REDUPLICATION IN PERSIAN:
A MORPHOLOGICAL DOUBLING APPROACH[*]

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1.   Introduction

This paper takes three distinct kinds of reduplication in Persian and argues that together they provide strong support for Morphological Doubling Theory (Inkelas and Zoll 2000, 2005). The three types of reduplication we consider are: echo reduplication, intensive reduplication, and indifference reduplication. We discuss each in turn giving descriptive information and showing how the construction is modeled within Morphological Doubling Theory.   We also present and discuss analogous constructions from Persian and other languages.
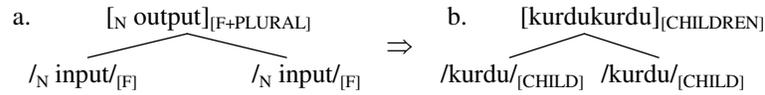
1.1   Morphological Doubling Theory

Inkelas and Zoll (2005 and references cited therein) have developed Morphological Doubling Theory as an alternative to theories of reduplication which involve phonological copying. Under phonological copying approaches (see, for example, Marantz 1982, McCarthy and Prince 1993/2001), a reduplicant is an affix onto which features or segments of the base are copied. In contrast, under Morphological Doubling Theory (MDT), reduplication involves semantic rather than phonological identity.   The units involved are morphological constituents which are spelled out independently, resulting in the appearance of copying. In some cases one or more of the units involved may be subject to independent phonological modification. The model for a reduplicated construction under MDT is shown in (1) where two daughters bearing the same morphosemantic features are combined to yield some additional component of meaning:

(1) $[output]_{[F+some\ added\ meaning]}$

      $/input/_{[F]}$ $/input/_{[F]}$ where [F] = semantic feature bundle
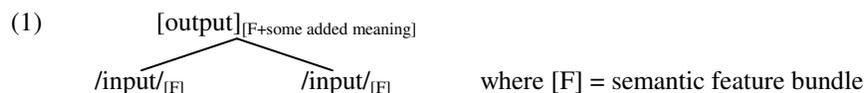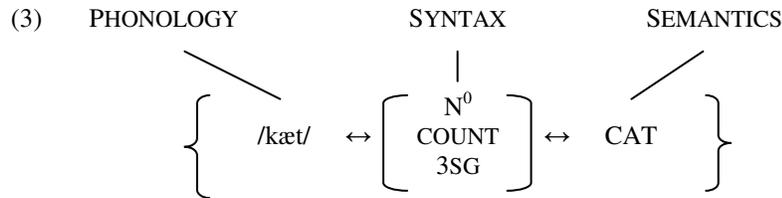
Let us take, as an example, plural formation in Warlpiri which involves the total reduplication of a nominal base: *kurdu* 'child' $\Rightarrow$ *kurdukurdu* 'children'. The MDT analysis of this phenomenon is shown in (2) where we see that two nouns with the same semantic features are spelled out identically to yield a plural meaning:
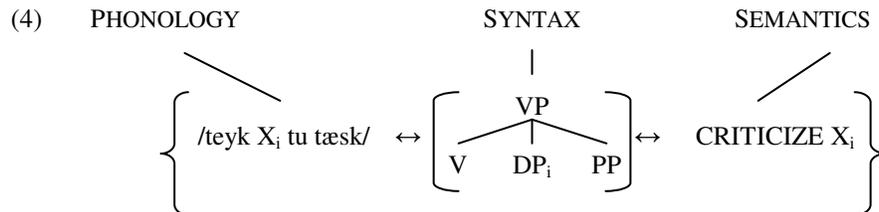
(2)   *Warlpiri*

a. $[_N \text{ output}]_{[F+PLURAL]}$ b. $[\text{kurdukurdu}]_{[CHILDREN]}$

$/_N \text{ input}/_{[F]}$ $/_N \text{ input}/_{[F]}$ $\Rightarrow$ $/\text{kurdu}/_{[CHILD]}$ $/\text{kurdu}/_{[CHILD]}$

1.2   Lexical Entries, Constructional Schemas, and Idioms

In this study, we treat constructional schemas of the kind shown in (1) and (2) above as lexical entries. In so doing we follow Jackendoff's (1997, 2002) view of lexical entries as correspondence rules between phonology, syntax, and semantics. The lexical entry for the word *cat*, for example, is as follows:

(3)   PHONOLOGY   SYNTAX   SEMANTICS

$$\left\{ /\text{kæt}/ \quad \leftrightarrow \quad \begin{bmatrix} N^0 \\ COUNT \\ 3SG \end{bmatrix} \quad \leftrightarrow \quad CAT \right\}$$

Jackendoff proposes to treat idioms in the same way, namely as lexical entries that contain a phonological, syntactic, and semantic component. Idioms may involve more than one word, contain variable positions, and have non-compositional semantics. The following lexical entry for the idiom *to take someone to task*, adapted from Jackendoff (2002:170.14), illustrates all of these points:

(4)   PHONOLOGY   SYNTAX   SEMANTICS

$$\left\{ /\text{teyk } X_i \text{ tu tæsk}/ \quad \leftrightarrow \quad \begin{bmatrix} VP \\ V \quad DP_i \quad PP \end{bmatrix} \quad \leftrightarrow \quad CRITICIZE \ X_i \right\}$$

The constructional schemas that we propose for the three types of reduplication in Persian can be viewed as idioms in Jackendoff's sense.

2.   Pattern 1: Echo Reduplication

Echo Reduplication (ER) in Persian involves the compounding of nouns, adjectives, and adverbs, where the first segment of the base is replaced by /m-/ or /p-/ in the reduplicant (Ghaniabadi 2005):

(5)   *ketab* 'book' $\Rightarrow$ *ketab-m/petab*   'books and related stuff'

As noted by Inkelas and Zoll (2005), this construction is a "virtually pan-Asian" phenomenon found in Turkish, Armenian, and Abkhaz (with *m-*replacement), as well as Kolami and Telugu (*gi-* replacement, Inkelas and Zoll 2005:42). Lidz (2001) discusses the construction in Kannada, and Keane (2001) analyzes ER in Tamil, noting that it also occurs in other Dravidian languages as well as in Bengali and Hindi. In all cases it extends the denotation of a word (or phrase) to mean "and related stuff" or "X and the like."

2.1 The Overwriting Segment: /m-/ vs. /p-/

Cross-linguistically, echo words must maintain a minimal non-identity from their bases. Examples are shown from Persian (6a&b). Where the non-identity requirement is not at issue, there is m/p optionality with /m-/ being the preferred choice. An example of this optionality is shown in (6c):

(6)   <u>BASE</u>   <u>ER FORM</u>

     a.   *pir* $\Rightarrow$ *pir-**m**ir*
                'old'   'old and stuff'

              bâlâ $\Rightarrow$ *bâlâ-**m**âlâ*
                'above'   'somewhere above'

     b.   *mive* $\Rightarrow$ *mive-**p**ive*
                'fruit'   'fruit and so forth'

     c.   *tarâzu* $\Rightarrow$ *tarâzu-**m**arâzu, tarâzu-**p**arâzu*
                'scale'   'scale and so on'

2.2 Lexical Categories That Undergo ER

Nouns most commonly undergo ER in Persian but adjectives and spatial/temporal adverbs may also be echo-reduplicated:

(7)   a.   Ns: *kâhu* $\Rightarrow$ *kâhu-m/**p**âhu*
                    'lettuce'   'lettuce and so on'

     b.   Adjs: *zarif* $\Rightarrow$ *zarif-m/**p**arif*
                    'slender'   'slender and stuff'

     c.   Advs: *nazdik* $\Rightarrow$ *nazdik-m/**p**azdik*
                    'near (time/place)'   'somewhere/sometime near'

2.3 Analogous Constructions

There are a number of compounding processes across languages to which ER bears a resemblance. We discuss these in turn.

Synonym compounds

Synonym compounds involve the combination of two nouns that are similar in meaning but not form. This kind of compound can be found in Hindi, Khmer, Vietnamese, and Mandarin (see Mortensen 2003:4 for references; see also Ourn and Haiman 2000, Inkelas and Zoll 2005). In some synonym compounds like those in Hmong, the meaning of the whole is the same as the meaning of the parts:

(8)   a.   caij+nyoog   ⇒   caij-nyoog
           time+time   'time'

      b.   ncauj+lu   ⇒   ncauj-lu
           mouth+mouth   'mouth'

                                           [Mortensen 2003:3.3]

In other synonym compounds like those in Hindi exemplified in (9), the meaning of the whole is the same as the meaning of ER: "N, etc."

(9)   a.   tan-badan   body-body   'body, etc.'
      b.   vivâh-šâdi   marriage-marriage 'marriage, etc.'
      c.   dhan-daulat   money-money   'money, etc.'
                                           [Singh 1982:346.5-7]

The synonym compounds above involve nouns that differ with respect to whether they are native to Hindi or not. Typically, the first noun is a native Hindi word while the second is of Perso-Arabic origin. Inkelas and Zoll (2005:61.51) give the following constructional schema for these compounds in which the two elements of the compound share the same meaning but are distinguished by the feature [+/-native]:

(10)
$$
\begin{bmatrix} \text{Syntax} = \text{N} \\ \text{Semantics} = \text{'x, etc.'} \end{bmatrix}
$$
$$
\begin{bmatrix} \text{Syntax} = \text{N} \\ \text{Semantics} = \text{'x'} \\ \text{Stratum} = +\text{Native} \end{bmatrix} \quad \begin{bmatrix} \text{Syntax} = \text{N} \\ \text{Semantics} = \text{'x'} \\ \text{Stratum} = -\text{Native} \end{bmatrix}
$$

Co-compounds

Another compounding pattern found throughout Eurasia involves combining two words that express closely associated concepts (words which express "natural coordination") deriving a meaning that is more general than the meaning of the parts (see Wälchli 2005). These co-compounds may bear markers of overt coordination but nevertheless function more like a word than a phrase. The meaning relation is one of hyponymy in which the compound is a hypernym (or superordinate) of its parts. Examples of co-compounds from Chuvash and Komi are given below:

(11) *Chuvash*
    a.   sĕt-śu   milk-butter   'dairy'
    b.   erex-săra   vodka/wine-beer   'alcoholic beverages'
                                                [Wälchli 2005:141]

(12) *Komi (Uralic)*
    Myj   **lun-voj**   vaj.e,   ńinęm   on   tęd.
    what **day-night** bring.PRES3SG nothing   NEG:2SG know
    'Nobody knows what the **future** will bring.'   [Wälchli 2005:10.5]

Wälchli considers echo-words to be very similar to co-compounds "as they mainly occur in the same languages as co-compounds … and as they are used in similar contexts as co-compounds…" (2005:169). They are also similar to what he calls "imitative co-compounds" in which the second member is meaningless and phonologically similar to the first but not in a way that is derivable by rule (section 5.2.6, p. 147).

        All these kinds of compounding, (see, for example, Shaki 1967), can be found in Persian:

(13) *Synonym compounds in Persian*
    a.   pič-o-tâb   lit. twist-and-twirl 'complication'
    b.   jang-o-jedâl lit. war-and-battle 'hostilities'

(14) *Co-compounds in Persian*
    a.   xâhar barâdar   lit. sister brother   'siblings'
    b.   âb-o jâru   lit. water-and broom   'cleaning/preparation'

(15) *Imitative co-compounds in Persian*
    a.   čarb-o-čili   'very/too oily' (from *čarb* 'oily')
    b.   pul-o-pale   'wealth' (from *pul* 'money')

The meaning relation between the parts of the above compounds in Persian is one of co-hyponymy in which the compound is a hypernym of its parts. Notice that in almost all cases, the overt marker of coordination intervenes between the two copies, although it does not affect the word status of compounds.

Numerical compounds
Numerical compounds in Persian also represent the same meaning relation, i.e. co-hyponyms evoking hypernyms. These compounds, shown in (16), must be followed by a classifier, unlike regular numerals which are a little more flexible in this regard:

(16) a.   do-se   qâšoq   šekar   b.   panj-šiš jeld   ketâb
            two-three   spoon   sugar   five-six   volume book
            'a few spoonfuls of sugar'   'about five or six books'

      c.   haft-haš-tâ   medâd
            seven-eight-CL   pencil
            'about seven or eight pencils'

Mortensen (2003) reports that Hmong has the same type of compounding:

(17) a. ob+peb   ⇒   ob-peb
          two+three   'a few'

      b. cuaj+kaum   ⇒   cuaj-kaum
          nine+ten   'many; however many'

                                        [Mortensen 2003:6.9]

Associative compounds
Associative compounds in Persian are also similar to ER in that they yield the meaning "and related stuff/people". Associative compounds involve a DP followed by the pronoun *inâ* 'these' (this+PL):

(18) a. parde   inâ   b. âqâ-ye   Tehrâni   inâ
          curtain   these   sir-EZ   Tehrani   these
          'curtains and related stuff'   'Mr. Tehrani and his family/friends'

The purpose of our discussion of these various sorts of compounds in Persian is to suggest that ER can be viewed as one specialized type of them. That is, if ER is related to synonym compounds and co-compounds, then it cannot be a purely phonological phenomenon. MDT can account for all such constructions in the same way.

2.4   Constructional Schema

In (19) we give the constructional schema for ER in Persian. This construction requires two daughters with identical semantic features and yields the meaning "and related stuff". We use the feature [+N] to distinguish nouns, adjectives, and adverbs from prepositions and verbs. Notice that the second copy must have a rule to account for the overwriting of the fixed elements (i.e. /m-/ and /p-/). We do not give this rule here. Also left for further research is the fact that some affixes (e.g. plural marking and the comparative) appear after the whole compound rather than on each copy (see Ghaniabadi 2005).

(19) $[_{+N}\ ]_{[F+\ \text{'and related stuff'}}$

              $[_{+N}\ ]_{[F]}$ $[_{+N}\ m/p\text{-}\ ]_{[F]}$

3.   Pattern 2: Intensive Reduplication

In this pattern, adjectives in Persian are duplicated and linked to each other via the Ezafe vowel:

(20) *sefid*   ⇒   *sefid-e sefid*
      'white'   'completely/pure white'

3.1 The Intervening Element: Ezafe

As shown in (21a&b), the main function of the Ezafe vowel is to link nouns to their modifiers and possessors (see Ghomeshi 1997). This vowel may also link adjectives to their complements as shown in (21c) but it is more common for adjectives to take their complements using the preposition *az* 'from, of' as shown in (21d):

(21) a. gol-e   [xoš+rang]   b. gol-e   [qašang]-e   man
       flower-EZ good+colour   flower-EZ   nice-EZ   me
       'a nicely colored flower'   'my nice flower'

    c. [$_{AP}$ negarân-e man]   d. mardom-e [$_{AP}$ xaste az   siyâsat]
        worried-EZ me   people-EZ tired of   politics
        'worried about me'   'the people tired of politics'

The Ezafe vowel never appears between the elements of the compound. This can be seen in (21a) where the members of the compound *xoš+rang* have not been linked via the Ezafe vowel. Similarly, adjectives and their preceding intensifiers (e.g. *xeyli* 'very', *besyâr* 'a lot', *kâmelan* 'completely', *biandâze* 'enormously' (lit. without size), *binahâyat* 'infinitely' (lit. without limit), *fo:qolâde* 'extraordinarily') do not allow the Ezafe vowel to intervene between them:

(22) a. xeyli/besyâr xub   b. biandâze   garm
       very/a lot   good   enormously warm

The presence of the Ezafe vowel in Intensive Reduplication cannot, therefore, be accounted for by some more general rule.

3.2 Lexical Categories That Undergo Intensive Reduplication

Adjectives are the main target of Intensive Reduplication (IR); nouns that have an adjectival use, as in (24), can also be subject to IR in their adjectival sense:

(23) a. <u>BASE</u>   <u>IR FORM</u>
      âbi   ⇒   *âbi-e âbi*
      'blue'   'completely/pure blue'

    b. *bi-xiyâl*   ⇒   *bi-xiyâl-e bi-xiyâl*
      'unperturbed'   'completely unperturbed'

(24) a. *tup*   ⇒   *tup-e tup*
      'perfect' (lit. ball (N))   'completely perfect'

    b. *bist*   ⇒   *bist-e bist*
      'A⁺/superb' (lit. twenty (N))   'totally superb'

3.3 Distribution of Intensive Reduplication

Intensive reduplicated forms occur predominantly in predicative position, as shown in (25), although they may also be used attributively, as shown in (26):

(25) **kalâfe-ye-kalâfe**   bud-am, bedun-e   in   ke   be-dun-am
agitated-EZ-agitated was-1SG without-EZ this that   SBJ-know-1SG

      če   kâr   mi-tun-am   bo-kon-am.
      what   work   DUR-able-1SG   SBJ-do-1SG
      'I was completely agitated, without knowing what I could do.'
                [Source: *Dašthâ-ye Xâkestari*   ('Grey   Deserts'),
                http://berke.persianblog.com/1384_8_berke_archive.html]

(26) Samâne jun! âbji-y   [**gol-e-gol**]-e   man! xošhâl
Samane dear sister-EZ flower-EZ-flower-EZ   I   happy

      šod-am   dânešgâh   qabul   šod-i …
      became-1SG   university   accepted   became-2SG
      'Dear Samane! My very best sister! I was happy that you were accepted
      at university …'
                [Source: *Siyâvaš va dustân* ('Siyavash and friends'),
                http://www.fonix.blogfa.com/]

3.4 Analogous Constructions

Many languages use full or partial reduplication of adjectives to indicate intensification or emphasis:

(27) *Mongolian*
    a.   khav-khar   'coal black'
    b.   chiv-chimeegüi   'completely silent'
    c.   uv-ulaan   'bright red'
                [Bosson 1964:110, cited in Inkelas and Zoll 2005:42]

(28) *Tagalog*
    a.   basag-basag   'broken to smithereens' (from *basag* 'broken')
    b.   butas-butas   'full of holes' (from *butas* 'having a hole')
    c.   punit-punit   'thoroughly torn' (from *punit* 'torn')
                      [Schachter and Otanes 1972:234]

(29) *Turkish*
    a.   kap-kara   'pitch black' (from *kara* 'dark')
    b.   bem-bejaz   'bright white' (from *bejaz* 'white')
    c.   ter-temiz   'spotless' (from *temiz* 'clean')
                         [Wedel 1999:1]

Persian Intensive Reduplication also bears a superficial similarity to Contrastive Focus Reduplication (CR) which is found in English, Spanish, Russian, and a range of other languages (Ghomeshi et al 2004):

(30) *Dressmaker:* Here's the skinny. We dressmakers have a very strict code, so I need to know, do you deserve to wear virginal white? Because if you don't, you'll have to wear an off-white, what we call a hussy white. So which will it be, **WHITE-white**?
        Margo: Yes. Um... except for the gloves.
        [Source: http://www.umanitoba.ca/linguistics/russell/redup-corpus.html]

CR is not limited to adjectives, however, and can target almost any lexical category (see http://www.umanitoba.ca/linguistics/russell/redup-corpus.html for plenty of examples). Moreover, CR is used to identify the prototypical meaning of the lexical category it targets and as such serves to disambiguate different senses of the same word.   Thus, CR has a different distribution from Intensive Reduplication of adjectives. Examples of CR are most often found in questions, with negation, or in comparatives.   Intensive Reduplication, on the other hand, is mostly used predicatively.

3.5   Constructional Schema

The constructional schema for Intensive Reduplication combines two adjectives with identical semantic features:

(31) $[_{ADJ}]_{[F +intensified]}$

        $[_{ADJ}]_{[F]} +Ezafe$ $[_{ADJ}]_{[F]}$

The first adjective appears with Ezafe marking. The Ezafe is realized differently depending on the phonetic shape of the stem (*-e* after consonants and *-ye* after vowels) and is thus represented abstractly in the constructional schema. The resulting string yields an intensified reading for the reduplicated adjective.

4.   Pattern 3: Indifference Reduplication

The third pattern we consider is referred to as the IKC (Indifference-*ke* Construction) by Sadat-Tehrani (2003).   This construction involves the repetition of a verb after the particle *ke*, and is used to express an attitude of indifference towards a proposition already introduced into the discourse:

(32) Speaker 1: mardom   raft-an.
                     people   left-3PL
                     'People left.'

        Speaker 2: raft-an   ke   raft-an.
                     left-3PL   that   left-3PL
                     'I don't care that they left.'

4.1   The intervening element: *ke*

The particle *ke* has many functions in Persian. It can introduce (a) a subordinate clause, (b) a relative clause, (c) the apodosis in a conditional, and (d) can serve as a marker of emphasis:

(33) a. Sinâ   goft   **ke**   Ali   mi-r-e
          Sina   said.3SG   that   Ali   DUR-go-3SG
          'Sina said that Ali will go.'

      b. aks-i   **ke**   tu   majalle   bud
          picture-INDEF   that   in   magazine   was.3SG
          'The picture that was in the magazine.'

      c. age   raft-an   **ke**   âli-ye.
          if   left-3PL   that   excellent-is
          'It's excellent if they've left.'

      d. man   **ke**   mi-r-am.
          I   EMPH   DUR-go-1SG
          'Me, I'm going.'

The use of *ke* in the IKC is not obviously related to any of those given above. One of the virtues of the morphological doubling approach is that we can treat *ke* in the IKC as a meaningless intervening element, much like the overwriting segment /m ~ p/ in ER or the Ezafe vowel in IR.

4.2   Lexical Categories That Undergo Indifference Reduplication

Only verbs can appear in the IKC. They can be inflected for any tense/aspect/mood (see Sadat-Tehrani 2003:51-2 for a full range of examples). An example in the simple past is provided in (32) above. Morphologically complex tenses such as the pluperfect which combines a participial form of the main verb with a form of the verb *to be* can also undergo this reduplication:

(34) *Pluperfect*
      umad-e   bud-an   ke   umad-e   bud-an.
      came-PART   were-3PL   that   came-PART   be.PAST-3PL
      'I don't care that they'd come.'

The copying of morphologically complex verbs is significant given that with compound verbs only the verbal part is reduplicated. (See Ghomeshi and Massam 1994, Dabir-Moghaddam 1997, and Folli et al 2005 for more on compound verbs.) This shows that the process is sensitive to lexical category:

(35) jiq+zad   ke   zad.
      shout+hit.3SG   that hit.3SG
      'I don't care that s/he shouted.'

The default word order for sentences in Persian is SOV but it is also a language in which scrambling occurs (see Karimi 2005). In cases where the verb is not sentence-final, the IKC nevertheless copies the verb showing that it is lexical category and not linear order which is relevant for this construction:

(36) Speaker 1: be-hešun   na-dâd   pul-o.
                  to-them   NEG-gave.3SG   money-OM
                  'S/he didn't give them the money.'

      Speaker 2: na-dâd   pul-o   ke   na-dâd.
                  NEG-gave.3SG   money-OM   that NEG-gave.3SG
                  'I don't care that s/he didn't give them the money.'

In most cases, however, the pre-*ke* constituent consists only of a verb since the proposition has already been introduced into the discourse context and thus constitutes given information and need not be repeated.

While the IKC almost always involves identity between two verbs, the durative aspect presents an exception. Both within the durative present and the durative past, the copied verb may appear in the subjunctive (see (37b)) rather than being an exact morphological copy of the first verb:

(37) *Durative past*
      a. dâšt-an   mi-raft-an   ke   mi-raft-an.
          had-3PL   DUR-left-3PL   that DUR-left-3PL
          'I don't care that they were leaving.'

      b. dâšt-an   mi-raft-an   ke   be-r-an.
          had-3PL   DUR-left-3PL   that SBJ-go-3PL
          'I don't care that they were leaving.'

We return to this fact in the conclusion as something that the morphological doubling approach is particularly well-suited to handle.

4.3   Analogous Constructions

There are a number of constructions cross-linguistically that bear a resemblance to the IKC. We start with a construction in Japanese in which a predicate is copied and repeated after *koto wa*:

(38) Speaker 1: kono   okasi   oisii   ne.
                  this   cake   tasty
                  'This cake is tasty, isn't it?'

Speaker 2:   un,   oisii   koto   wa   oisii   kedo, takai yo.
                     yes   tasty   tasty but   expensive
                     'Yes, it's true that [it]'s tasty, but [it]'s expensive.'

                                       [Okamoto 1990:254.22]

The meaning associated with this construction, as with the IKC, is above the level of the sentence – here expressing concession with regard to a proposition already introduced into the discourse context. Also, similar to the IKC, the elements *koto*, which is a nominalizer, and *wa*, a topic marker, do not carry their regular meaning in this construction.

    More generally, we find a range of constructions across languages that involve reduplication at the periphery of a sentence of some constituent contained within it. In Vata (Koopman 1984) a verb is copied in clause-initial position and receives a focused interpretation:

(39)   a.   mlĪ   waU   mlÌ.
                leave they leave
                'They LEFT.'   [Koopman 1984:157.11a]

       b.   zālĪa   nU   zàlÌà   zàmÚ.
                redden   I   redden   sauce
                'I really REDDENED the sauce.'   [Koopman 1984:157.11g]

A similar process is found in Modern Hebrew (Landau 2003):

(40)   lirkod   Gil   lo   yirkod   ba-xayim.
       to-dance   Gil   not   will-dance   in-the-life
       'Dance, Gil never will.'
                   [Landau 2003:7, cited in Inkelas and Zoll 2005:3]

Significantly, in both of these cases, the copied verb differs morphologically from the source verb, either by virtue of having default tonal specification (Vata) or by appearing in the infinitive (Modern Hebrew). As Inkelas and Zoll (2005) point out, this is a problem for theories of reduplication that involve phonological copying.

    The copying of a verbal constituent at the periphery of a clause is also a characteristic of certain kinds of tags:

(41)   a.   She'll go, will she?
       b.   You can write this up, can't you?

While tag questions in English have not been viewed as a kind of reduplication, their similarity to the constructions in Persian, Vata, and Modern Hebrew suggests that they could be.

    Reduplication at the clause periphery need not involve verbs. Grohmann and Nevins (2004) present an analysis of *shm*-reduplication in which the reduplication is derived by movement within the left periphery of a clause. A

shm-reduplicated sequence cannot appear in an argument position (see (42)) or be moved from one (see (43)):

(42)   a.   **Money, schmoney* is a concept.
       b.   **Money, schmoney* ruins everything.
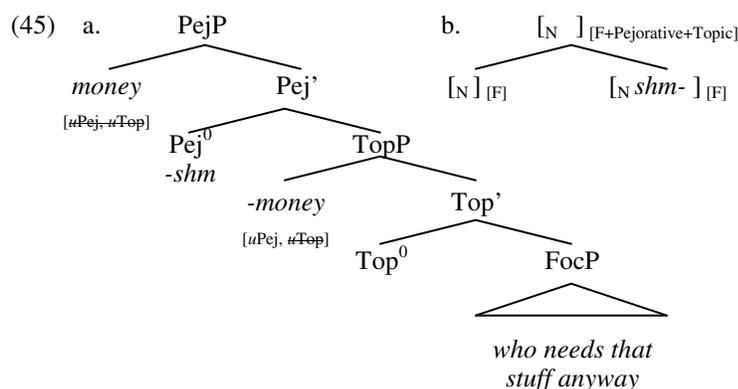   [Grohmann and Nevins 2004:158.36]

(43)   a.   *Who needs *money shmoney* (anyway)?
       b.   **Money, schmoney*, who needs ---------- (anyway)?
                                                [Grohmann and Nevins 2004:158.34]

Grohmann and Nevins write that *shm*-reduplication is "employed when there is a salient discourse topic, and the speaker wishes to reflect a dismissive attitude towards that topic;" (p. 147). Thus they base-generate the reduplicated element in a topic position, noting that it may either be resumed clause-internally or can function as a clause-external topic:

(44)   a.   *Money, schmoney*, who needs that stuff (anyway)?
       b.   *Breakfast, shmreakfast,* look at the score for God's sake!
                                                [Grohmann and Nevins 2004:158.35]

They account for the reduplication by movement from Topic Phrase (TopP) to a projection they label Pejorative Phrase (PejP). This projection can be realized in a number of ways: by a funny sound following the moved constituent or by a non-linguistic gesture such as a smirk or raised eyebrows. When the head of this projection contains *shm-*, the head and tail of the chain created by movement are both spelled out resulting in reduplication.

        We note that under a view in which syntax is the manipulation of features, the structure submitted to PF for Grohmann and Nevins is something quite similar to a constructional schema: it involves identity of features that receive the same phonetic realization and added features such as [+Topic] and [+Pejorative]. We give a constructional schema in (45) for the sake of comparison:

(45)   a.   PejP   b.   [N   ] [F+Pejorative+Topic]
           /   \
       money   Pej'   [N] [F]   [N *shm-*] [F]
      [uPej, uTop] /   \
                 Pej⁰   TopP
                 -shm   /   \
                     -money   Top'
                    [uPej, uTop] /   \
                             Top⁰   FocP
                                      /   \
                                  who needs that
                                  stuff anyway

4.4   Constructional Schema

The constructional schema for the IKC is more complex than the two we have seen above:

(46)   [TP.2][indifference towards proposition expressed in TP.1]

         [TP.1 … [V][F] …]+*ke*   [V][F]

In this schema the two sisters are not of the same syntactic category. One is a clause (TP.1) containing a verb and the other is just a verb sharing the same set of semantic features as the first verb. The particle *ke* appears as a fixed and invariant element within the schema. The resulting construct is a clause (TP.2) in which indifference is expressed towards the proposition denoted by TP.1.

5.   Conclusion

In this paper we have presented three patterns of reduplication, all of which are productive and yet at the same time have an idiomatic flavour. We have argued that Inkelas and Zoll's Morphological Doubling Theory, whereby reduplication is analyzed as identity of semantic features, can best capture the facts. We have shown that MDT allows us to capture similarities between ER and the family of compounding constructions that often occurs within the same languages that have ER. We have shown that MDT can handle reduplication containing fixed elements (e.g. *Ezafe, ke*). This is an advantage as the Ezafe vowel does not normally appear between intensifiers and adjectives and the particle *ke* does not carry any of its normal meanings within the IKC.   We have seen that morphologically complex items can reduplicate – something that does not present a problem for MDT. We have seen that Persian reduplication often involves non-adjacency between base and reduplicant and sometimes involves (morpho-phonological) non-identity between base and reduplicant (as in the case of the IKC and the durative aspect). Both of these facts are problematic for phonological theories of reduplication. Finally, under MDT the meaning of reduplication does not have to be attributed to the reduplicant but can be posited as a property of the construction as a whole.

Adopting MDT allows us to analyze Persian reduplication constructions as productive idioms: items with non-compositional semantics that are merged as chunks into larger syntactic structures. That we are able to capture both the productivity and the idiosyncracies of these reduplication constructions is a distinct advantage over theories that have come before.

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