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Reduplication in Movima: a Prosodic Morphology Approach

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Abstract

Reduplication in Movima (isolate, lowland Bolivia) covers a remarkable range of grammatical functions. Different reduplication processes indicate morphosyntactic categories such as direct, inverse and middle voice on verbal bases; on nominal bases, reduplication serves to form subordinate predicates, inalienably possessed nouns, and possessive predicates. In contrast, the cross-linguistically typical functions of reduplication, such as emphasis or plurality, are not or only marginally present. Movima reduplication is based not on morphemes, but on prosodic categories (moras and feet). With all these properties, it is best analysed in terms of prosodic morphology, where reduplicative morphemes are considered phonologically underspecified affixes.

1. Introduction

1.1. Some grammatical characteristics of Movima¹

Movima is a linguistic isolate still spoken by several hundred elderly speakers in the Bolivian Amazon area, mainly in and around Santa Ana del Yacuma in the department of Beni. The language was first investigated by the SIL linguists Robert and Judith Judy (see e.g. Judy and Judy 1967).

Movima clause structure is predicate initial. The linear order of the two core arguments in a transitive clause depends on the position of the nominal referents in a referential hierarchy, the argument denoting the higher-ranking referent occurring in first position after the predicate. The semantic roles of the two core arguments are indicated by direct/inverse morphology on the verb (see e.g. Haude 2006, Haude 2009). Movima morphology is mainly agglutinating and analytic (one morpheme – one meaning). However, to a large extent it is also prosodically based. For instance, there is an infix <kak> IRREALIS, which is inserted not inside the root, but after the first iambic foot of the word, independently of the word's complexity; similarly, the DIRECT suffix *-na* has a base-internal

¹ For detailed information on Movima phonology and grammar, see Haude (2006).

allomorph *-a-* that is used whenever the root of a morphologically complex verb is monosyllabic and ends in a consonant. In addition, there are several reduplication processes, to be discussed in this paper. Compounding and noun incorporation are frequent, generally involving classifier-like bound elements.

Tense, mood, and aspect are expressed by particles. Number and natural gender are indicated by referential elements (articles, personal pronouns, demonstratives), which additionally indicate presence, absence, position, and ongoing vs. ceased existence of the referent. There are only two case categories, core (morphologically unmarked) and oblique (marked by the prefix *n-*).

The phoneme inventory of Movima contains 19 consonants (represented orthographically, but with phonetic specification when not self-explanatory): *p*, *t*, *k* (realized as [pʔ^m], [tʔⁿ], and [ʔ], respectively, in coda position), ' [ʔ], *kw* [k^w], *b* [β], *d* [d], *ch* [tʃ], *v* [β], *s*, *j* [h], *ʔ*, *m*, *n*, *l*, *r* [r], *w*, *y* [j], and *y'* [j^ʔ]. The five vowel phonemes are *i*, *e*, *a*, *o*, and *u*. Syllable structure is CVC or CV(:). Stress generally falls on the penultimate syllable of the word, except when the word ends in a glottal(ized) consonant, which attracts stress to the last syllable. A penultimate open syllable is usually lengthened, the major exception is words that end in a glottal stop. A lexical root must minimally consist of a heavy syllable, i.e., CVC or CV:. An independent content word must consist of minimally two syllables constituting three moras, as will be shown below. A lexical root can only occur independently if it fulfills these criteria, otherwise it must be morphologically or phonologically augmented, and, as will be seen, reduplication can serve as a way to achieve this.

1.2. Reduplication in Movima: an overview

Movima has four reduplication processes, three word-initial ones and a word-internal one. Word-initial reduplication includes monomoraic, bimoraic and foot reduplication; word-internal reduplication is monomoraic. All reduplication processes are regressive, i.e., the copy precedes the source.

The different reduplication processes cover a large range of grammatical functions. In the verbal domain, word-initial monomoraic reduplication marks direct voice (Section 4.1.1); bimoraic reduplication marks inverse and middle voice (4.1.1, 4.1.2). Word-initial foot reduplication only occurs on nouns, from which possessive predicates are derived (4.2.3). Word-internal reduplication has two functions on nominal bases: on the one hand, it marks nouns as inalienably possessed (4.2.1), and, on the other hand, it derives subordinate predicate nominals (4.2.2); it is also a means to mark inverse and middle voice on some

verbal bases (4.1.1, 4.1.2). The different functions of one and the same reduplication process are easily identified on the basis of the morphological, lexical and syntactic environment.

All reduplication processes are also found in places where their grammatical function is not obvious (4.3). While in some cases, they can be identified as creating prosodically well-formed words, in others it is not clear whether their function is grammatical or rather phonological. In neither of these cases does reduplication seem to be fully productive at the present stage of the language.

This paper is structured as follows. Section 2 presents general facts of the prosody of Movima words. In Section 3, the four reduplication processes are illustrated. Section 4 discusses the functions of reduplication. The conclusions are summed up in Section 5.

2. The structure of Movima words

2.1. Syllable structure

For a better understanding of Movima reduplication, a few words have to be said about the prosodic structure of Movima words and syllables.

There are two syllable types in Movima: heavy (H) and light (L). Heavy syllables are either closed (CVC) or open and long (CV:); light syllables are short and open (CV). There are no consonant clusters.

When the word-initial consonant is a glottal stop (see Haude 2006: 38-42), it is not orthographically represented, as in (1); the glottal stop is represented only when forming the onset of an element that occurs inside a word, e.g. in compounding, incorporation or when preceded by reduplication (see e.g. (17) and (19) below). In (2) this is illustrated for compounds.

(1)	<i>i:may</i>	[^h ʔi:maj]	‘night’	
	<i>et'i</i>	[^h ʔɛʔi]	‘name’	
	<i>o:ra</i>	[^h ʔɔ:ra]	‘hour’	
(2)	<i>pek-i:may</i>	[pɛʔ ^h ʔi:maj]	‘all night’	(all-night)
	<i>kem-et</i>	[^h kɛmʔɛʔ]	‘my surname’	(inform-name)
	<i>et-o:ra</i>	[ʔɛʔ ^h ʔɔ:ra]	‘what time’	(name-hour)

2.2. Prosodic words

Movima content words (nouns, adjectives, verbs) are minimally disyllabic and consist of at least three moras. In (3), some typical examples are given. When a content word is disyllabic, its first syllable is generally heavy (i.e., two of the minimally three moras occur on the first syllable); hence, if the first syllable is open (CV), its vowel is usually lengthened, as can be seen in (3) with *to:mi* 'water' and *bi:jaw* 'old'.

(3)	<i>baytim</i>	'garden, field'
	<i>alra</i>	'my friend'
	<i>to:mi</i>	'water'
	<i>bi:jaw</i>	'old'
	<i>baba:kwa</i>	'fruit'
	<i>kori:di</i>	'stick'

There is a closed class of about seven nouns that are phonologically defective in that they only consist of two light syllables (CVCV):

(4)	<i>ma'a</i>	'mother'
	<i>pa'a</i>	'father'
	<i>je'e</i>	'state of being'
	<i>ve'e</i>	'fire'
	<i>ko'o</i>	'tree, firewood'
	<i>chi'i</i>	'excrement'
	<i>ke'e</i>	'sister' (respectful address)

These nouns have in common that they contain a glottal stop, which is followed by a vowel identical to the one preceding the glottal stop. They show special behaviour when other morphemes are added (see Haude 2006: 197, and 4.3.4 below).

2.3. Stress and vowel length

Stress normally occurs on the penultimate syllable of the word. In (5), it can be seen that when suffixes are added to a word, stress shifts to the right:

(5)	a.	<i>bo:ve</i>	[¹ bo:βε]	'fan of straw'
	b.	<i>bove-mo</i>	[¹ bo'βε:mo]	'jasayé (type of basket)' (-mo 'CLF.basket')

- c. *bove-mo:-ba* [bɔβɛ'mɔ:ba] 'little basket' (-ba 'CLF.round')
- d. *bove-mo-to:da* [bɔβɛmɔ'tɔ:da] 'broken *jasayé*' (-*toda* 'CLF.piece')

The glottal stop attracts stress. This means that words ending in /k/ (phonetically realized as a glottal stop) or in /t/ or /p/ (glottalized in coda position, see 1.1) are stressed on the last syllable:

- (6) *chu:jat* [tʃu:'hatʔⁿ] 'motacú (palm tree)'
ku:dup [ku:'dúpʔ^m] 'flea'
pa:kona:nak [pa:kɔna:'naʔ^a] 'fox'

The lengthening rules in Movima are, in general, as follows: i) when the penultimate syllable of a word is open, the vowel is lengthened; ii) all other syllables are short. This can be observed in (5) above. There are quite a few deviations from the lengthening rule, however. For instance, most disyllabic words ending in the simple glottal stop (which is often followed by a release vowel identical to the preceding vowel) have a short penultimate syllable:

- (7) *merək* [mɛ'rɛʔ^e] 'big'
tochik [tɔ'tʃiʔⁱ] 'small'
karak [ka'raʔ^a] 'macaw'
bitok [bi'tɔʔ^ɔ] 'old person' (affective)

There are also some trisyllabic words where lengthening of the penultimate syllable does not occur. Examples are given in (8). Note that despite the absence of lengthening, the words in (7) and (8) conform to the minimality criterion in that they consist of three moras (light plus heavy syllable and three light syllables, respectively).

- (8) *chinata* [tʃi'naʔa] 'manioc'
awaro [ʔa'warɔ] 'parrot'
juyeni [hu'jeni] 'person'
yonali [jɔ'nali] 'caiman'

On the other hand, there are also words that have a *long* syllable where this would not be expected. A case in point are Spanish loan words, which are adapted to the Movima stress rules. When the penultimate syllable is stressed, it is also lengthened when open, as shown in (9). When, however, a Spanish loan originally carries stress on a syllable other than the penultimate (e.g. Spanish *máquina* ‘machine’, *música* ‘music’ in (10)), the penultimate syllable is stressed, but remains short, while the originally stressed syllable is lengthened.

- | | | | | |
|------|------------------|--------------|-----------|------------------------------------|
| (9) | <i>pol:ata</i> | [pɔ'la:ta] | ‘money’ | (Sp. <i>plata</i> ‘silver, money’) |
| | <i>sani:ya</i> | [sa'ni:ja] | ‘melon’ | (Sp. <i>sandía</i> ‘melon’) |
| | <i>polisi:ya</i> | [pɔli'si:ja] | ‘police’ | (Sp. <i>policía</i> ‘police’) |
| | | | | |
| (10) | <i>ma:kina</i> | [ma:'kina] | ‘machine’ | (Sp. <i>máquina</i>) |
| | <i>mu:sika</i> | [mu:'sika] | ‘music’ | (Sp. <i>música</i>) |
| | <i>ele:siya</i> | [ʔele:'sija] | ‘church’ | (Sp. <i>iglesia</i>) ² |

In line with the general lengthening rules, disyllabic loans with the structure CVCV always have a first long syllable, like native words. However, unlike typical native words of the same structure (e.g. *bo:vein* (5a) above), all loans with the structure CVCV retain the long vowel also when further suffixes are added. This contradicts the second lengthening rule, according to which the lengthening would automatically be lost. Examples (11)-(13) illustrate this:

- | | | | | | |
|------|----|---------------------|-------------------------------|--------------------|---------------------------------------|
| (11) | a. | <i>wa:ka</i> | ['wa:ka] | ‘cow’ | |
| | b. | <i>wa:ka-wandi</i> | [,wa:ka'wandi] | ‘ranch’ | (- <i>wandi</i> ‘INS.house’) |
| | | | | | |
| (12) | a. | <i>pa:ko</i> | ['pa:kɔ] | ‘dog’ ³ | |
| | b. | <i>pa:ko-na:nak</i> | [,pa:kɔna:'naʔ ^a] | ‘fox’ | (- <i>na:nak</i> ‘PSEU’) ⁴ |

² Since Movima has no diphthongs, Spanish diphthongs (like /ia/ in *iglesia*) are reanalysed as disyllabic (/ija/).

³ The etymology of the noun *pa:ko* ‘dog’, which occurs in this or similar forms in other native Bolivian languages as well, is not clear. Movima treats it like a Spanish loan both phonologically (lexical length of the first syllable) and morphologically (see 4.3.5 below).

⁴ The suffix *-na:nak* [na:'naʔ^a] is exceptional in that it has a lengthened penultimate syllable despite the final glottal stop, which is possibly due to a fossilized reduplication (<*na:-*>*nak*); this is irrelevant for the phenomenon illustrated here, however.

- (13) a. *mo:to* ['mɔ:tɔ] 'motorbike'
 b. *mo:to-to:da* [,mɔ:tɔ'tɔ:da] 'wrecked motorbike' (-*toda* 'piece')

The lengthening properties of Movima words are relevant for some of the reduplication processes discussed in the following section.

3. The forms of reduplication

The prosodic units relevant for reduplication in Movima are moras and feet (see McCarthy and Prince 1995). The reduplication processes that occur in Movima are listed in (14). All these processes are regressive, i.e., the copy precedes the source. None of the processes can occur repeatedly within one word, but combinations of two different processes do occur. In (14), the reduplication processes are characterized by the prosodic properties of the copy: μ = mora, L = light syllable (CV), H = heavy syllable (CVC or CV:). As will be seen, this does not say anything about the structure of the base to which the reduplication applies; for instance, monomoraic reduplication can apply to a bimoraic unit, of which only the first CV segment is copied.⁵

- (14) Movima reduplication processes
- a. initial monomoraic reduplication ($\mu\sim$)
 - b. initial bimoraic reduplication ($\mu\mu\sim$)
 - c. initial foot reduplication (LH \sim , H \sim , or LL \sim)
 - d. internal monomoraic reduplication ($\langle\mu\sim\rangle$)

The following subsections describe each reduplication process in turn. In this section, and in line with the practice of the present volume, the copied part is glossed as 'RED', independently of its formal or functional properties. In the subsequent sections, where the different functions of reduplication are explained, the reduplicated elements will be treated in terms of prosodic morphology, i.e., as templatic affixes with a proper grammatical meaning.

⁵ In this article, reduplication is not discussed in terms of "full" and "partial". Either of these phenomena is accidental in Movima, where the rules for reduplication are entirely prosodic. Hence, when a root or word is copied as a whole (as e.g. in (16-17) or (26) below), this is only because its structure happens to correspond to the reduplication template, not because there existed some rule for full reduplication.

3.1. Initial monomoraic reduplication ($\mu\sim$)

The addition of a word-initial monomoraic segment through reduplication is illustrated in (15)-(17). (Regarding (17), recall that a word-initial glottal stop is not represented in the practical orthography.)

(15) *be~bet-kwa*
RED~hide-ABS
'leather, hide'

(16) *ju~ju:-wa=∅*
RED~scold-NMLZ=1SG
'my scolding (you/ her/ him/ it/ them)'

(17) *a~'am-wa=∅*
RED~enter-NMLZ=1SG
[ʔa'ʔamwa]
'my putting (it) into something'

Initial monomoraic reduplication occurs productively on verb roots, as in (16) and (17), where it marks direct voice (see 4.1.1). Non-productively it is also found with monosyllabic noun roots, as in (15) (see 4.3.4).

3.2. Initial bimoraic reduplication ($\mu\mu\sim$)

Bimoraic reduplication can have several forms: when the base permits it, the copy consists of a single heavy syllable, i.e., either CVC, as in (18), or CV:, as in (20); when the base commences with a light syllable (CV), the copy includes the additional CV segment of the following syllable, as in (21). Note that the latter type is not frequent: in the domain where bimoraic reduplication is most productive, namely the marking of inverse and middle voice (see 4.1.1), bases commencing with a light syllable normally undergo word-internal reduplication (see 3.4).

(18) *sal~sal-wa=∅*
RED~look.for-NMLZ=1SG
'my being looked for (by you/ her/ him/ it/ them)'

- (19) *am~'am-wa=∅*
 RED~enter-NMLZ=1SG
 [ʔam'ʔamwa]
 'my being put into (something)'
- (20) *ju:~ju:-wa=∅*
 RED~scold-NMLZ=1SG
 'my being scolded (by you/ her/ him/ it/ them)'
- (21) *puru~purut-wa=∅*
 RED~kiss-NMLZ=1SG
 'my being kissed (by you/ her/ him/ it/ them)'

3.3. Initial foot reduplication

Foot reduplication copies the first iambic foot of the base and can have the shape LH, H, or LL (see Kager 1995: 397). Which of these shapes the reduplicated element has depends on the structure offered by the base. When the base starts in a LH segment, i.e., when a maximal iambic foot is available, this entire segment is copied, as is illustrated in (22) with the word *chorankwanto* 'hat'.

- (22) *choran~chorankwanto*
 RED~hat
 'to have/ wear a hat'

When no maximal iambic foot is available, i.e., when the base commences with a heavy or with two light syllables, the reduplication process is formally identical to bimoraic reduplication. (As will be shown in 4.2.3 below, however, iambic foot reduplication can be identified by its function of marking predicative possession.) For a heavy first syllable consider (23) (CVC) and (24) (CV:).

- (23) *maj~majni*
 RED~offspring
 'to have children'
- (24) *wa:~wa:ka*

RED~COW

'to have cattle'

The foot reduplication of a base commencing in two light syllables (e.g. *china¹ta* 'manioc') is shown in (25). When comparing (25) with (22), it can be seen that foot reduplication copies a prosodic unit already present in the base: it does not just copy the first CVCVC sequence to create a maximal iambic foot (which in the case of (25), would result in **china¹ta~china¹ta*).

(25) *china~china¹ta*

RED~manioc

'to have manioc'

The base in (24) above, *wa:ka*, is a loan from Spanish (*vaca* 'cow'). As was already mentioned, in disyllabic loans with an open first syllable, the first syllable is inherently long, i.e., it remains long also when the word is augmented (see (11)-(13) above). It therefore counts as heavy and can constitute a iambic foot. By contrast, on native words with an open first syllable, the first syllable is lengthened only when occurring in penultimate position; when additional elements are attached, the lengthening is dropped, as can be observed in (5) above. Hence, the first syllable of a native word with the structure CV(:)CV not being inherently long, iambic foot reduplication copies the entire word. This is illustrated in (26) with the word *ro(:)ya* 'house'.⁶

(26) *roya~ro:ya*

RED~house

'to have a house'

Also the phonologically defective nouns (see (4) above), whose structure is CVCV without any lengthening, are entirely reduplicated, as in (27) and (28). (Sometimes the penultimate syllable of the resulting word is lengthened, but the data are not consistent on this.)

⁶ In elicitation, a speaker once accepted my proposal to reduplicate only the first syllable of a native word (*ro:~ro:ya* 'to have a house'). However, this was never provided spontaneously and never confirmed by text data. By contrast, the full reduplication of a Spanish loan (**waka~wa:ka* 'to have cattle') is always considered ungrammatical.

(27) *ko'o~ko'o*
 RED~tree
 'to have trees'

(28) *ma'a~ma'a*
 RED~mother
 'to have a mother'

3.4. Internal monomoraic reduplication (<μ~>)

Internal monomoraic reduplication involves the copying of the final CV segment of the base. This, too, is a regressive reduplication process, i.e., the copy precedes the source. The regressive character of the reduplication is only apparent when the base ends in a consonant, like *tokot-* 'boil' in (29), since on vowel-final bases, copy and source are identical, as shown in (30). For the sake of comparison, the (a)-examples below show the roots in their non-reduplicating form, while the (b)-examples illustrate the reduplication.⁷

(29)	a.	<i>loy it tokot-na=∅</i>	b.	<i>jayna to<ko:~>kot is to.mi</i>
		ITN 1 boil-DR=1SG		DSC boil<RED~> ART.PL water
		'I'll boil it.'		'The water is already boiling.'

(30)	a.	<i>jayna mat-lo</i>	b.	<i>jayna mat-<lo:~>lo</i>
		DSC undo-CLF.liquid		DSC undo<RED~>CLF.liquid
		'It has already melted.'		'It melts already.'

Internal reduplication has many different functions, depending on the lexical base to which it applies. Most importantly, it marks inverse (4.1.1) and middle voice (4.1.2) on verbs, inalienable possession on nouns (4.2.1), and it derives subordinate predicate nominals from nouns (4.2.2). Internal reduplication can cooccur with iambic foot reduplication, as illustrated in (31) (see 4.2.3 for this and other examples).

⁷ In (29b), the reduplication only involves the root, not the suffix *-na* DIRECT that appears in (29a). In fact, the reduplicative element is the middle voice marker (see 4.1.2), which is incompatible with the direct suffix. In (30b), the reduplication involves a suffix, *-lo* 'CLF.liquid'. This, however, does not mean that the reduplication is based on the morphological structure (root + suffix) of the base. Rather, the process applies to the entire base irrespective of its internal morphological structure.

- (31) *n-as* *maj-maj<ni~>ni='ne*
 OBL-ART.N RED~offspring<RED~>=3F
 'when she has children'

4. The functions of reduplication

The four reduplication processes described above have various grammatical meanings. The reduplication processes, the bases to which they apply productively, and the meanings they have with these bases are listed in Table 1. (Less productive occurrences and less clearly identifiable functions will be discussed in Section 4.3 below.)

Table 1: Forms and functions of Movima reduplication

reduplicant	base	function	gloss
μ~	monosyllabic verb root with suffix	direct voice	DR~
μμ~	monosyllabic verb root with suffix	inverse voice	INV~
μμ~	monosyllabic verb root	middle voice	MD~
<μ~>	disyllabic verb root or complex base with suffix	inverse voice	<INV~>
<μ~>	disyllabic verb root or complex base	middle voice	<MD~>
<μ~>	noun	inalienable possession	<NAL~>
<μ~>	noun	subordinate predicate	<NMLZ.N~>
foot~	noun	predicative possession	POSS~

Given their clearly identifiable functions, the reduplication processes are best analysed in terms of prosodic morphology, which considers reduplication as “a special case of ordinary affixal morphology, where the affixes are phonologically underspecified, receiving their full phonetic expression by copying adjacent segments” (Broselow and McCarthy 1983: 25; see also Marantz 1994). Hence, the reduplicative morphemes are represented as affixes, the tilde identifying them as reduplicated elements; word-internal reduplication is furthermore signalled by angle brackets, which are conventionally used for infixation. In the table above and the discussion to follow, the glosses are now used to indicate the meanings of these affixes; only when no clear meaning can (as yet) be identified, the reduplicated elements are glossed as RED, in the same way as in the previous section.⁸

⁸ All but some elicited single-word examples stem from spontaneous texts.

4.1. Reduplication on verbs

4.1.1. Marking bivalent verbs: $\mu \sim$ DIRECT, $\mu\mu \sim$ INVERSE

Movima bivalent verbs, i.e., verbs that form the predicate of a transitive clause, are morphologically marked for either direct or inverse voice (see Haude 2006: 323-328). Direct marking indicates that the first postverbal argument, attached to the predicate through ‘internal cliticization’ (marked by =), is the actor, while the second postverbal argument, which is either not attached to the predicate or attached to it by ‘external cliticization’ (marked by --),⁹ is the undergoer; inverse marking indicates the reversed situation.¹⁰

On affirmative main-clause predicates with monosyllabic verb roots, the direct marker is the suffix *-na*, as in (32a), and the inverse marker is the suffix *-kay*, as in (32b).

- (32) a. *sal-na=n--as*
look.for-DR=2--3N.AB
‘You look for it.’
- b. *sal-kay-a=n--as*
look.for-INV-LV=2--3N.AB
‘It looks for you.’

When a bivalent verb is combined with further suffixes (e.g. nominalizing *-wa*, causative *-poj*, benefactive *-kwa*, among others; see Haude 2006: 360ff.), direct and inverse marking can be carried out through reduplication. The examples here illustrate this with the suffix *-wa*, which derives action nominals, i.e., predicates of complement and adverbial clauses (see Haude 2006: 467ff. and Haude 2011) as well as of negated main clauses.

On verbs that consist of a monosyllabic root and an additional suffix, the direct suffix *-na* is either retained, as in (33a), or it is replaced by word-initial monomoraic

⁹ Internal cliticization creates a new prosodic word, which carries stress on the penultimate syllable. Furthermore, for consonant-final hosts it involves the attachment of the linking vowel *-a*. This process applies to pronouns as well as to determiners (articles or demonstratives). In contrast, the only morphophonemic effect of external cliticization is the resyllabification with a preceding consonant (see Haude 2006: 97-103).

¹⁰ The terms ‘direct’ and ‘inverse’ reflect the fact that the first postverbal argument outranks the second postverbal argument in a referential hierarchy (1 > 2 > 3, 3rd given > 3rd new; see Haude 2009); since a high-ranking referent is a more prototypical actor and a low-ranking one a more prototypical undergoer, the construction that depicts the prototypical constellation is conventionally labelled ‘direct’, while the construction in which the constellation is reversed is labelled ‘inverse’.

reduplication, as in (33b). According to the data and to the speakers, both variants are entirely equivalent.

- (33) a. *n-as* *sa-na-wa=n--as*
 OBL-ART.N look.for-DR-NMLZ=2--3N.AB
 ‘when you look for it’ (lit. ‘at your looking for it’)
- b. *n-as* *sa-sa-na-wa=n--as*
 OBL-ART.N DR-look.for-NMLZ=2--3N.AB
 ‘when you look for it’ (lit. ‘at your looking for it’)

Reduplicative direct marking only occurs on verbs with monosyllabic roots. When the verb has a longer root, as in (34), or a morphologically complex base, as in (35), the marker *-na* is retained:

- (34) *n-os* *purut-na:-wa=∅--us*
 OBL-ART.N.PST kiss-DR-NMLZ=1SG--3M.AB
 ‘when I kissed him’
- (35) *ka: n-as* *pek-a-ṭaba-poj-na-wa=i* *i'net* *ma:ma=n*
 PRCL OBL-ART.N lift-DR-CLF.earth-CAUS-DR-NMLZ=3PL ART.F:1 mother.of=2
 ‘so that they won’t make our Mother (i.e., Holy Anne) carry earth’

Inverse marking on a verb with a monosyllabic root and an additional affix is obligatorily carried out by bimoraic reduplication, as illustrated in (36); unlike the direct marker, the inverse suffix *-kay* is never retained. Since monosyllabic verb roots always consist of a heavy syllable (according to the condition that lexical roots be minimally bimoraic), bimoraic reduplication copies the entire root. However, this does not mean that this is a case of root reduplication, as will become apparent in the context of pluri-syllabic roots; also, like Movima reduplication in general, inverse-marking reduplication is based on prosodic and not on morphological rules.

- (36) *n-as sal~sal-wa=n--as*
 OBL-ART.N INV ~look.for-NMLZ=2--3N.AB
 ‘when it looks for you’ (lit. ‘at your being looked for (by) it’)

The following text example illustrates the direct- and inverse-marking function of mono- and bimoraic reduplication, respectively, in natural discourse. It shows the two processes with one and the same verb root, *yey-* ‘want/like’. The monomoraic reduplication ($\mu\sim$) in (37a) and (37c) indicates the direct voice, while the bimoraic reduplication ($\mu\mu\sim$) in (37b) (causing gemination here, i.e., an audible lengthening of the glide) indicates the inverse voice.

- (37) a. *kas ye~yey-wa=∅ as ney-ni:-wa=∅, majni=∅,*
 NEG DR~want-NMLZ=1SG ART.N here-PRC-NMLZ=1SG offspring=1SG
 ‘I don’t want to be here, my child, ...’
- b. *bo toł rey kas yey~yey-wa=∅ kinedé=s kwe:ya*
 REAS very MOD NEG INV~want-NMLZ=1SG DEM.NSTD.F=DET woman
 ‘...because that woman (sitting over there) doesn’t like me at all ...!’
- c. *che rey inła jema’ kas ye~yey-wa=∅*
 and MOD PRO.1SG also NEG DR~want-NMLZ=1SG
 ‘...and I don’t like (her) either.’

On verbs with a plurisyllabic base that take additional suffixes, the inverse is marked by word-internal monomoraic reduplication ($\langle\mu\sim\rangle$). Example (38b) shows a verb with a disyllabic root (*purut-*) whose last CV-element (/ru/) is reduplicated, and (39b) shows the internal reduplication with a morphologically complex base (*netawakapoj-*).

- (38) a. *purut-kay-a=n*
 kiss-INV-LV=2
 ‘(He) kisses you.’
- b. *n-as pu<ru~>rut-wa=n*
 OBL-ART.N kiss<~INV>NMLZ=2
 ‘when (he) kisses you’

- (39) a. *net-a-waka-poj-kay=∅*
drive-DR-COW-CAUS-INV=1SG
‘(He) makes me drive cattle.’
- b. *n-os net-a-waka-<po~>poj-wa=∅*
OBL-ART.N.PST drive-DR-COW-<INV~>CAUS-NMLZ=1SG
‘when (he) made me drive cattle’

There seems to be a relationship, perhaps based on as yet unknown prosodic rules, between word-initial bimoraic and word-internal reduplication. When the base has a disyllabic root with a light first syllable (like *purut-* ‘kiss’), inverse marking can also be carried out by initial bimoraic reduplication (resulting in CVCV~). The form in (40), which was volunteered during elicitation, is semantically similar to (38b) above. Examples (41a) and (41b) are yet another illustration of the equivalence of the word form with the internal and the bimoraic initial reduplication.

- (40) *n-os puru~purut-wa=∅--us*
OBL-ART.N.PST INV~kiss-NMLZ=1SG--3M.AB
‘when he kissed me’
- (41) a. *n-os de<wa~>waj-wa=∅--us*
OBL-ART.N.PST see<INV~>NMLZ=1SG--3M.AB
‘when he saw me’
- b. *n-os dewa~dewaj-wa=∅--us*
OBL-ART.N.PST INV~see-NMLZ=1SG--3M.AB
‘when he saw me’

Inverse marking by a LL-segment, as in (40) and (41b), is less favored than internal reduplication, however: it does not occur in the text corpus, and the forms in the examples are not accepted by all speakers. Still, these data allow an interesting hypothesis. If bimoraic word-initial reduplication can occur not only with monosyllabic but also with longer roots, as in (40) and (41b) above, it can be assumed that historically, bimoraic reduplication was the principal means for forming an inverse base for further suffixation on

all verb roots, and that internal reduplication on bases with longer roots is a later development. In the case of disyllabic roots, such as *purut*- ‘kiss’ in (38) and (40) or *dewaj*- ‘see’ in (41) above, phonological reduction of the third syllable may have led to an interpretation as internal reduplication. This possible development is illustrated in (42a-c), with (42b) showing the analysis of the hypothetical intermediate stage with the truncated verb root.

- (42) a. *n-os* *puru-purut-wa=∅--us*
 OBL-ART.N.PST INV~kiss-NMLZ=1SG--3M.AB
- b. *n-os* *puru-rut-wa=∅--us*
 OBL-ART.N.PST INV~TRC.kiss-NMLZ=1SG--3M.AB
- c. *n-os* *pu<ru~>rut-wa=∅--us*
 OBL-ART.N.PST kiss<INV ~>-NMLZ=1SG--3M.AB
 ‘when I was kissed by him’

Subsequently, the internal reduplication may have been extended to more complex bases, like the one in (39).

The three reduplicative allomorphs involved in the direct and inverse marking of morphologically augmented verbal bases are summed up in Table 2 (VB σ = monosyllabic verb base, VB $\sigma\sigma$ = disyllabic verb base).

Table 2: Reduplicative direct and inverse marking

Suffix	reduplicative allomorph	in environment	gloss	examples
<i>-na</i>	$\mu\sim$	__VB σ -suffix	DR	(33), (37a,c)
<i>-kay</i>	$\mu\mu\sim$	__VB $\sigma(\sigma)$ -suffix	INV	(36), (37b), (40), (41b), (42a)
<i>-kay</i>	$\langle\mu\sim\rangle$	VB $\sigma\sigma$... __-suffix	INV	(38), (39), (41a), (42c)

For the sake of completeness, note that reduplicative direct and inverse marking only occurs with verbs that are marked for direct voice by the suffix *-na*. On verbs that are marked for direct voice by the base-internal allomorph *-a-* or $\langle a \rangle$, reduplication is no option. Here, the direct morpheme is the same as in the underived form, as shown in (43).

- (43) a. *joy-a-t̥e=n--us* b. *n-as* *joy-a-t̥e-wa=n--us*
 go-DR-CO=2--3M.AB OBL-ART.N go-DR-CO-NMLZ=2--3M.AB
 'You take him with you.' 'when you take him with you'

By contrast, the inverse form of these verbs is completely unmarked for voice when combined with an additional suffix, as illustrated in (45b) (see Haude 2011: 160-162).

- (44) a. *joy-t̥e-kay-a=n--us* b. *n-as* *joy-t̥e-wa=n--us*
 go-CO-INV-LV=2--3M.AB OBL-ART.N go-CO-NMLZ=2--3M.AB
 'He takes you with him.' 'when he takes you with him'

4.1.2. Middle voice: $\mu\mu\sim$ and $\langle\mu\sim\rangle$

Bimoraic reduplication is also found on verbal bases that, unlike the inverse verbs described in 4.1.1, are not combined with an additional suffix. Here again, we see an affinity between initial bimoraic reduplication and internal reduplication, already observed in the previous section. Initial bimoraic reduplication occurs with monosyllabic bases, as in (45), and internal reduplication with longer bases, as in (46).

- (45) *tos~tos*
 MD~peel
 'to peel (spontaneously, e.g. skin)'

- (46) *t̥o<ko:~>kot*
 boil<MD~>
 'to boil'

Here, the two reduplication processes are allomorphs of one morpheme, which is best characterized as a marker of middle voice: verbs with this form denote a dynamic event whose single participant is usually in some way affected by it, as can be seen in the above examples.

Reduplicative middle marking also occurs on more complex bases, consisting of a verb root and one or more affixed or incorporated elements. This is illustrated in (47) (repeated from (30)):

- (47) a. *jayna mat-lo* b. *jayna mat-<lo:->lo*
 DSC undo-CLF.liquid DSC undo-<RED~>CLF.liquid
 'It has already melted.' 'It melts already.'

Middle marking cannot be confused with inverse marking, carried out by the same reduplicative morpheme, because reduplicative inverse marking only occurs on verbs that are derived by further morphemes, e.g. by the nominalizing suffix *-wa* (see 4.1.1). On such derived verbs, the middle marking is dropped, as can be seen in the nominalized form in (48) (see also Haude 2006: 357-365 and Haude 2011).

- (48) *ka'de as jayna pat-wa=is, jayna pat~pat nokopa jayna*
 until ART.N DSC sprout-NMLZ=PL.AB DSC MD~sprout like.this DSC
 'When it sprouts (lit.: 'until its sprouting'), it sprouts like this.'

4.2. Reduplication on nouns

4.2.1. Inalienable possession: <μ~>

Internal reduplication marks inalienable possession on nouns, as illustrated by the following examples, involving the nouns *kaldo* 'soup', *chak^ɬa* 'pole' and *wa:ka* 'cow'. The possessor-denoting constituent (in the case of a noun phrase, the article) is attached through internal cliticization (see fn. 8 above).

- (49) *n-os dej-na-wa=y^ɬi is kal<do~>do=is chara:ye*
 OBL-ART.N.PST COOK-DR-NMLZ=1PL ART.N.PL soup<INAL~>=ART.PL sugar.cane
 'when we cooked the juice of the sugar cane'

- (50) *daya' di:re n-os chak<ɬa~>ɬa=os ro:ya*
 DUR.NSTD leaned OBL-ART.N.PST pole<INAL~>=ART.N.PST house
 '(I) was sitting against the pole of the house.'

- (51) *bo yey-na=∅ kos wa:<ka~>ka=i*
 REAS want-DR=1SG ART.N.PST COW<INAL~>=3PL
 '...because I want their meat (i.e., the meat that is on the bones).'

4.2.2. Subordinate predicate nominals: <μ~>

Internal reduplication also derives subordinate predicate nominals (see Haude 2011; subordinate verbal predicates are marked by the suffix *-wa*, see 4.1.1 above). The subordinate predicate is obligatorily possessed (marked by internal cliticization). Example (52) illustrates this for a noun; in (53) it can be seen that adjectives, which are nounlike in many respects (see Haude 2006: 112-119), behave in the same way.

- (52) *n-os* *tolkos<ya:~>ya=∅*
 OBL-ART.N.PST girl<NMLZ.N~>=1SG
 ‘when I was a girl’ (lit. ‘at my former being a girl’)

- (53) *n-os* *di:ra* *to<chi~>chik-a=as* *Tirinra*
 OBL-ART.N.PST still small<NMLZ.N~>LV=ART.N Trinidad
 ‘when (the town) Trinidad was still small’

Since both nominalization and adnominal inalienable possession are marked by internal reduplication, homophonous forms can occur. In the following examples, consider the word *bi<ja~>jaw-a=is*, which is a possessed noun in (54) and a subordinate predicate nominal in (55). However, the context is clear enough that no ambiguities occur.¹¹ Subordinate predicate nominals, for instance, tend to occur in adverbial clauses (i.e., oblique-marked NPs), as can be seen in (55).

- (54) *jayna* *tet-~~che~~--is,* *eney,* *is* *jayna* *bi<ja~>jaw-a=is*
 DSC scare-R/ R--3PL.AB (filler) ART.PL DSC old<NAL~>LV=3PL.AB
 ‘Then they, er, their parents (lit. ‘their old ones’) got scared.’

- (55) *jayna* *n-os* *bi<ja~>jaw-a=is,* *jayna* *n-asko*
 DSC OBL-ART.N old<NMLZ.N~>LV=3PL.AB DSC OBL-PRO.N.AB
don-wa=is
hate-NMLZ=3PL.AB
 ‘Then when they got older, that was when they hated each other.’

¹¹ Note that the placement of the particle *jayna* DISCONTINUOUS outside the NP, as in (54), or within the NP, as in (55), does not distinguish different kinds of NPs.

4.2.3. Predicative possession: iambic foot reduplication

Reduplication of the first iambic foot (see Section 3.3) only occurs on nouns, from which it derives intransitive possessive predicates. Reduplication in this function is possibly unique cross-linguistically (L. Stassen, p.c.), but it is highly productive in Movima.¹²

Example (56) illustrates two instances of the reduplication of the first two light syllables of the base, which in the second case (*kweya-*) leads to the reduplication of the entire disyllabic word.

- (56) *iti~'itila:kwa jayna is tolkosya,*
 POSS~man DSC ART.PL girl
che is itila:kwa jayna kweya-kwe:ya jema'
 and ART.PL man DSC POSS~woman too
 'The girls already had husbands, and the men, too, had wives already.'

In (57), we first see two instances of CVC-reduplication (*kor-*, *pul-*) and then the reduplication of an initial LH segment (*choran-*).¹³

- (57) *kos rey buka' kor~korba:ta, kos rey buka'*
 ART.N.AB MOD DUR.MOV POSS~cravat ART.N.AB MOD DUR.MOV
pul~pulse:ra, che kos rey choran~chorankwanto[..],
 POSS~watch and ART.N.AB MOD POSS~hat
kas asko-niwa mowi:maj
 NEG PRO.N.AB-NMLZ Movima
 'Someone (who) wears a cravat, someone (who) wears a watch, and someone (who) wears a hat [...], that one is not a Movima (Indian).'

Example (58) illustrates, again, the reduplication of a LL-segment (*pola-*), but also, in the second reduplicated form, the copying of a long first syllable (*wa:-*) of a disyllabic Spanish loan. As was illustrated in (11)-(13) above, the first syllable of disyllabic loans is never shortened and therefore counts as inherently heavy.

¹² There is an alternative construction containing a demonstrative predicate that encodes gender, number, and temporal information of the possessed item (see Haude 2006: 296-297).

¹³ Note that possessive predicates, like all Movima content words, can be preceded by an article, resulting in a headless relative clause (see Haude 2006: 298-300).

- (58) *is karaya:na di' pola~pola:ta, di' wa:~wa:ka*
 ART.PL rich.person REL POSS~money REL POSS~cow
 '(the) rich people who have money, who have cattle'

Possessive predicates can also be formed from nouns marked as inalienable by internal reduplication (see 4.2.1 above), as illustrated in (59) and (60) (containing H- and LL-reduplication, respectively). The resulting predicate characterizes an entity as inalienably possessing another entity, like bones that still have some meat on them or bees which produce their own honey.

- (59) *vel-na=Ø kis nun-'i di' wa:~wa:<ka:~>ka,*
 look.at-DR=1SG ART.PL.AB bone-D REL POSS~cow<INAL~>
di' ney, wa:~wa:<ka:~>ka, isko † way-na=Ø
 REL here POSS~cow<INAL~> PRO.PL.AB 1 take-DR=1SG
 'I look at the bones that have (their) meat, that (are) like this, that have (their) meat, those I take (when buying bones at the butcher's).'

- (60) *is chuydi di' chara~charaye-<o:~>o*
 ART.PL bee REL POSS~syrup-<INAL~>CLF.liquid
 'bees that have (their) honey'

Possessive predicates can also be turned into subordinate predicate nominals through internal reduplication (see 4.2.2), as illustrated in (61).¹⁴

- (61) a. *ulkwat maj~majni*
 PRO.2SG POSS~offspring
 'You have children.'

¹⁴ The formation of a subordinate predicate through reduplication is an exclusive property of nouns and adjectives. Therefore, the fact that subordinate possessive predicates require reduplication shows that morphologically, they are nouns (or adjectives) rather than verbs.

- b. *kas jayaw-t̚e=as jeya='ne n-as maj~maj<ni~>ni='ne*
 NEG good-NEG=ART.N state.of=3F OBL-ART.N POSS~offspring<NMLZ.N~>=3F
 'Her state is not good for having children (i.e., it is difficult for her to give birth).'

4.3. Less productive functions of reduplication

Apart from the productive and clearly identifiable functions of reduplication described above, reduplication is also found in environments where its function is less clear and where it is less productive. Many of these cases seem to serve prosodic well-formedness, but some of the often-cited functions of reduplication, like the marking of emphasis, are included here as well.

4.3.1. $\mu\mu$ on transitive roots in compounds and with *-ni*

Before certain elements, transitive verb roots are entirely reduplicated.¹⁵ Since the cases found so far only involve bimoraic roots (of the structure H or LL), this can be considered a case of bimoraic reduplication.

This reduplication is found when the verb root forms a compound together with a bound nominal element, such as a classifier (62) or a truncated noun (63) (see 4.3.5):

- (62) *is~'is-ra*
 RED~roast-CLF.meat
 'roasted meat'

- (63) *dan~dan-so*
 RED~chew-TRC.*chicha*
 'chewed *chicha*'

Reduplication is also found when a verb root is combined with the suffix *-ni* 'PRC', which marks intransitive verbs and adjectives (see Haude 2006: 493-495), as in (64) and (65). These

¹⁵ A reviewer suggested that this might be thought of as being a case of 'automatic reduplication', defined as "reduplication that is obligatory in combination with another affix, and which does not add meaning to the overall construction; the affix and reduplicated matter together are monomorphemic" (Rubino 2005: 114). However, I would not analyse these cases in that way, firstly, because the suffixes with which the reduplication cooccurs can also occur with unreduplicated verb roots and, secondly, because it is not entirely clear that the reduplication does not add any meaning to the overall construction.

derived verbs denote atelic actions, hinting at a possible relationship with the reduplicative middle marker (4.1.2); however, the evidence is not clear since the atelic reading may also be due to the suffix *-ni* or to the combination of the two morphemes.¹⁶

(64) *sal~sal-ni*
RED~look.for-PRC
'to go about searching'

(65) *aya~'aya:-ni--i*
RED~wait-PRC--3PL
'They wait and wait.'

Both these types of reduplicated verbs, with a classifier and with the suffix *-ni*, are infrequent and of limited productivity.

4.3.2. Emphasis

As may be expected from the cross-linguistically common iconic character of reduplication, also in Movima, reduplication can be used to mark emphasis. However, according to the data so far, this does not seem to be very productive, and it cannot be connected to one single reduplication process. In (66), the entire word (of the structure LH) is reduplicated; in (67), the copy only consists of a bimoraic segment (LL).

(66) *paluy~pa:luy*
RED~cold
'very cold'

(67) *dewa~dewaj-na=Ø*
RED~see-DR=1SG
'I see it well.'

Emphatic reduplication seems to be most productive for verbs containing the irrealis infix <(k)ak>, which in negated clauses means 'there is not' (see Haude 2006: 438-442). Here, the

¹⁶ On nouns, the suffix *-ni* 'PRC' indicates the process of 'becoming/turning into X' (e.g. *rulrul-ni* [jaguar-PRC] 'turn into a jaguar'); on adjectives, it does not normally add anything to the basic meaning (e.g. *ta:doy*, *tadoy-ni* 'sweet'). It is a synchronically unsegmentable element of several atelic intransitive verbs (e.g. *ilo:ni* 'walk').

reduplicated entity is the iambic foot. For a verb starting with two light syllables, as in (68), only these are reduplicated; for a verb starting with a LH sequence, as in (69), this entire sequence is reduplicated, as can be seen from comparing the simple irrealis verb in (69a) and the reduplicated form in (69b).¹⁷ Again, this shows that only the prosodic but not the morphemic structure of the base is relevant for reduplication.

- (68) a. *kas ona-kak-ra:-na=∅* b. *kas ona~'ona-kak-ra:-na=∅*
 NEG know-IRR-CLF.NTR-DR=1SG NEG RED-know-IRR-CLF.NTR-DR=1SG
 'I don't know anything.' 'I know absolutely nothing.'

- (69) a. *kas sal-ak-na=∅* b. *kas salak~sal-ak-na=∅*
 NEG look.for-IRR-DR=1SG NEG RED~look.for-IRR-DR=1SG
 'I don't look for anything.' 'I look for absolutely nothing.'

4.3.3. Property-denoting words

Some property-denoting intransitive verbs contain a reduplicated element. Reduplication does not seem to be a productive device here: the words seem to be lexicalized and are not always fully analysable. The process involved seems to be iambic foot reduplication. The verb root in (70) has a LH structure and is reduplicated entirely. Of the verb roots in (71) and (72), which have the shape LL, the first, long syllable is apparently counted as heavy, since it is copied entirely.¹⁸

- (70) *dewaj~de:waj*
 RED~see
 'to be visible'

- (71) *de:~de:ye*
 RED~lie?
 'to be visible'

¹⁷ While the irrealis affix is inserted according to prosodic properties of the base and therefore clearly an infix (see Haude 2006: 78-82), it can be represented as a suffix in cases like these, where it happens to occur between two segmentable morphemes.

¹⁸ There is also independent evidence of the inherent length of the first syllable of some words; see Haude (2006: 56-58).

- (72) o:~'o:wa
 RED~?
 'to be audible'

4.3.4. Reduplication for prosodic well-formedness

Reduplication enables certain monosyllabic noun roots to occur alone or as bases for further derivation (see Haude 2006: 195). Here, the reduplication does not have any grammatical function, and most probably it originates historically from some prosodic constraint on content words. It is not a productive process, but is lexically determined: only some noun roots are reduplicated; others take the dummy element *-i* when occurring independently; yet others, when consisting of a LL pattern, simply undergo lengthening of the initial syllable (e.g. *to:mi* 'water' in (3)).

Most of the monosyllabic roots that undergo reduplication denote inalienably possessed entities, mostly parts of wholes (see Haude 2006: 246f. for more details). Consider the root *duk-* 'back' in (73). In (73a), the root is reduplicated before being marked as possessed. The attachment of the linking vowel *-a* creates a complete prosodic word. When no overt possessor is attached (i.e., when the possessor is the first person singular), the resulting word */*duduk*/ would not correspond to the prosodic constraint that the first two moras of a disyllabic word fall on the first syllable. It is therefore reduplicated once more, as shown in (73b), so that the word becomes trisyllabic.¹⁹

- | | | | | | | |
|------|----|-------|-------------------|----|-------|-----------------------------|
| (73) | a. | as | <i>du~duk-a=n</i> | b. | as | <i>du~<du:~>duk=∅</i> |
| | | ART.N | RED~back-LV=2 | | ART.N | RED~<RED~>back=1SG |
| | | | 'your back' | | | 'my back' |

If the reduplicated elements here were interpreted as marking inalienable possession, this could only account for one of them, while the other one would not have a grammatical function. However, since inalienable possession is not marked on all body-part terms (see Haude 2006: 249-256), no clear case can be made for possessive marking here. Therefore, the hypothesis is that the word-initial reduplication in (73a) creates the prosodically well-formed base for the cliticization of a possessive marker, which is then the base for the further internal reduplication in (73b).

¹⁹ Note that another expected strategy would be the lengthening of the first syllable.

Most monosyllabic roots are also reduplicated when combined with a suffix, e.g. the absolute-state suffix *-kwa* (see the list in Haude 2006: 553-555). The addition of the suffix must be a later process, since the suffixation itself would form a prosodic well-formed word and no further augmentation would be needed. Most of these roots denote inalienably possessed items, as in (74), although there are exceptions, as in (75); the suffix *-kwa* indicates non- or alienable possession.

- | | | | | |
|------|----|-------------------|----|-------------------|
| (74) | a. | <i>be~bet-a=a</i> | b. | <i>be~bet-kwa</i> |
| | | RED~hide-LV=3N | | RED~hide-ABS |
| | | 'its hide' | | 'hide, leather' |

- | | | | | |
|------|----|-------------------|----|-------------------|
| (75) | a. | <i>la~lak-kwa</i> | b. | <i>po~poy-kwa</i> |
| | | RED~piranha-ABS | | RED~animal-ABS |
| | | 'piranha' | | 'animal' |

Since the reduplication occurs on both possessed and unpossessed bases, its function on these roots is not an indicator of possession or any other grammatical category but is probably rather a prosodic device. Still, it is not a productive process that automatically applies to noun roots: there are also words with *-kwa* whose monosyllabic roots are not reduplicated, as illustrated in (76). (In (76a), the root is lengthened to comply with the mora requirement.) Thus, words like those in (74) and (75) are probably the lexicalized result of a prosodic requirement that was active at an earlier stage of the language.

- | | | | | | | |
|------|----|---------------------------|----|-----------------|----|----------------------|
| (76) | a. | <i>si:t-a=a</i> | b. | <i>si:t-kwa</i> | c. | * <i>si~si:t-kwa</i> |
| | | hole-LV=3N | | hole-ABS | | RED~hole-ABS |
| | | 'its cave (of an animal)' | | 'hole, cave' | | ('hole, cave') |

Another case where reduplication does not have any other function than that of forming a well-formed word involves two 'defective' nouns (see (4) above): the words for 'mother' and 'father' undergo reduplication before they can be marked for possession.²⁰ In (77) they are given with the presential article (*i'nes* for feminine and *us* for masculine) and the cliticized

²⁰ Other defective nouns are augmented with the syllable *-ya* replacing the ?V-segment and the lengthening of the first syllable (e.g. *jeya=n* 'your state of being').

pronouns of second and third person. The base form only occurs with a first-person possessor.

- (77) *i'nes ma'a* 'my mother'
i'nes ma:ma=n 'your mother'
i'nes ma:ma=us 'his mother'

- (78) *us pa'a* 'my father'
us pa:pa=n 'your father'
us pa:pa=us 'his father'

4.3.5. Truncated loans

Many nouns undergo truncation when participating in compounding or incorporation (Haude 2006: 212ff.): only the final element of the noun is used in these processes. The truncation of most native nouns involves only the last syllable of the noun, as illustrated in (79).

- (79) *cha:do* 'plate' → *loj-a:-do* 'wash plates' (wash-DR-TRC.plate)
mo'incho 'chivé' → *il-a:-cho* 'spread chivé' (spread-DR-TRC.chivé)
pokso 'chicha' → *kwajtak-so* 'maize beer' (maize-TRC.chicha)

Spanish loans behave differently: when they are polysyllabic, the truncation preserves the last two syllables, as illustrated in (80).

- (80) *sapa:to* 'shoe' → *dok-a-pa:to* 'put shoes on' (put_on-DR-TRC.shoe)
aro:so 'rice' → *duk-a-ro:so* 'grind rice' (grind-DR-TRC.rice)
asu:ka 'sugar' → *tavoj-su:ka* 'white sugar' (white-TRC.sugar)

Strikingly, as first noted by Grinevald (2002), with disyllabic loans, the requirement of truncating two syllables of a loan leads to reduplication of the last syllable, as illustrated in (81). It should be noted, however, that this process is not productive anymore. It involves loans that were probably borrowed rather early, possibly along with objects that were brought by the Spanish-speaking missionaries. More recent loans (e.g. *pi:la* 'battery', *elade:ra* 'refrigerator') are not truncated but incorporated as entire words (see Haude 2006: 216).

(81)	<i>si:ya</i>	'chair'	→	<i>sotak-ya:ya</i>	'one chair' (one-TRC.chair)
	<i>me:sa</i>	'table'	→	<i>bay-a-sa:sa</i>	'to knock on the table' (knock-DR-TRC.table)
	<i>pa:ko</i>	'dog'	→	<i>sot-ko:ko</i>	'another dog' (other-TRC.dog)

5. Conclusion

To sum up, Movima has several productive reduplication processes: word-initial monomoraic, word-initial bimoraic, word-internal monomoraic, and word-initial foot reduplication. These different types express different grammatical functions, which include the following: direct and inverse voice marking on verbs; middle marking on particular verb bases; inalienable possession on nouns; marking of predicate nominals in subordinate clauses; derivation of possessive predicates.

In addition, reduplication serves prosodic functions, e.g. it can enable a root to occur alone or as a base for further derivation, a process which does not seem to be fully productive anymore. Likewise, emphasis can be expressed by reduplication, but this is not productive either and seems to be a marginal function. At some earlier stage in the history of the language, reduplication was presumably used as a device to mark Spanish borrowings in compounds or incorporating verbs.

It is striking that there is hardly any direct evidence of iconicity (reflected by markedness and weight/length of an expression) in Movima reduplication, a phenomenon that is often found in other languages where reduplication marks habitual, iterative or durative aspect on verbs or plural number on nouns (see e.g. Rubino 2005: 115). Furthermore, it might be asked why Movima expresses the aforementioned grammatical functions by reduplication instead of by 'ordinary affixes' (i.e., segmental material), and why particular functions are expressed by particular forms of reduplication. This question cannot be answered here, but some tentative hints can be given. For instance, the foot reduplication marking possessive predicates (4.2.3) results in a word describing a state, that of possessing something. An iconic interpretation would be, firstly, that the durative aspect of this state is iconically reflected by the reduplication, and secondly, that the state of *possessing* something might be considered more complex than that of *being* something (which accounts for the contrasting non-reduplicated form of simple nouns, which designate an entity).²¹ An iconically-based explanation might also be proposed for the

²¹ This point is inspired by Stolz (2007), who suggests that less clearly iconic functions of reduplication may still be understood as iconic in a looser sense; thus, reduplication may simply be a way of indicating the conceptually more marked category in an opposition even where there is no obvious iconic motivation deriving from the meaning.

reduplication of subordinate predicate nominals, which denote states (see Haude 2011), for the middle-marking reduplication (4.1.2) and for the reduplication of verb roots in compounds with classifiers or with the suffix *-ni* (4.3.1), all of which create atelic verbs. However, this account has its limitations since not all atelic verbs contain reduplication.

It would be more complicated to explain the direct- and inverse-marking function of reduplication in nominalized verbs, where reduplication replaces the suffixes *-na* and *-kay*, respectively. While it does not distinguish between a more and a less marked member of an opposition, maybe the reduplication is related here to the changed rhythmic pattern of verbs with further suffixes: the monomoraic reduplication of direct verbs creates a base with the pattern LH (/sa.sal-/ 'looking for X', (33b)) instead of HL (/sal.na-/ , (32a)), and a word-initial light syllable may seem prosodically more convenient for further suffixation (cf. the occurrence of word-initial monomoraic reduplication on noun roots, 4.3.4). The bimoraic reduplication marking inverse verbs (/sal.sal-/ 'being looked for', (36)) is a device which retains the prosodic pattern HH of the underived verb (/sal.kaj/ , (32b)), thereby creating the same prosodic contrast with the direct form (note, however, that the attachment of the linking vowel on the underived verb creates a light syllable). An account in terms of markedness, however, which would consider the direct form as less marked than the inverse, cannot be used as an explanation, since on certain verbal bases, the inverse is unmarked (see (45b) above), whereas the direct form is always overtly marked without exception.

Thus, while some traditional explanations of reduplication may come to mind, there seems to be no satisfactory explanation of the extensive and multifunctional use Movima makes of reduplication. Rather, Movima seems to confirm the view expressed by Marantz (1994: 3487) that "[a]s far as morphological function is concerned [...], reduplication is indistinguishable from other forms of affixation"; we are simply dealing here with a language that makes more use of prosodic morphology than others, employing metrics rather than substantial morphology as a word-forming device. As can be shown, due to the different morphological environments in which they appear, the reduplicative affixes of Movima mark grammatical functions in the same non-ambiguous way in which this is done by phonologically specified affixes. That the correspondence between form and function can be blurred by homophony is well known also in the case of such 'normal' affixes. The answer to the question why Movima makes so much more use of reduplication as a grammatical device than other languages probably lies in the role metrics play in the word formation of this language, a topic on which more research is needed.

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and typological perspective, ed. Paolo Ramat and Elisa Roma, 317-350. Amsterdam: John Benjamins.

Symbols and abbreviations

~	reduplication
=	internal cliticization
--	external cliticization
<>	infixation
1	first person
2	second person
3	third person
AB	absential
ABS	absolute state
ART	article
CAUS	causative
CLF	classifier
CO	co-participant
D	dummy affix
DET	determiner
DEM	demonstrative
DR	direct voice
DSC	discontinuous
DUR	durative
F	feminine
INAL	inalienable
INS	instrumental
IRR	irrealis
ITN	intentional
LV	linking vowel
M	masculine
MD	middle voice
MOD	modal
MOV	moving
N	neuter

NEG	negation
NMLZ	nominalization
NMLZ.N	nominalization of noun
NSTD	nonstanding
NTR	neutral
OBL	oblique
PL	plural
POSS	possessive
PRC	process
PRCL	preclusive
PRO	free pronoun
PSEU	pseudo
PST	past
REAS	reason
RED	reduplication
REL	relativizer
RES	resultative
R/ R	reflexive/ reciprocal
SG	singular
TRC	truncated element