**Original Article**

# Abstraction and Unification of the Number Category in the Languages of Isolated Communities (Based On Swahili and Japanese)

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## ABSTRACT

This article deals with comparing the number category in two non-related languages: Swahili (Bantu language family) and Japanese (Altaic language family), which represent more or less isolated communities as water locked states (like Japan) or states of traditional societies (like Tanzania). Our research supports the hypothesis that some languages show the tendency to unify/abstract the means of expressing different grammatical meanings as time passes. The number phenomenon is highly complex but systematic. Both in Swahili and Japanese it is closely interwoven with the class category and displayed by the diversity of morphological markers retaining archaic views. Moreover, Japanese does not grammatically differentiate between singular and plural forms, making the whole number category more unified. However, retaining some archaic quantity patterns these languages as well possess some abstract notions in the number domain.

**Key words:** Quantity, Number category, Morphology, Semantics, Swahili, Japanese

## INTRODUCTION

The problem of language quantity was widely studied by different researchers: I.A. Baudouin de Courtenay, O. Espersen, E. Sapir, V. Dressler, V.Z. Panfilov, Z.Y. Turaeva, A.A. Kholodovich, L.G. Akulenko, S.A. Krylov, etc. Being universal and logical, the category of quantity represents quantitative characteristic of objective reality. The quantity is the obligatory constituent of any culture with its universal and unique reflection in different world languages.

The number category in Swahili was touched upon by N.V. Gromova, N.V. Okhotina (1995), E. Contini-Morava (2000), and in our research [1]. The scholars assume that the Swahili noun class system is very complex and number is inseparable from its semantic content. N.V. Gromova and N.V. Okhotina emphasize that there is a tendency of using the *ma-* prefix as a productive pluralizer for noun stems. E. Contini-Morava asserts that number is a scale of individuation rather than a binary opposition between singular and plural.

Japanese, characterized by numeral quantifiers, was studied by Kobuchi-Philip (2003, 2007), Nakanishi (2004, 2007, 2008) [2], Yokota [3].

We support the idea that the Swahili number category tends to the unification of noun number as well as Japanese.

## MATERIALS AND METHODS

Primitive man did not have abstract numbers, hence his language lacked in the category of number, numerals, morphological quantifiers, etc. As Luria and Vygotsky point out, "many primitive peoples do not count beyond 2 or 3". Due to this fact, counting above three is directly connected with memory. Using it, primitive man can remember the given quantity without applying to exact counting. According to Levi-Bruhl, "up to a point they are able, by means of operations which are peculiarly their own, to reach the same results". The auxiliary devices inherent in the memory operations connected with primitive counting

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were by all means concrete; "the simplest method used by primitive man for counting is a comparison between the parts of the body and various groups of objects" [4]. Although there is no abstract counting at this level, it forms the first phase of our arithmetic. The next step was unification of the counting system, its wider use in calculating exact numbers of objects with various properties. Thus, there appeared different counting systems, e.g. of long, round, small, flat objects, animals, birds. The Japanese language, for instance, has classifiers for cylindered, flat objects, animals, birds, technical devices, clothes, etc. Swahili as well has classifying systems for different objects.

With further development of quantitative ideas natural languages start to possess abstract numerals, noun number, quantitative affixation, i.e. demonstrate abstraction in the category of number. However, some languages, for instance, Japanese and Swahili demonstrate asymmetric miscellaneous representation of primitive and abstract markers of the number category. To illustrate this, we point out the interim stage being unification of the category of noun number.

Our research is aimed at comparing Swahili and Japanese in the field of number category claiming that these languages retain some vestiges of primitive mentality but are showing the tendency to unifying the means of expressing different grammatical meanings thus moving/having already moved to higher abstractions.

### Abstraction/Unifying Indicators of the Swahili Number
Bantu languages show the tendency to the number category separation as a grammatical category as a result of reducing plural classes and unification of the number category. N.V. Gromova, N.V. Okhotina point out that the Swahili noun manifests concord between adjectives, pronouns, and verbs as well. So, the category of number penetrates into almost all morphologically distinct Swahili parts of speech: nouns, adjectives, numerals, pronouns, infinitives, verbs and innovative adverbs [5]. Being typical of Bantu languages, the Swahili singular-plural class pairing is very complex.

Nouns in Swahili represent the class system regulating all grammatical correlations of the dependent words. Most linguists assume that Swahili noun class systems are largely arbitrary from a semantic point of view and permit a certain amount of flexibility.

All class nouns have the number opposition. As N.V. Gromova and N.V. Okhotina assume "the category of number is considered to be word-forming for it has a prefix as a word-forming element" [5].

There are following characteristics of noun classes regarding the category of number:
1. the existence of singularia and pluralia tantum groups;
2. different historical changes and the ambiguity of word meaning;
3. the tendency to the unification of number as a separate category: it was inseparable from class category.

The category of number in Swahili is not constituent. Number noun class opposition is presented in Table 1:

As the table shows, the semantic characteristics of noun classes tend to singularity or plurality, with the defining prefix.

The plural in Swahili is characterized by:
1. discrete plural is mostly the peculiarity of Class 2;
2. non-discrete plural of collective (Classes 6 and 11), pluralia tantum (*ma-* prefix of Class 6) and restricted plural. Non-discrete plural is peculiar to the stems with the prefixes of abstract meaning.

So, the number opposition for singular Class 1 is plural Class 2 prefix *m-* changes into *wa-* and *mw-* into *wa-* or *w-*: *m-kulima/wa-kulima* 'peasant/s', *mw-alimu/wa-alimu* or *w-alimu* 'teacher/s', etc. Noun correlation for singular Class 3 is plural Class 4 with its prefix *mi-* being the only one without phonetic variant: *m-ti/mi-ti* 'tree/s', *mw-aka/mi-aka* 'year/s', etc. The plural of singular Class 5 is formed with the help of Class 6 preffix: *ji-cho/ma-cho* 'eye/s', *Ø -gari/- ma-gari* 'car/s', etc. *Ma-* prefix of Class 6 with its collective meaning is used to form the words denoting liquids, inseparable substances, etc: *ma-ji* 'water', *ma-futa* 'oil', etc. As Thilo C. Schadeberg points out 'Class 5 has a zero prefix in most cases (except when the stem is monosyllabic and also with some disyllabic vowel-initial stems). The corresponding plural class 6 (prefix ma-) is used as a default strategy for the formation of plurals' [6].

Class 7 with its diminutive and pejorative denotation form plural with the prefix of Class 8: *ki-ti/vi-ti* 'chair/s', *ch-umba/vy-umba* 'room/s', etc. Class 9 correlates in number either with Class 10, with singular and plural prefixes coinciding in their forms: *ny-umba/ny-umba* 'house/s', or Class 6: *pete/ma-pete* 'ring/s', etc. Most Class 7 nouns, being a separate group, are loanwords and do not change in number: *n-jaa* 'starvation', *kusi* 'south', etc. There are a lot of Arabic words among them: matini 'text/s', hadithi 'story/s'; some of them having the plural *ma-* prefix: rafiki/marafiki 'friend/s', shaka/mashaka 'doubt/s'. Abstract nouns of Class 11 form singularia tantum. But most nouns of this class form plural with the help of Class 10 prefix: *w-akati/ny-akati* 'time/s', *u-bao/bao* 'board/s', etc. Grammatical semantics of Class 10 conveys the grammatical meaning of number that makes

it possible to correlate with different singular classes: 9/10, 5/10. While correlating with Class 11 it may denote inseparable plural: *n-devu* 'beard', etc. with its opposition denoting singularity of plurality: *u-devu* 'a hair of beard', etc. So Class 10 nouns convey complex unity and correlate with singular Class9.

N.V. Gromova and N.V. Okhotina emphasize that '*ma-* prefix in modern Swahili is becoming the plural form marker as grammatical category of noun number regardless of the class. Four classes (1, 5, 9 and 11) can correlate with plural *ma-* prefix… The choice of *ma-* prefix as the plural marker for Bantu languages is a universal phenomenon [5].

E. Contini-Morava defines number as a semantic, rather than morphological category. In her research she treated number as a separate category from noun class affiliation because there is a certain number of nouns that denote entities that are not amenable to enumeration, such as masses, collectivities, or abstractions [7]. She claims the criteria for defining noun class in Bantu languages involving reference to either singular/plural prefix pairings is insufficient, because of the existence of nouns that are singularia or pluralia tantum. Moreover, the existence of the second criterion on the concordial affixes associated with nouns of a given class lead to conflicting results: nouns denoting animate beings may exhibit the singular-plural prefix pairings of various classes.

She defines some productive prefixes that are narrowly specialized, such as *m-/mi-* of Class 3-4 that indicate extraordinary size like in *ki-kombe* 'cup' (Cl. 7), *m-kombe* 'very large cup' (Cl. 3); *fedha* 'money' (Cl. 10), *mi-fedha* 'large amount of money' (Cl. 4), *Ø-/ma-* of Class 5-6 that indicate large size but not as large as Class 3-4 like in *m-toto/wa-toto*'child/ren' (Cl. 1), *Ø-toto/ma-toto* 'large child/ren'; *ma-* of Class 6 that form collective plurals: *karatasi* 'paper/s' (Cl. 9-10), *ma-karatasi* 'collection of papers'; *ki-/vi-* of Class 7-8 that indicate small size: *m-toto/wa-toto* 'child/ren' (Cl.1-2), *ki-toto/vi-toto* 'little child/ren' [8].

So, according to E. Contini-Morava, Swahili number is a system of individuation degree. She concludes that three pairs of classes (1-2, 3-4, 7-8) are reciprocally paired co-occurring with singular and plural prefixes. Class 5 is non-reciprocally paired. Class 6 being a plural class can pluralize nouns of more than one class. Class 11 is a singular class. Classes 9-10 are plural or neutral. The scholar supports the idea that the prefix *ma-* can be productive. *Ma-* plurals may express collectiveness: *u-nyasi* 'blade of grass' – *nyasi* 'blades of grass' – ma-*nyasi* 'grass'. As it is stated the contrast among the different classes can suggest various degrees of singularity/plurality. Being treated as a scale of individuation rather than a binary singular/plural opposition, Swahili number evolves the characteristics of discreteness, homogeneity and boundedness in space which is the peculiarity of the *ma-* prefix: *ma-we* 'stones', *ma-ji* 'water', *ma-sizi* 'soot' [9].

Numerals in Swahili have a special lexical meaning – abstract idea of number. There are only eight cardinal numerals of Bantu origin: *moja* (or *mosi*) 'one', *mbili* (or *pili*) 'two', *tatu* 'three', *nne* 'four', *tano* 'five', *nane* (i.e. nne na nne = 4 and 4) 'eight' and *kumi* 'ten'. All the rest are Arabic words: they do not concord with nouns. According to Myachina, eight cardinal numerals of Bantu origin are adjectives by their origin that explains their agreement with nouns: singular prefix is added to the numeral 'one' and plural prefix – to 2, 3, 4 and 5: *ki-ti ki-moja* 'one chair', *ma-gazeti ma-tano* 'five newspapers', etc. As for the numeral 10, it originates from a noun and does not agree with it: *wa-tu kumi* 'ten men'. Ordinal numerals are formed from cardinal ones with the help of the particle *–a* that agrees with a noun connecting it with a numeral: *mji w-a tatu* 'the third city'. The numeral *kwanza* 'first', formed from the verb *-anza* 'to begin', is an exception explained by primitive thinking: *somo la kwanza* 'the first lesson'. The numeral 'second' has the form *pili*: *gari la pili* 'the second car'.

### Abstraction/Unifying indicators of the Japanese number
The Japanese language does not possess the high abstraction of the grammatical category of noun number.

## Table 1: Affixal structure of the noun number in Swahili

| Singular classes | Prefixes | Meaning | Plural classes | prefixes | Meaning |
|---|---|---|---|---|---|
| 1 | m-, mw- mu- | | 2 | wa-, w- | Discrete plural |
| 3 | m-, mw-, mu- | | 4 | mi- | Discrete plural |
| 5 | ji-, j-, 0 | large size, diminutiveness | 6 | ma-<br>m- | pluralia tantum<br>collectiveness, discrete plural |
| 7 | ki-, ch- (ka-) | diminutiveness, pejorativeness | 8 | vi-, vy- | diminutiveness, discrete plural |
| 9 | n-, ny-, m-, 0 | singularia tantum | 6 | ma-, m- | discrete plural |
| | | | 10 | n-, ny-, m-, 0 | |
| 11 | u-, w-(uw-) | singularity, collectiveness, singularia tantum | - | - | - |

It is primarily realized by the system of numerals. The numeral system is characterized by a rather high degree of abstraction; there are two main numeral sequences: purely Japanese and borrowed Chinese. However, we can see a reference to primitive thinking, which is found in the numerals "one" and "two", describing human beings: 一人 *hitori* 'one man', 二人 *futari* 'two persons'. These numerals do not belong to the two conventional numeral systems.

### Summary

Implication of primitive mentality can be traced in the graphic system: the hieroglyphs which denote the numbers 1,2,3 consist of one, two and three lines respectively.

Numerals of the Chinese origin are used to count the objects of the outside world. When counting, they are used with specific suffix-classifiers for different objects around us. Thus, the suffix 人 *nin* is used to count people; さつ *satsu* is used to count books and dictionaries; わ *wa* is used for birds and hares; 台 *dai* is used for technical devices and machines, 本 *hon* is used for cylindrical objects, etc. Comparing to the Chinese numerals, purely Japanese numerals may be used without suffix-classifiers, thus acting as an abstract marker, e.g. with fruit, boxes, balls, etc.

Another unifying indicator developed in the Japanese language is replication, which is used as a compensatory means for the noun number: 人 *hito* 'a person' – 人々 *hitobito* 'people', 国 *kuni* 'a country' – 国々 *kuniguni* 'different countries', 木 *ki* 'a tree' – 木々 *kigi* 'different trees'.

The category of collectiveness in Japanese is realized through affixation, an abstract quantity marker: by prefixes 問題 *mondai* 'a problem' – 諸問題 **sho**mondai 'problems'; by suffixes 学生 *gakusei* 'a student' – 学生たち *gakusei***tachi** 'students', 友 *tomo* 'a friend' – 友達 tomo**dachi** 'friends', 僕 *boku* 'I' – 僕ら *boku***ra** 'we', 殿 *tono* 'a lord' – 殿原 *tono***bara** 'lords', 犬 *inu* 'a dog' – 犬ども *inu***domo** 'dogs' [10].

### RESULTS

So, Japanese and Swahili possess similar and different markers of abstraction and unification, retaining some peculiarities of primitive mentality. Thus, both Japanese and Swahili have different classifiers (classes) of suffixes and prefixes respectively which refer to specific groups of objects, showing signs of primitive thinking. The same may be said about isolated numerals which are associated with specific objects or notions, not with abstract numbers.

The languages in question have some unifying markers, i.e. show the tendency to unification of the classes.

**Table 2: Primitive, unified and abstract indicators of the number category in Japanese and Swahili**

| | Primitive quantity views | Unified number | Abstract number |
|---|---|---|---|
| Japanese | Suffix-classifiers, isolated numerals | Replication | Affixation, numerals |
| Swahili | Classes, isolated numerals | Classes | Numerals |

In the case of Swahili prefixes of some classes tend to oust other prefixes as well as some Japanese objects are counted without suffix-classifiers. Another indicator of unified number category is the Japanese replication.

Abstract indicators of the number category are, by all means, numerals in both languages and rather rich affixation in Japanese. This is illustrated in the Table 2 below.

### CONCLUSION

Languages of isolated communities, such as Japanese and Swahili, demonstrate tendencies to unify/abstract certain grammatical categories (such as the number category), however retain some peculiarities of the primitive mentality and ancient thinking.

### ACKNOWLEDGMENTS

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