clitic with a host, though only when there is no other potential host. In Ingush, the enclitic *ʔa* pre-verbally in several syntactic contexts, including the clause-chaining construction in (1)–(2). Any other lexical material, such as the direct object in (1), can host *ʔa*, but if the verb is the only element in the relevant domain, then the verb is duplicated to provide *ʔa* with a host, as in (2). Nichols and Peterson (2010) report parallel facts for a number of geographically proximate languages.

(1) muusaa buc=*ʔa* hʕaq-aa, čɨ=v-ie-r.
Musa grass=*ʔa* mow-ACV, in=AGR-go-PAST
"Musa cut the grass and went home."

(2) jett **laq**=*ʔa* laq-aa, b-el-ar.
cow go.dry=*ʔa* go.dry-ACV AGR-die-PAST
"The cow stopped giving milk and died."

A similar pattern is found in Breton, as described by (Jouitteau, 2010, 2012), though at the CP edge rather than the VP edge. Breton exhibits V2 word order in main clauses; the finite verb can be preceded by a focused or topicalized phrase, as in (3) from Standard Breton, but in the absence of any other fronted constituent a non-finite form of the main verb occurs clause initially, followed by a finite verb that is either a form of a verb meaning *do*, or (for an idiosyncratic subset of verbs) a finite double of the main verb, as in (4) from the Quimperlé variety of Breton. Jouitteau attributes both *do*-support and verb doubling to a requirement of the *rannig* (R), a morpheme that occurs immediately before the finite verb—in essence, a second-position clitic.

(3) [ D' ar jardin ] ez an.
[ P DET garden ] R go.1SG.
"I am going **into the garden.**"

(4) **Mont** *a* yan d' ar jardin.
go R go.1SGP DET garden
"I am going into the garden."

**Puzzle:** The pattern above differs in key respects from other instances of verb copying, including both canonical reduplicative affixes and verb doubling of the type found in predicate cleft constructions. Unlike affixal reduplication, the copied material does not correspond to a morphosyntactic element—there is no syntactic head that can be identified as the locus of realization for the copied string. More significantly, we see in Breton that the two copies of the verb can differ segmentally: in (4) neither is a substring of the other, and so the copy cannot be generated by segmental reduplication.

Reduplication as a prosodic repair also differs from the type of verb doubling commonly found in predicate cleft constructions, which is often analyzed as resulting from the realization at PF of more than one copy of a single moved verb (Nunes, 2004; Kandybowicz, 2008; Aboh and Dyakonova, 2009). The difference is that in the Ingush and Breton examples above there is no evidence for syntactic movement of the verb that would leave copies in both positions needed for the attested doubling; Jouitteau (2012) further demonstrates that verb doubling is distinct from predicate focus in Breton.

Despite these disanalogies, however, the pattern of reduplication seen above resembles affixal reduplication in applying within a local prosodic domain—the phrase rather than the word—and resembles verb

doubling in being naturally understood as resulting from conflicting requirements on the linearization of a single element.

**Proposal:** I propose that this pattern of reduplication results from a correspondence-based approach to reduplication (McCarthy and Prince, 1995), but applied at a level prior to the insertion of segmental content. Specifically, I argue for the derivational model of PF in (5). The syntactic component produces a purely hierarchical (non-linear) representation consisting only of roots and formal features; this representation must be converted to a phonetic string, but the conversion proceeds in stages. The first stage in linearization, the addition of linear order and prosodic correspondence to the syntactic representation. The second stage is Vocabulary Insertion (VI), which rewrites a hierarchical arrangement of formal features with a string of phonological elements. This is in turn the input to segmental phonology, which lacks access to the original syntactic hierarchical information, and has a more limited ability to modify linear order, but retains prosodic and linear boundary information.

(5) *Syntax* $\longrightarrow$ *Linearization* $\longrightarrow$ VI $\longrightarrow$ *Segmental Phonology*

This model incorporates more than one level of phonology, but differs from models such as Stratal OT (Kiparsky, 2000, 2007) in that the two levels differ in the representations over which they operate. Linearization operates over hierarchies, while segmental phonology operates over strings.

Different profiles for reduplication arise from differences in the stage of the PF derivation at which it applies, and from whether reduplication occurs as a repair or as the realization of a reduplicative affix. Reduplicative affixes are inserted at VI in the form of an abstract template; they receive their segmental content via base-reduplicant correspondence in segmental phonology.

Reduplication as a prosodic repair, by contrast, occurs at the earlier stage of linearization, as the optimal resolution of conflicting requirements. In languages with this type of reduplication, a constraint requiring an enclitic to have a prosodic word to its right (PROSODIC SUPPORT; Franks, 2000), and the constraints governing the relative position of the clitic and the main verb (CLITIC-V), outrank a constraint violated by an element in the input having more than one correspondent in the output (*DOUBLING).

(6) PROSODIC SUPPORT, CLITIC-V $\gg$*DOUBLING

In the absence of any other potential host for the clitic, this ranking prefers copying the main verb, rather than leaving the clitic without a prosodic host or inverting the clitic and the verb. At this stage of the derivation, however, neither the input nor the output has any segmental content. The only thing available to be copied is thus the abstract verb root; at the subsequent stage of VI, both instances of this root will be realized separately, potentially subject to different contextual allomorphy. Because correspondence applied at a phonological level without segmental content, it is compatible with segmental non-identity between the two copies of the verb, as in (4).

This account thus accommodates reduplication as a prosodic repair within the general correspondence-based approach to reduplication, simply by making explicit a divide between linearization and segmental phonology that is implicitly assumed in much work on linearization as a component of the PF branch. A possible concern remains, however, in the sense in which linearization can occur prior to VI. In particular, if VI does not occur until after linearization, how does linearization know that certain syntactic elements are clitics, while others are not? Recent work by Richards (2016), however, has suggested that precisely this type of prosodic information is available to syntactic mechanisms of linearization, information about the general prosodic characteristics of particular categories of heads, though not information about any exceptions particular to individual morphemes.

**Conclusion:** This paper argues for an articulated PF derivation, in which linearization and segmental phonology constitute separate levels divided by the process of Vocabulary Insertion, which converts a hierarchical representation in terms of roots and features into a phonologically contentful string. This separation allows patterns of reduplication as a phrasal prosodic repair to be accommodated within a correspondence-based model of reduplication, a unification that is otherwise unavailable.

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