VERBAL REDUPLICATION IN SINITIC[*]

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Abstract
The main aim of this paper is to underpin the connection between the semantic relationship binding the constituents of verbs and the formal and semantic properties of their reduplication in Sinitic. We will first discuss in detail verbal and adjectival reduplication in Standard Mandarin, the best described Chinese language; we also collected data on adjectives, in order to compare them to verbs. Then, we will discuss data from a convenience sample of twelve Chinese 'dialects', representing the eight major groups of Sinitic, comparing them to Mandarin. We will show that whereas the ABAB reduplication pattern often has a (counter-iconic) diminishing meaning and appears as close(r) to syntax, being also sensitive to the aspectual properties of the base, the AABB pattern always has an increasing function, regardless of the word class of the base, and it is a phenomenon conditioned by morphological factors, being sensitive to the relation holding between the constituents of the base verb.

1 Introduction

The topic of reduplication in Chinese has been investigated in depth in the literature (see *e.g.* Li & Thompson 1981, Tang 1988, Zhu 2003, Tsao 2004, Wang & Xie 2009, Xu 2012, *inter alios*). Many word classes, including nouns, classifiers, verbs and adjectives undergo full reduplication in Chinese

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[*] Traditional characters have been used as a default for Chinese. The romanisation system used for (Standard) Mandarin Chinese is *Hanyu Pinyin*, whereas for other Chinese varieties the transcriptions are given as provided by the sources. When no transcription is provided, we will use toneless smallcaps *Pinyin* following Mandarin pronunciation. The glosses follow the general guidelines of the Leipzig Glossing Rules. For academic purposes, Giorgio F. Arcodia is responsible for sections 3 and 4, Bianca Basciano is responsible for sections 1, 2, 2.1 and 2.2, Chiara Melloni is responsible for sections 2.3 and 2.4. Authors' names are alphabetically listed.

languages, with both iconic and non-iconic meanings, as *e.g.* Mandarin 紅紅 *hóng~hóng* 'red~red, very/quite red', and 看看 *kàn~kan* 'look~look, have a look'. Special attention has been accorded to adjectival and verbal reduplication, not only in Standard Mandarin, but also in the so-called 'Chinese dialects', *i.e.* Sinitic languages other than the national standard. In this paper, we will focus on phenomena of *full* reduplication (at the segmental level, *i.e.* disregarding tone change), excluding partial reduplication (*e.g.* Mandarin 冷冰冰 *lěng-bīng~bīng* 'cold-ice-ice, ice-cold'; *cf.* 冰冷 *bīng-lěng* 'ice-cold') and reduplication involving the addition of other segmental material (as *e.g.* Cantonese 肥 *féi* 'fat' > 肥肥哋 *fèih~féi-déi* 'rather fat, chubby'; Matthews & Yip 2011: 186).

The main aim of this paper is to underpin the connection between the semantic relationship binding the constituents of verbs and the formal and semantic properties of their reduplication in Sinitic. To this end, we carried out a detailed survey of patterns of verbal and adjectival reduplication in (Standard) Mandarin Chinese, the best-described Sinitic language, and we then looked for analogous data in a convenience sample of twelve Chinese dialects, with at least one representative for each of the eight major groups of Sinitic, comparing them to Mandarin. We collected data also on adjectives in order to compare the features of adjectival reduplication with those of verbs and to highlight the connection between form and meaning characterising full reduplication; moreover, the classes of verbs and adjectives are not always well distinguished in isolating languages, including Sinitic varieties (see Dixon 2004).

Our main claim is that there is a very strong correlation between form and meaning/function in reduplication which applies fairly consistently throughout Sinitic. Thus, whereas the ABAB reduplication pattern often has a (counter-iconic) diminishing meaning and appears as close(r) to syntax, being also sensitive to the aspectual properties of the base, the AABB pattern always has an increasing function, regardless of the word class of the base, and the input is conditioned by morphological factors, being sensitive to the relation holding between the constituents of the base verb, but not to its aspectual features. However, there is also considerable variation both within and across individual languages, which shows up chiefly in patterns of monosyllabic reduplication.

This paper is organised as follows. In section 2, we will provide an overview of reduplication in Mandarin, discussing the correspondence between form and function of the attested patterns, the constraints on the input and output of processes of reduplication, and we will propose a syntactic analysis for diminishing reduplication. In section 3, we will discuss data from our sample of Chinese dialects, highlighting the commonalities and the differences

among them and comparing them to Mandarin, showing that many of the generalisations we may draw on the latter apply also to the former. In the last section of this paper, we will summarise our main conclusions and provide some hints for further research.

2 Mandarin data and background

As mentioned in the introduction, reduplication in Mandarin has both iconic and counter-iconic uses. Typically, the *diminishing* (counter-iconic) function is associated with verbs (1), whereas the *increasing* (iconic) function is associated with adjectives (2):

(1) 教　　　　　　→　　　　　教教
　　　jiāo　　　　　　　　　　*jiāo~jiao*
　　　teach　　　　　　　　　　teach~teach
　　　'teach'　　　　　　　　　'teach a little'

(2) 小　　　　　　→　　　　　小小
　　　xiǎo　　　　　　　　　　*xiǎo~xiāo*
　　　small　　　　　　　　　　small~small
　　　'small'　　　　　　　　　'very/really small'

Diminishing reduplication marks the so-called 'tentative' or 'delimitative' aspect (Chao 1968, Li & Thompson 1981, Tsao 2004), meaning to do something "a little bit/for a while" (Li & Thompson 1981:29), to do something quickly, lightly, casually or just for a try; it has the pragmatic function of marking a relaxed tone, casualness (Ding 2010), and thus reduplicated verbs are also used as mild imperatives (see Xiao & McEnery 2004). Increasing reduplication for adjectives indicates a higher degree of liveliness or intensity (see Tang 1988, among others). However, as a matter of fact, increasing reduplication is possible also for verbs, but only if the base is bimorphemic and its constituents are in a relation of coordination. See the example in (3), where the reduplication shows two interrelated actions which are performed alternately, repeatedly.

(3) 進出　　　　　　　　　→　　　　進進出出
　　　jìn-chū　　　　　　　　　　*jìn~jìn-chū~chū*
　　　enter-exit　　　　　　　　　enter~enter-exit~exit
　　　'enter and exit'　　　　　　'go in and out, shuttle in and out'

This kind of reduplicated verbs, besides expressing pluriactionality or action in progress (see Hu 2006, Ding 2010), can also express vividness (4), or other kinds of more abstract meanings (5), depending on the linguistic context (on the meaning of AABB verbal reduplication, see Hu 2006).

(4) 跑跳   →   跑跑跳跳
     pǎo-tiào   *pǎo~pǎo-tiào~tiào*
     run-jump   run~run-jump~jump
     'run and jump'   'skip, run about, run and jump in
                                     a vivacious way'

(5) 偷摸   →   偷偷摸摸
     tōu-mō   *tōu~tōu-mō~mō*
     steal-touch   steal~steal-touch~touch
     'pilfer'   'furtively, do a thing covertly'

The distinction between diminishing and increasing reduplication, thus, crosscuts lexical categories, rather than being firmly associated with a word class.[1] Rather, it appears that the two (contradicting) functions of reduplication are associated with a set of formal and selectional properties. This will be the topic of the following two subsections.

2.1 Correspondence between form and function
One of the most striking features of the Modern Chinese lexicon is the prevalence of polysyllabic words, most often disyllabic (see Shi 2002); given that the overwhelming majority of syllables correspond to morphemes in this language, we may say that Chinese words are mostly complex, typically composed of two syllables/morphemes:

(6) a. 逼供   b. 酸辣
         bī-gòng   *suān-là*
         force-confess   sour-hot
         'extort a confession'   'hot and sour'

Nevertheless, a considerable number of words (especially, very common ones) are monosyllabic/monomorphemic, as those in examples (1) and (2).
This distinction is very relevant for Mandarin, because reduplication works in a significantly different way for monosyllabic and disyllabic words. From the formal point of view, the difference between increasing and diminishing

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[1] Reduplication of coordinate nouns is also attested, but it is not productive.

reduplication is visible only at the suprasegmental level, in that the reduplicated verb is toneless, whereas the reduplicated adjective always bears the first tone (Tang 1988: 282, Paul 2010: 120; but *cf*. Li & Thompson 1981: 33). However, for disyllabic bases (AB), the difference arises at the segmental level. In the diminishing function, the base is reduplicated as a whole (ABAB):

(7) 休息   →   休息休息
     xiūxi   *xiūxi~xiūxi*
     'rest'   rest~rest
                                'rest a little, for a while'

In the increasing function, each morpheme is reduplicated by itself (AABB), as seen above for coordinated verbs (3-5). This is true for adjectives as well:

(8) 乾淨   →   乾乾淨淨
     gān-jìng   *gān~gān-jìng~jìng*
     dry-clean   dry~dry-clean~clean
     'clean'   'very/totally clean'

Thus, it appears that there is a strong correlation between the function and the form of reduplication. This is very interesting especially because many (if not most) languages do not exhibit such a clear correspondence between patterns and functions in reduplication (Mattes 2007). Moreover, the difference between these two patterns is not only semantic, but also concerns the restrictions on the input and on the output, as we will show in what follows.

2.2 Input and output constraints
As seen above, whereas increasing reduplication involves (a subclass of) adjectives and verbs, diminishing reduplication only allows verbs as input, either monosyllabic or polysyllabic.[2] Moreover, not all verbs may enter the diminishing reduplication construction. The base verb must be a dynamic and volitional verb (Li & Thompson 1981), *i.e.* it should possess the features [+controlled], [+dynamic], [+durative]; all inherently telic verbs are excluded:

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[2] An adjective such as 高興 *gāoxìng* 'happy' may also reduplicate as 高興高興 *gāoxìng~gāoxìng*, with the diminishing meaning 'have some fun'; this is restricted to those adjectives which may be used as dynamic predicates in Mandarin (basically, stage-level adjectives); see Sybesma (1997), Liu (2010).

(9) *贏贏那場比賽   (Xiao & McEnery 2004: 155; characters added)
     * *yíng~ying nà chǎng bǐsài*
       win~win that CLF   match
       'win that match a bit'

(10) *喝醉喝醉
     **hē-zuì~hē-zuì*
       drink-drunk~drink-drunk
       'get drunk (a bit)'

The diminishing (AA) reduplication of monosyllabic verbs like 來 *lái* 'come' or 進 *jìn* 'enter' is thus ruled out by aspectual constraints; generally speaking, the delimitative aspectual semantics of the diminishing pattern is incompatible with the *Aktionsart* of accomplishments and achievements. Moreover, stative verbs generally cannot reduplicate (see Tsao 2004).[3]
As to the output, delimitative aspect turns an unbounded dynamic event into a holistic / temporally bounded event (see Xiao & McEnery 2004). This is apparent if we consider that, differently from the base verb, reduplicated (non-coordinate) verbs are incompatible with the progressive aspect marker 正在 *zhèngzài*, but are perfectly compatible with the perfective aspect marker －了 *−le*, which signals completion or termination of an action (Xiao & McEnery 2004, Ding 2010):

(11) 學習了學習
     xuéxí-le   xuéxí
     study-PFV study
     'studied a bit'

Differently from diminishing reduplication, increasing reduplication requires that its base adjectives and verbs have specific structural properties. As for adjectives, increasing reduplication applies both to monosyllabic and to disyllabic bases; however, the AABB pattern requires a disyllabic *and* bimorphemic base, whereas disyllabic monomorphemic words cannot be reduplicated (Paul 2010: 137):

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[3] However, some stative verbs expressing states of mind which can have a dynamic interpretation, as *e.g.* 了解 *liǎojiě* 'understand', may actually reduplicate (Ding 2010: 283).

(12) 窈窕   →   *窈窈窕窕
    yǎotiǎo   **yǎo~yǎo-tiǎo~tiǎo*
    'graceful, gentle'

It thus appears that here units are handled on a morphemic base, rather than on a prosodic base. Moreover, the possible bases for AABB reduplication are either lexicalized, non-transparent bases (13a), adjectives formed by two morphemes with a similar meaning (13b) or in logical coordination (13c)

(13) a. 馬虎   →   馬馬虎虎
        mǎ-hu   *mǎ~ma-hū~hū*
        horse-tiger   horse~horse-tiger~tiger
        'careless, casual'   'careless, casual (stronger)'
    b. 快樂   →   快快樂樂
        kuài-lè   *kuài~kuài-lè~lè*
        pleased-happy   pleased~pleased-happy~happy
        'happy'   'very/really happy'
    c. 高大   →   高高大大
        gāo-dà   *gāo~gāo-dà~dà*
        tall-big   tall~tall-big~big
        'tall and big'   '(very) tall and big'

As to verbs, increasing reduplication has no aspectual requirements on the base verb, since all kind of verbs, including inherently telic verbs like 來 *lái* 'come', 進 *jìn* 'enter' or 出 *chū* 'exit' are allowed (see *e.g.* 3), but requires bases with specific structural properties. As a matter of fact, AABB increasing reduplication is possible only for coordinated complex verbs, the constituents of which may be either in a relation of logical coordination (14a), synonyms (14b) or antonyms (see above, ex.3):

(14) a. 說笑   →   說說笑笑
        shuō-xiào   *shuō~shuō-xiào~xiào*
        talk-laugh   talk~talk-laugh~laugh
        'talk and laugh'   'talk and laugh continuously'
    b. 叫嚷   →   叫叫嚷嚷
        jiào-rǎng   *jiào~jiào-rǎng~rǎng*
        call-shout   call~call-shout~shout
        'shout, howl'   'shout repeatedly'

Note that in (14a-b) the bases of reduplication are existing verbs, but this is not necessarily always the case, as e.g. 走走停停 *zǒu~zǒu-tíng~tíng* 'walk

and stop' (there is no corresponding base verb 走停 *zǒu-tíng*)[4]. Also, a coordinate compound made of synonymous constituents as 討論 *tǎo-lùn* 'discuss-discuss = discuss' reduplicates as 討論討論 *tǎo-lùn~tǎo-lùn*, meaning 'discuss a little' (i.e. diminishing, rather than increasing). Arguably, this happens because such highly lexicalised word forms are unanalysable for the average speaker, and hence are treated as non-coordinate (on lexicalisation, see Packard 2000). We will get back to this in §3.1.

Thus, the constituents of increasing AABB reduplication must be either coordinate (and non-lexicalised, in the case of verbs) or lacking a semantic/structural head. Notably, disyllabic adjectives with a modifier-head structure, such as 雪白 *xuě-bái* 'snow-white', reduplicate as ABAB (雪白雪白 *xuě-bái~xuě-bái*), with an increasing meaning. This is actually the only exception to the form-function identity between ABAB reduplication and diminishing meaning in Mandarin. Moreover, adjectival reduplication normally requires as input a [+gradable] base (either monosyllabic or disyllabic), thus a non-gradable adjective such as 方 *fāng* 'square' cannot reduplicate (*方方 **fāng~fāng*; Paul 2010: 139, fn. 19); modifier-head adjectives are the only non-gradable adjectives which may reduplicate. It is also worth remarking that 'rhotacisation', a morphophonological phenomenon consisting in the addition of a retroflex approximant at the end of a word, occurs after the reduplicated adjective in AABB reduplication (高高興興兒 *gāo~gao~xìng~xìng-r* 'really happy'), but after each AB in the case of modifier-head compound adjectives (雪白兒雪白兒 *xuě-bái-r~xuě-bái-r*; see Lee 2012). These facts suggest that adjectival AA/AABB and ABAB reduplication are two distinct phenomena, albeit both morphologically conditioned (*i.e.* they have specific structural requirements on the base).

To sum up, it appears that increasing reduplication is sensitive to the morphological makeup of its input, rather than to any semantic feature. Also, we showed that there appears to be an exception to the strong correspondence between form and function in Mandarin reduplication, which involves a very peculiar subclass of adjectives. In the next subsection we will focus on verbs, outlining an analysis of the data discussed here**.**

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[4] One could argue then that verbal AABB reduplication is the result of the coordination of two reduplicated verbs, [A~A] [B~B]. However, note that reduplication of monosyllabic verbs expresses a delimitative meaning, so the coordination of two monosyllabic reduplicated verbs should result in delimiting semantics. Moreover, note that telic verbs like 進 *jìn* 'enter', as said above, cannot reduplicate by themselves, * 進進 *jìn~jìn* (*cf.* ex. 3).

2.3 Analysis: diminishing reduplication

In the previous section, we showed that despite superficial similarities the diminishing and increasing patterns of Mandarin reduplication are characterized by different properties that make a unified analysis of the two phenomena untenable. Quite to the contrary, we purport the view that, whereas increasing reduplication is sensitive to *morphological* constraints and its building blocks allegedly are chunks of structure below the X° level, diminishing reduplication is a *syntactic* phenomenon, which combines larger structures within the *v*P domain.

This rationale is motivated primarily by the separability of the verbal complexes obtained via the diminishing pattern, which challenges the alleged syntactic atomicity or lexical integrity of words (see Lapointe 1979, *inter alios*). Specifically, in (11), we remarked that the aspect marker −了 −*le*, usually occurring at the rightmost side of verbs, is 'interfixed' between the base and the reduplicant, and other elements can in fact occur between them (see Basciano & Melloni 2013). Furthermore, under the acknowledged view that aspectual properties are *syntactically* encoded,[5] the range of aspectual constraints described in the previous section for the input verbs is unexpected if one treats this pattern as a strictly morphological phenomenon. Besides this, and differently from increasing reduplication, there is a lack of purely morphological constraints that impose specific requirements on the structural makeup of input verbs.

We thus propose a syntactic analysis of diminishing reduplication in the constructionist framework put forth by Ramchand (2008), which is based on a syntactic decomposition of the event structure ('first phase syntax'). In this system, the event structure can be decomposed into a maximum of three subevents, each represented with its own projection, ordered in a hierarchical causal embedding relation: the causative subevent (*init*P), which introduces the causation event and the verb external argument hosted in its specifier (*i.e.* the subject of cause or *initiator* in Ramchand's theory); the process subevent (*proc*P), which specifies the nature of the change or process and introduces the entity undergoing the change or process (*i.e.* the subject of process or *undergoer*);[6] the result subevent (*res*P), which provides the *telos* or *result state* and hosts the subject of result or *resultee*.

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[5] Since the early 1990s, a number of studies have advanced the hypothesis that thematic and aspectual requirements of events are directly encoded in the syntax: see among others, Travis (2000, 2010); Borer (1994, 2005); McClure (1995); Ramchand (1997, 2008).

[6] The *proc*P is the heart of the dynamic predicate, since it represents change through time and it is present in every dynamic verb.

(15)
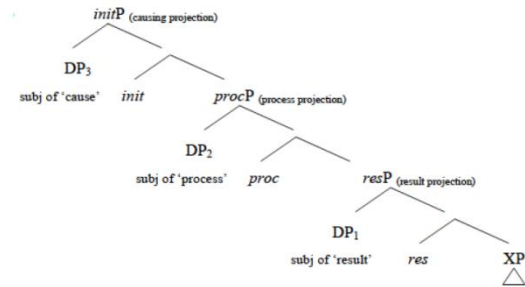
In this framework, lexical items specify the syntactically-relevant information by means of a category label or 'tag', which permits their insertion in the eventive structure, and may have multiple category features. Telicity in this framework can arise in two ways: either it is lexically encoded (in Ramchand's terms, the lexical item is marked by [res] feature) or it is compositionally obtained in *proc*P by means of a spatial bounded path (usually acknowledged as 'incremental theme') in the complement position.[7]

The present analysis rests upon the main hypothesis that diminishing reduplication spells out two copies of the same element within the *v*P domain. Let us now see the details of our proposal. First, it should be premised that the group of Chinese verbs that can undergo diminishing reduplication are easy to delimit in Ramchand's framework since – being activities and accomplishments taking a non quantized object – they are lexically marked by the tags [init, proc]. All verbs tagged with [res] (*i.e.* achievements and resultatives) are excluded. Relevant literature (see Xiao & McEnery 2004) advances a purely semantic explanation for the incompatibility between inherently telic verbs and diminishing reduplication. We contend instead that this fact straightforwardly follows from the inner structure of reduplicated verbs.

It has been noticed that the main semantic function of diminishing reduplication is to delimit the temporal duration of an otherwise unbounded event. We thus claim that the reduplicant adds a [+bounded] temporal path to the [-bounded] situation codified by the base verb. Being a Path of process verbs, we claim that the reduplicant (the verb lower copy) occupies a

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[7] "The complement position of a process head is associated with the semantic relation of structural homomorphism, regardless of the category of that complement." (Ramchand 2008: 47). We refer the reader to Ramchand's (2008) book for further details.

dedicated syntactic position in the complex structure of *v*P, *i.e*., it is the complement of the Process head in Ramchand's (2008) framework.

This analysis implies a *structural* incompatibility between the reduplicant and the *res*P, which sits in the complement of *proc*P; hence it syntactically accounts for the aspectual restrictions exclusively ascribed to the semantic level in previous analyses. As mentioned in section 2, limited temporal duration is not the only semantic value conveyed by diminishing reduplication: besides this, a number of related semantic effects such as casualness, tentativeness, etc. are also listed as possible meanings of reduplication in reference grammars of Mandarin. As a matter of fact, the aspectual constraints on input verbs hold in all the instances of diminishing reduplication, independently from the overall semantics of the output. We argue, however, that the aspectual restrictions on input verbs are hardly justified in an account that derives them from the lexical-semantic incompatibility between the inner temporal constitution of the base and the varied (hardly predictable) semantics of the reduplication template. On the other hand, the derived semantic nuances of diminishing reduplication are structurally justified in the present analysis provided that they are analysed as shifted semantic correlates of the core meaning of the *proc*P - Path template, *i.e*. temporal boundedness.

2.3.1 Reduplicants as objects

In order to grasp the technical details of our analysis, let us start from the 'simplest' case of an intransitive verb, 走 *zǒu* 'walk':

(16) a. 走走
      zǒu~zou
      walk~walk
      'have a walk/walk a little'
   b. 走 *zǒu* 'walk' [init, proc]
   c.
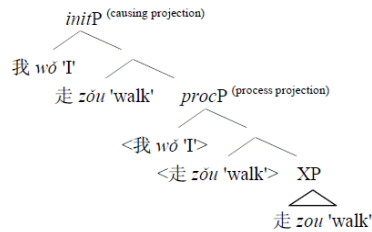
The structure in (16c) shows that the reduplicant, occupying the verb complement, turns a basically unergative verb into a transitive one, a solution

which is reminiscent of Hale & Keyser's (1993) understanding of unergative verbs. Thematically, the object is not a Patient, but a temporal Path which provides a temporal boundary for the event.

If all reduplicated verbs undergo a kind of 'transitivization', the obvious issue to address concerns the position of syntactic objects of inherently transitive bases, provided that the reduplicant should cause the unavailability of the complement of *proc*P. In Ramchand's framework, however, 'objects' of the verb can originate in different places in the *v*P. Within the *proc*P, they can be either Undergoers (*i.e.* the entity undergoing the change or process), which originate in the specifier of *proc*P, or Paths in the complement position of *proc*P (see above). Let us consider the case of verbs with Undergoers first. It is worth noting that Undergoers cannot measure out the event, since they are not incremental themes, but do undergo the change described by the event. Therefore, no incompatibility arises in cases such as 試試 *shì~shi* 'try~try, try on (shortly, for a while)' because the syntactic object and the reduplicant occupy different structural positions:

(17) a. 我试试衣服
　　　wǒ   shì~shi yīfu
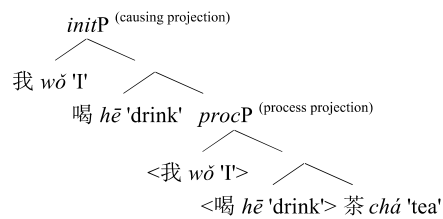　　　1SG try~try dress
　　　'I'll try the dress on'
　　b.

Ramchand (2008) observes that some transitive verbs are characterized by having an object which is not the Undergoer of the Process but a Path (more typically acknowledged as incremental theme). With respect to the traditional Vendlerian taxonomy, verbs taking a Path as object are accomplishments.

According to Ramchand, when the verb takes a Path object, the property mapped onto the process is inherent to the DP and does not change; the homomorphism with the process of the event is established via the scalar structure of the inherent property, and the process is defined by its progress through the scale provided by the Path object. This class includes creation/consumption (or ingestive) verbs, like *eat, drink, read, write,* etc. Ramchand assumes that in these cases the specifier position of *proc*P is not

filled by the direct object of the verb, which is a Path, and that it is the Initiator itself which fills the Undergoer position too, given its status as a continuous experiencer of the process. See the example below:

(18) a. 我喝茶
    wǒ hē chá
    1SG drink tea
    'I drink tea'
  b.

*init*P ^(causing projection)
我 *wǒ* 'I'
喝 *hē* 'drink' *proc*P ^(process projection)
<我 *wǒ* 'I'>
<喝 *hē* 'drink'> 茶 *chá* 'tea'

As for diminishing reduplication, accomplishment verbs do not behave in the same way. Typically, they cannot undergo reduplication when they are combined with a quantized object; however, when taking a non-quantized object, accomplishments can undergo reduplication too.

(19) 喝喝茶
    hē~he chá
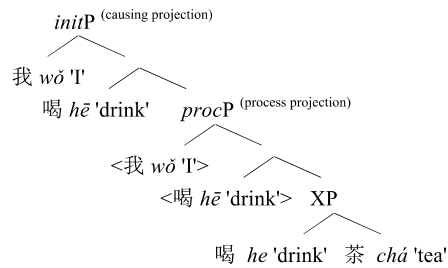   drink~drink tea
    'have some tea'

Assuming that the object is a Path in the complement position of *proc*P, we should exclude the possibility that the reduplicant is a Path itself, since the complement position is already occupied by the object (see ex. 18 above). We thus advance a tentative hypothesis which might be able to capture their structure and semantics. Interestingly, a cross-linguistic look shows that reduplicated verbs combined with incremental themes are close, at the semantic level, to light verb constructions (henceforth, LVCs) such as the following (attested in many Romance and Germanic languages):

(20) Italian
    a. *fare (*bere) una bevuta di tè*
      do-INF (*drink-INF) a-SG.F of tea
    English
    b. *take a drink of tea*

In these cases, a semantically light verb (such as *do*, *make*, *take*, *give*, etc.) takes as its object a complex DP that, beyond codifying the core event semantics, is able to delimit the event temporally; in particular, in (20) *una bevuta (di…)* / a *drink (of…)* is a DP headed by an event noun which acts as a measure phrase, able to turn the mass noun 'tea' into a quantized nominal expression. At the *v*P level, this DP also provides a "boundary" to the unbounded process encoded by the verb *bere/drink*.

Provided that LVCs are formed by a process verb combined with a DP complement, which in turns embeds a complement (*di tè* is the internal argument of the event noun *bevuta*, from *bere* 'to drink'), we argue that the semantic parallel between LVC and diminishing reduplication can be translated into a syntactic one. Structurally, both *bevuta* / *drink* and the reduplicant 喝 *hē* 'drink' are Paths able to delimit the event; further, just as *di tè* / *of tea* acts as the complement of *bevuta* / *drink*, in Chinese 茶 *chá* 'tea' would be the complement of 喝 *hē* 'drink'.

(21)

    *init*P ^(causing projection)

我 *wǒ* 'I'

    喝 *hē* 'drink'   *proc*P ^(process projection)

        <我 *wǒ* 'I'>

          <喝 *hē* 'drink'> XP

             喝 *he* 'drink' 茶 *chá* 'tea'

In this picture, many issues still deserve further understanding; above all, we still lack an assessment of the categorial nature of the reduplicant, which as a verb should not sit in the complement of *proc*P, but as a noun should not be able to license its nominal complement (茶 *chá*).

We believe however that this line of analysis, whose details are omitted here due to space limitations, offers novel insights on a phenomenon generally ascribed to the lexical/morphological domain. First, it structurally accounts for the counter-iconic semantics of the diminishing/delimiting pattern. Furthermore, it can justify the lack of lexical integrity of the complex since, as a phenomenon affecting the 'first phase syntax' of the verb, diminishing reduplication is not expected to created syntactic atoms. Also, it offers a structural explanation for the incompatibility between Result State and diminishing reduplication: under the present analysis, the result state and the

reduplicant cannot be base-generated in the same structural position. Finally, it predicts the semantics of direct objects of reduplicated verbs, which are never Paths/Incremental Themes; they can be either Undergoers (originated in the specifier position of *proc*P) or complements of the reduplicant itself.

2.3.2 Reduplicants as Cognate Objects
Other evidence in support of the object analysis of reduplicated verbs comes from the heterogeneous class of cognate object constructions (henceforth: COC). It has been remarked (see Chao 1968 and Hong 1999) that Mandarin V-*yi*-V reduplicating construction can be understood as a kind of COC, sharing many properties of Indoeuropean COCs. Consider the following English standard case of COC:

(22) *laugh a (scornful) laugh*

A cognate object such as *a (...) laugh* possesses the following three characteristics: from the point of view of its morphological form, *laugh* bears the same form as the verb *laugh*; from the point of view of its syntactic function, *a laugh* is the syntactic object of the verb *laugh* (at least according to Massam 1990, Macfarland 1992, and Pham 1999); as to its semantic function, *a laugh* is delimitative, since it temporally bounds the process codified by the verb *laugh* (see Hong 1999: 263). Chao (1968) and Hong (1999) argue that delimitative reduplication is in fact a type of COC, but their claim is limited to those cases where 一 *yi* (*yī*) 'one' precedes the reduplicant.

(23) 看一看
    kàn-yi-kàn
    look-one-look
    'have a look/look for a while'

On the other hand, this analysis does not take into account two interesting facts. First and foremost, there seems to be no difference in semantics between reduplicated forms with and without the numeral 一 *yi* (*yī*):

(24) 看看
    kàn~kan
    look~look
    'have a look/look for a while' (*cf*. ex. 23)

Furthermore, 一 *yī*, as a numeral taking a classifier, is often omitted in speech.

(25) 我想买（一）本书
    wǒ xiǎng mǎi (yī) běn shū
    1SG want buy (one) CLF book
    'I want to buy a book'

Therefore, here we put forth the tentative hypothesis that not only monosyllabic verbs reduplicated with 一 *yi* (*yī*) are instances of COC, but that the COC analysis applies to all instances of diminishing reduplication, which would contain 一 *yi* (*yī*) covertly or overtly. Under this analysis, the double parallelism arising between DR and COCs is easy to capture; that is to say, both reduplicants and cognate objects provide a (temporal) boundary to the event; syntactically, they can be analysed as complements of the verb, specifically as delimiting Paths of process heads.

2.4 Further remarks

In the previous sections, we outlined a syntactic analysis of diminishing verb reduplication, mainly on the grounds of the fact that reduplication modifies the aspectual structure of the base verb; its base is indeed aspectually constrained, yet not conditioned by morphology. This picture does not take into account reduplication of coordinate verbs though. As we have shown in §2.2, this kind of reduplication is akin to adjectival reduplication in that it expresses an increasing meaning and its input, differently from diminishing verbal reduplication, is conditioned by morphological factors[8].

Semantically, both diminishing reduplication and increasing adjectival reduplication affect boundedness (intended as gradability for adjectives, see Alexiadou 2010): in particular, reduplication turns a [-bounded] (atelic) event into a [+bounded] one and a [+gradable] adjective into a [-gradable] one. An open question concerns increasing verbal AABB reduplication: can this kind of reduplication too be accounted for in term of boundedness? This hypothesis is intuitively appealing: the typical meanings of this pattern, as shown before, include pluractionality and action in progress, *i.e.* essentially unbounded aspectual profiles (we will get back to this in §3.1). However, at present we do not have an analysis able to account for the semantics expressed by this kind of reduplication. We leave this for further research.

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[8] An analysis of adjectival reduplication is beyond the scope of this paper, but we believe that, though constrained by morphological factors, it should be understood as a phenomenon pertaining to the syntax, rather than to the morphological or lexical module of grammar. We leave this for further research.

3 Beyond Mandarin: reduplication in other Sinitic languages

Sinitic is the largest branch of the Sino-Tibetan family in terms of number of speakers, with a number of dialect groups varying from 7 to 10, according to different classifications (see Kurpaska 2010); most of the variation within Sinitic is found in Central and Southern China, whereas the North of the country is dominated by Mandarin dialects (from which Standard Mandarin Chinese originated). Chinese 'dialects', thus, are not varieties of a unitary language but, rather, varieties *related* to Standard Mandarin, just as Dutch and Swedish are related to English, and should be viewed as distinct objects for comparison (Norman, 2003); the difference is that whereas English, Dutch and Swedish all have a long written history and recognised standard varieties taught in schools and used in media discourse (as well as a number of regional dialects/varieties), within Sinitic only Mandarin and, in a sense, Cantonese are standardised language varieties.

As stated in the introduction, for the purposes of our study, we looked for data on reduplication in twelve Chinese dialects, with at least one representative for each of the eight major groups. In table 1 we provide a list of the varieties considered, together with their affiliation.

Language	Group	Source
Chengdu	Mandarin	Yang (2005)
Huojia	Jin	He (1989)
Xiangtan	Xiang	Zeng (2001)
Taiwanese Southern Min	Min	Tsao (2004), Chuang (2007)
Zhangzhou	Min	Ma (1995), Li (2013)
Gutian	Min	Li (2006), Li (2013)
Hong Kong Cantonese	Yue	Matthews & Yip (2011)
Taiwanese Hakka[9]	Hakka	Lai (2006)
Shanghai	Wu	Zhu (2003)
Wenzhou	Wu	Chi & Wang (2004), Wang F. (2011)
Suzhou	Wu	Wang P. (2011), Fu & Hu (2012)
Yanshan	Gan	Lin & Hu (2008)

Table 1: Our sample of Chinese dialects

Unfortunately, we do not have data of the same quality as for Mandarin for any of these dialects, since the descriptions are not nearly as detailed, also with considerable variation from dialect to dialect; nevertheless, we will show that some clear tendencies are visible even in the (incomplete) data we could gather.

3.1 Verbal reduplication
Verbal reduplication is found in all the languages of our sample except Xiangtan, in which, according to the description we consulted, only adjectives reduplicate; the (near) absence of verbal reduplication appears to be a common feature of the Xiang group (Wu 2005: 11-12). Generally speaking, in the dialects of our sample the reduplication of monosyllabic and (non-coordinating, non-lexicalised) disyllabic verbs has the same function as in Mandarin, *i.e.* indicating short duration, 'tentativeness' (see §2), and, in the latter case, it follows the ABAB pattern, as in the following example:

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[9] 'Taiwanese Hakka' is used here loosely as a cover term for the Hakka dialects spoken in Taiwan. The transcriptions of the examples represent the Siyen (四縣, Mandarin *Sìxiàn*) variety.

(26) Shanghai (Zhu 2003: 86)

幫助　　　　　　　→　　　　幫助幫助
pòngzu　　　　　　　　　　　*pòngzu~pòngzu*
'help'　　　　　　　　　　　　help~help
　　　　　　　　　　　　　　　'help out a bit'

However, progressive/iterative semantics is also attested for reduplication of monosyllabic verbs in several Chinese dialects; see Fu & Hu (2012) for examples from Min, Wu and Yue dialects, and Wang (2005) for examples from a Mandarin dialect (Taonan). In Wenzhou, reduplication of monosyllabic verbs may mean 'repetition/continuation over a short period of time';[10] in the following example (adapted from Chi & Wang 2004: 150), the actions of 'reading' and 'writing' are performed alternately and repeatedly over a quite long period, but each individual action is performed for a limited time:

(27) 渠㱥见㱥见，写写
　　　gi²　　*tsʰɤ⁵~ tsʰɤ⁵* XIE~XIE
　　　3SG.M read~read write~write
　　　'He is reading and writing'

Shi (2007) proposes that progressive/iterative verbal reduplication is a feature distinguishing Southern China from Northern China, and that it reflects the Middle Chinese pattern of verbal reduplication, whereas the diminishing pattern is an innovative feature (see also Fu & Hu 2012). However, all the examples quoted in Shi (2007) and Fu & Hu (2012), as well as those from our sample, involve monosyllabic verbs; hence, although ABAB reduplication *might* in principle have increasing semantics, we could not find any instance of this, and in all the varieties considered, if ABAB reduplication of verbs is possible, it has a diminishing function, as in the following examples (and ex. 26 above):

(28) Zhangzhou (Ma 1995: 127)
　　a.　修理　　　　　→　　　修理修理
　　　　siu⁴⁴li⁵³　　　　　　*siu²²li⁴⁴~siu²²li⁵³*
　　　　'repair'　　　　　　　　repair~repair
　　　　　　　　　　　　　　　'try to fix, repair a bit'

　　　Gutian (Li 2006: 71)

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[10] The 'true' delimitative and the iterative/progressive patterns of reduplication in Wenzhou are distinguished by suprasegmental means (*i.e.* different tone patterns; see Chi & Wang 2004, Wang F. 2011).

b. 研究 → 研究研究
$\eta ie\eta^{42}kiu^{21}$ $\eta ie\eta^{35}kiu^{53}\sim\eta ie\eta^{35}kiu^{53}$
'study, research'   research~research
                         'study a bit, do some research'

We will get back to progressive/iterative reduplication of monosyllabic verbs below.

Just as for Mandarin, AABB reduplication in 'our' dialects typically conveys vividness, iteration and alternation of actions, as in the following examples:

(29) Hong Kong Cantonese (Matthews & Yip 2011: 40)
     a. 上落 → 上上落落
        séuhng-lohk   *séuhng~séuhng-lohk~lohk*
        rise-fall   rise~rise-fall~fall
        'rise and fall'   'go up and down'
     Chengdu (Yang 2005: 85)
     b 商量 → 商商量量
        SHANG-LIANG   SHANG~SHANG-LIANG~LIANG
        discuss-consider   discuss~discuss-consider~consider
        'discuss, consult'   'discuss repeatedly/for a while'

The patterns exemplified here, however, have different degrees of generality; for instance, according to Matthews & Yip (2011), AABB reduplication is found with directional verbs, and they provide no data on other types of verbs; also, according to Yang (2005), the AABB pattern in Chengdu is available only for a small set of verbs.

Yang also claims that the verbs reduplicating as AABB in Chengdu, nearly all made of coordinate (often synonymous) constituents, correspond to ABAB reduplicates in Mandarin, *i.e.* to highly lexicalised compound verbs (see above, §2.2). Nevertheless, with a cursory Google search, we actually found that *e.g.* both 商量商量 *shāng-liang~shāng-liang* (delimitative) and 商商量量 *shāng~shāng-liang~liang* (iterative) are commonly found in written Chinese[11], attesting not only to the differences in the perception of the

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[11] 882,000 hits for the ABAB version and 609,000 hits for the AABB version (11/11/2013).

structure of this word by different speakers[12], but also to the strong connection between the AABB pattern and increasing semantics, on the one hand, and the ABAB pattern and diminishing semantics, on the other hand.

One last aspect of verbal reduplication in the dialects of our sample which is worth mentioning is its interaction with the resultative verb construction. In Mandarin, resultative verb compounds, being inherently telic, cannot be reduplicated, as shown by the ungrammaticality of (10) above. In §2.3.1 we provided our analysis of this incompatibility: in diminishing reduplication, the reduplicant and the result state cannot be base-generated in the same structural position. However, reduplication of (monosyllablic) verbs with resultative elements is not uncommon in our dialect sample:

(30) Wenzhou (Wang F. 2011: 60)
    a. 逮魚洗洗光生
         DAI YU XI~XI-GUANGSHENG
         OBJ fish wash~wash-clean
         'wash the fish clean'
    Taiwanese Southern Min (Chuang 2007: 6; characters added)
    b. 拍死   →   拍拍死
         $phah^4$-si^2 $phah^4$~$phah^4$-si^2
         hit-die   hit~hit-die
         'beat to death, kill'   'beat savagely, to death'

According both to Chi & Wang (2004) and to Wang F. (2011), in Wenzhou reduplication with a resultative element is typically found in imperative sentences, as it softens the tone of the request; Chi & Wang also remark that in this construction a reduplicated verb indicates an action which has not yet occurred (irrealis?). According to Fu & Hu (2012), in these sentences the focus is on the result state, whereas the reduplicated verb indicates that the action leading to the result state is carried on (or repeated) for some time. Basing on an extensive cross-dialectal survey, Fu & Hu (2012) suggest that all monosyllabic patterns of verbal reduplication with a progressive/iterative meaning are found in background sentences, which are necessarily followed by another clause (see 31 below), by a resultative complement (30a-b), or by a directional or a quantifier. Their function is to indicate the manner, reason or circumstances of the occurrence of the following predicate or result state,

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[12] Compare Mandarin 來往 *lái-wăng* 'come and go', which reduplicates as 來來往往 *lăi~lăi-wăng~wăng* 'go back and forth, come and go in great numbers', and 來往 *lái-wang* 'have contacts with', fully lexicalised (note the neutral tone of the second constituent), which reduplicates as 來往來往 *lái-wang~lái-wang* 'have some contacts with'.

whereas, on the other hand, the function of the result state is to provide a boundary to the continuation of the action.

Hence, it appears that progressive/iterative verb reduplication differs from diminishing reduplication not only because of its meaning, but also because of its aspectual properties: in the former pattern, reduplication apparently *detracts* from the boundedness of the verb, rather than adding a boundary. The analysis we proposed above for Mandarin, thus, cannot apply as such for these cases.

As to Taiwanese Southern Min, whereas Tsao (2004) believes that the reduplication of the verb in the resultative construction indicates 'rapid completion', being thus somehow consistent with a delimitative interpretation (short duration > rapid completion), Chuang (2007) proposes that the actual meaning conveyed by verbal reduplication, here, is 'intensity'. Thus, in (30b), the reduplication of 拍 *phah⁴* 'hit' somehow adds intensity to the predicate, indicating "intensification on the action causing a change of state" (Chuang 2007: 84). Interestingly, in Suzhou, a Wu dialect just as Wenzhou, reduplication of monosyllabic verbs appears to work similarly to the latter, indicating continuation of an action in the background (Fu & Hu 2012: 145):

(31) 我打打球，小王来喊唶
    WO DA~DA   QIU XIAO-WANG LAI HAN ZE
    1SG play~play ball young-wang come call PERF
    'I was playing [a ball game], when Young Wang came to call me'

However, when the (monosyllabic) verb in a resultative construction is reduplicated, it is said to indicate that the action has been already completed (Wang P. 2011: 332):

(32) 烧烧熟
    SHAO~SHAO SHU
    cook~cook cooked
    'Cooked'

Just as in Wenzhou, the reduplicated resultative construction is found chiefly in imperative sentences (judging from the examples provided in Wang P. 2011). In yet another Wu dialect, Yongkang (not included in our sample due to the lack of adequate data), verb reduplication is one of the devices used to express, again, perfective aspect/completion of an action (Huang 1996: 175):

(33) 信寄寄就来

    XIN   JI~JI   JIU LAI

    letter send~send then come

    '(I, she, etc.) will come after sending the letter / (please) come after sending the letter'

Since no context is provided, it is unclear whether (33) is to be understood as a declarative or as an imperative sentence. Note that in Wenzhou the reduplication of a monosyllabic verb, if followed by an aspectual(/modal) particle as 爻 *huɔ⁰*, indicating perfect aspect, may mean 'sudden change' (Chi & Wang 2004: 151):

(34) 鸡都死死爻

    JI   DOU   SI~SI   *huɔ⁰*

    chicken already die~die PERF

    'The chicken has already died'

The reader may have noticed the use of a verb like 'die', which is not allowed in Mandarin delimitative reduplication because of its inherent telicity. Wang F. suggests that 爻 *huɔ⁰* is added only to those reduplicated verbs whose base form indicates non-volitional, instantaneous actions, and the construction indicates "suddenness, broad scope, gravity of the consequences, etc." (2011: 87; our translation). Moreover, according to her analysis, the reduplication of 死 SI contains a "subjective evaluation on the part of the speaker, expressing 'surprise', 'disappointment'" (2011: 71).

3.2 Adjectival reduplication

Adjectival reduplication seems to be even more common than verbal reduplication in our sample: it is attested in each of the dialects considered, and, apparently, it is less restricted. Given that our main concern here are verbs, we shall provide but a few remarks on adjectives, focussing on the comparison with verb reduplication, just as we did for Mandarin above.

One first remark is that, perhaps surprisingly, reduplication of monosyllabic adjectives, which is the structurally simplest pattern, is not available in all the dialects considered: it is apparently not attested at all in Shanghai, whereas in Xiangtan reduplicated monosyllabic adjectives are part of a pattern including other morphemes (*e.g.* 好高不高 HAO-GAO-BU-GAO 'very-tall-not-tall = very tall'; Zeng 2001: 52). Moreover, reduplicated monosyllabic adjectives do not always convey increasing semantics. In Taiwanese Hakka and Southern Min, reduplication of adjectives has a diminishing meaning, whereas triplication has an increasing meaning, as hinted at above:

(35) Taiwanese Hakka (Lai 2006: 490; characters added)

    a. 紅   →   紅紅   →   紅紅紅

        $fung^{11}$ $fung^{11}\sim fung^{11}$ $fung^{11}\sim fung^{11}\sim fung^{11}$

        red   red~red   red~red~red

        'red'   'kind of red'   'very red'

Taiwanese Southern Min (Chuang 2007: 2; characters added)

    b. 紅   →   紅紅   →   紅紅紅

        ang^{5} $ang^{5}\sim ang^{5}$ $ang^{5}\sim ang^{5}\sim ang^{5}$

        red   red~red   red~red~red

        'red'   'reddish'   'very red'

Thus, notwithstanding the differences between these two varieties and Standard Mandarin, we still do have a clear correspondence between pattern and function. An analogous distinction is found again in the reduplication of disyllabic adjectives :

(36) Taiwanese Hakka (Lai 2006: 491, fn. 8)

    a. 風神   →   風神風神

        $fung^{24}\text{-}sen^{11}$ $fung^{24}\text{-}sen^{11}\sim fung^{24}\text{-}sen^{11}$

        style-smart   style-smart~style-smart

        'awe-inspiring'   'quite awe-inspiring'

    b. 淨利   →   淨淨利利

        $qiang^{55}\text{-}li^{55}$ $qiang^{55}\sim qiang^{55}\text{-}li^{55}\sim li^{55}$

        clean-sharp   clean~clean-sharp~sharp

        'clean'   'very clean'

The same situation is found in Taiwanese Southern Min (Tsao 2004). Interestingly, verbal reduplication for disyllabic verbs works just as Mandarin both in Taiwanese Hakka and in Southern Min, *i.e.* the ABAB pattern is associated with diminishing semantics, and the AABB pattern with increasing semantics; hence, there appears to be a perfect correspondence between the ABAB pattern and diminishing semantics, and between the AABB pattern and increasing semantics, which equally applies both to adjectives and to verbs. Tsao (2004: 306) suggests that diminishing reduplication for disyllabic adjectives possibly is a Taiwanese innovation; we may speculate that the basis for this was an extension of the ABAB verbal pattern to adjectives. Note that, according to Tsao's (2004) account, only a few adjectives may reduplicate as AABB, and he suggests that these cases may be interpreted as the result of Mandarin influence on Taiwanese Southern Min. In the other Min dialects of our sample, *i.e.* Gutian and Zhangzhou, both spoken in mainland China, AABB reduplication has increasing semantics, whereas

ABAB reduplication is apparently found (in Zhangzhou) only for modifier-head adjectives, just as seen above for Mandarin.

Thus, in short, it appears that the strong correspondence between form and function in disyllabic reduplication is consistent across word classes and across dialects. As to monosyllabic reduplication, we discussed some very significant differences in semantic and aspectual features among different dialects, again both for verbs and for adjectives.

3.3 Summary

The picture sketched above for verb reduplication in the dialects of our sample is very complex, if compared both to the situation of adjectives and to what we saw earlier for Mandarin. Moreover, whereas the behaviour of disyllabic verbs is consistent across dialects, monosyllabic verbs are found in several kinds of constructions, apparently expressing incompatible meanings. In the adjectival domain, again, we find much more consistency for disyllabic items than for monosyllabic ones. Thus, there seems to be a general tendency for variation to occur in constructions involving the reduplication of monosyllabic, rather than disyllabic items. The most striking fact, however, is the use of verb reduplication to indicate background open-ended events, contrary to Mandarin, where reduplication typically conveys temporal delimitation /boundedness of the event expressed by the base verb.

As a (tentative) conclusion, we may propose that there are two core semantic values for reduplication, both involving the notion of 'iteration' (incidentally, iconically coded in the construction): iteration over a long/undefined period of time and iteration over a short/defined period of time. The former should reflect the older use of reduplication, and the latter should reflect the 'innovative' uses, as *e.g.* those of Mandarin. Iteration over a long/undefined period of time may easily be reanalysed as expressing progressive/unbounded semantics, as in Suzhou, whereas iteration over a short period of time may be reanalysed as indicating perfective-like meanings, as rapid completion and suddenness, and, also, tentativeness. These processes of reanalysis, needless to say, are construction-specific, *i.e.* they depend on the interaction between verb semantics and the other items, such as resultatives or aspect markers, if present. Thus, reduplication may add a temporal boundary, as in Mandarin, but may also act to the contrary; in Suzhou, for instance, both effects of reduplication are attested (compare ex. 31 and 32). However, more data taken from a broader variety of contexts is needed to provide a proper assessment of these phenomena.

4. Concluding remarks

In this paper we provided an illustration of the patterns of verbal and adjectival reduplication in Mandarin and in a convenience sample of twelve Chinese dialects, showing some interesting correlations between form, structure and meaning in reduplication which crosscut lexical classes. One of the most striking aspects of reduplication in Sinitic is that there appears to be a very significant difference between monosyllabic/monomorphemic and disyllabic/bimorphemic items; it seems that word structure constrains meaning somehow.

Monosyllabic/monomorphemic verbs and adjectives exhibit a wide range of behaviours in the languages considered; reduplicated monosyllabic verbs, in particular, may express meanings as different as delimitative aspect, tentativeness, rapid completion, suddenness, greater intensity, etc. We proposed that these functions are all somehow connected to two semantic (macro-)values, namely repetition over an unbounded time span, which appears to be the earlier use for verb reduplication in the history of Chinese, and repetition over a bounded time span, the innovative usage; these were extended to include the disparate functions and values which reduplicate construction possess in modern Sinitic varieties. As to disyllabic/bimorphemic reduplication, we showed that the association between functions and patterns is much more stable and consistent, both across word classes and across dialects. For instance, we did not found a single instance of a disyllabic (non-coordinate) verb reduplicating as ABAB and expressing *increasing*, rather than diminishing semantics, and in the dialects which allow ABAB reduplication of adjectives, as Taiwanese Southern Min, this has diminishing semantics.

As to the deeper significance of the distributional and selectional properties of reduplicative constructions, we outlined a syntactic analysis of the Mandarin data, though limited to the diminishing pattern. We argued that diminishing verbal reduplication is subject to aspectual constraints only, and appears to modify the eventive structure of the base verb (providing a temporal boundary to the event described). On the contrary, increasing verbal and adjectival reduplication is subject to *structural* morphological constraints on the input; we leave for future research whether increasing reduplication too, along the lines of the analysis put forward here for diminishing reduplication, may be accounted for in syntactic terms. Unfortunately, we could not provide a formal analysis for all the patterns exemplified due to lack of adequate data for varieties other than Standard Mandarin; we hope that further research, based on a large number of actual occurrences of reduplication in different contexts, rather than on individual examples, will

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make it possible to provide a unified analysis of verbal (and adjectival) reduplication in Sinitic based on the framework introduced here.

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