

# Semantic Properties of Reduplication among the World's Languages

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This paper presents the results of a crosslinguistic study of semantic properties expressed by reduplication (a repetition of sound strings). Particularly, the study focuses on the relationship among four semantic properties: Augmentation (increase of quantity), Diminution (decrease of quantity), Intensification (increase of degree), and Attenuation (decrease of degree). Based on a sample of sixteen languages, several generalizations are made, and a specific hierarchy of semantic properties is proposed. An attempt is also made to explain such crosslinguistic generalizations in terms of iconicity and common perceptual experiences of speakers across languages.

## 1 Introduction

Languages around the world employ reduplication as a way of expressing various meanings. For example, in English, reduplication can denote emphasis (e.g. *coke* 'coke' > *coke-coke* 'real coke (Coca-Cola)'). In Japanese, it expresses diversity of referents (e.g. *kami* 'god' > *kami-gami* 'various gods'); and in Pitjantjatjara, a language spoken in Australia, it expresses approximation or pretension (e.g. *wati* 'man' > *wati-wati* 'children playing at being adult men') (Dixon 1980: 326).

Despite this diversity, however, crosslinguistic similarities have been attested as well. Uspensky (1972: 70) states that in reduplicative constructions, increase of quantity (Augmentation) and increase of degree (Intensification) are universally preferred over decrease of quantity (Diminution) and decrease of degree (Attenuation). The goal of the present study is twofold: 1) to test the preference for Augmentation and/or Intensification over Diminution and/or Attenuation as suggested by Uspensky; and 2) to see if there is a preferential

ranking between Augmentation and Intensification, and/or between Diminution and Attenuation.

In order to answer these questions, expressions that contain reduplication have been collected from reference grammars and native informants of sixteen genetically and geographically distributed languages. The data have been charted to indicate the presence or absence of a particular meaning. The findings are as follows: for question 1), it was found that Uspensky's ranking of Augmentation and/or Intensification over Diminution and/or Attenuation held for the language sample collected; and for question 2), it was found that Augmentation was preferred over Intensification and Attenuation was preferred over Diminution.

Based on the generalizations above, the following hierarchy of the meaning properties expressed by reduplication is proposed: Augmentation  $\Rightarrow$  Intensification  $\Rightarrow$  [Attenuation  $\Rightarrow$  Diminution] (where  $X \Rightarrow Y$  stands for 'X is universally preferred over Y in every language,' and  $\Rightarrow$  stands for statistical preference). These results suggest that at least some aspects of the universal semantic properties of reduplication reflect iconicity and common perceptual experiences of speakers across languages.

The paper is organized as follows. In section 2, the background of the current study is briefly reviewed. Section 3 establishes research questions, and section 4 presents the methodology of data collection and analysis. In section 5, the results are presented, and section 6 is a discussion of the resulting generalizations. Finally, section 7 provides a brief summary of the study.

## 2 Background

Reduplication is defined as "a pattern where the double or multiple occurrence of a sound string, syllable, morpheme, or word within a larger syntagmatic unit is in systematic contrast with its single occurrence, with the iterated elements filling functionally non-distinct positions" (Moravcsik 1992: 323). It can be total reduplication (a repetition of the whole meaningful constituent) or partial reduplication (a repetition of part of a constituent). (1) exemplifies these two types of reduplication:

(1) Formal types of reduplication:

- a. Total reduplication: Indonesian  
*orang* 'human being' > *orang-orang* 'human beings'  
(Macdonald 1976: 32)
- b. Partial reduplication: Daga  
*nononga* 'long' > *nononononga* 'very long'  
(Murane 1974: 73)

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As for semantic properties, various meanings are expressed by means of reduplication. There is a wide range of meanings in addition to those mentioned in section 1. Some further examples are listed below:

- (2) Semantic properties of reduplication:
- a. Plural: Indonesian  
*orang* 'human being' > *orang-orang* 'human beings'  
(Macdonald 1976: 32)
  - b. Weakening: Palauan  
*beot* 'easy' > *bebeot* 'fairly easy'  
(Josephs 1943: 232)
  - c. Diminution: Indonesian  
*anak* 'child' > *anak-anak* 'baby'  
(Macdonald 1976: 36)
  - d. Distribution: Turkish  
*čors* 'four' > *čors čors kalel* 'to march four by four'  
(Godel 1945: 12, as cited in Moravcsik 1978: 318)

As these examples show, the meanings expressed by reduplication differ greatly, and at first glance, it is hard to see any similarities among them. However, previous literature indicates striking similarities. Moravcsik (1978) notes:

There is no a priori reason why reduplication, or any other form device of language, should serve as the expression of some meanings rather than as that of others. Nonetheless, as pointed out by a number of linguists, the particular meanings associated with reduplication strikingly reoccur across languages (316; emphasis original).

One of the linguists who investigated the crosslinguistic patterns of semantic properties expressed by reduplication is Uspensky (1972). Uspensky states the following universal about the four meaning properties of reduplication (increase of quantity, decrease of quantity, increase of degree, and decrease of degree):

IF BY MEANS OF REDUPLICATION DECREASE OF QUANTITY OR DEGREE MAY BE EXPRESSED IN A LANGUAGE, THERE ARE CASES IN THAT LANGUAGE IN WHICH REDUPLICATION EXPRESSES AN INCREASE OF QUANTITY OR DEGREE (in other words, it is assumed that there

exists no language in which reduplication would express exclusively a decrease of quantity or degree) (70; emphasis original).

Table 1 below summarizes the points made by Uspensky. It shows that among the world's languages, the meaning expressed by reduplication is primarily increase (Augmentation and/or Intensification) rather than decrease (Diminution and/or Attenuation):

Table 1: Sixteen logically possible language types and three non-occurring types, based on Uspensky (1972)

Type	Aug	Dim	Int	Att	Type	Aug	Dim	Int	Att
I	+	+	+	+	IX	-	+	+	-
II	+	+	+	-	X	+	-	+	-
III	+	+	-	+	XI*	-	+	-	+
IV	+	-	+	+	XII	+	-	-	-
V	-	+	+	+	XIII*	-	+	-	-
VI	+	+	-	-	XIV	-	-	+	-
VII	+	-	-	+	XV*	-	-	-	+
VIII	-	-	+	+	XVI	-	-	-	-

+ Presence of a feature; - Absence of a feature; \* Non-occurrence

Types I through XVI are all logically possible; however, according to Uspensky, Types XI\*, XIII\*, and XV\* do not occur because they use reduplication exclusively to express decrease (Diminution and/or Attenuation) without expressing increase (Augmentation and/or Intensification).

### 3 Research questions

Based on Uspensky (1972) reviewed in the previous section, the following questions are posed in the current study:

- 1) To what extent does the generalization made by Uspensky (1972) hold for the language sample in the current study? That is, in the language sample, does decrease (Diminution and/or Attenuation) imply increase (Augmentation and/or Intensification)?
- 2) In the language sample, is there a preferential ranking between Augmentation and Intensification, and/or between Diminution and Attenuation?

In order to investigate these questions, data were collected and analyzed using the methodology described in the following section.

## **4 Methodology**

### **4.1 Data collection**

In the current study, reference grammars and native informants were used as a source of the data. Reference grammars were selected based on descriptions of a great range of reduplicative phenomena and glosses for both non-reduplicated base expressions and reduplicated expressions. The first criterion was necessary because a book, *Pluralization expressed by reduplication in language X*, for instance, would lead one to wrongly conclude that no other meaning is expressed by reduplication in the language. The second criterion was also important because if the meaning of a base expression were not clear, it would not be possible to identify what the process of reduplication expresses.

Based on the availability of literature, sixteen languages were chosen for the purpose of this study. These languages are meant to represent genetic and geographic diversity. This was crucial because it allows me to claim that any similarities found are typological and not due to shared genetic affiliation or language contact. Table 4 in the appendix presents the language families to which the sixteen languages belong and the countries where they are primarily spoken.

In order to identify the presence or absence of a particular meaning, the definitions of Augmentation, Diminution, Intensification, and Attenuation have been adopted as given by Moravcsik (1978). According to Moravcsik, Augmentation can be defined as either increase of quantity of participants of an event or that of the events themselves. Augmentation of participants includes expressions such as (a) simple plurality: 'Xs,' (b) 'every X,' (c) 'all X,' (d) 'very many Xs,' (e) 'very much X,' (f) 'X each,' (g) 'various Xs,' (h) 'any X,' and (i) 'some X.' The following exemplify these meanings:

- (3) Augmentation (participants of an event):
- a. Papago: *tini* 'mouth' > *tiitini* 'mouths' (Langacker 1972: 267)<sup>1</sup>
  - b. Mandarin: *ren* 'person' > *renren* 'everybody' (Chao 1968: 202)

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<sup>1</sup> The examples of reduplication presented in section 4.1 were all taken from Moravcsik (1978: 317-325), and the individual references are not included in the reference list.

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- c. Pacho: *bar* ‘two’ > *babar* ‘all two’  
(Watson 1966: 83, 99)
- d. Tzeltal: *na* ‘house’ > *nanatik* ‘very many houses’  
(Berlin 1963: 212)
- e. Tzeltal: *hiʔ* ‘sand’ > *hiʔhiʔtik* ‘very much sand’  
(Berlin 1963: 212)
- f. Twi: *dú* ‘ten’ > *dú dú* ‘ten each’  
(Christaller 1875: 53)
- g. Malay: *anak* ‘child’ > *anakanak* ‘various children’  
(Gonda 1949)
- h. Sundanese: *saha* ‘who?’ > *sahasaha* ‘whoever’  
(Robins 1959: 355)
- i. Khasi: *ka ʔey* ‘who?/what?’ > *ka ʔeyka ʔey* ‘someone’  
(Rabel 1961: 110ff)

Augmentation of events can be one of the following: (a) repetition of events: ‘to Y repeatedly,’ (b) habits: ‘to have the habit of Y-ing,’ (c) reciprocal actions in which roles of participants change: ‘to Y each other,’ or (d) continuation of actions: ‘to keep Y-ing’:

- (4) Augmentation (events):
  - a. Rotuman: *leume* ‘to come’ > *leleume* ‘to come repeatedly’  
(Churchward 1940)
  - b. Aztec: *zanilia* ‘to narrate’  
> *zazazanilia* ‘to have the habit of narrating’  
(Dressler 1968: 74)
  - c. Yami: *palu* ‘strike’ > *mipalupalu* ‘strike each other’  
(Gonda 1949: 182)
  - d. Ewe: *zɔ* ‘walk’ > *zɔzɔ* ‘be walking’  
(Ansre 1963)

Having seen the examples of Augmentation, let us look at an instance of Diminution. Diminution includes expressions with the meaning ‘small X’:

- (5) Diminution:  
Agta: *wer* ‘creek’ > *walawer* ‘small creek’ (Healey 1960: 6)

In addition to changes in quantity, reduplication can also denote changes in degree. Intensification involves expressions with the meaning ‘very Z’:

- (6) Intensification:  
Turkish: *dolu* 'full' > *dopdolu* 'quite full' (Godel 1941: 6)

Attenuation can be (a) 'somewhat (like) X,' (b) similarity: 'similar to X,' or (c) unreality: 'to pretend to be X':

- (7) Attenuation:  
a. Swahili: *maji* 'wet' (?) > *maji-maji* 'somewhat wet' (Ashton 1952: 316)  
b. Turkish: *havlú* 'towel' > *havlú mavlú* 'towels and such' (Swift 1963; cp. also Lewis 1967: 235ff)  
c. Pacho: *qaqay* 'sick' > *táq qaqay qay* 'act sick' (Watson 1966: 9)

It is on the basis of the criteria and definitions presented in this section that the data have been collected.

#### **4.2 Data analysis**

The data collected using the methods described above were analyzed in three stages. In the initial stage, an expression that exemplifies each meaning property within a language was taken from the available literature and native informants and listed. In the second stage, based on the examples found in the sixteen languages, Table 2 (presented in section 5 below) was created to graph the presence or absence of a particular meaning property in each language. Finally, in the third stage, Table 2 was compared with Table 1 (presented in section 2 above) to determine whether there are any languages that contradict Uspensky's universal.

### **5 Results**

Table 2 below indicates the presence and absence of reduplication meaning properties in the sixteen languages:

Table 2: Distribution of the four semantic properties in the sixteen languages

	Languages	Aug	Dim	Int	Att
1	Daga	+	-	+	-
2	Dakota	+	-	+	-
3	English	+	-	+	+
4	Hausa	+	-	+	+
5	Hawaiian	+	+	-	+
6	Indonesian	+	+	+	+
7	Japanese	+	-	+	-
8	Mandarin	+	-	+	-
9	Mokilese	+	-	+	-
10	Palauan	+	+	-	+
11	Pali	+	-	+	-
12	Pangasinan	+	-	-	+
13	Tagalog	+	-	+	+
14	Thai	+	-	+	+
15	Turkish	+	-	+	+
16	Yurok	+	-	+	+

+ Presence of a feature; - Absence of a feature

Relative to question 1) (to what extent does the generalization made by Uspensky (1972) hold for the language sample in the current study?), all of the data suggest that decrease (Diminution and/or Attenuation) implies increase (Augmentation and/or Intensification). This is shown in (8) below:

(8) Increase (Augmentation/Intensification)

➡ Decrease (Diminution/Attenuation) (100%)

In **ALL** languages, IF decrease of quantity or degree can be expressed by reduplication, THEN increase of quantity or degree can also be expressed by reduplication.

Moreover, the relation of Augmentation to Diminution holds in all instances whereas the relation of Intensification to Attenuation holds in 81.25% of the instances. These are summarized in (9a) and (9b) below:

(9) a. Augmentation ➡ Diminution (100%)

In **ALL** languages, IF Diminution can be expressed by means of reduplication, THEN Augmentation can also be expressed by reduplication.

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- (9) b. Intensification  $\Leftrightarrow$  Attenuation (81.25%)  
 In **ALMOST ALL** languages, IF Attenuation can be expressed by means of reduplication, THEN Intensification can also be expressed by reduplication.

Table 3 below highlights the three languages that express Attenuation without expressing Intensification.

Table 3: Three languages that exclusively express Attenuation

	Languages	Aug	Dim	Int	Att
1	Daga	+	-	+	-
2	Dakota	+	-	+	-
3	English	+	-	+	+
4	Hausa	+	-	+	+
5	Hawaiian	+	+	-	+
6	Indonesian	+	+	+	+
7	Japanese	+	-	+	-
8	Mandarin	+	-	+	-
9	Mokilese	+	-	+	-
10	Palauan	+	+	-	+
11	Pali	+	-	+	-
12	Pangasinan	+	-	-	+
13	Tagalog	+	-	+	+
14	Thai	+	-	+	+
15	Turkish	+	-	+	+
16	Yurok	+	-	+	+

+ Presence of a feature; - Absence of a feature

Relative to question 2) (is there a preferential ranking between Augmentation and Intensification, and/or between Diminution and Attenuation?), the data suggest that Intensification always implies Augmentation and Diminution always implies Attenuation. This is summarized in (10a) and (10b) respectively:

- (10) a. Augmentation  $\Rightarrow$  Intensification (100%)  
 In **ALL** languages, IF Intensification can be expressed by means of reduplication, THEN Augmentation can also be expressed by reduplication.

- (10) b. Attenuation ➔ Diminution (100%)  
In ALL languages, IF Diminution can be expressed by means of reduplication, THEN Attenuation can also be expressed by reduplication.

These results are discussed in the next section.

## 6 Discussion

The results of the analysis indicate four crosslinguistic generalizations (9a, 9b, 10a, and 10b in the section above). They are repeated here for clarification:

- (11) Four crosslinguistic generalizations:
- (9a) Augmentation ➔ Diminution (100%)
  - (9b) Intensification ⇔ Attenuation (81.25%)
  - (10a) Augmentation ➔ Intensification (100%)
  - (10b) Attenuation ➔ Diminution (100%)

Based on these tentative universals, one can formulate a hierarchical relation among the four semantic properties:

- (12) Hierarchy of the four semantic properties expressed by reduplication:

Augmentation ➔ Intensification ⇔ [Attenuation ➔ Diminution]  
Aug ➔ Int ➔ [Att ➔ Dim] (holds for 81.25 % of the sample)  
OR  
Aug ➔ [Att ➔ Dim] ➔ Int (holds for 18.75 % of the sample)

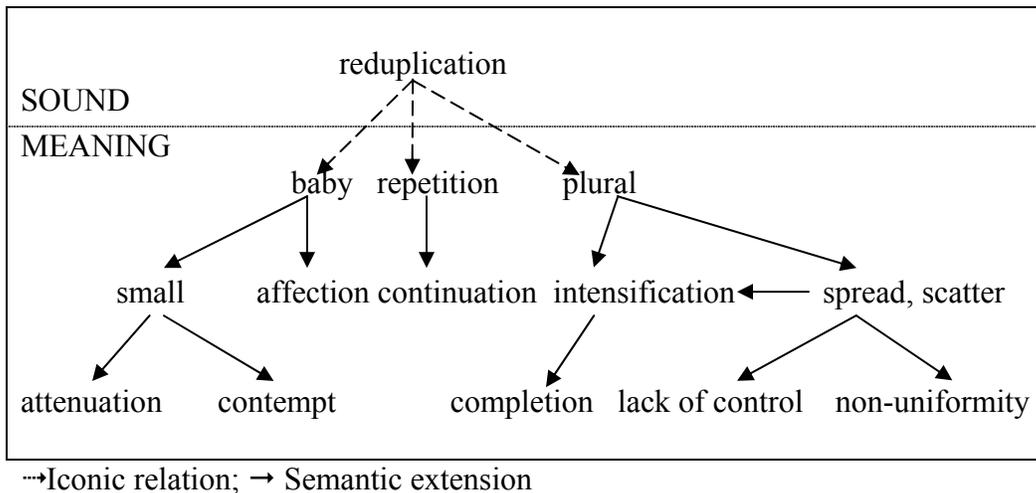
Several questions can be asked about these generalizations. First, why does the use of reduplication for decrease in a language generally imply the use of reduplication for increase in that language? This question can be answered in terms of iconicity. Although languages primarily show arbitrary relations between forms and meanings, they also exhibit some examples of iconicity. One can hypothesize that it is easier for people to express increase (Augmentation/Intensification) rather than decrease (Diminution/Attenuation) by means of reduplication because reduplication involves an increase in the number of forms.

Second, why does the use of reduplication for Intensification imply the use of reduplication for Augmentation in that language? It must be easier for people to express Augmentation than Intensification by reduplication because quantity is

more concrete than degree. Along the same line, these considerations can also account for the reason that Diminution implies Attenuation. It seems plausible that expressing decrease of quantity by reduplication is generally least favorable because expressing decrease of quantity by means of increase in the number of forms would cause the greatest “perceptual clash.”

Iconicity and perceptual similarities of speakers across languages cannot be the only explanations for the proposed hierarchy, however, because some languages express decrease by means of reduplication, and 18.75% of the language sample expresses Attenuation without expressing Intensification. How can language express decrease in terms of reduplication? One possible account is an interaction of iconicity and conceptually based semantic extension as suggested by Regier (1998). According to Regier, reduplication is iconically related to the meanings ‘plural,’ ‘repetition,’ and ‘baby.’ Regier argues that the meaning ‘baby’ is semantically extended to meanings such as ‘small’ and ‘affection’ in a number of languages. Regier’s view is summarized in Figure 1 below:

Figure 1: The interaction of iconicity and semantic extension (Regier 1998: 888)



A still unanswered question is why three languages in the sample (Hawaiian, Palauan, and Pangasinan) exclusively express Attenuation without expressing Intensification. At present, the answer to this question is not clear.

## 7 Conclusion

This paper has presented the study of the meaning properties expressed by reduplication: Augmentation, Intensification, Diminution, and Attenuation. As a result of a crosslinguistic comparison, four tentative generalizations have been made and a hierarchy of the preference for the meaning properties has been proposed. An attempt has been made to relate these generalizations to iconicity and common perceptual experiences of speakers across languages. The hypothesis is yet to be tested on a larger set of data, and the unexpected preference of Attenuation over Intensification in 18.25% of the language sample is also yet to be explained.

## Appendix

Table 4: Genetic and geographic distribution of the sixteen languages

	Languages	Classification	Countries
1	Daga	Trans-New Guinea, Main Section	Papua New Guinea
2	Dakota	Siouan, Siouan Proper	USA
3	English	Indo-European, Germanic	UK
4	Hausa	Afro-Asiatic, Chadic	Nigeria
5	Hawaiian	Austronesian, Malayo-Polynesian	Hawaii, USA
6	Indonesian	Austronesian, Malayo-Polynesian	Indonesia
7	Japanese	Japanese, Japanese	Japan
8	Mandarin	Sino-Tibetan, Chinese	China
9	Mokilese	Austronesian, Malayo-Polynesian	Micronesia
10	Palauan	Austronesian, Malayo-Polynesian	Palau
11	Pali	Indo-European, Indo-Iranian	India
12	Pangasinan	Austronesian, Malayo-Polynesian	Philippines
13	Tagalog	Austronesian, Malayo-Polynesian	Philippines
14	Thai	Tai-Kadai, Kam-Tai	Thailand
15	Turkish	Atlantic, Turkic	Turkey
16	Yurok	Algic, Yurok	USA

*The Ethnologue*

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