

A Morphological Study of Sign Language: Reduplication in *Kata Kolok*

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Abstract— Reduplication is part of a morphological process carried out by repetition of basic or affixed words, both in the form of full repetition and partial repetition. Reduplication is found in spoken language, namely the language spoken. This research is an experimental development in which researchers try to find the phenomenon of reduplication in the sign language *Kata Kolok*. This study aims to identify and describe the occurrence of reduplication in sign language, *Kata Kolok*, that is used by the deaf community in Bengkala Village, Buleleng, Bali. The approach used is a generative morphological approach as defined by Aronoff (1976). The selection of this theory is because this study only focuses on the word formation process, so this theory wants to be tried or applied on sign language. The output of this research is the description of reduplication in *Kata Kolok* according to the theory used. The outcome of this study will enrich the documentation of *Kata Kolok* which in the future will be realized in the form of the *Kata Kolok Dictionary*.

Keywords—*Kata Kolok*; sign language; reduplication; generative morphological approach

I. INTRODUCTION

The Natural Sign Language *Kata Kolok* is a language that was created by deaf people (*kolok*) in Bengkala Village and was agreed upon by the entire community of Bengkala Village to be used as a bridge of communication between residents who heard and deaf residents in the village. *Kata Kolok* has been used for more than eight decades since deaf-mute people have been living in Bengkala Village. The first deaf-mute person was named *Kolok Sinur*, according to villagers who knew about him. It was he who became the forerunner of the *kolok* in Bengkala Village. A study carried out by a consortium including Udayana University Denpasar as a research member in 2015 focused on the fields of health, genetics and anthropology. The results of this study found that the incidence of deafness in Bengkala was a type of birth defect (congenital), related to the sensor neural, which is classified as non-syndromal. The full cause of this disability is the entry of recessive chromosome cells that mutate at the locus *DFNB3* with the frequency of mutations estimated to occur among 9-4% of normal people who have a 17-2% chance of decreasing this chromosome.

Bengkala Village currently has a population of 2749 according to the calculation of the Traditional *Prajuru* of Bengkala Village during the 2016 - 2021 period which explains that the population of Bengkala Village consists of 1247 male residents and 1502 female residents (source: <http://desa-adat-bengkala.simplesite.com/>). Among the population there are 43 villagers who are deaf (*kolok*), which comprises a range of ages. There are toddlers, elementary school age, teenagers, and adults to aged people. *Kata Kolok* has become a bridge of communication that is very helpful for them to understand each other among those who hear and those who are deaf and mute. Even there is an elementary school, *SDN 2 Inklusi Desa Bengkala* that uses three introductory languages in the lessons, namely Indonesian, *Basa Bali*, and *Kata Kolok*.

Research on *Kata Kolok* sign language has been carried out by the author since 2012 and until now is still intensively paying attention to the phenomena in *Kata Kolok*. Now the research is directed at developing the area and domain of research related to the *Kata Kolok*. As an intellectual property, it is important to carry out the retention of natural sign language *Kata Kolok* by conducting various researches while collecting the treasures of the *Kata Kolok* later to be summarized in a *Kata Kolok Dictionary* that can accommodate almost all of the vocabulary of *Kata Kolok* used to communicate between residents in Bengkala Village so far. The direction of this research is to raise the realm of morphology from *Kata Kolok*, which in this case, concentrates on reduplication. The efforts are focused on various *Kata Kolok*, which are units of meaning that are built of reduplication and find the rules of their formation. The purpose of this study is to identify and describe the occurrence of reduplication in the *Kata Kolok* used in Bengkala Village, Buleleng, Bali.

II. LITERATURE REVIEW

2.1 Previous Studies on *Kata Kolok*

A. Modalities In *Kata Kolok* Bengkala

This research conducted by Putri (2017) describes some of the meanings of modalities found in sign language that is natural in *Kata Kolok*. This sign language was agreed upon by residents of Bengkala Village in the Buleleng Regency area. At that time

there were 42 signers of the deaf Kata Kolok from a total of 1,200 signers in the village. There are as many as five meanings of the modalities outlined in this study, namely: have to, must, should, have and have not. The method used is the method of cognitive anthropology, which is also known as the new ethnographic method. The research techniques used were observation, recording, and interviews.

B. Natural Sign Language Kata Kolok for the Basic Needs Expression

This part of the dissertation research by Putri (2017) has been published in a journal entitled: "Study of Kata Kolok: How the Deaf People of Bengkulu Express Their Basic Needs". The article describes the various natural signs of the Kata Kolok vocabulary used by Bengkulu signers to show their basic needs. There are ten meanings and signals discussed. Kata Kolok is a simple and conventional gesture by all communities in Bengkulu Village. There is only one gesture. There are also some movements and many signals are also mimicking activities.

C. Sign Language Variations in Kata Kolok

Putri (2018) in her article entitled: "Sign Language Variations in Kata Kolok" discusses various variations of Kata Kolok sign for the same meaning. The Kata Kolok sign described in this article is the meaning of a single third person pronoun, meaning modality 'must', meaning related to religion: *mebanten* and *Pura*, meaning related to customs: *ngaben*, cultural-related meaning: *tajen*, the meaning of the basic need 'speaking', and emotional expressions: 'sad' and 'surprised'. There are also discussions about polysemy and homonymy.

D. The Study of Natural Semantic Metalanguage on the Process-Meaning to Cut in Balinese Sign Language Kata Kolok Bengkulu Village, Buleleng, Bali.

Putri (2018) wrote about Kata Kolok, entitled: The Study of Natural Semantic Metalanguage on the Process-Meaning to Cut in Balinese Sign Language Kata Kolok Bengkulu Village, Buleleng, Bali. The signs expressing process-meaning of to 'cut' in Kata Kolok are explained using natural semantic metalanguage (NSM). There are thirteen meanings of the process of to 'cut', namely: *ngētēp*, *ngudud*, *nēktēk*, *ngodot*, *ngiyis*, *ngēt*, *ngandik*, *ngarit*, *ngabas*, *nyēpēg*, *ngēmpug*, *nyēpih* and *nampah*.

E. Natural Semantic Metalanguage on the Meaning of Verbs to Carry in Kata Kolok Bengkulu Village, Buleleng, Bali

Putri (2019) on "Natural Semantic Metalanguage on the Meaning of Verbs to carry" in Kata Kolok Bengkulu Village, Buleleng, Bali", discusses natural semantic metalanguage applied on the explication of verbs meaning to carry. There are six meanings of the process of 'to carry' which are expressed in several Kata Kolok that are interpreted based on the Balinese language. Balinese is chosen because it follows the community of non-deaf / normal speakers in Bengkulu Village, namely native speakers of Balinese. Six meanings of the process of 'to carry' namely: *ngaba*, *negen*, *nengteng*, *nikul*, *nyangkol*, and *nyuwun*.

2.2 Reduplication

A. Reduplication in Spoken Language

Aronoff (1976: 11) in his hypothesis mentioned, "All regular word-formation processes are word-based. A new word is formed by applying a regular rule to a single already existing word. Both the new word and the existing one are members of major lexical categories." Generally, morphological processes are formed by combining morphemes with words, morphemes with morphemes or words with words to form new words from existing words or morphemes. Morphological processes can be found in the level of affixation, reduplication, and compounding.

Reduplication is part of a morphological process for word formation by duplicating all basic forms or affixed forms, namely full reduplication, or duplicating part of the basic forms, namely partial reduplication. The type of reduplication observes based on form, function, and meaning, according to the referral language hierarchy. The process produces words with new meanings, or change or does not change the meaning of the origin word. (Loe, 2018: 80-81).

B. Reduplication in Sign Language

Johnston & Schembri (2016: 126-127) for Auslan linguistics mentioned that reduplication refers to the repetition of the movement segment in a sign. The purpose is to modify some aspect of the sign's meaning or to create a new lexical item. Börstell (2011: 15) on his investigations on the reduplications of Swedish Sign Language mentioned that reduplications in sign languages tend to express repeated action and plural arguments. Reduplication in SSL ordinarily communicates majority of occasions and/or referents, but may also express intensification, progressing occasion or nonexclusive movement. There are fast reduplications and slow reduplications, and there is also doubling reduplication. Bergman (1983) in Kyle and Woll (1989: 145) Berman (1983) in Kyle and Woll (1989: 145) recognized three morphological forms that verbs experience related to aspectual modulation, namely: fast reduplication, slow reduplication, and initial stop.

III. METHOD

A. Data Type and Source

Data are obtained from video recordings of Kata Kolok deaf signers. These primary data are directly collected from the villagers, the *kolok* (deaf) and the *inget* (hearing). There are three Bengkala deaf villagers involved, namely Sukesti, Resmini and Juliarta. The research took place in Bengkala Village, Kubutambahan district, the Regency of Buleleng. Bengkala is around 96 kilometers from Denpasar.

B. Data Collection

The process of data collection is conducted by following various stages such as: socializing, paying attention, finding moments, recording and making direct interviews with informants namely the *kolok* and *inget* community of Bengkala Village who are domiciled in Bengkala village. The video files are changed into images by a converter application program. Having had those sorted according to the right meaning in the spoken language (target text), the images are converted into sketches which are only in black and white colors. The meaning in the spoken language is taken from the Balinese Dictionary, online dictionary LEXICO powered by OXFORD and online *Kamus Besar Bahasa Indonesia* (KBBI), Indonesian Dictionary. Thus, corpus data is ready for the analysis.

C. Data Analysis

The data are analyzed according to the generative morphology theory which pioneered by Aronoff (1974) with his theory of *word-based morphology*, from spoken language point of view and elaborated by the recent research on sign languages conducted by Johnston and Schembri (2016), and Borstell (2011) and the other scholars mentioned in Part II Literature Review. The explanation of reduplication in Kata Kolok starts from the origin sign (SL1) and the sign which is the result of the reduplication process (SL2).

D. Data Presentation

The data are presented in both formal and informal methods. There are pictures and explanations with verbal and visual techniques. The Kata Kolok sign language is presented in black-white sketches so that the result is focusing on signs and the meaning of the signs.

IV. RESULT AND DISCUSSION

A. Reduplication expressing reciprocal meaning

This Kata Kolok SL1 means *bincang-bincang* /*omong-omong* (Eng. 'talking'; Bali. 'ngorta', 'masatua'). This is a type of slow reduplication.



Fig. 1. SL1 *bincang-bincang* (alt.1)

The signs are already reduplication from SL1 since the single sign is meaningless. This reduplication has a variation, which presented below.



Fig. 2. SL1 *bincang-bincang* (alt.2)

The sign category for *bincang – bincang* or *omong-omong* is a verb. This sign is a reciprocal expression with double signs, which use right and left hands moving reciprocally.

B. Reduplication expressing repeated actions

This Kata Kolok SL1 means *minum* (Eng. 'to drink'; Balinese 'nginum'). The sign looks like following the action of getting a glass of water to drink. The sign category is a verb.



Fig. 3. SL1 *minum*

The reduplication sign of SL1 *minum* is SL2 *minum-minum* (Eng. V 'drink excessive amount of alcoholic beverages'; N 'the act of drinking alcoholic beverages to excess. Balinese 'nginum-inum', 'mamunyah'). There are two sign-categories for *minum-minum*, namely verb and noun according to the context. Thus there is a possibility of category conversion from verb to noun. This is the type of fast reduplication.



Fig. 4. SL2 *minum-minum*

Another repeated actions expression in Kata Kolok SL1 means *batuk* (Eng. N 'cough'; Balinese 'kokohan'). The sign consists of coughing. The sign category is a noun. This sign is fast reduplication.



Fig. 5. SL1 *batuk*

The reduplication sign of SL1 *batuk* is SL2 *batuk-batuk* (Eng. V 'to cough'). The sign-category for *batuk-batuk* is a verb. Thus there is a category conversion from noun to verb.



Fig. 6. SL2 *batuk-batuk*

C. Reduplication expressing plural arguments

This Kata Kolok SL1 means *bulan* (Eng. N 'month'; Balinese 'abulan'). The sign consists of making a round shape. The sign category is singular noun.



Fig. 7. SL1 *bulan*

The reduplication sign of SL1 *bulan* is SL 2 *bulan – bulan* (Eng. N ‘months’; Balinese ‘*akudang bulan*’). The sign category is a plural noun.



Fig. 8. SL2 *bulan – bulan*

There is no conversion of category.

D. Reduplication expressing intensification

This Kata Kolok SL1 means *aduk* (Eng. V ‘stir’; Balinese ‘*korek*’). The sign consists of making gestures like stirring the grains. The sign category is a verb.



Fig. 9. SL1 *aduk*

The reduplication signs of SL1 *aduk* is SL 2 *aduk – aduk* (Eng. V ‘stir intensively’; Balinese ‘*korek-korek*’). The sign category is a verb.



Fig. 10. SL2 *aduk –aduk*

There is no conversion of category.

E. Reduplication expressing progressing occasion

This Kata Kolok SL1 means *dulu* (Eng. Adv ‘long time ago’ or ‘previously’; Balinese ‘*pidan*’, ‘*imaluan*’). The sign consists of movement tapping the pointing finger to the cheek. The sign category is adverb.



Fig. 11. SL1 *dulu*

The reduplication sign of SL1 *dulu* is SL 2 *lama-lama* or *lama-kelamaan* (Eng. Adv. ‘gradually’; Balinese ‘*makelo-kelo*’). The sign consists of tapping the pointing finger to the cheek many times. The sign category is an adverb.

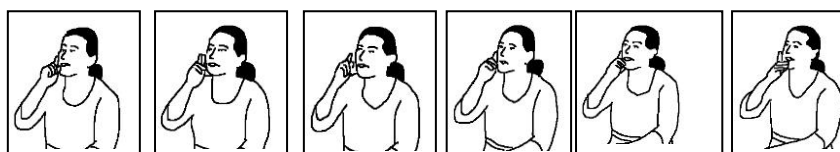


Fig. 12. SL2 *lama-lama / lama-kelamaan*

There is no conversion of category.

V. CONCLUSION

Having observed the analysis generally, the findings of reduplication in Kata Kolok comprises some expressions, namely reciprocal, repeated actions, plural arguments, intensifications and progressing occasion. For some cases, there is a change of sign category, for example, from the verb to a noun or vice versa, but also there are some which remain in the same category. There is a type of fast reduplication and also slow reduplication, and there is a doubling sign, using right and left hand.

It is realized that all Kata Kolok signs discussed in this paper are interpreted according to the spoken language, which in this occasion, are Indonesian, English and Balinese. However, the interpretation is only based on the core meaning or basic meaning in the spoken language. There are no affixations involved.

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