

# Other Reduplication Phenomena

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## 1. Syntactic and Textual Repetition of Elements

### 1.1. Types of reduplication

Reduplication is a morphological process which repeats the morphological base entirely or only partially (cf. Haspelmath 2002: 274), e.g.

IND	kanak	kanak	LAT	te-tig-i
	child	child	RED-touch:PST-1S	
	children		I have touched	

The common definition of reduplication (as being a repetition of a morphological base; cf., e.g., Haspelmath 2002: 274) restricts the phenomenon of reduplication to morphology. It does not account for the doubling of linguistic forms at other levels of grammar. However, reduplication can also be seen "as a formal linguistic device that can be used at all levels of linguistic structure" (Maas 2005: 395; cf. also Pott 1862). With regard to the bases used, there are, however, different forms of reduplication. For reduplication research, it is therefore vital to distinguish the different levels of doubling operations, in order to define, as well as to distinguish, between reduplication processes and other forms of doubling. The choice of different technical terms (e.g. reduplication, iteration, re-iteration, repetition, and doubling) often has as its purpose the capability of being able to distinguish between these different types.

A still stricter definition of reduplication would only include inflectional reduplication, i.e., only a reduplication which serves a clear-cut grammatical function, is to be considered an 'actual' form of reduplication, thereby excluding lexical reduplicate forms. Inflectional reduplication, is however probably the most uncommon of all forms of reduplication. Inflectional reduplication is manifested either as a full reduplication or as a partial reduplication, i.e., the copying of only a part of the base.

Lexical reduplication is then more often encountered. Lexical reduplication can still be productive, in that the reduplication regularly serves to express specific semantic (or pragmatic) categories, e.g. a reduplicative word class changing operation. In some languages, a less strict distinguishment is made between derivational and inflectional operations, thus rendering lexical reduplication an almost inflectional process, such as the reduplication of verbs in order to express some lexical or aspectual value.

Word formation processes can nonetheless lead to lexicalization – which is the formation of new words in a language, whereby the reduplicative process itself is no longer "applied", since only the result of the word formation process is lexically stored (cf. Aronoff 1976).

On a systemically higher level, identical words or phrases can be juxtaposed. This level may well be termed syntactic reduplication, or 'repetition' (Gil 2005: 31). By selecting the term 'repetition', Gil distances syntactic reduplication from 'reduplication' (proper). By definition, this type of reduplication does not serve lexical or inflectional purposes, and does not form new words. Its syntactic status might be called an apposition or a coordination of structures. This type of reduplication is the most frequent in the languages of the world. We can distinguish mere repetitions from repetitions which are joined by a conjunction (syndetic and asyndetic reduplication, Stolz 2008).

Finally, on the level of the text, we find various strategies involving repetition of elements (as well as the avoidance of repetitions).

## 1.2. Repetition of elements or structures in texts

The repetition of words and phrases is a frequent phenomenon in probably all languages of the world. Repetitions of any kind usually serve rhetorical purposes. They indicate that there is a similarly regular relation between formal and content-related entities, usually expressing a relation of equivalence, but sometimes also of opposition (de Beaugrande & Dressler 1981: 63).

The term for repetitions in a text is 'recurrence' (cf. Plett 1975, de Beaugrande & Dressler 1981: 57ff.); recurrence serves to put the focus on the speaker's viewpoint.

- FRE Il a marché longtemps, longtemps, longtemps, avant d'arriver. (Vittrant & Robin 2007: 77)  
GER Reiten, reiten, reiten, durch den Tag, durch die Nacht, durch den Tag. Reiten, reiten, reiten. (Rilke 1899)  
TIB hthung hthung! ('drink drink!')

If the repetition is performed by the dialogue partner, it often serves to express surprise or a viewpoint conflict which may go as far as rejection; it is also used to overcome interruptions in discourse (de Beaugrande & Dressler 1981: 58f.).

Partial recurrence (de Beaugrande & Dressler 1981: 60f.) is the repetition of lexemes in different forms, e.g., as a verb and as a noun; it serves to refer to a previously activated event or object, cf.

- GER Sie **wanderten** viele Stunden [...]. Von der langen **Wanderei** ermüdet [...]  
ENG He **caught** many **fish** [...] Tired from **fish-catching** [...]

Parallelism (de Beaugrande & Dressler 1981: 61f.) is the repetition of syntactic structures with different content. It serves to express similar events and places the focus on their similarity or quick succession. This rhetorical figure is often used with three events, cf.

- GER Er stürmte hinein, nahm das Geld, und rannte wieder hinaus.  
ENG He [= the king of England] has plundered our seas, ravaged our coasts, burnt our towns. (American Declaration of Independence, quoted in de Beaugrande & Dressler 1981: 61)  
LAT veni, vidi, vici. (Gaius Iulius Caesar)<sup>1</sup>

Parallelisms can also involve repetitions of lexemes, as in the following example:

- ENG Our **repeated** Petitions have been answered only by **repeated** injury. (American Declaration of Independence, quoted in de Beaugrande & Dressler 1981: 62)

Strangely enough for iconicity research, the opposite of parallelism, 'chiasmus' can have the same effect.

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<sup>1</sup> As in this example, alliteration is a sub-morphemic type of reduplicative structure which is popular in certain written styles, e.g. OHG "welaga nu, waltant got, quad Hiltibrant, wewurt skihit!".

### 1.3. Repetition of elements or structures in clauses

In the Tibetan language, there is a very popular pattern involving two verb forms (Vollmann 2006); the first is a causative or agent-oriented form, and the second is either the resultative or the 'modal' form.<sup>2</sup> The meaning of these constructions has been termed 'conative', i.e., it implies that **someone** tried to do something, but **it** did not happen. Consider the following examples in Lhasa Tibetan and in Themchen (North-Eastern dialect, north of Xining and the Blue Lake).

TIB      ngas      dkar yol      bcag pa yin te                                  chag ma song/  
           ᠨᠭᠠᠰ      kāajøð      tʃäk-pa-jin-te    tʃʰäk-ma-son  
           1:ERG      cup            break-NS-CONJ-CONN    break-NEG-PFV:DISJ  
*I [tried to] break the cup, but [it] did not break. (Tournadre 1996: 204)*<sup>3</sup>

THE      rta mgrin gyis      dkar yol      bcag thal ra    ma chag thal/  
           ʃtamdzən-yə      karu            ptɕʰaχ-tʰa-ra,    ma-tɕʰaχ-tʰa.  
           Tamdrin-ERG      cup            break-NVOL:EVID-CONC    NEG-break:PFV-NVOL:EVID  
*Tamdrin [tried to] break the cup, but [it] did not break. (602b) (Haller 2004: 129)*

Similar words ('partial recurrence') which are used in one clause (such as 'Der Trinker trinkt einen Trunk.') are unusual in German, as Maas (2007: 1f.) points out. He attributes this behaviour to the classical rhetoric heritage of the Latin tradition which normatively avoids such similarities which are termed 'pleonasms' (Maas 2007: 6f.). On the other hand, 'folk'-attributed styles of Latin had such forms ('flumen fluit', = figura etymologica). Spoken variants often include such forms, e.g., Yiddish: 'Ich hab dich eine Frage zu fragen'. Tibetan dialects also give many examples such as (Kham) 'zama za', 'to eat (food)', and 'pleonasms' are normal in Arabic, Maltese (Maas 2007: 13, 23), and Hebrew; consider the Hebrew example:

HBW      ha-'anak      tsaxak    tsaxok      'afel  
           DEF-giant      laugh:PRET:3S:M      laughter      dark  
*The giant laughed [a laughter] darkly. (Stolz 2007: 64)*

### 1.4. Word repetitions

In contrast to lexical and inflectional reduplication as well as to pleonastic constructions, European languages (in general) more readily permit word repetitions (cf. Stolz 2006).

ENG      This was **very, very** good, grandgrandfather!  
 GER      Das war **ur-ur**-super, Urugroßvater!<sup>4</sup>

We will, however, thereby rapidly discover that, in many cases, a coordinative conjunction or some other syntactic (case) relation has to be employed. Stolz (2008) has therefore introduced the distinction between syndetic and asyndetic reduplications (repetitions).

<sup>2</sup> 'Modal' is a term proposed by Haller (2004) for the so-called 'imperative'; obviously, it does not only have imperative meaning.

<sup>3</sup> cf. also Kelzang Gyurme (1992: 255): <ngas dkar yol bcag pa yin/ yin na'ang chag ma song/> ('J'ai cassé la tasse, mais elle ne s'est pas cassée.').

<sup>4</sup> This is, of course, a (wrong) example of a morphological recursion (of a bound morpheme). It is possible only in the grandfather context and as intensive elative with the prefix 'ur-'. This prefix behaves strangely also in another respect: 'ur-ig' is a singular example of a suffix attached to a prefix.

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ENG He rode on and on. (Stefanowitsch 2007: 35)  
GER Jahr für Jahr gehen die Preise in die Höhe.  
GER Er suchte und suchte, aber er fand ihn nicht.  
FRE Peu à peu, il s'est accoûtumé.  
TIB yin dang yin. (lit. 'be-and-be') So be it! For sure!

Lindström (1999) discusses 'contrastive reduplication' by identifying one specific function of syntactic repetition in a variety of languages, e.g.<sup>5</sup>

SWE Du har en ny blus.  
2 have INDEF new blouse  
  
Ny och ny, jag köp-te den i vaaras.  
new and new 1 buy-PST DEIX ILL spring  
*You've got a new blouse. – New is relative, I bought it last spring.*

POL Nowa jak nowa, kupilem ja w zeszłym roku.  
new like new I bought her last year  
*New is relative, I bought her in last year*

This approximates the tautology form (which are, pragmatically, considered violations of the conversational maxim of quantity (cf. Grice 1975), thereby introducing an indirect speech act), such as

GER Es gibt Lehrer und Lehrer  
DUT Er zijn leraren en leraren  
There are teachers and teachers.  
*There are different kinds of teachers, real ones and problematic ones.*

GER Geschäft ist Geschäft.  
ENG business is business  
*Business is tough, unethical, etc., as the definition says.*

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<sup>5</sup> examples from <http://linguistlist.org/issues/5/5-300.html>

GER Entweder er kommt oder er kommt nicht.  
 Either he comes or he comes not  
*Whether he is coming or not, I don't really care.*

In summary, it can be said that these syntactic forms are most often used to express pragmatic categories, such as relativizing an earlier statement or pointing to an attitude of a speaker.

Wälchli (2005, 2007) discusses so-called co-compounds, i.e., exocentric compounds of the reduplicative (dvandva), synonymic, antonymic, and enumerative types which are especially common in the East of the Eurasian continent, cf. Indian Engl. 'wife-children', 'mother-father' (Rushdie 1995: 403, quoted in Wälchli 2007: 84); Tibetan ཕ་མ་ <pha ma> 'parents', ཡག་ལྷོ་སྐྱེས་ <yag nyes> 'quality' (lit. 'good-bad'); 父母 /fu4 mu3/ 'father and mother, parents'; Tok Pisin 'su.soken' 'legwear', 'rit.rait' ('read-write') 'learnedness' (Mühlhäusler 1979: 377, quoted in Wälchli 2007: 85). Co-compounds imply a close relatedness between two connected words – juxtapositions or exocentric compounds. In other respects, these may possibly exist between the syntactic and morphological level.

### 1.5. Syntactic repetition and morphological reduplication

How can repetition be distinguished from reduplication? In the first instance, reduplication can be deemed a morphological process, whereas repetition is a syntactic process (cf. Gil 2005). In other words – and according to Kouwenberg (2003) – repetition is composed of two identical words, whereas reduplication is one word consisting of two identical parts. Huttar & Huttar (1997) therefore emphasize that a reduplicated word has one intonation pattern, whereas repetition consists of two prosodically, phonologically, and semantically distinct forms; they also distinguish 'recursion' from both reduplication and repetition for entities greater than a word. Gil (2005) attempts to enumerate a list of distinctions for the two phenomena. The criteria for distinguishing between repetition and reduplication are as follows (Gil 2005: 33, 37):

critereon	repetition	reduplication
1 unit of output	greater than word	equal to or smaller than word
2 communicative reinforcement	present or absent	absent
3 interpretation	iconic or absent	arbitrary or iconic
4 intonational domain of output	within one or more intonation group	within one intonation group
5 contiguity of copies	Contiguous or disjoint	contiguous
6 number of copies	two or more	usually two

In some languages, at least, there may however be a gradual intersection between morphological reduplication and the syntactic repetition of elements. In Italian, syntactic repetitions such as 'bella bella' have a slightly more grammaticalized meaning; it is similar to the elative ('very beautiful', cf. 'molto bella'), but it has a more specific morphopragmatic function (emotive expressivity) (cf. Goddard & Wierzbicka 1999: 148ff.). The application of such rules is again probably restricted by pragmatics; the form 'presto presto!' would directly translate as 'schnell schnell!' into German, whereas German 'schön schön' ('fine fine') would rather indicate disinterest or the desire to pass on to a new topic.

The distinction between reduplication and repetition may be considered straightforward in some languages, and slightly less in others, but it is also difficult to identify in some languages. This

occurs mainly in languages, where no clear distinctions are shown as to what the word is in that language.

When the identification of words and word boundaries is clear and straightforward, the distinction between repetition and reduplication is correspondingly clear and unambivalent. However, in those cases when the identification of words and word boundaries is problematical, the distinction between repetition and reduplication may also be fraught with difficulties. (Gil 2005: 31)

In summary, doubling strategies are to be found on various levels of grammar: A few examples can be found of a recursive application of morphological rules (German 'Ururgroßvater', 'grand-grand-father'), (morphological) reduplication (Indonesian 'kanak-kanak', 'children'), (syntactic) repetition (German 'Schnell, schnell!', 'Quick, quick!'), and, finally, rhetorical figures of an entire or partial repetition of larger linguistic units (phrases). Reduplication and repetition may be connected to one another on a sliding scale, i.e., there are examples of elision between these two phenomena.

Repetitive techniques are formal techniques related to the semantic techniques of content-related repetitions such as paraphrases on the text level and synonymic compounds in word formation.

## 2. Reduplication in Phonology

The crucial definitional criterion distinguishing phonological doubling from other repetitive procedures, especially from morphological reduplication in the proper sense, is the following: If we can detect a purpose for its realization then we are dealing with conditions on purely phonological grounds. We insist on holding this claim erect, in spite of the serious objections of various grammarians who claim that every single sound phenomenon must express some meaning and thus a grammatical function, on whatsoever ground the latter might be found.

Pott (1862) also mentions a series of other doubling phenomena, exterior to reduplication proper and, as far as we can see, also in Pott's terms the crucial criterion for drawing the borderline to reduplication is the purely phonological vs. grammatically functional (i.e. semantic, categorical) use of the two in appearance related phenomena.

The diachronic relationship between phonological and morphological reduplication should also be briefly discussed in this context. A diachronic change of morphologization of phonological processes has been described in many instances. It is recognized, that many morphophonemic rules go back to productive phonological processes. But we must at least challenge the question as to whether morphological reduplication with the same regularity might have its origin in phonological doubling. We do not have any diachronic evidence, which might sustain such a historical type of change, neither on theoretical nor on empirical grounds. On the contrary, a series of arguments can be actively adduced against it as preferences of directionality, frequency, conditions and distribution.

### 2.1. Motivation for phonological doubling

In previous publications under the auspices of the *Graz Reduplication Project*, it has been argued that euphony should be re-established as a criterion for the evaluation of phonological and/or prosodic structures (cf. Hurch 2002). The motivation for applying such processes is to create structures, which for one reason or another produce phonologically more appropriate sound patterns. These grounds might variably follow acoustic and/or perceptual regularities. But not all processes, which in their structural change overtly show two realizations of one phonological unit should be adequately described as doubling, insofar as the latter presupposes a certain teleology. An assimilatory (lenitive) tendency which as a by-product results in not-changing, for example, a certain feature, can hardly be analyzed on the same grounds as a fortitive tendency aimed at deliberately repeating some sound portion, in order to conform with an aesthetic category.

### 2.2. Types of phonological doubling phenomena

Phonological doubling phenomena do exist at probably all levels of phonological elements, thus from (non-?)distinctive features to phonological phrases.

**Segmental doubling** or gemination does usually have rhythmic origin. One example is the process of lengthening of the initial consonant of the final syllables after the syncopation of the penultimate vowel in proparoxytonic words in Late Latin<sup>6</sup>:

(1) Late Latin: gemination

*laburu* > *labbro*

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<sup>6</sup> For a thorough discussion of Latin-Romance phonology see Pulgram 1975.



The rhythmic origin of such geminations can properly be understood by examining the opposite tendency of simplification, cf. the Late Latin “Lex Mamilla”:

(2) Late Latin: simplification

*mamma* 'breast' > *mamilla* diminutive

**Doubling of portions of the syllable** is well known in (poetic) rhyming, which is ideally based on the identity and repetition of that part of the syllable which includes the nucleus and the following material up to the boundary. Use and type of rhyming are mostly governed by stylistic principles.

**Doubling of syllables** has, for example, been described for Tarahumara. In so-called ‘expletive’ reduplication in Tarahumara (cf. Brambilla 1953: 8), any final syllable can be echoed with the sequence *k* plus the final vowel, whenever the final syllable is accented, with preferences according to certain intonational position.

(3) Tarahumara (Uto-Aztecan, Mexico)

a. *txopé* > *txopeke* 'pine firewood'

b. *pačí* > *pačiki* 'corn cob' (cf. Brambilla 1953: 8)

c. *sonó* > *sonoko* 'stubble (field)' (ibid.)

**Doubling of rhythmic patterns** is used in poetry and it is familiar under the term 'meter': The pre-stabilized sequence of a certain number of feet with a fixed internal and overall structure is regularly repeated in order to create cohesion in the text. Poetic meter is also governed by stylistics.

These phonological doubling processes can be viewed as salient in human perception. The possibilities and regularities of doubling must be regulated more specifically by what is perceived as rhythmically 'better', as being more pleasant, as a higher euphony, as a stylistic means of verbal art, or as a stylistic figure (both the latter in poetry).

### 3. Reduplication in the Acquisition of Language

It has commonly been stated, that “children like reduplication”<sup>7</sup>. And indeed, the reduplication of syllables is one of the most frequent processes of first language acquisition on the prosodic phonological level (quite apart from reduction in consonant-clusters and the deletion of unstressed syllables). In contrast to morphological reduplication, as it is systematically used by adults in many languages of the world, reduplication in language acquisition is purely a phonological phenomenon, and entirely unrelated to the morphological reduplication which can appear in the target language. Phonological reduplication produced by children can be observed from the very beginning of the language acquisition (i.e. at around 12 months-) until some 18 to 24 months of age.

#### 3.1. Form

In most cases, the reduplications employed by children take the form of bi-syllabic words comprising one reduplicated syllable. More often, the expression employed substitutes for polysyllabic adult words (as for example [wawa] for *water*<sup>8</sup> or [nana] for *another*<sup>9</sup>). More commonly, the stressed syllable of the target word is reduplicated by children. To a lesser extent, they may also represent mono-syllabics (as for example [baba] for *ball*). These forms are either exact reduplications, or they contain an alternation of the vowel (e.g. [nanɪ] for *candy*<sup>10</sup>) or the consonant (e.g. [bu:du:] for *bacon*<sup>11</sup>).

Further Examples:

English: [be:be:] for *biscuit* (Waterson 1971: 186), [aɪaɪ] for *all right* (Leopold 1947: 213)

German: [nana] for *Nase*, [bebe] for *Bär* (Dressler et al. 2005: 462-463), [dada] for *danke*, [bubu] for *Papier* (Leopold 1947: 213)

French: [ne'ne] for *donner* (Dressler et al. 2005: 462-463), [bubu] for *bouche*, [vava] for *vache* (Ingram 1979: 140)

#### 3.2. Origins

The origins of reduplicative structures in child language phonology are doubtless a form of 'playing a game' with language structure, at the babbling stage. The so-called “canonical babbling” (cf. Ferguson & Macken 1983: 236), i.e. /C<sub>1</sub>V<sub>1</sub>C<sub>1</sub>V<sub>1</sub>/-utterances, is the most important stage in the development of articulation (cf. Papoušek 1994: 84). At this stage, babies practice articulation without intending to produce concrete words, but this acquired skill of producing polysyllables is later applied to express meanings. Apart from babbling, reduplication probably also occurs by imitating the baby talk of adults. Reduplication is one of the most salient features of baby talk in all languages. Child-directed speech is structured in a manner, which satisfies the skills and preferences of small children (and is in turn an imitation of child language).

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<sup>7</sup> cf. for example Leopold 1947: 221.

<sup>8</sup> Ingram 1979: 140

<sup>9</sup> Waterson 1971: 186

<sup>10</sup> Ingram 1979: 145

<sup>11</sup> Ingram 1979: 138

### 3.3. Functions

The main function of reduplication of simple syllables is the process of acquiring meaningful words, in order to enable the child to produce polysyllabic utterances without articulating complex structures (cf. studies of Fee & Ingram 1982, Lleó 1990, Schwartz et al. 1980). Empirical studies show, that there is a significant negative correlation between the amount of reduplicated utterances and polysyllabic words produced by a child; i.e. to the degree, that polysyllabic words are increasingly and correctly pronounced by a child, the proportion of reduplicated utterances decrease (cf. Schwartz et al. 1980). Ingram (1974) draws the conclusion, that the function of the reduplication of syllables by children is a strategy to compensate their "... inability to appropriately represent or produce the second syllable of the word" (Ingram 1974: 54).

Examples:

German: [nana] for *Nase*, French [ne'ne] for *donner*, [papama] for *pyjama*, [wawar] for *au revoir*, [afaf] for *giraffe* (Dressler et al. 2005: 462)

However, reduplications do not only substitute polysyllabic- but also monosyllabic words as well - only to a smaller extent. The reason for this is, that children seek to avoid the final consonant, because it causes considerable difficulties in the early stages of language development (cf. Fikkert 1994). The study of Fee and Ingram (1982) shows, that the reduplicating stage usually precedes the acquisition of final consonants. Schwartz et al. (1980) find significantly negative correlations of numbers of words with final consonants and reduplications.

Examples:

German: [bebe] for *Bär*, [baubau] for *Bauch* (Dressler et al. 2005: 463)

### 3.4. Frequency

Of course, not all children reduplicate to the same extent. While some children use this strategy intensively, others don't use it at all. But, this does not permit any conclusions to be drawn with regard to abnormal- or normal language-development.

... children who can be classified as frequent reduplicators are not experiencing greater difficulty in reproducing multisyllabic words than other children. Rather, they are at the onset of phonological development and are concentrating on developing multisyllabic rather than monosyllabic productions. (Fee and Ingram 1982: 52)

With regard to the linguistic discussion on the relevance of reduplication in language acquisition, there are arguments for two contradicting positions. Whereas some authors see reduplication as a universal phenomenon in language acquisition (e.g. Jakobson 1944, Moskowitz 1973), others consider reduplication to be an individual strategy 'consciously' and deliberately selected by some children (e.g. Ferguson 1979, Lleó 1990).

## 4. Reduplication in Sign Language

Reduplication is highly productive morpho-syntactic practise in sign language. The purpose of the present Paper is to give a general overview of how reduplication in sign language(s) functions, i.e. to illustrate by means of selected examples what meanings can be expressed and which forms of reduplication can be found in the various sign languages. Hence, theoretical assumptions and papers on this subject matter are only briefly discussed at the end of this Paper. For further information, please consult the attached Bibliography.

Before some reduplication types in various sign languages can be presented, the crucial difference between reduplication and repetition in sign language has to be explained. Repetition is considered “to be generally composed of a single repetition of the lexical movement with a (non-meaningful) return/transition movement in between” (Wilbur 2005: 596). Repetition is thus inherent in the sign and lexically or prosodically determined (cf. Wilbur 2005; Pfau & Steinbach 2006), whereas morphosyntactic reduplication consists of at least two repetitions (in the majority of cases we find three repetitions) and serves grammatical functions (cf. Wilbur 2005: 597f). In Swedish Sign Language, for example, the sign for ‘wait’ consists of one repetition of the root, but if the sign is reduplicated, the root sign is repeated three times.

- (4) **Repetition vs. reduplication** in Swedish Sign Language/Tecknad Svenska (SSL/TS)  
(Bergman & Dahl 1994: 402f):

WAIT:           ‘wait’ – citation form (the colon indicates one repetition or twice the root).  
                  ‘be waiting, wait for a while’ – three times the root sign WAIT, the three pluses  
WAIT+++       indicating three repetitions of the root

### 4.1. Function and form

The meanings expressed through and the word formation processes performed by reduplication are generally speaking the same as those found in spoken languages, e.g. habitual, iterative and continuative aspects, plurality, reciprocity and noun-verb derivations and conversions. Some of these will be discussed in more detail below, in regard to their formal properties. In contrast to the function, some formal aspects of reduplication in sign language are completely different from those observable in spoken languages. Due to the visual channel and the use of three dimensions, forms in sign language are not restricted to those detected in spoken languages.

Two common reduplication types in terms of formal features in sign language(s) are, apart from simple reduplication (see example (2) below), the so-called ‘sideward’ (example (3)) and ‘backward’ (example (4)) reduplication (cf. Pfau & Steinbach 2006). In German Sign Language (Deutsche Gebärdensprache – DGS), for instance, the plural of mid-sagittal nouns<sup>12</sup> is formed by simple reduplication, where the whole sign is produced three times.

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<sup>12</sup> i.e. nouns, whose signs are demonstrated with both hands in the mid-sagittal plane.

- (5) **Simple reduplication** for nominal plural in German Sign Language/Deutsche Gebärdensprache (DGS) (Pfau & Steinbach 2006: 146):



DGS nouns demonstrated single-handed in the sideward signing space with a simple movement and without the involvement of the body, i.e. sideward non body-anchored nouns, are pluralized by employing sideward reduplication. The whole sign is reduplicated with a movement to the right (for left-handed signers to the left).

- (6) **Sideward reduplication** for nominal plural in DGS (Pfau & Steinbach 2006: 144f):



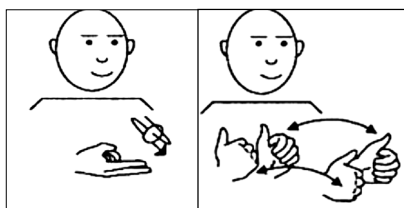
In British Sign Language (BSL), the sideward reduplication of verbs indicates distribution (multiplicity), e.g. the sign for 'TEACH' when reduplicated sideward, indicates 'TEACH-EACH-OF-THEM'. (Sutton-Spence & Woll 1999: 108)

The second type, which features a change in the direction of the reduplicant, with regard to the direction of the non-reduplicated sign, is called backward reduplication. This type can be found for instance in German Sign Language, where it is used to express a reciprocation of the verb. Two-handed agreeing verbs<sup>13</sup> form reciprocal constructions by demonstrating the reduplication with both hands into the reverse direction of the non-reduplicated verb. In example (4), the subscripts and superscripts indicate the points in the signing space: subscripts represent the points of the dominant hand and superscripts those of the non-dominant hand.

<sup>13</sup> i.e. verbs, which are demonstrated with both hands but, which have no fixed starting- and ending point within the signing space; they agree with the points already established for the participants within the signing space.

(7) Reciprocal **backward reduplication** in DGS (Pfau & Steinbach 2005: 573):

${}_x\text{wir\_beide}_y$        ${}_x\text{helf}_y\text{helf}_x$   
 we.two              help:REC  
 'we are helping each other.'



${}_x\text{WIR\_BEIDE}_y$        ${}_x\text{HEL}_y\text{HEL}_x$

In addition to the direction of the movement, duration and velocity also play an important role in the reduplication system of some sign languages. In Swedish Sign Language, for example, there is a general distinction between fast and slow reduplication of verbs affecting the aspect system of the language. The sign WAIT: has two reduplicated forms which express different aspectual meanings. The notation in example (5) has to be read the following way: VERB+++ is the demonstration for fast reduplication, while VERB### represents slow reduplication. The colon indicates lexical repetition, as explained above.

(8) **Fast and slow reduplication** in SSL/TS (Bergman & Dahl 1994: 402f):

WAIT:            'wait'  
 WAIT+++        'be waiting, wait for a while'  
 WAIT###        'wait for a long time'

Thus when referring to formal features and patterns in regard to reduplication in sign language, it should be remembered, that sign language is a visually communicated language with the possibility of demonstrating subject matter simultaneously, and at different rates in a three-dimensional space. In addition to the movement and the shape of the hand(s), facial expression also communicates special meanings. Even though facial expression is an important and constantly appearing part of sign languages, it will not be discussed here, as the description of this aspect of sign languages would 'explode' the scope of the present Paper, which is merely to provide a survey of basic formal (and functional) characteristics of reduplication in sign language.

## 4.2. Theoretical assumptions

Reduplication in sign language has been thoroughly investigated by Ronnie B. Wilbur on American Sign Language (e.g. 2005, in collaboration with Petersen 1997) and by Roland Pfau and Markus Steinbach on German Sign language (e.g. 2003, 2005, 2006). In these studies, the domain of reduplication is defined with respect to the phonological, semantical and lexical properties of the signs in more detail. The morphological status of reduplication process(es) is also discussed in Bergman and Dahl (1994) who investigate verbal reduplication in Swedish Sign Language at the intersection of inflectional and derivational morphology .

The status of parts of speech in sign language(s) is another point of discussion in the literature (cf. Erlenkamp 2000). This issue is of importance here, because reduplication is often described

as derivation or a conversion process between word classes. Another interesting question arising in this context is whether it is legitimate to speak of derivation or conversion by reduplication in sign language, although the existence of distinct word classes is arguable?

In short, reduplication is a feature of the majority of sign languages and is applied in many different usages. Therefore, the interested reader is referred to the references below.

## 5. Reduplication in Language Games \*

Language games (also known as secret languages, ludlings, and so forth) systematically alter elements of words and disguise them in order to obtain unintelligibility for the purpose of entertainment or to privatize conversations (Davis 1994:1981; Bagemihl 1995:698; Sherzer 1976:31). Such language games are said to use mechanisms similar to those in ordinary languages to form game-words. For example, there is a set of game-words whose formation process can be described in terms of the theories developed to explain the phonological properties of reduplication in ordinary languages. Although language games are functionally a unique case of linguistic systems, a close look into this reduplication-like game-word formation might possibly yield insight that can be incorporated into the general discussion of reduplication. This article examines reduplication approaches to game-word formation. More specifically, it outlines two reduplication analyses of a game known as Fanqie, which is based on various Chinese dialects.<sup>14</sup> To simplify the illustration, the article focuses on May-ka, a Mandarin-based Fanqie, as exemplified below:

(1) May-ka game-word formation (Yip 1982:640; Bao 1990:318)

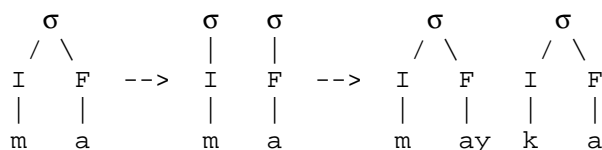
- a. ma 'mother'    -->    may-ka  
 b. pey 'north'    -->    pay-key

In order to set a background for the reduplication accounts of May-ka formation, let us first examine the traditional approach to Fanqie formation.

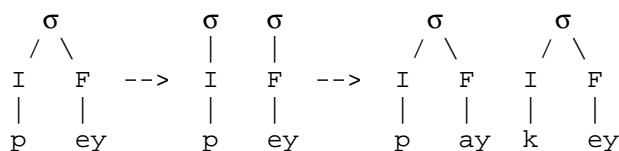
### 5.1. The syllable-splitting approach

In traditional Chinese phonology, it is a common practice to divide a syllable into an Initial (I) (initial consonant, optional) and a Final (F) (the rest of the syllable) (Lin 2001:29; Zhu 2001:148). Following this traditional view, word formation in Fanqie has been analyzed as involving the following process: (i) a syllable is split into I and F; and (ii) a fixed F is added to I and a fixed I to F (Chao 1931 as cited in Yip 1982:642 and Bao 1990:318-319). According to this analysis, the May-ka words *may-ka* and *pay-key* are derived as follows (the fixed F and I in May-ka are *ay* and *k* respectively):

(2) ma --> may-ka



(3) pey --> pay-key (Yip 1982:642)



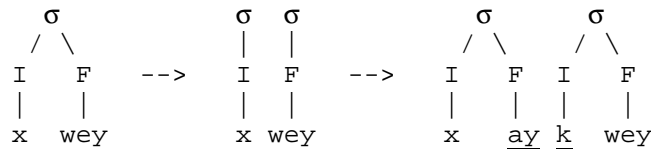
\* We would like to thank Marie Meili Yeh of National Hsinchu University of Education and National United University in Taiwan for providing us with information on the relevant literature and on the historical aspects of Fanqie.

<sup>14</sup> Fanqie was originally developed in the Han Dynasty in order to specify the pronunciation of an unknown character through two known ones (Pulleyblank 1995:5-6; Yeh p.c.).

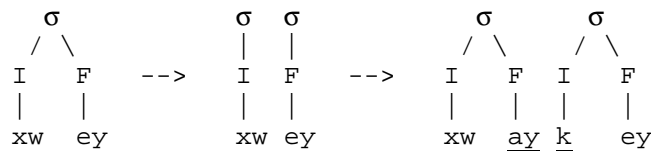


Although this traditional analysis predicts derivation of many May-ka words, it runs into problems when applied to some other words. For instance, it fails to explain the behavior of medial glides in the formation of words such as *xway-kwey* from *xwey* ‘meeting’ (Yip 1982:643-647). On the one hand, if the medial glide *w* is assumed to be a part of F as in traditional Chinese phonology, the syllable-splitting analysis predicts an ill-formed word *\*xay-kwey* as in example (4). On the other hand, when it is assumed to be a part of I, it leads to yet another wrong form *\*xway-key* as in example (5):

(4) *xwey* --> *\*xay-kwey* (Yip 1982:644)



(5) *xwey* --> *\*xway-key* (Yip 1982:644)



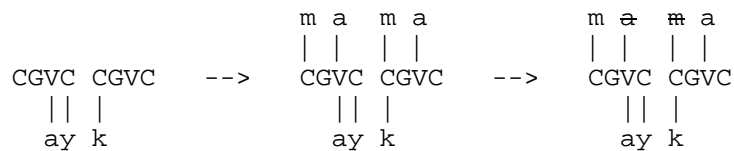
The first reduplication approach was proposed by Yip (1982) in order to solve the problems of the traditional syllable-splitting approach.

## 5.2. The reduplication approaches

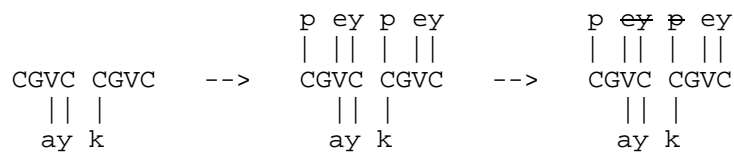
### Yip (1982)

In Yip’s analysis, any Fanqie language is considered to have its own bisyllabic CV skeleton and prespecified segments. Furthermore, based on Marantz’s (1982) theory of reduplication, Yip argues that formation of Fanqie words follows the following sequence: (i) the bisyllabic nature of the skeleton triggers copying of the melody of a source word; and (ii) the melody is associated with the CV skeleton, with precedence given to prespecified segments (642). In this view, the May-ka words *may-ka* and *pay-key* are derived in the following manner (in May-ka, the bisyllabic skeleton is CGVC CGVC, and the prespecified segments are *a*, *y* and *k*):

(6) *ma* --> *may-ka* (Yip 1982:643)

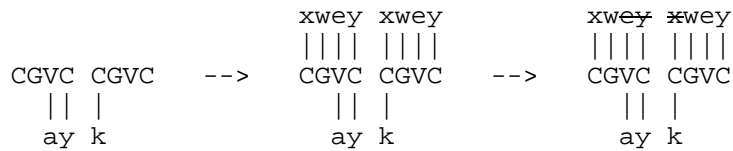


(7) *pey* --> *pay-key*



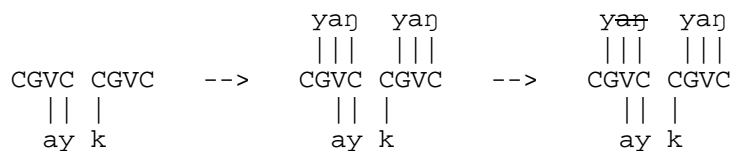
This approach successfully solves the problem of the traditional syllable-splitting analysis with regard to medial glides described in examples (4) and (5) above. It correctly predicts the May-ka word *xway-kwey* to be derived from *xwey*:

(8) *xwey* --> *xway-kwey* (Yip 1982:644)

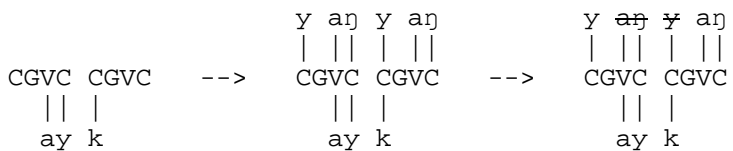


Though Yip's copy-and-association model provides an account of the derivation of May-ka words with medial glides, it is not without shortcomings. For example, it does not explain some phenomena of initial glides (Bao 1990:324-325). As in examples (9) and (10) below, in order to attain the correct May-ka words *yay-kyaŋ* (>*yε-tɕyaŋ*)<sup>15</sup> from *yaŋ* 'sun' and *way-kan* from *wan* 'curved,' the front-glide *y* should be associated with G and the back-glide *w* with C; otherwise, incorrect forms *\*yay-kaŋ* and *\*way-kwan* result:

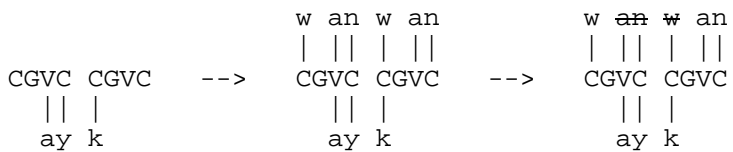
(9) a. *yaŋ* --> *yay-kyaŋ* (>*yε-tɕyaŋ*) (Bao 1990:324)



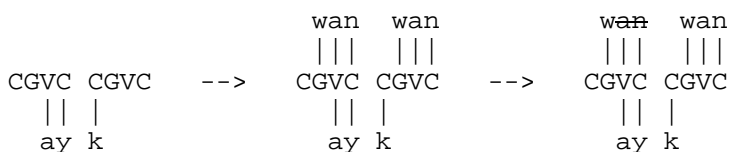
b. *yaŋ* --> *\*yay-kaŋ* (Bao 1990:325)



(10) a. *wan* --> *way-kan* (Bao 1990:325)



b. *wan* --> *\*way-kwan* (Bao 1990:325)



<sup>15</sup> In Mandarin, *ay* becomes *ε* by reason of the rule of rime reduction, and *k* palatalizes when preceding *y* (Bao 1990:324).

Despite these discrepancies, there is nothing in Yip's theory to prevent *y* from being associated with *C* or *w* with *G*. The second reduplication approach proposed by Bao (1990) attempts to compensate for the problems raised in Yip's approach.

### Bao (1990)

Based on Steriade's (1988) theory of reduplication, Bao argues that Fanqie formation involves the following process: (i) the source syllable is copied in its entirety, including its syllable structure and suprasegmental substances such as tone; and (ii) the language-specific substitution operation is assigned to a given syllable (329-330). Within this approach, the May-ka words *may-ka* and *pay-key* are formed as follows (in May-ka, the rime is replaced by *ay* in the first syllable, and the onset-initial is replaced by *k* in the second syllable):

(11) *ma* --> *may-ka*

*ma* --> *m.a-m.a*<sup>16</sup> --> *m.ay-k.a*

(12) *pey* --> *pay-key* (Bao 1990:331)

*pey* --> *p.ey-p.ey* --> *p.ay-k.ey*

This analysis can explain the behavior of medial glides in the derivation of words such as *xway-kwey*, which was previously problematic under conditions of the traditional syllable-splitting analysis as illustrated in examples (4) and (5) (also see example (8) for Yip's account):

(13) *xwey* --> *xway-kwey*

*xwey* --> *xw.ey-xw.ey* --> *xw.ay-kw.ey*

Moreover, in order to solve the problems of initial glides in Yip's approach described in examples (9) and (10), Bao argues that the front-glide *y* and the back-glide *w* are placed in different positions within a given syllable. That is, *w* is an onset-initial itself, while *y* is preceded by # (zero-initial) (334).<sup>17</sup> On the assumption of such syllable structures, the non-uniform behavior of initial glides can be explained, and the May-ka words *yay-kyan* (>*yε-tcyan*) and *way-kan* can be successfully derived as a result of Bao's model:

(14) *yan* --> *yay-kyan* (>*yε-tcyan*) (Bao 1990:334)

*#y.aŋ* --> *#y.aŋ-#y.aŋ* --> *#y.ay-ky.aŋ*

(15) *wan* --> *way-kan* (Bao 1990:334)

*w.an* --> *w.an-w.an* --> *w.ay-k.an*

This short article has outlined approaches to May-ka, one of the Fanqie languages. It has demonstrated how the approaches proposed by Yip and Bao make use of the theories developed to explain the phonological aspects of reduplication in ordinary languages. Of course, depending on one's theoretical standpoint, one of the approaches may appear more plausible than the other, or other reduplication (or even non-reduplication) approaches may be proposed. In any event, however, further investigations into Fanqie formation may well contribute to a more complete picture of the theories of reduplication.

<sup>16</sup> A dot indicates the onset-rime boundary.

<sup>17</sup> Bao notes as evidence that in actual speech a glottal stop can freely precede *y*, but not *w* (333 fn 12).

## Abbreviations

DUT	Dutch	LAT	Latin
ENG	English	OHG	Old High German
FRE	French	POL	Polish
GER	German	SWE	Swedish
HBW	Hebrew	THE	Themchen Tibetan
IND	Indonesian	TIB	Tibetan

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## Other Reduplication Phenomena

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