

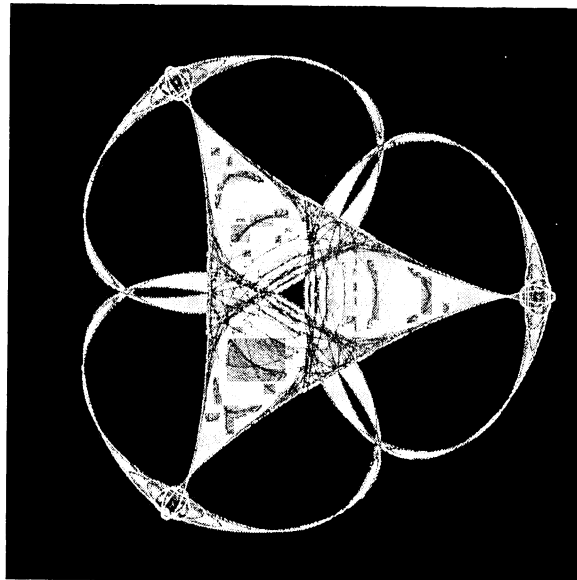
**AMALGAMATION OF PATTERN PRIMITIVES FOR THE GENERATION
OF STANDARD FORM OF LANGUAGE**

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IMA Preprint Series # 1609

February 1999



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AMALGAMATION OF PATTERN PRIMITIVES FOR THE GENERATION OF STANDARD FORM OF LANGUAGE

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In the present work five pattern primitive parameters of the Kumauni language have been assimilated by clustering process,in an attempt to obtain the standard form of the language.

Key words: Pattern primitives / clustering cycle / standard form / associativity.

INTRODUCTION

Language,the most important and impressive way of transmission of feelings, is a purely human and non-instinctive method of communicating ideas,emotions and desires by means of a system of voluntarily produced symbols. The whole community of human beings,speak hundreds of languages that are almost unintelligible to most of their fellow beings.It has been observed that no two persons speak exactly alike, and within the area of all but the smallest speech communities (groups of people speaking the same language) there are sub-divisions of recognizably different types of languages,called dialects,which stand for variety of languages.Nevertheless,all languages have some common structural properties that are basic as the orbits of electrons within atoms or the fact that human beings have precisely two eyes and two ears.

The Science of language is known as linguistics.The word was first used in the middle of 19th century to emphasize the difference between a newer approach to the study of language that was then developing and the more traditional approach of philology. Based on the convictions of deductive reasoning ,it can be presumed that a mathematical description of language is possible because every language is a collection of discourses (utterances or writings) and every discourse ia sequence of discrete elements.In a sequence of sentences, each of which is a sequence of words (or morphemes,i.e. stems and affixes), which again is an extension of sounds or letters,these elements are arbitrary and one can replace them by other elements without changing the linguistic structure.In an attempt to apply the findings and techniques of advanced mathematics and its allies, a new arena bearing the name Mathematical linguistics has emerged and developed very fast. It mainly comprises two areas of research: the study of statistical structure of texts and the construction of mathematical models of the phonological and grammatical structure of

languages. In studying this structure, mathematical linguistics proceeds like very other discipline that uses mathematics in the study of natural or social phenomenon. The works of Naranan & Balasubrahmanyam [4-6] can be cited in the field of information theoretic models while that of Dhama [1] for obtaining standard form for some Kumauni words (spoken in Kumaun region, a part of central Himalaya which is glittering gem amid the mist, like a tranquil land, spread in the magnificent valleys and mountains ranging from 28 44'-30 49'N latitude and 78 45'-81 5' longitude). In another work, Kandpal & Dhama [3] have identified some pattern primitives usable in the formation of pattern grammar.

CONCEPTUAL FRAMEWORK

We have identified following five parameters in our earlier studies [2] ,with reference to Kumauni language.

1. Alphabetic counts (obtained by assigning natural numbers in ascending order for the different part phonemes of the language in the syllable pattern)
2. Computer counts (acquired by counting number of letters in all words starting with same vowel or constant, fed in the computer, having same beginning upto that particular letter.)
3. Phonemes
4. Graphemes
5. Allophones

Our concern in the present work is to identify that particular inconstant (on the basis of numerical values of the five variables given above) which shall represent the standard form of the language. In this approach, however, the data is for words taken from Kumauni but the discussion and consequent result shall hold good for finding standard form of any language.

Considering the five variables (described above) as X - 1, X-2, X-3, X-4 and X-5 , we have obtained following correlation matrix depicting the degree of association of the variables with each other. The highest coefficient for each column has been underlined.

X-1	-----	0.444604	0.816656	0.152351	0.034320
X-2	0.444604	-----	0.527861	0.557366	-0.200854
X-3	<u>0.816656</u>	<u>0.527861</u>	-----	<u>0.892040</u>	0.032921
X-4	0.152351	0.557366	<u>0.892040</u>	-----	<u>0.083611</u>
X-5	0.034320	-0.200854	0.032921	0.083611	-----

Clustering process shall be adopted to locate the representative normal variable.

CLUSTERING PROCESS AND ITS FLOW CHART

On the basis of above matrix we observe that variable X-1 is showing fair degree of association with X-3 and X-3 with X-4. Whether the other two variables X-2 and X-5 are permitted to join the cluster during one clustering cycle, this basic inquiry has led to the formation of following matrix

	A	B	X-2	X-5
A	-----	<u>0.771602</u>	0.572117	0.035276
B	<u>0.771602</u>	-----	<u>0.557879</u>	<u>0.059905</u>
X-2	0.572117	0.557879	-----	-0.200854
X-5	0.035276	0.059905	-0.200854	-----

The process of approaching towards fair degree of affinity has led to the formation of two more matrix tables given as under:

	C	D	E	X-5
C	-----	<u>0.918914</u>	<u>0.933495</u>	<u>0.058183</u>
D	0.918914	-----	0.875065	- 0.031975
E	<u>0.933495</u>	0.875065	-----	- 0.052095
X-5	0.058183	- 0.031975	- 0.052095	-----

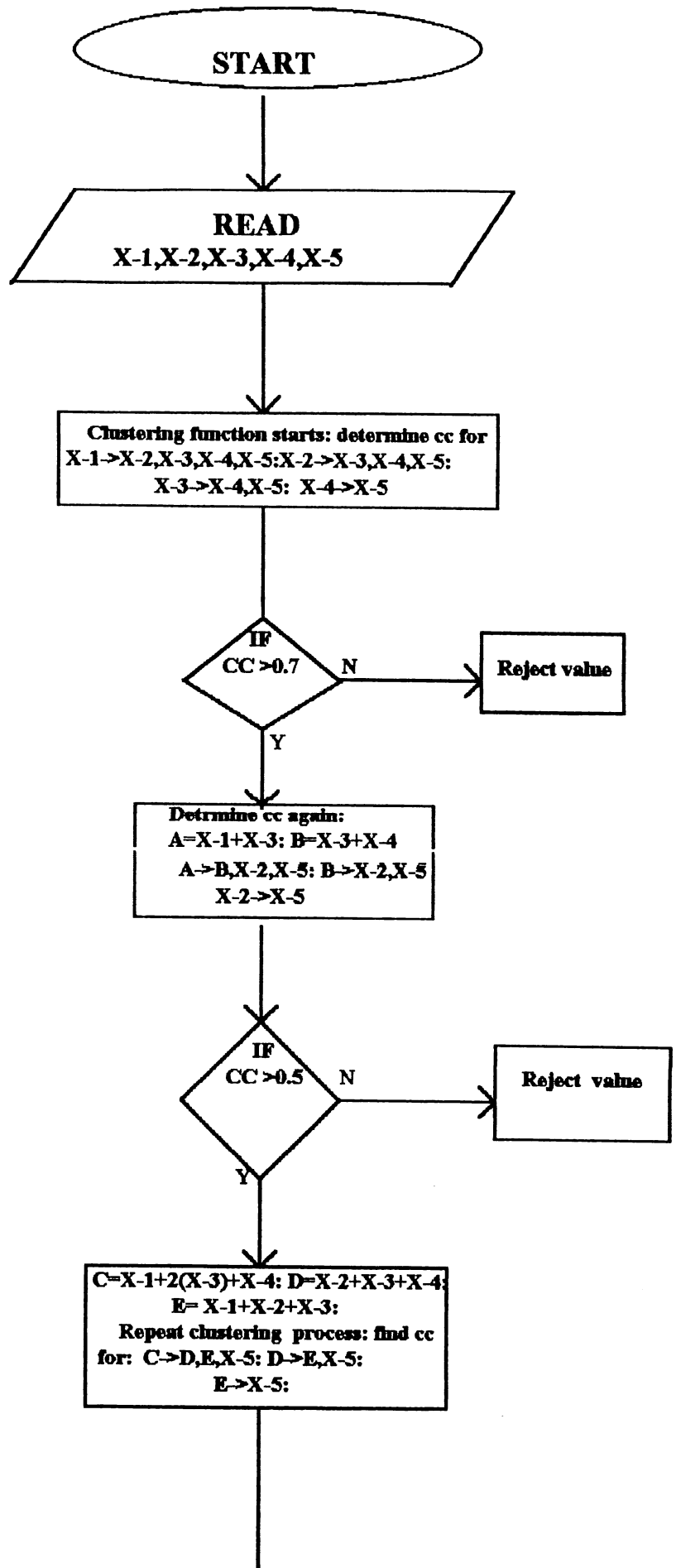
and

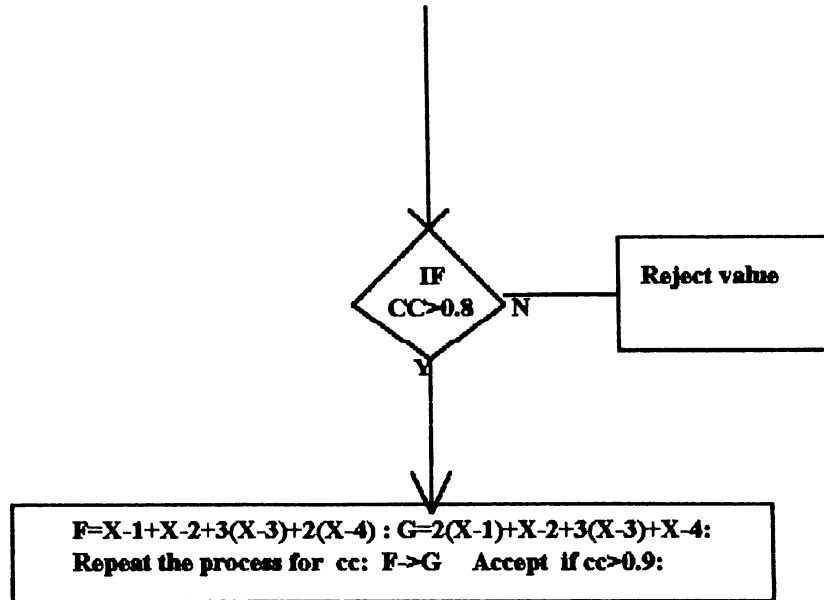
	F	G
F	-----	<u>0.970334</u>
G	<u>0.970334</u>	-----

Either of the two parameters (F or G) obtained in such a manner concede the amalgamated numeral value of the concerned word, which on transmogrification yield the standard form of the language. It has been tested and verified for the language under study (Kumauni language). The device discussed in the present paper shall be applicable to all languages, which are in the process of standardisation, which stands for procurement of such a form of the language which is well understood by all people residing in the region, can be used for text writing and is accessible for critical examinations.

Out of the four characteristics of language- standardisation, autonomy, liveliness and historical significance ;the privation of first two is marked in the dialects and so the method discussed in the present paper can be applied to all those dialects, which are in the process of being recognized as official languages.

Flow chart of this programme has been given in the next pages:





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