

# Computable Difference Matrix for Synonyms in the Holy Quran

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**Abstract**—In the field of Quran Studies known as GHAREEB AL QURAN (The study of the meanings of strange words and structures in Holy Quran), it is difficult to distinguish some pragmatic meanings from conceptual meanings. One who wants to study this subject may need to look for a common usage between any two words or more; to understand general meaning, and sometimes may need to look for common differences between them, even if there are synonyms (word sisters).

Some of the distinguished scholars of Arabic linguistics believe that there are no synonym words, they believe in varieties of meaning and multi-context usage. Based on this viewpoint, our method was designed to look for synonyms of a word, then the differences that distinct the word and their synonyms.

There are many available books that use such a method e.g. synonyms books, dictionaries, glossaries, and some books on the interpretations of strange vocabulary of the Holy Quran, but it is difficult to look up words in these written works.

For that reason, we proposed a logical entity, which we called Differences Matrix (DM).

DM groups the synonyms words to extract the relations between them and to know the general meaning, which defines the skeleton of all word synonyms; this meaning is expressed by a word of its sisters.

In Differences Matrix, we used the sisters (words) as titles for rows and columns, and in the obtained cells we tried to define the row title (word) by using column title (her sister), so the relations between sisters appear, the expected result is well defined groups of sisters for each word. We represented the obtained results formally, and used the defined groups as a base for building the ontology of the Holy Quran synonyms.

**Keywords**—Quran, synonyms, Differences Matrix, ontology.

## I. INTRODUCTION

THE study of the vocabulary of Holy Quran is a great science; ancient Arabic scholars studied it deeply, they had had known that the Holy Quran is miraculous due to the meanings in its vocabularies, the most important vocabularies called Ghareeb Al Quran (The study of the meanings of strange words and structures in Holy Quran). A better way to know a meaning of a vocabulary and its context is to deeply study what words guessed as synonyms, and the search for what can collect between the synonyms, or can differ between them. Some scholars [1] like ElAskri [2] wrote a book called The Differences, he gainsays (disprove) the synonyms in Arabic language; especially in the Holy Quran, and believes in varieties of meanings and multi-context usage.

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The research problem in differences between synonyms in the Holy Quran lay in choosing accurately the meanings of what supposed to be synonyms; moreover, how to extract the required meaning.

The rarity of references and scholars' disagreement about vocabulary's synonyms in this field are problems the researcher in this field may face.

## II. THE IDEA

The idea was based on grouping of the synonyms words or what supposed to be synonyms in Differences Matrix (DM); to extract the relations between them, we used synonyms (sisters) as titles for rows and columns, in each obtained cell; we tried to define the column title by using the row title; the definitions were summarized in single words called servant words so the relations between sisters appear, the cell considered empty if it had the same title for row and column, or the cell contained general definition for titles. By DM, we can know the general word (based word or mother of sisters), which involves overall meaning that defines all word synonyms; it lies in the most filled row.

Example: In Table I there are five sisters and eleven relations between sisters (servants); Word4 is the mother of the five sisters, because it has relation with most of the sisters.

TABLE I  
WORDS SISTER

	Word1	Word2	Word3	Word4	Word5
Word1	-	Servant1		Servant2	
Word2	Servant3	-			Servant4
Word3			-	Servant5	
Word4	Servant6	Servant7	Servant8	-	Servant9
Word5		Servant10		Servant11	-

## III. THE METHOD

1. Firstly, we chose the sisters' words
2. In DM, we put sisters as rows and columns titles
3. We used respectable dictionaries to fill DM cells
4. We specified the most filled row cells, and regard its title as the mother of sisters
5. From the filled cells we determined the relations between rows and columns titles, then summarized each relation in one word (servant)
6. Following the previous steps the mother of sisters and servants were determined. For ontology emergence, we formally represented that using set theory, predicate logic and formal concept analysis [5]





theory were used, and in the future some ontology language may be capable of representing it.

This paper deals only with real meanings; the metaphorical meaning needs more extensive research to find out if DM could properly represent it.

## APPENDIX

TABLE IV

TRANSLATION LIST OF ARABIC WORDS (SYNONYMS) THAT WERE USED

Arabic word	English translation
الخوف	The expectation of hating
الحذر	Fear with precaution
الخشيبة	Fear tainted by maximizing
الفرع	Sudden fear
التقففة	Care mixed with fear
الرؤية	Constant fear
الجزع	Sadness preventing man from doing something
الوجل	Fear sensing
الهلج	Sudden fear with disorder
الإنقاء	Prevention of fear

TABLE V

TRANSLATION LIST OF ARABIC WORDS (SERVANTS OR ATTRIBUTES) THAT WERE USED:

Arabic word	English translation
الخوف	Fear
احتراز	Precaution
تعظيم	Maximizing
مفاجأة	Surprise
عناية	Care
استمرار	Continuation
استشعار	Sensing
وقاية	Protection
اضطراب	Disorder

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