The Unique Vowel-Play for "Negative" Quantifier in Javanese Reduplication

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Abstract—**Native speakers of a given language, including Javanese, may not be aware of their detail language system. This is due to the fact that they are able to use their first language through natural process of language transmission from care givers and members of community. Furthermore, it seems that they are given a talent to produce "strange" expressions automatically, for instances, <u>mloka-mlaku</u> vs. <u>mlaku-mlaku</u>, <u>ngguya-ngguyu</u> vs. <u>ngguyu-ngguyu</u>. This paper is intended to reveal how the reduplication system for "negative" quantifier works in Javanese language when phonology is taken into account. Descriptive qualitative is applied with documentation and interview. The findings suggest that the occurrence of reduplication system for "negative" quantifier is predictable. Firstly, the words are reflected regressively from the source of the word. Secondly, the nucleus of the last syllable must be [a] vowel as the default. Thirdly, the nucleus of the first syllable is kept as it is, except [a] vowel. Whenever [a] is the nucleus of the first syllable, it is changed into [o] vowel. Thus, these predictable phonological mechanisms allow Javanese native speakers produce "negative" quantifiers correctly, yet unconsciously.**

Keywords: phonology, reduplication, syllable structure, geminate

I. INTRODUCTION

Although there is a claim that languages generally share a general grammatical system, its details are various yet at the same time are specific from one language to others. Word formation, for instance, one language applies reduplication but other languages do not. reduplication is a specific feature characteristic of Austronesian language family [1]. Some languages under this family, to name of few, are Tagalog, Malay/Indonesian, Javanese, Malagasy, Sundanese, Balinese, Cebuano, Chamorro, Tetum, Manggarai, Fijian, Samoan, Hawaiian, and Maori (See further [1]). On the other hand, this language phenomenon is not common in English [2].

Reduplication is to repeat the same morpheme with or without modification [3]. This definition is in line with what O'Grady and de Gusman said "… which duplicates all or part of the base to which it applies to mark a grammatical or semantic contrast [2]. Similarly, Reduplication is defined as a morphological process that repeats or copies all or parts of a word to produce a new word [4]. It seems that linguists come to the agreement that reduplication is duplication of word base either fully or partially as one of ways of "the make-up words" or to produce a new word formation.

Javanese language as the member of Austronesian family indeed has reduplication as part of word formation. Among types of reduplication, there is a phenomenon that needs to be revealed. The fact that there is somewhat melody for this reduplication is worth investigating. Study the following examples as in (1a, 1b, and 1c). Note to be made that all Javanese words have been consulted to Javanese dictionary written by [5].

The base is *mlaku* 'walk'. The possible reduplications are:

(1a) *mlaku-mlaku*   'go sightseeing'

(1b) *mlaka-mlaku**   -

(1c) *mloka-mlaku*   'walk repeatedly within short period
                of time'

Reduplication form in (1) shows that one word of *mlaku* can be reduplicated into three possible forms. Form in (1a) is grammatical as it is full base reduplication and there is no question about it. Form in (1b) is not accepted. Then, surprisingly, reduplication in (1c) which experiences vowel modification is well-formed reduplication. This paper aims at seeking the answer to this phenomenon specifically on phonological processes of reduplication as shown in (1c).

This paper covers four sections, namely: introduction, methods, discussion, and conclusion. The discussion encompasses types of reduplication, meaning of reduplication, and process of changed-voice full reduplication.

II. METHODS

This study employed descriptive qualitative method. The data were mostly taken from daily conversation and were consulted to Javanese Dictionary. Others were also taken from documentation such as books and journals, and other relevant sources. Besides, interview with some Javanese children was conducted to test their ability to use vowel change in Javanese reduplication.

III. DISCUSSION

A. Types of Reduplication

Reduplication falls into twofold when seen from its construction: full and partial reduplications. Full reduplication is the repetition on the entire word, as in the data from Turkish and Indonesian, respectively, shown in (2) and (3) below [2].

(2)   *ʧabuk* 'quickly'   *ʧabuk ʧabuk*   'very qickly'

        javaʃ 'slowly'   *javaʃ javaʃ*   'very slowly'

(3)   *oraŋ* 'man'   *oraŋ oraŋ*   'all sorts of
men'

        anak 'child'   *anak anak*   'all sorts of

children'

The data show that in Turkish the base *ʧabuk* becomes *ʧabuk ʧabuk*. Similarly, *oraŋ* in Indonesian turns into *oraŋ oraŋ*. Javanese has the same case as in (04).

(04)

kanʧa	'friend'	*kanʧa-kanʧa*	'many friends'
mlaku	' walk'	*mlaku-mlaku*	'go sightseeing'

All these evidence show that many languages in the world including Javanese share common language phenomenon like full reduplication. Javanese term for this matter is known as *dwilingga* that literally means 'two bases' or 'full reduplication'

In contrast, partial reduplication copies only part of the word. In the following data from Tagalog, for instance in (05), reduplication affects only the first consonant-vowel sequence of the base [2].

(05)

takbuh	'run'	*tatakbuh*	'will run'
lakad	'walk'	*lalakad*	'will walk'

The same phenomenon is also found in Papaggo whereby the first sequence of consonant and vowel (or onset and nucleus of the first syllable) is duplicated as seen in (6) below [6]. The first sequence of consonant-vowel in the base *bana* is *ba*. This is reflected regressively to the front of the base *bana*. The resulted form is *babana*.

(6)

bana	'coyote'	*baabana*	'cayotes'
tini	'mouth'	*tiitini*	'mouths'

Turkish applies the same principle but somewhat different. The first sequence of consonant and vowel is duplicated then there is an insertion process [p] as seen in (7) below [6]. Note to be made that due to the limited data, the insertion process cannot be used as generalization; this needs more data to see the regularity.

(7)

dolu	'full	*dopdolu*	'quite full'

Interestingly in Javanese, however, the partial reduplication is divided into two types i.e. *dwipurwa* 'first/initial part reduplication' and *dwiwasana* 'last/final part reduplication' [7]. Examine the examples in (8) for the partial reduplication of the initial part.

(8)

mala	*memala,*
laku	*lelaku*

In (8), this phenomenon is similar to the case in Tagalog, Papaggo, and Turkish. However, as every language has specific system, Javanese also has its own rule. The first sequence of consonant and vowel (onset and nucleus) is duplicated to the left then there is a process of vowel change from [a] to [e]. This discussion is halted here as it is not the main concern of this paper.

The final part reduplication in Javanese can be seen in (9).

(9)

ɲuwek	*ɲuwewek*
busik	*busisik*

The final part of the base *ɲuwek* is *wek*. The onset [w] and nucleus [e] of this syllable is projected regressively. The resulted duplication is *wewek*. Then the complete reduplication after being attached to first part of the base is *ɲuwewek*. This process occurs across the board.

Javanese has another form of reduplication that may not be possessed by other languages; fake reduplication. The surface structure is precisely the same as full reduplication but this not reduplication. These two bases are actually one lexeme which refers to the single entity. Study the evidence in (10).

(10)

ondhe-ondhe	name of food
undur-undur	name of animal
andheng-andheng	'mole'

The word *andheng-andheng* is not resulted word from reduplication process. There is no standalone word of *andheng* in Javanese. Therefore, the word *andheng-andheng* is not full reduplication but a single word which means 'mole'. This explanation applies to all examples.

Now, it comes to the core discussion of this paper; that is *dwilingga salin swara* 'sound changing of full reduplication'. This issue is interesting to address yield two sides: syntactic and semantic consequences. Take a look at closer to the following example in (11a) and (11b) that is taken from (4).

(11)

a)	*mlaku*	'take a walk'	*mlaku-mlaku*	'go sightseeing'
b)	*mlaku*	'take a walk'	*mloka-mlaku*	' walk repeatedly
				within short
				period of time'

The base *mlaku* has two resulted two forms of reduplication: full reduplication as discussed in the earlier part of this section; and sound changing of full reduplication. The questions are: What implied meaning does this type of reduplication carry on? How is the process of this reduplication? The former question is discussed in the following section (B) and the latter is described exhaustively in Part IV.

B. Meaning of Reduplication

Reduplication carries semantic property which, again, varies from language to others. This part is devoted to explore the function of reduplication in some languages. As far as data are concerned, there are nine function/meaning of reduplication and the discussion is presented consecutively as follow.

1) Plural

In Papaggo, according to Katamba [6] and in Tohono according to Akmajian et al. [8], partial reduplication indicates plurality from its singular counterpart as in (12a 12b) respectively. The word *kuna* is singular that means husband whereas *kuukuna* is its plural form.

(12)

a) *kuna*   'husband'   *kuukuna*   'husbands'

bana 'coyote'   *baabana*   'cayotes'

b) *daikud* 'chair'   *dadaikud*   'chairs;

   kawyu 'horse'   *kakawyu*   'horses'

2) "every X and all X"

This second type can be found in Luganda in which the resulted reduplication carry a meaning 'every' from the original base. See example in (13) from Katamba [6] .

(13)

baibir   'two'   *bari-bari*   'every two'

Unlike Luganda, some languages operate reduplication to express 'all' as seen in (14)

(14)

bar 'two' *barbar* 'all two'   (Tzeltal)

ren 'man' *renren* 'everybody'   (Mandarin)

3) Continuation or repetition

Reduplication when it is a verb often indicates continuation, frequency or repetition of an event or action [6]. There are two types of this: repetition involves the same participants and different participants as presented in (15a) from Tzeltal and (15b) from Sundanese.

(15)

a) *pik*   'touch it' *pikpik* 'touch it lightly/ repeatedly'

b) *guyon* 'to jest'   *guguyon* 'to jest repeatedly'

The following as in (16) is evidence of reduplication which involves repetition of the event or action, but with different participants as in Twi [6].

(16)

wu   'die (of one or several persons)' →

wuwu   'die in numbers'

bu   'bend/break (in many places)' →

bubu 'bend/break (break many things)'

4) Augmentation

Reduplication can carry an augmentative meaning. This means that reduplicated result shows an increase in size, frequency or intensity [6] as in (17a) from Turkish and (17b) from Thai respectively.

(17)

a) *dolu* 'full   *dopdolu* 'quite full'

b) *dii* 'to be good' *diidii* 'to be extremely

                good'

5) Diminution

Reduplication may also bring diminutive effect, often with connotations of endearment as in (18a) or of attenuation as in (18b and18c).

(18)

a) *xo⇔yamac*   'child'   →
   xo⇔yamac xo⇔yamac   'small child' (Nez Perce⇔)

b) <u>*kEƎE*</u>   'old (of people)'   →
   kEƎE-kEƎE   'elderly' (Thai)

6) Pronoun changing

Fromkin et al. [4] provides examples of partial reduplication (final part) which show pronoun changing from *nao* 'he' to *nanao* 'they' as in Samoan (19).

(19)

manao   'He wishes'   *mananao*   'They wish'

malosi   'He is strong'   *malolosi*   'They are strong'

7) Tense marker

The following data is from Tagalog (20) taken from (05) for convenience, for instance. The reduplication shows tense changing from present tense to future tense simply by duplicating the first consonant-vowel sequence (onset and coda of the first syllable) of the base [2].

(20)

takbuh   'run'   *tatakbuh*   'will run'

lakad 'walk'   *lalakad*   'will walk'

8) Intensifier

Data from Turkish show that resulted reduplication in (21) produces new words from neutral to become more intensifying ones [2].

(21)

javaʃ 'slowly'   *javaʃ javaʃ* 'very slowly'

iji   'well'   *iji iji*   'very well'

9) "Negative" quantifier

Javanese has a type of reduplication which shows repeated action. Yet, this carries negative sense. Study the following examples in (22)

(22)

a) *ŋomoŋ* 'talk'   *ŋomaŋ ŋomoŋ* 'talk repeatedly'

b) *mlaku*   'walk'   *mloka mlaku*   'walk repeatedly'

This type of reduplication is produced to give advice or criticism to somebody who does this action which should have not been done. In (22a) the base *ŋomoŋ* 'talk' has neutral meaning. However, when it is duplicated *ŋomaŋ ŋ omoŋ*, it carries negative sense, somebody talks/promise repeatedly but there is no fact that he does what he said. The intended meaning: One is supposed to do what he said; not just keep saying or promising. Similarly, reduplication in (22b) is used to advise someone not to walk around. The intended meaning is that someone should have not walked around. Instead, he should have been sat still nicely.

In relation to the purpose of this paper, the issue that is put forward is: How to form the negative quantifier in Javanese? In fact there is also full reduplication from the same base as presented in (11); sound changing of full reduplication. The in-

depth discussion to address this issue is presented in Section IV below.

IV. UNIQUE JAVANESE REDUPLICATION

There are three steps to form the changing sound of full-base reduplication (*dwilingga salin swara*), namely: reflecting the base regressively, applying [a] as default nucleus in the last syllable, and changing nucleus [a] in the first syllable of the source word to [o] in the reflected word. These detail steps are addressed consecutively below.

Step One: The word is reflected regressively prior the source word

The process of first step is the same as that of making full-base reduplication. That is all segments are copied and brought to the left direction. The process is seen in (23), (24), and (25). The reflection of the base to the left direction has not experienced any change yet. The nucleus is kept equally as it is no matter what vowels are.

(23)* ru tu   turu

(24)* uk iŋ   iŋuk

(25)* aku ml   mlaku

Note to be made that all reduplications in Step One such as in (23), (24) and (25) are grammatical when seen form full-base reduplication. However, they are not grammatical for changing sound full-base reduplication. For the latter case, grammatically, there is not any change in the structure, yet the target is 'changing sound' reduplication. Semantically, the meaning is positive; this does not follow the nature of changing sound reduplication which carries negative meaning. The target forms of the changing sound reduplication from the examples above are presented below respectively.
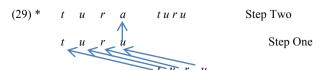
(26) *tura*   *turu*

(27) *iŋak*   *iŋuk*

(28) *mloka*   *mlaku*

Since these forms in (23), (24), and (25) are not accepted yet, the next step must be followed.

Step Two: The nucleus of the last syllable must be

[a] vowel.

Study the data in (23), and (24) which are brought to be in (29) and (30) respectively to keep consistency and simplicity. The word *turu* on the left side in (29), following the rule of Step Two, experiences a change. The nucleus [u] of the last syllable becomes [a]. Therefore, the word *turu* becomes *tura*. This rule is also well applied and grammatical to the word in (30).

(29) * t u r a   t u r u   Step Two

t u r u   Step One

t u r u

v. [tura turu]
'sleep repeatedly within short period of time'
Intended meaning: One is supposed to do activities, not being lazy by lying on bed.

(30)* i ŋ a k   i ŋ u k   Step Two

i ŋ u k   Step One

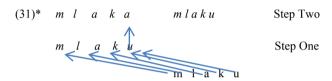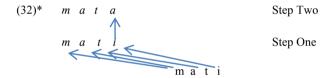i ŋ u k

[iŋak iŋuk]
'look at someone else repeatedly without showing his/her face fully'
Intended meaning: One is supposed to see someone else or thing boldly, face to face directly; not hiding his/her face.
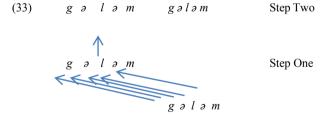
If the rule works well for (29) and (30), it must be also true or the word *mlaku* in (31) which becomes *mlaka* as the result of the phonological process. The reduplication is then *mlaka mlaku*. Nonetheless; this reduplication does not exist in Javanese: Native speakers do not use this reduplication. Hence, this reduplication is not accepted or not well-formed grammar. The fact that the two processes have been executed; and the two previous examples are accepted. There must be something else which triggers the ungrammaticality.

(31)* m l a k a   m l a k u   Step Two

m l a k u   Step One

m l a k u

Other evidence for this phenomenon can also be found in (32) below. All of these changing sound reduplications are not grammatical either. Why is it so?

(32)* m a t a   Step Two

m a t i   Step One

m a t i

As Javanese has more than just [a, i, u] vowels, testing this phenomenon to other remaining vowels [ə and o] are required to find consistency. Examine the data in (33). The fact is that the result of phonological process of those words ends on Step Two

(33)* g ə l ə m   g ə l ə m   Step Two

g ə l ə m   Step One

g ə l ə m

v. [gəlam gələm]

'accept one's offer easily without considering their commitment/consequence'

Intended meaning: One is supposed to consider commitment/consequences before accepting other works.

level. This implies that when the nucleus of the first syllable of reflected words are [ə and o], the nucleus is kept what it is; and the grammar is well-formed.

Tentatively, based on the data on Step Two, it can be stated that there are two groups of words which have undergone phonological process: 1) Reduplication which is already

grammatical. That is words that the first syllable is [ə, i, o, u]. 2) Reduplication which is not grammatical. That is words that the first syllable is [a]. The question is: Why cannot the Step Two rules "The nucleus of the last syllable must be [a] vowel" be applied for all words? Is there any explanation to this phenomenon? The answer to these queries is presented in Step Three.

Step Three: The nucleus of the first syllable is kept as it is, except [a] vowel. Whenever [a] is the nucleus of the first syllable, it is changed into [o] vowel.
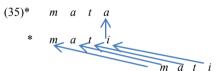
The remaining puzzling data is the fact that there are some reduplications that are well accepted in Step Two but some others are not. Before addressing this issue, study the dialogs as presented in (34).

(34)

:	A	Hei, sepurane ya cak, gaweanku durung rampung.	Hi, sorry mate, I haven't finished my work.
:	B	Lho, kok isa?	How come?
:	A	Sampean mungkin gak percaya. Lampu ndik omahku mota-mati terus mau bengi, prasasast let setengah jam.	You may not believe it. The light at my home was always on and off last night, almost every half hour.

The A's utterance in the dialogs, in fact, contains reduplication mota-mati which is accepted in Javanese community. This may a clue to reveal the puzzle: Why mata mati and other reduplications (as in 31, and 32) in Step Two are not grammatical as in (35). It seems that the triggering source is not the last syllable. The first word of reduplication in mota has nucleus [a] in the second syllable. This means that the rule of Step Two "The nucleus of the last syllable must be [a] vowel" works well indeed.

(35)*   m   a   t   a
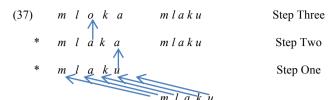   *   m   a   t   i
                 m   a   t   i

Having mota-mati in (34) as the true empirical evidence, the suspension now is directed to the first syllable of the reflected word mota. The fact that the source of word is mati then underwent phonological process during regressive reflection in Step Two becoming mata which is still not grammatical; then becoming *mota* which is grammatical. Now, it is tentatively said "change the nucleus [a] in the first syllable of the reflected word into [o]. Then the complete process of reduplication is presented in (36).

(36)   m   o   t   a   mati   Step Three

        m   a   t   a   mati   Step Two
    *
    *   m   a   t   i   Step One
                 m   a   t   i

That is true that by changing vowel [a] in the first syllable into [o] resulted reduplication grammatical. Is this rule well applied in words which have nucleus [a] in the first
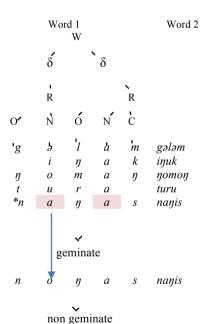
syllable? Again for convenience, the data in (31) is brought here to test the case and be (37) and (38).

(37)   m   l   o   k   a   m l a k u   Step Three

    *   m   l   a   k   a   m l a k u   Step Two

    *   m   l   a   k   u   Step One
                     m   l   a   k   u

v. [mloka mlaku]
'walk repeatedly within short period of time'
Intended meaning: One is expected to stay or sit still; not moving around.

The evidence from data in (37) and (38) as compared to (34) shows that changing sound of nucleus [a] to [o] does work well across the board. This leads to the indication that there are reduplications which are completed in Step Two and there are some in Step Three. The latter is words which consist of [a] in the first syllable. Yet, why must nucleus [a] be changed to [o]? Study the following syllable structure of reduplication in (39), following model of Fromkin, et al. [4] and pay attention to particularly the first and the second syllables of the Word 1.

(39)

Word 1			Word 2		
	W				
σ́		σ̀			
R		R			
O N	Ó N C				
'g ə	'l ʉ̆ 'm	gələm			
i	ŋ a k	iŋuk			
ŋ o	m a ŋ	ŋomoŋ			
t u	r a	turu			
*n a	ŋ a s	naŋis			

geminate

n   o   ŋ   a   s   naŋis

non geminate

All words which have vowels other than nucleus [a] in the first syllable work well with the application of Step Two rule. They are *gələm gələm, iŋak iŋuk, ŋomaŋ ŋomoŋ,* and *tura turu*. Nevertheless, when the first syllable has nucleus [a], the grammar is not accepted. The strong reason, as the two shaded nucleuses in (39), is the first and the second syllables are twin segments [a] or geminate; following term used by [6, 9] which is low-central vowel [10, 11]. The germination in Javanese seems to be avoided by altering the nucleus of the first syllable into [o] segment which is more back and slightly more rounded [12]. Thus, the last form of changing sound full-base reduplication *noŋas naŋis* is accepted.

V. CONCLUSION

Among four types of reduplication, changing sound full-base reduplication '*dwilingga salin swara*' is the trickiest. This reduplication has a function as "negative" quantifier; the activity, if it is verb, is done repeatedly which should not have been done. To produce the well-formed grammar, the reduplication undergoes three steps of phonological process.

They are projecting the source word regressively, changing the last nucleus of the last syllable into [a], and changing nucleus of the first syllable into [o] when the segment is [a]. These phonological processes are innately attached in Javanese native speakers' mind. It has been proven by giving a test to Javanese children. They are naturally able to produce changing sound of full-based reduplication even though words have not been known yet. The process of this reduplication is in their sub-consciousness as native speakers. They can produce reduplication without knowing how it works.

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