



## Multimodal Representation of Meaning in Merriam-Webster Online Dictionaries

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### ABSTRACT

With the development of technology, there has been a shift from monomodality where an isolated text has been seen as the primary source of communication to the multimodality where the multiplicity of modes of representation and communication has been foregrounded. Based on the previous works, the research study aims to investigate the interaction of multiple modes in the context of Merriam-Webster online dictionaries in the meaning creation process. This study proposes an integrated framework based on logico-semantic and status relations, multimodal lexicography, and systemic functional multimodal discourse analysis for analyzing the relationships of three semiotic resources – verbal, visual, and aural – in online dictionaries. The results show that in Merriam-Webster visual dictionary such relationships between the modes as elaboration, extension, enhancement, and metonymy are widely applied and complement one another, while in Merriam-Webster online dictionary enhancement would be the main means of presenting information besides the semantic features.

**Keywords:** multimodality, multimodal discourse analysis, online dictionaries, modes, multimodal lexicography, meaning.

### 1. Introduction

In the process of development of language proficiency, every language learner uses a number of language learning strategies. As the language learners encounter the unknown single words, set phrases, variable phrases, phrasal verbs, or idioms, dictionaries are appeared to be the most crucial learning strategy of the acquisition of new vocabulary knowledge [1, 2, 3]. According to Cambridge Academic Content Dictionary, “dictionary” is “a book that lists words with their meanings given in the same or another language, and often includes other information”[4].

The rapid development of science and technology has resulted in great changes in human communication as well as in language learning; therefore it made it possible to move from printed dictionaries and elaborate various lexicographical online dictionaries [5]. The characteristic feature of the electronic medium is its multimodality and the multiplicity of modes, all of which contribute to meaning. It is significant to study how these different modes are combined in online dictionaries: whether one empowers the others, or whether they play complementary roles.

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In recent years, the linguistic interest in the study of the mixture of modes, especially the visualization of communication in which information is transferred into visual and audio forms, has increased. For this reason, multimodality, a new interdisciplinary approach, has become an important factor in discourse studies and linguistic science. Van Leeuwen suggests that "multimodality is the combination of different semiotic modes in a communicative artifact or event" [6] [van Leeuwen 2005: 28]. Jewitt refers to "mode" as "a set of socially and culturally shaped resources for making meaning" [7] [Jewitt 2016: 80]. Halliday (1994), Kress and van Leeuwen (2001), Martinec (2000), O'Halloran (2004) are just some of a significant list of scholars who have made contributions to the research area of multimodality. The multimodal discourse analysis was expanded to many semiotic resources such as visual images [8,9], movement and gesture [10], video texts and internet sites [11], verbal and visual modes [12]. Despite the considerable amount of previous studies, online dictionaries have remained a lesser researched area in the field of multimodality. Influenced by the research development on multimodality, the purpose of this research is to explore the interrelation of visual, linguistic, and aural modes in Merriam-Webster online dictionaries, namely [Dictionary](#) by Merriam-Webster and [Visual Dictionary Online](#) in the meaning-making process. The following question reflects the aim of this research:

1. How do the visual, linguistic, and aural modes interact in the meaning-making process in online dictionaries?

## **Method of Data Collection and Analysis**

### *3.1. Corpus*

Multimodal discourse analysis is an evolving concept in discourse studies which expands the study of language in itself to the investigation of language in conjunction with other modes, such as images, symbols, animation, music, and sound. This research study reports a qualitative content approach to analyze the interplay of visual (image), linguistic (text) and aural (sound) modes in online dictionaries "Merriam-Webster Online Dictionary", "The Merriam-Webster Visual Dictionary Online" from the following sites URL: <https://www.merriam-webster.com/> [13] and <http://www.visualdictionaryonline.com/index.php> [14].

### *3.2. Analytical Tool*

According to Kress and van Leeuwen (1996), the understanding of the meaning-making process in the interplay of semiotic modes includes a whole series of perceptual and cognitive operations [15]. The reader becomes aware of an overall message in context deriving meaning from the linguistic, visual and aural content through a succession of stages.

Taking into account the investigated modes, our study proposes an integrated analytical framework for the analysis of online dictionaries based on the Halliday's logico-semantic and status relations [16], multimodal lexicography [17] and systemic functional multimodal discourse analysis [18].

Halliday (1994) developed systemic functional linguistics grounded on the opinion that language is a social semiotic system, namely, a resource for making meaning and suggested that the main aim of systemic functional linguistics is to evolve a functional grammar, taking into consideration the meaning-making potential of language. According to Halliday (1994), language is a semiotic mode which has to represent three communicative metafunctions: the ideational metafunction (experiential meaning and logical relations), the interpersonal metafunction (social relations), and the textual metafunction (through the organization of the discourse) [16].

Multimodal lexicography explores the meaning explanation of a word, phrase, or expression and to complement verbal definitions with modalities for enhancing comprehension and perception, especially in an online dictionary [17].

Taxonomy of Halliday's (1994) logico-semantic and status relations refer to the system network of possible connections combining status and logico-semantics. The main relationships between the modalities adopted in the present research are the following kinds of expansion proposed by Halliday (1994): elaboration (one mode is utilized to explain, illustrate or specify the other), extension (new and related information is added in one mode, which is not given in the other), and enhancement (one mode qualifies the other mode, circumstantially adding information related to time, place, reason and purpose). It needs to be highlighted that the category of projection differentiated two relationships: exposition and exemplification (an example capturing the essential meaning of a concept) [16].

According to Chan's model there are three basic types: extension, enhancement and projection [19]. Metonymy as a means of multimodality was coined by Xiqin Liu, who refers it to referential or predictive function [20]. Visual aids have long history of usage since Jan Amos Komenský introduced this method in his "Orbis Sensualium Pictus" 1658, or even earlier [21].

## Results and Discussion

We start with the study of the three basic types under discussion suggested by Halliday: elaboration, extension, enhancement, and then we proceed with projection postulated by Chan and dwell on metonymy mentioned by Xiqin Liu and projection.

Elaboration consists in explanation of one mode by another, as for example in Merriam-Webster online dictionary, the phonetic transcription is not presented with audio, but in the International Phonetic Alphabet (IPA).

### chemical

#### adjective

chem-i-cal | \ 'ke-mi-kəl \

#### Definition of chemical

**1:** of, relating to, used in, or produced by [chemistry](#) or the phenomena of chemistry *chemical reactions*

**2a:** acting or operated or produced by [chemicals](#) *chemical fire extinguisher*

**b:** detectable by chemical means

**Figure 1.** Merriam-Webster online dictionary. Headword *chemical*

In Merriam-Webster visual dictionary the phrase chemical elements is elaborated with images.



**Figure 2.** Merriam-Webster visual online dictionary. Head phrase *chemical elements*

Extension means that meanings of one mode are represented in another with a new additional information. For instance, the presentation of *religion* Merriam-Webster online dictionary

### religion

#### noun

re-li-gion | \ ri-'li-jən \

#### Definition of religion

**1a:** the state of a [religious](#) *nun in her 20th year of religion*

**b(1):** the service and worship of God or the supernatural

**(2):** commitment or devotion to religious faith or observance

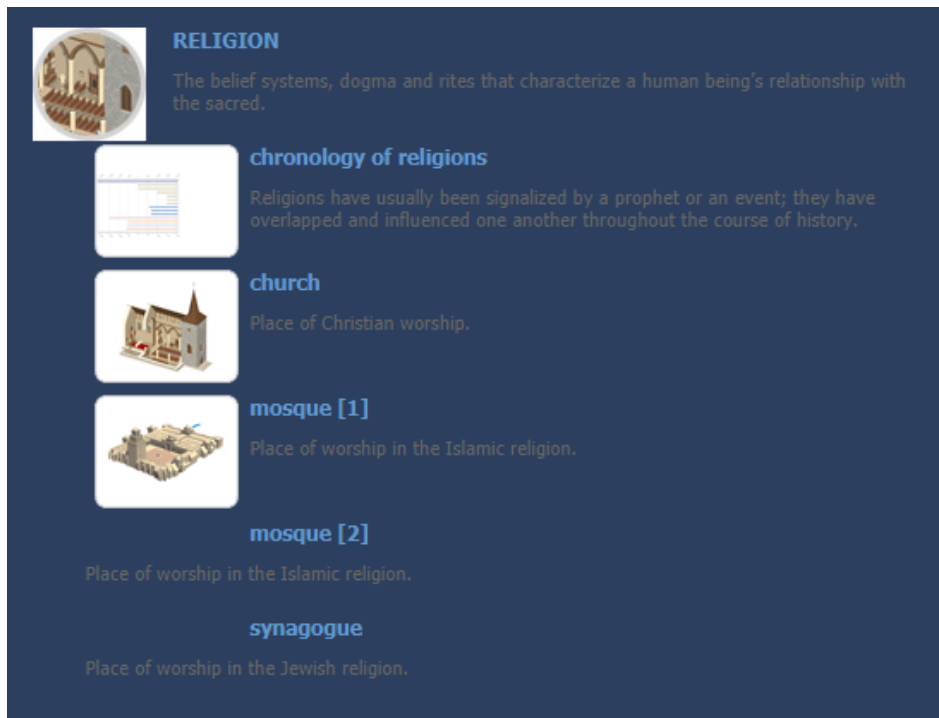
**2:** a personal set or institutionalized system of religious attitudes, beliefs, and practices

**3** *archaic* : scrupulous conformity : CONSCIENTIOUSNESS

**4:** a cause, principle, or system of beliefs held to with ardor and faith

**Figure 3.** Merriam-Webster online dictionary. Headword *religion*

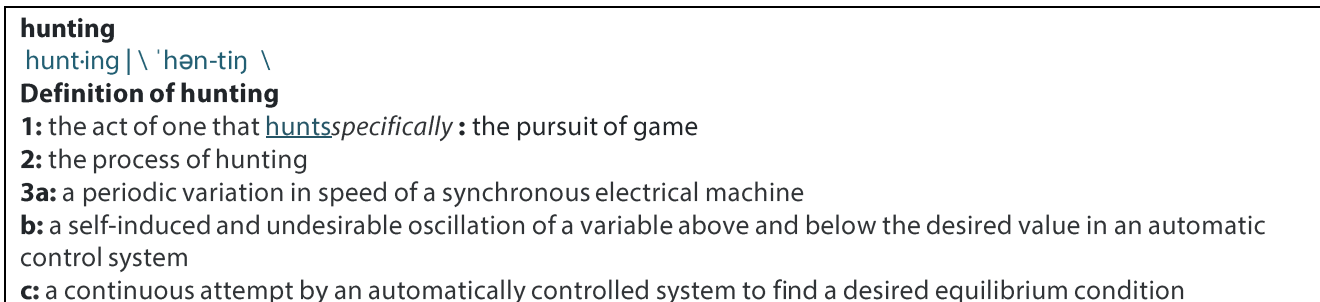
In comparison to the visual online dictionary, we observe no extension.



**Figure 4.** Merriam-Webster visual online dictionary. Headword religion

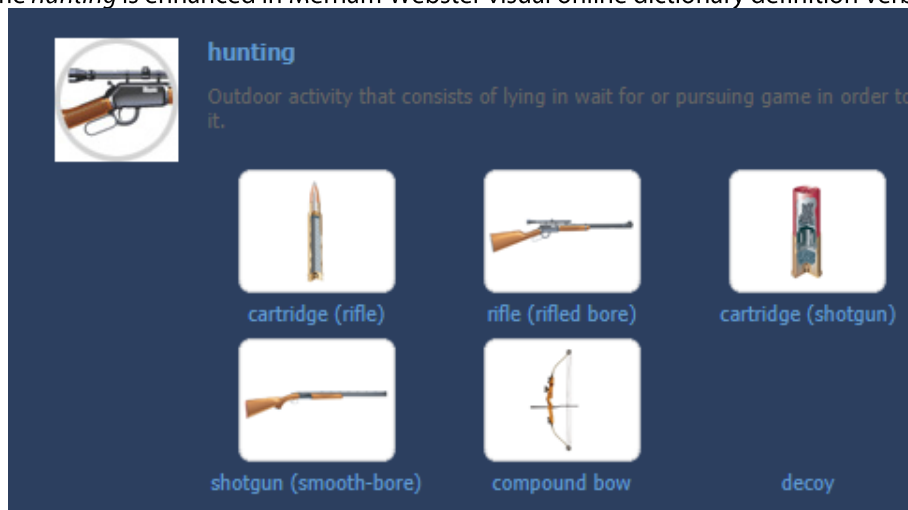
Extension is realized through presenting the lexical mode in images of the worship places.

Enhancement, in its turn, might depict the end result of a process described in the verbal text, and add to its spatial, temporal or causal data. Let us check the word *hunting* in Merriam-Webster online dictionary:



**Figure 5.** Merriam-Webster online dictionary. Headword hunting

The lexeme *hunting* is enhanced in Merriam-Webster visual online dictionary definition verbally.



**Figure 6.** Merriam-Webster visual online dictionary. Headword religion

The definition of hunting given above rifles and hunting equipment depicts the end result of hunting.

Projection in the frame of e-lexicography implies the floating tips as the main form of projection. There are no cases of floating tips usage in Merriam-Webster online dictionary and Merriam-Webster visual dictionary under study.

Metonymy as a means of multimodality was coined by Xiqin Liu, who refers it to referential or predictive function [20], which we could term as suggestive function. We have come to the conclusion that metonymy is used abundantly in dictionaries with multiple images, if the illustrations are scarce in a dictionary, then the metonymic image mode is not applied.

## dog

**noun, often attributive**

\ 'dɒg , 'dæg \

### Definition of dog

**1a:** CANID *wolves, foxes, and other dogs especially*: a highly variable domestic mammal (*Canis familiaris*) closely related to the gray wolf the family's pet *dog*

**b:** a male dog *dogs and bitches also*: a male usually carnivorous mammal

**2a:** a worthless or contemptible person

**b:** FELLOW, CHAP *a lazy dog you lucky dog*

**3a:** any of various usually simple mechanical devices for holding, gripping, or fastening that consist of a spike, bar, or hook

**4:** uncharacteristic or affected stylishness or dignity *put on the dog*

**5** *capitalized, astronomy*: either of the constellations Canis Major or Canis Minor

**6** *dogs plural, anatomy*: FEET *rest his tired dogs*

**7** *dogs plural*: RUIN *going to the dogs*

**8:** one inferior of its kind *the movie was a dog*: such as

**a:** an investment not worth its price

**b:** an undesirable piece of merchandise

**9:** an unattractive person *especially*: an unattractive girl or woman

**10:** HOT DOG\_SENSE 1 *bought two dogs and a beer*

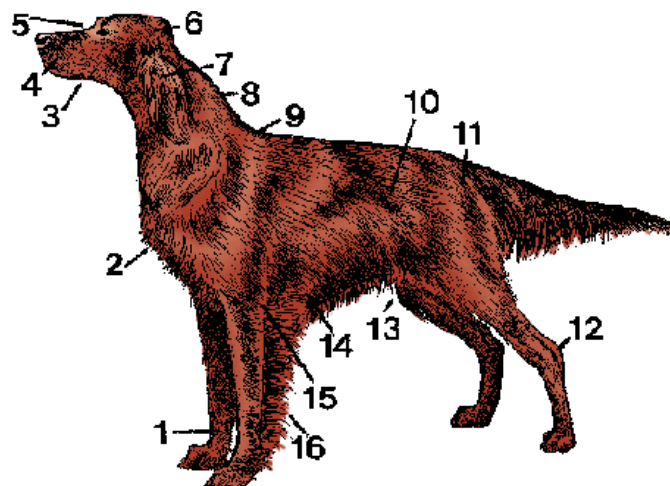


Figure 7. Merriam-Webster online dictionary. Headword dog



**Figure 8.** Merriam-Webster visual online dictionary. Headword dog

The metonymic presentation of the headword dog can be observed in presenting the head of the dog instead of giving the whole image of the animal, as the following clusters of information present its morphology and skeleton.

### Summary

The aforementioned modalities in their symbiosis are directed for the full understanding of the headwords by a user, thus realizing the prior commercial purpose of the contemporary lexicographic industry – being user-friendly. Non-verbal modes develop and add to the core verbal meanings and can be regarded as a paradigm of center and peripheries. These results extended our knowledge of ideational metafunction as the most significant communicative metafunction for the determining of dictionaries because it is closely linked to the content of meaning.

### Conclusions

Decoding dictionaries widely apply the multi modal lexemes presentation as the technical credentials of e-dictionaries provide unique opportunities for meaning delivery in its word and imagery format. In addition, the results found in this study could be useful for further research in order to investigate the interaction of verbal and non-verbal modalities in different electronic dictionaries.

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