RESEARCH ARTICLE

A Proposed Collocational Marker for the Computational Identification of Metaphor: The Case of Metaphor in the Ever-Glorious Qur’ān

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ABSTRACT

The present paper is a corpus-based study that proposes a collocational criterion to computationally identify metaphor with special reference to metaphor in the Ever-Glorious Qur’ān. The study draws on studies on metaphors in the Ever-Glorious Qur’ān, the conceptual theory of metaphor (1980), studies on collocations as well as computational studies of metaphor, in general, to finally arrive at a collocational marker for metaphoricity toward a computational identification of metaphor in the Ever-Glorious Qur’ān. The study adopts a quantitative as well as a qualitative approach in investigating and analyzing metaphors in the corpus to contribute to the input of computer software for identifying metaphor candidates (i.e., lexical items that are likely to have been used metaphorically). The corpus of the study is two surahs from the Ever-Glorious Qur’ān, namely Sūrat Yūsuf and Sūrat Ar-Rā’d. The manual identification of metaphors on the two Sūrahs of the study is achieved by referring to authentic exegeses of the Ever-Glorious Qur’ān and interpreting the meanings of the Ever-Glorious Qur’ān. The paper ends by suggesting a collocational marker for metaphors in the Ever-Glorious Qur’ān, which could be adopted and applied to other corpora.

KEYWORDS

Collocational, metaphor, the Ever-Glorious Qur’ān, computational identification

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1. Introduction

Lakoff and Johnson (1980) presented an alternative to the perception of metaphor as a rhetorical device. Though for most people, metaphor is a device of the poetic imagination and the rhetorical flourish, for Lakoff & Johnson (1980), metaphor is the means by which human experiences are organized and conceptualized. In Metaphor We Live, Lakoff and Johnson (1980) indicate that metaphor is one of our most important tools in a trail to understanding our feelings, ethics, practices, and aesthetics”. Lakoff argues that the majority of expressions about our subjective experiences are metaphorical and that without such metaphors, it would be difficult to describe our experiences.

The study attempts to set a collocational criterion for the computational identification of metaphors in the Ever-Glorious Qur’ān (EGQ). This study claims that computational linguistics has a great deal to contribute to metaphor studies, particularly with respect to collocational features of metaphor in the (EGQ). The study draws on four exegeses of the (EGQ), namely Tafsīr Aṭ-Ṭabarī (2010), Az-Zamakhshari (2007), Al-Qurtubi (1964), and Ash-Sha’rāwī (1997). It also draws on Lakoff and Johnson’s (1980) cognitive theory of metaphor, studies on metaphor in the (EGQ), as well as computational studies of metaphor in general. The study draws on previous studies on selection preferences in addition to early studies by Arab rhetoricians and grammarians on metaphors to finally arrive at a unified method of computational identification of metaphors in the (EGQ).

The present study has two main objectives. The first objective is to study collocational features of metaphorical candidates, that is, identify collocational features of lexical items that are likely to be metaphorical. The second objective is to use such features as linguistic markers to contribute to the input of a computer software towards identifying metaphors in (EGQ).

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1.1 Research Questions
The present study attempts to answer the following questions: 1) Are there certain collocational features for a metaphor? 2) Do these collocational features contribute to the degree of metaphoricality? And 3) how collocational features could be used to computationally identify metaphors in the (EGQ)?

2. Literature Review
The review of literature is subdivided into six sections. The first section consists of a review of the definition of metaphor in both Arabic and English. The following sections review metaphor in Arabic rhetoric, metaphor in the (EGQ), studies on collocations, studies of cognitive theory of metaphor by Lakoff and Johnson (1980), and computational linguistic studies of metaphor.

2.1 Definition of Metaphor
Arab rhetoricians’ definitions of metaphor are either borrowing as in Al-Sakkākī (1937) or replacing one concept for another as in Al-Jurjānī (1966). Al-Jahiz (1960) indicates that metaphor is used “to describe one thing in terms of another” (p. 153). Ibn Qutaibah (1962) defines metaphor as follows: “borrowing a word and replacing it with another word if there is a relation between both words or they have a similar meaning or one causes the other, so, for example, they call rain sky because the rain comes from the sky” (p. 88) (Cited in ‘Atiq, 1985, p. 367). Al-Jurjānī (1966) defines metaphor as “a word which is in the language has a known basic meaning, is temporarily lent as it were, to something other than the original object” (p. 29).

In English, a definition similar to that of the Arabic definition of metaphor is provided in the English dictionaries. Longman Modern English Dictionary (1976) describes metaphor as “a figure of speech in which a name or quality is attributed to something to which it is not literally applicable, e.g., an icy glance, nerves of steel”. The American Heritage Dictionary of the English Language (2000) defines metaphor as “a figure of speech in which a word or phrase that ordinarily designates one thing is used to designate another, thus making an implicit comparison”. Furthermore, Newmark (1988) puts forth one of the definitions of metaphor as an “application of a word or collocation to what it does not literally denote, i.e., to describe one thing in terms of another” (p. 104).

2.2 Metaphor in Arabic Rhetoric
This section reviews studies on metaphor in Arabic rhetoric, explores metaphor in Arabic rhetoric, and describes how various disciplines of Arabic rhetoric approached it. Rhetoric means the harmonizing of speech as well as the eloquence of its pronunciation and structure according to the context (Al-Ḥāshimī, 1960). In Arabic rhetoric, metaphor is one type of ما بعد/ (i.e., figures of speech) which is subdivided into three sections: التشبیه /tta/biːh/i (i.e., simile), المجاز /lmadʒəz/ (i.e., allegory) and الکناية /ilkinājəh/ (i.e., metonymy). The استعارة /lístiʃːərah/ (i.e., metaphor) is one type of allegory. In Arabic rhetorical studies, allegory stands for المجاز /lmadʒəz/. Linguistically, allegory is morphologically related to the verb جاز /dʒəzə/ (i.e., to pierce through something, to penetrate, to go beyond). Based on this sense, the verb جاز /dʒəzə/ is employed to signify ‘going through and reaching an unintended objective’. Therefore, rhetorically, المجاز /lmadʒəz/ (i.e., allegory) signifies ‘the lexical item’ that is transferred from its denotative, i.e. intrinsic non-allegorical, meaning to another meaning, i.e. non-intrinsic allegorical meaning, which is intimately associated with the inherent non- allegorical meaning. There is علاقة /虪ːqət/ (i.e. a semantic link) between the denotative signification and the allegorical signification, provided there is قرينة /ʔarīnaːh/ (i.e. a clue) that indicates the non-occurrence of the denotative signification (Abdul-Raof, 2006, pp. 220-225).

The second type of allegory, المجاز الشخصي /ʔaːqlıː/ (i.e. cognitive allegory) applies to lexical items, which are transferred from their intrinsic meaning to another non-intrinsic meaning where there is a semantic connection as well as a similarity between the two meanings through a lexical clue. المجاز الشخصي /ʔaːqlıː/ (i.e. linguistic allegory) is sub-divided into two major figures of speech: the استعارة /lístiʃːərah/ (i.e. metaphor) and المجاز المرسل /lmadʒəz /lmusnæːd/ (i.e. hyppallage).

2.3 Metaphor in the Ever-Glorious Qur’ān
Arab rhetoricians and grammarians are divided into two groups as to whether or not metaphor exists in the (EGQ). The first group is those who deny the existence of metaphor in the (EGQ). Some Zahiriya people and Ibn Al-Qas and Ibn Khuwaiz Mindād have
denied the very concept within the (EGQ). Their denial is derived from the belief that metaphor is similar to lying and that (EGQ) is cleansed from any lies (As-Suyūṭī, 1974, p. 382). The second group is in favour of the existence of metaphor in the (EGQ). This group believes that the (EGQ) comprises a large number of figures of speech, and metaphor is a type of figure of speech. This group of rhetoricians and grammarians built their belief on the fact that metaphor has been studied within the field of rhetoric in the (EGQ). The basis of the argument put forward by those who firmly believe in the existence of figurative usage was that if the (EGQ), as the perfect example, was devoid of such features as توكيد /tauki:d/ (i.e. emphasis), it would lose the aesthetic beauty which makes it so unique (As-Suyūṭī, 1974).

2.4 Studies on Collocations

In English, many studies highlighted the collocational aspect of metaphorical language. Specifically, some studies allude to the collocational characteristics of metaphor (Beardsley, 1967; Palmer, 1981; Cowie & McCaig, 1983; and Benson, Benson & Ilson, 1986).

Beardsley (1967) discusses the notion of the shift of intension resulting in metaphorical language. This study suggests that a shift in the use of the language results in metaphorical meaning. Due to this “shift of intension”, a lexical item acquires a metaphorical meaning different from its literal meaning. In an attempt to clarify this “shift of intension”, Beardsley identifies two features working in tandem within a metaphor. On the one hand, a metaphor produces a ‘conceptual tension’ between the concept that is expressed by the metaphorical term (i.e. figurative meaning) and the concept that is normally applied to the subject (i.e. literal meaning). Therefore, for example, there is a ‘tension’ or mismatch between representing “Juliet as a sun and as a girl” in Romeo’s quote from Shakespeare’s play. Beardsley points out that “in spite of their apparent absurdity, metaphors are generally quite intelligible and even profound”. Therefore, for example, Romeo’s metaphor seems to serve as an effective means for communicating his feelings about Juliet (such as being impressed by her), to claim that she possesses certain properties (such as being beautiful and life giving) as the sun. In Arabic, Albustānī (1986) distinguishes \l̲ή̱στί̱f̲a̱r̲a̱h \l̲ή̱σ̲μ̲i̱j̲a̱h̲/ (i.e. metaphor in the verb) and \l̲ή̱σ̲τί̱f̲a̱r̲a̱h \l̲ή̱σ̲m̲i̱j̲a̱h̲/ (metaphor in the noun). He indicates that metaphor in the verb exists when there is لا ملاءمة دلالية (i.e. semantic inappropriateness) between the lexical item and its collocate which is similar to the concept of ‘semantic tension’. The deviation of meaning resulting from this “semantic inappropriateness” is a marker of metaphoricity.

Palmer (1981) illustrates that "semi-restricted" collocations are based on a range where a whole set of lexical items sharing the same semantic features collocate with a specific lexical item. For example, though the expression ‘the rhododendron died’ is acceptable, we shall not say ‘the rhododendron passed away’, in spite of the fact that ‘passed away’ is synonymous with ‘died’ (p. 79). Palmer (1981) points out that some collocations are “unrestricted collocations,” and they are named as such because they are ‘open’ collocations that do not change the meaning of their individual lexical items; hence they are non-metaphorical collocations. As Palmer (1981) puts it, this type of collocation could be labeled ‘unrestricted collocation’ because “it describes the ability of particular lexical items to be open to collocate with a wide range of items” (pp. 77–78).

Cowie & McCaig (1983) also classify collocations into three types. They explain that the first type, “restricted collocation,” is [where] one lexical item has “a figurative sense not found outside that limited context”. They point out that in a “restricted collocation,” one of the elements may be either literal or figurative. For example, the verb ‘explode’ in the combination ‘explode a myth/a belief’ is arguably figurative. They conclude that “the choice of the specialized meaning of the verb which means ‘show to be false or no longer true’ is contextually determined by occurring within no lexical context other than that of ‘myth/belief’ (pp.227). According to Cowie & McCaig (1983), the second type of collocation is “bound collocation,” which is “a bridge category between collocations and idioms” that “exhibits unique contextual determination; in other words, one of the elements is uniquely selective of the other” (pp.228). These are partly fixed expressions that become established through repeated context-dependent use. For example, the collocation “shrug shoulders” (i.e. to feel or display indifference or to indicate a lack of knowledge about a particular topic or a lack of care about the result of a situation) is a bound collocation where ‘shrug’ is selective of ‘shoulder’ as in ‘when I asked her if she minded staying home, she just shrugged her shoulders’.

A study that denotes when and how metaphor can be produced is Benson, Benson & Ilson (1986). They distinguish "grammatical collocations" and "lexical collocations". "Grammatical collocation" is collocations where a dominant lexical item, e.g. (noun or verb), is followed by a grammatical, lexical item, typically a preposition where the meanings of “the prepositions in the collocations are not predictable” (p. 43). This indicates that these grammatical structures are metaphorical. Examples are verb–particle combination (i.e. phrasal verb) as in "look after and look up to," where a verb is followed by a particle forming a phrasal verb, i.e. an idiomatic expression where the meaning cannot be predicted from its parts and is therefore metaphorical. The second type Benson et al. (1986) allude to is "lexical collocations". These are grammatical structures that usually consist of two equal lexical components where collocates are not “restricted” or "semi-restricted". These grammatical structures are "open collocations," and hence the meaning is not metaphorical. Examples are noun-verb combinations as in ‘bells ring’, ‘birds chirp’ (fly, sing), and ‘blood circulates’
(flows), or adjective-noun combinations as in ‘confirmed bachelor’, ‘keen competition’, and ‘sincere condolences’ (p.43). The meaning of a lexical item in a ‘lexical collocation’ is predictable, and hence, it is not metaphorical.

It appears from the reviewed studies that lexical relations creating metaphors result in different types of collocations. The studies by Palmer (1981); and Cowie and McCaig (1983) show that, while open collocating lexical items are used literally, semi and restricted collocating lexical items are not. According to Palmer (1981) and Cowie & McCaig (1983), unlike “unrestricted” or “open collocations,” where a lexical collocate maintains its literal meaning, “restricted collocations” have the figurative sense not found outside these limited contexts and as such are of figurative meaning. They also point out that there is another type of collocation that Palmer labels “semi-restricted” while it is “bound collocation,” as Cowie & McCaig label it. Palmer illustrates that “semi-restricted” collocations are based on a range where a whole set of words sharing the same semantic features collocate with a specific word. According to Cowie & McCaig (1983), “bound collocation” is “a bridge category between collocations and idioms” that “exhibits unique contextual determination; in other words, one of the elements is uniquely selective of the other” (p.228). These are partly fixed expressions that become established through repeated context-dependent use.

The collocational criterion, which is arrived at from these studies, is as follows: “restricted, semi-restricted and bound collocations“ are metaphorical because they acquire a non-literal meaning, while “unrestricted and open collocations“ are not because they collocate freely while maintaining the literal meaning of their collocants. The study fills a gap in the literature where the collocational features of metaphor are investigated, analyzed, and studied in order to be incorporated into a comprehensive framework to be employed as software input to computationally identify metaphor.

2.5 The Cognitive Theory of Metaphor (1980)

Lakoff & Johnson (1980) maintain that metaphors are the means by which human experiences are organized and conceptualized. They define metaphor as: “a way of conceiving of one thing in terms of another, and its primary function is understanding”. They claim that conceptual metaphors penetrate our understanding of the world around us and assert that ‘metaphor is a tool so ordinary that we use it unconsciously and automatically to understand ourselves and our world in ways that no other modes of thought can.’ (Lakoff & Turner, 1989, p.ix as cited in Lakoff & Johnson 1980).

The fundamental tent of conceptual metaphor theory is that metaphor operates at the level of thinking. Until recently, the metaphor was usually treated at best as a kind of decorative or embellishment on language. However, Lakoff & Johnson (1980) inverted the traditional view by placing metaphor at the core of the language, arguing that concepts are themselves primarily metaphorical and that verbal metaphor is but expressions of underlying conceptual metaphors. It follows that analysis of metaphorical language can lead to insights into the conceptual structure that underlies thought as well as language (Cameron & Maslen, 2010, p. 59).

2.6 Computational Linguistic Studies of Metaphors

Most previous computational approaches have treated metaphors as relatively independent and isolated anomalies that require exceptional processing (Martin, 1990 & Fass, 1991). In contrast, the approach advocated here is to focus on the ubiquity of metaphor in order to identify potential underlying conceptual metaphors in the (EGQ).

According to Ooi (1998), ‘it is a truism to say that what exactly counts as ‘computational linguistics’ is controversial for two main reasons. Firstly, the term ‘computational’ attached to the headword ‘linguistics‘ implies that any activity involving an analysis of language using the computer has a claim to being, in some sense, computational linguistics: this would include that which constructs programs for understanding and generating natural language. Secondly, and more importantly, the confusion over the use of this term is due to its evolving nature over the years (p. 23). Specifically, Grishman (as cited in Ooi, 1998) treats computational linguistics as ‘the study of computer systems for understanding and generating natural language’. On the other hand, Gazdar and Mellish (1989, as cited in Ooi, 1998, p. 23) avoid any definition of the term and treat it as somewhat similar, if not equivalent, to NLP (i.e. Natural Language Processing).

Some studies used methods and techniques of metaphor identification in computational linguistics. Studies by Martin (1990) and Fass (1991) were found to use linguistic markers or ‘selection preferences’ (i.e. collocational span) to identify metaphors in different types of corpora.

Martin (1990) describes the Metaphor Interpretation, Denotation, and Acquisition System (MIDAS), a system that can interpret metaphorical language in questions asked by users. Martin (1990, p.xxii) asserts that MIDAS can be used for representation, interpretation, and learning of metaphor. The first task is the explicit representation in a knowledge-base of the conventional metaphors in the language in the form of explicit associations between concepts. The second task is the correct and efficient
application of metaphorical knowledge to the interpretation of metaphorical language. The third is the acquisition of new metaphors when examples are encountered for which no known metaphor provides a coherent explanation.

An early system that takes a slightly different approach is Fass (1991) which describes Met*, a system for interpreting nonliteral language. Met* differentiates metonymic, metaphorical, literal, and anomalous language. Although designed primarily to identify metonymy and metonymic chains, met* (Fass, 1991) can also be used to identify metaphors. Met* (Fass, 1991) identifies metonymies using 'selectional restriction rules' encoded in a "knowledge representation" through sense-frames, where each sense of a word has its own frame. For example, in the sense-frames for "eat" and "drink," both senses have a preference for the animal as the agent, i.e., the thing doing the eating or drinking. Similarly, the sense-frame for "eat" prefers edible food as its object, while "drink" prefers potable liquids. Words are related to each other via paths through this "knowledge structure".

Sardinha (2010), on the other hand, presents a computer program for detecting lexical items that are likely to have been used metaphorically in a corpus. It works by matching each word in the corpus to five databases that contain several kinds of information about the lexis and its relationship to metaphor. These databases store the probability of lexical items being metaphorical based on their previous use in metaphors, on lexical patterns occurring near and around lexical items, and on their word-class" (p.52). Though results indicate that the procedure did pick up some major metaphors in the corpus, it also captures metonyms. Another shortcoming of this program is that it does not indicate where metaphorical expressions begin and end because the program tags individual lexical items. Such kind of drawbacks could be overcome in the present work since the node and span of lexical items are thoroughly identified. Not only selection preference of the lexical item is identified, but the occurrence of lexical items counted as the 'potential' metaphors is counted. If a lexical item occurs with certain defined 'linguistic markers' and is denoted as a metaphor for a minimum of five tokens, it will be regarded as metaphorical. Hence, such limitations present in the study of Sardinha (2010) could be totally resolved.

It appears from the reviewed studies that there is a gap in the literature to be filled through this study. A framework for the collocational identification of metaphor in the (EGQ) is set up, and the following section, the methodology, highlights the 'manual' identification of metaphor which aims to identify the collocational marker of metaphor.

3. Methodology
This section sets down the collocational criterion for the 'manual' identification of metaphor in the (EGQ). This criterion identifies candidate metaphors as well as the degree of the metaphoricity of metaphors. Metaphoricity is gradable as some metaphors are more metaphorical or primary while others are secondary (Hanks, 2006). In this section, a corpus methodology is used to manipulate the data. According to the reviewed studies on collocations and the collocational features of metaphor, the collocational criterion of metaphor is built on a group of assumptions. In order to be labeled as 'metaphorical', a collocate should meet at least one of these criteria: if there is 'conceptual tension' or 'mismatch' (Beardsley, 1967), if the collocation is "restricted, semi-restricted or bound" (Palmer, 1981 and Cowie & McCaig, 1983), if it is a verb deviating semantically in its relation with a noun acting as its subject or object, a noun acting as a subject having inappropriate semantic relation with the main verb of the sentence, a noun in a nominal sentence having inappropriate semantic relation with a verb as a predicate, with a prepositional phrase following the head of the phrase, or when it is the added noun in a genitive construction (Albustānī, 1986), or when it is "dynamic or has a portative or quantifier (of)" (Hanks, 2006). The conclusion arrived at then is that the "collocational criterion" hypothesized that candidate metaphors are "restricted or semi-restricted". The degree of metaphoricity of candidates is calculated as follows: the lower the score achieved by each candidate, the lower the degree of metaphoricity of the candidate metaphor in question, and vice versa; the higher the score of a candidate, the higher the degree of its metaphoricity.

3.1 Corpus of the study
To carry out the objectives of the study, a corpus of two Sūrahs from the (EGQ), namely (Sūrat Yūsuf and Sūrat Ar-Ra’d, is used employing the following methodology; Investigating the collocational features of candidate metaphors in the corpora, identifying the "selection preference" of the lexical item in question. (i.e. identify the node and span of the lexical items that collocate with the lexical items in question), and counting the occurrence (token) of the lexical item in question. If the said lexical item occurs with a fixed linguistic marker and denotes a metaphor for a minimum of five tokens, it will be considered metaphorical.

3.2 Data Analysis
In this section, the collocational criterion for the computational identification of metaphors in the corpus is applied to the two Sūrahs. To do so, a three-step methodology is applied. The first step consists of manual identification of candidate metaphors. The manual identification of metaphors on the two Sūrahs of the study is achieved through referring to authentic exegeses of the (EGQ) namely Tafsīr At-Tabari (2010), Az-Zamakhshari (2007), Al-Qurtubi (1964) and Ash-Sha’rāwī (1997) as well as Yūsuf ‘Ali interpretation of the meanings of the (EGQ) (1992), being one of the most widely known authentic interpretations of the (EGQ). The second step consists of applying the criterion to the candidate metaphor. The successful passing of each criterion by the
candidate metaphor will earn it a mark on the continuum of metaphoricity. In the third step, marks earned by each individual candidate metaphor will be calculated. The lower the score, the lower the degree of metaphoricity of the candidate metaphor in question; the higher the score, the higher the degree of its metaphoricity.

### 3.3 Manual Identification of Candidate Metaphors

The identification of the candidate metaphor consists of identifying its components (i.e. tenor, vehicle, and ground). The tenor is the subject to which attributes are ascribed (i.e. the meaning of the candidate metaphor or what it refers to metaphorically), the vehicle is the object whose attributes are borrowed (i.e. a word, phrase, or longer stretch of language), and the ground (i.e. the similarity or connection between the two) (Richards, 1965).

The first Sūrah in the corpora is Sūrat Yūsuf. This Sūrah has been named after Prophet Yūsuf (Peace be upon him), whose story has been related all through the Sūrah. It is the 12th Sūrah of the (EGQ), and it is said to have been revealed in a single sitting, being unique in this respect.

The second Sūrah of the corpora is Sūrat Ar-Ra’d. Sūrat Ar-Ra’d is the 13th Sūrah of the (EGQ), and it begins with some verses concerning faith and convictions and ends with introducing the deeds that are helpful in the formation of human character. After making allusions to the legitimacy and greatness of the (EGQ), it refers to monotheism and states the secrets of creation which are the signs of the existence of Allah, the Almighty. The Sūrah discusses the resurrection and the new life of mankind in the Hereafter, as well as the Day of Judgment. Candidate metaphors are identified and derived from the two Sūrahs following the selected excerpts along with the colloquial criterion arrived at.

### 3.3 The Proposed Collocational Criterion

The proposed collocational criterion investigates the collocational distribution of a candidate metaphor. The criterion is based on the following hypothesis: If a certain lexical item collocates with another creating an opening collocation, it is assigned a mark, but if it enters into a “semi-restricted or restricted” collocation, this lexical item is considered to be metaphorical and scores two marks if it is “semi-restricted” and three marks if it is a “restricted” collocation. A collocation unit includes a “node” (i.e. the lexical item in question) that co-occurs with a “span” of lexical items on either side (i.e. collocants to the left and the right of the node). This string produces a candidate metaphor. The collocation span size investigated for metaphoricity in this study is 3 lexical items on both sides of the node, excluding punctuation and limited by Qur’ānic verse boundaries. In this criterion, the total number of occurrences of the node within the specified span of lexical items is counted to find the degree of the metaphoricality of a candidate metaphor along a continuum of scales ranging from open to semi-restricted to restricted collocation, where open collocation is the lowest scale, semi-restricted is medium and restricted is the highest.

In Al-Hāwī fi Tafsīr Al-Qur’ān (1996) lists examples of the lexical items that collocate with the verb /wa dʔaʔal/, the node of the the verb/sawwalia/ and its span on both sides is /kaʔib qa:la bal/ to the right, and /lakum /nakasum /ʔamra/ to the left. This candidate metaphor, the span form is (R3, L3) (i.e. three lexical items to the right and three lexical items to the left). In Al-Mu’djam Al-Wasit (2004) lists examples of the lexical items that collocate with the verb /swl/ as follows: /swl/ (i.e. evil made something agreeable to him) and /swl/ (i.e. dev tricked himself agreeable to him), were in both collocations the verb maintains its basic meaning of ‘entice. In Al-Hāwī fi Tafsīr Al-Qur’ān, the /sawwala/ is defined as /swl/ (i.e. to make unagreeable action agreeable and its basic meaning producing an open collocation. On this basis, the verb /sawwala/ scores a mark in this criterion.

In Ra’d (2009) lists examples of the nouns that collocate with the verb /swl/, the node of the /swl/ /swl/ (i.e. love penetrates his heart) and /swl/ (i.e. love penetrates his heart), were in both collocations the verb maintains its basic meaning producing an open collocation. On this basis, the verb /swl/ scores a mark in this criterion.
its collocant the abstract noun /huban/ producing a semi-restricted collocation. On this basis, the verb /JaYafa/ scores two marks in this criterion.

In (52) /qa.la /dqYa-thu /hlaemin wamæ nahnu bita'wilil /hlaemi bif'aelim:n /, the node of the candidate metaphor is the noun /hlaemin /Acabat /dqYa-thu/ and its span on both sides is /qa.la/ on the right, and /hlaemi/ on the left. The span form is (R1, L3) (i.e. one lexical item to the right and three lexical items to the left), where the cooccurrences are the immediately adjacent lexical items, often referred to as bigrams. Thus /Acabat /dqYa-thu/ would be a bigram cooccurrence of the pair /hlaemin wamæ nahnu/. Al-Mu'djam Al-Wasit (2004) lists examples of collocants with the noun /Acabat /dqYa-thu/ as follows: /fafa'ah fala /Balijatu/ (i.e. one disaster following another and /Balijatu fa-lat /xara:/ i.e. one disaster)

In (53) /Qa.alikî iljaf/la /Qa:lan /lanatun bi /awannahala: /lae /jahdi qaidal xa:n'ini:/, the node is /jahdi qaidal/ and its span on both sides is /lae /jahdi/ to the right, and /Qa.alikî iljaf/la /Qa:lan /lanatun /i.e. one disaster)

In (54) /na bi /Qa:l /xar /Qa:lan /lanatun /dara'侂a /Qa:lan /lanatun /i.e. one disaster)

In (55) /na bi /Qa:l /xar /Qa:lan /lanatun /dara'侂a /Qa:lan /lanatun /i.e. one disaster)
of competitiveness), and روح النبي /ruḥ innnabī / (i.e. alcohol). In all these previous occurrences of the noun روح النبي /ruḥ in collocation with different lexical items, the noun روح /ruḥ acquires a meaning different from its basic meaning. In the collocation روح الجامع /ruḥ aldʒamaːḥaː, the noun روح /ruḥ does not mean ‘soft wind’; it means the feeling or the sense of belonging to a team or group. The noun روح /ruḥ in the restricted collocation روح القدس /ruḥ ilqudus refers to ‘Angel Gabriel’ (peace be upon him). In the collocations روح المناقضة /ruḥ ilmunafasah and روح النبي /ruḥ innnabī the noun روح /ruḥ denotes ‘the sense of competitiveness’ in the former and ‘alcohol’ in the latter. In a similar way, the noun روح /ruḥ in the semi-restricted collocation روح الله /raḥul laḥahi acquires an abstract meaning of ‘Allah’s Mercy’. On this basis, the noun روح /ruḥ scores two marks in this criterion.

In12:107 لَأَلْهَيْنِي أَسْأَلُوهُ ثَانِيَةً مَّنْ عَذَابَ الْأَمْرِ أَنْ أَتَّقِنَ أَنْ نَأْتِيَهُمْ غَاشِيَّةً، نِّيَاباً عَلَى أَنْ كُنُواُ تَأْتُونَهُمْ مِنْ قَبْلِ الْمُثَلَّاتِ ۗوَإِنَّ رَبَّكَ لَذُو مَغْنِيٍّ حَيْثُ يُؤْمِنُونَ، لَنَأْتُوهُمْ غَاشِيَّةً أَفَأَمَّنُواْ أَن تَأْتِيَهُمْ غَاشِيَّةً؟

In13:5 وَإِنْ تُغَفِّقُ فَقُولُواْ أَنّاُ كَثِيرُونَ لَا لِحَقِّ خَيْبَةٍ أُولُواْ الْأَخْطَارُ فِي أَفْتَاحِهِمْ أَوْلُواْ أَظُلُّ الْطَّيْرَانَ، حَتَّى يُؤْمِنُواْ أَنّاُ كُنُواُ تَأْتُونَهُمْ غَاشِيَّةً، لَّا حَيْثُ يُؤْمِنُونَ. Ψ

In13:6 وَيَسْتَغْفِلُونَ بِالْبَيْنَةِ فِي الْحَسَنَةِ وَهُمْ خَالِدُونَ قَبْلَ الْحَسَنَةِ وَقَدْ خَلَتْ مِنْ قَبْلِهِمْ الْمَثَلَّاتُ ۗوَإِنَّ رَبَّكَ لَذُو مَغْنِيٍّ حَيْثُ يُؤْمِنُونَ.
acquires the meaning of 'passed' to refer to Allah's punishment previously inflicted upon previous nations. This results in "semantic inappropriateness" between the verb خَلَت /xalat/ (i.e. pass) and its collocant the prepositional phrase من قبلهم /min qablihuma/ (i.e. before them) producing a restricted collocation. On the basis of the above, the lexical item خَلَت /xalat/ scores three marks in this criterion.

In 13:8 /ۚٓاَللهُ يَعْلَمُ مَا تَطِيعُ الْأَزَّازُ وَمَا تُزَادُّ وَكُلُّ شَيْءٍ عِلْدَةٌ بِمَيْدَانٍ (the word is the verb تَعْيِضُ /ta'iyidu/ i.e. fall short and its span on both sides is (R1, L2) (i.e. one lexical item to the right side and three lexical items to the left side of the node). Al-Mu'джam Al-Wasit (2004) lists examples of the lexical items that collocate with the verb تَعْيِضُ /ta'iyidu/ as follows: خَذَلَ الْمَاءِ (i.e. the water decreases) /Ya'uefa Imad (i.e. noble people are getting fewer and mean people are getting more). However, in the collocation خَذَلَ الْمَاءِ /Ya'uefa Imad /means 'to hold back' (i.e. hold back his tears), so that the verb acquires a meaning different from its basic one. In this Qur'anic verse, the co-occurrence of the verb تَعْيِضُ /ta'iyidu/ (i.e. decrease) collocating with the noun المصدر /النَّاسِ / (i.e. shortening of the usual period of gestation or miscarriage) results in "semantic inappropriateness" between the verb and its collocant the noun المصدر /النَّاسِ / (i.e. wombs) producing a semi-restricted collocation. On the basis of the above, the verb تَعْيِضُ /ta'iyidu/ scores two marks in this criterion.

In 13:15 /ۚٓوَلَّهُ يَشْدُدُ مِنْ فِي السَّمَوَاتِ وَالْأَرْضِ طَوْعًا وَكَرْهًا وَظِلَالُهُمْ بِالْغُدُو ِ وَالْآصَالِ ۩۞ (the word is the verb يَسْجُدُ /yasjad/ and its span on both sides is (R1, L2) (i.e. noble people are getting fewer and mean people are getting more). However, in the collocation يَسْجُدُ /yasjad/ /means 'to hold back' (i.e. hold back his tears), so that the verb acquires a meaning different from its basic one. In this Qur'anic verse, the co-occurrence of the verb يَسْجُدُ /yasjad/ collocating with the noun المصدر /النَّاسِ / (i.e. noble people are getting fewer and mean people are getting more). However, in the collocation يَسْجُدُ /yasjad/ /means 'to hold back' (i.e. hold back his tears), so that the verb acquires a meaning different from its basic one. In this Qur'anic verse, the co-occurrence of the verb يَسْجُدُ /yasjad/ (i.e. shortening of the usual period of gestation or miscarriage) results in "semantic inappropriateness" between the verb and its collocant the noun المصدر /النَّاسِ / (i.e. wombs) producing a semi-restricted collocation. On the basis of the above, the verb يَسْجُدُ /yasjad/ scores two marks in this criterion.

In the first candidate metaphor in 13:17 /ۚٓۖىَنِزَّلَ مِنَ السَّمَاءِ مَاءً فَسَالَتْ أَوْدِيَةٌ بِقَدَرِهَا فَاحْتَمَلَ السَّيْلُ زَبَدًا رَابِيًا وَمِمَّا يُوقِدُونَ عَ ِ (الفيض)، the span form is (R2, L3) (i.e. three lexical items to the right side and three lexical items to the left side of the node). Al-Mu'джام Al-Ghani (2013) lists the nouns that collocate with the verb يَدُعُ /yadad/ as follows: يَدُعُ المُسْلِمُ /yadad-lmuslim/ (i.e. the Muslim lay down in prostrate) where the verb يَدُعُ /yadad/ maintains its basic meaning (i.e. prostrate). However, in the collocation يَدُعُ السَّفِينَة /yadad-lsafinah/ (i.e. the ship sailed into the wind), the verb acquires a meaning other than its basic meaning (i.e. sailed into the wind). In a similar way, the verb يَدُعُ /yadad/ in this Qur'anic verse acquires the meaning of ‘submission, humility and modesty to Allah the Almighty’ when it collocates with the prepositional phrase من في السموات والأرض /man fīsāwāt wa lārbi/ (i.e. whatever beings there are in the heavens and the earth), referring to the submission of all creatures to Allah the Almighty. This results in "semantic inappropriateness" between the verb يَدُعُ /yadad/ (i.e. prostrate) and its collocant من في السموات والأرض /man fīsāwāt wa lārbi/ (i.e. whatever beings there are in the heavens and the earth), producing semi-restricted collocation. Based on this, the verb يَدُعُ /yadad/ scores two marks in this criterion.
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(2.31) It has also another metaphorical meaning of something and ‘er into l item acquires a different figurative meaning of /人民银行/ (i.e. standing). A metaphorical meaning of the lexical item in the collocation /ال짜عقة/ wa albaṭil/a (i.e. Truth and falsehood) and /ibadah/ acquires the meaning of ‘show forth’ and ‘set forth’ as a result of collocating with the nouns /الذاكر/ wa albaṭil/a (i.e. Truth and falsehood) and /الباطل/ (i.e. Falsehood and falsehood) in the first candidate metaphor, and /إِلَى الْأَرْضِ/ in the second candidate metaphor producing restricted collocations. On the basis of the above, the two candidate metaphors score three marks each in this criterion.

In Arabic, "أَمَّنَ ٰهُوَ ق़َائِمَ عَلَىٰ كُلِّ شَيْءٍ مَا كَسَبْتُنَّ ۖ وَجَعَلَنَّهُ لِلَّهِ شُرَكَاءٍ ۖ فَلَسَمُوْهُ آمَنَواْ لَا يَعْلَمُونَ ۖ فِي الْأَرْضِ يَظَاهَرُونَ مِنَ الْعَذَابِ نَٰؤُمَٰنَ ۖ (20:133) (i.e. Truth and falsehood) and /إِلَى الْأَرْضِ/ (i.e. to the earth) and /إِلَى الْأَرْضِ/ to the right, and /إِلَى الْأَرْضِ/ would be a bigram cooccurrence of the pair .four (i.e. continuous). Likewise, the lexical item /إِلَى الْأَرْضِ/. is counted to find the degree of the metaphoricity of each candidate metaphor. Candidate lexical items that enter into restricted collocations are assigned 2 marks, those that occur within a semi-restricted collocation are assigned 2 marks, and those that occur within an open collocation are assigned a mark.

4. Results and Discussion

The following is an interpretation of the results of the proposed metaphor marker, namely that of the collocational criterion. In this criterion, the total number of occurrences of three lexical items within the specified span of lexical items, namely 3 lexical items on both sides, is counted to find the degree of the metaphoricity of each candidate metaphor. Candidate lexical items that enter into restricted collocations are assigned 3 marks, those that occur within a semi-restricted collocation are assigned 2 marks, and those that occur within an open collocation are assigned a mark.
The following table shows the results of investigating the collocational criterion in the corpus. The first column lists all candidate metaphors in the corpus. The second shows the type of collocation within which a candidate metaphor occurs and is subdivided into 3 types: R (restricted), SM (semi-restricted), OP (open) collocations, and the last column lists the degree of metaphoricity scored by each candidate metaphor in this criterion depending on the type of collocation it enters into.

**Table 1. Collocational Criterion of the Candidate Metaphors**

<table>
<thead>
<tr>
<th>No.</th>
<th>Candidate Metaphor</th>
<th>Collocational Criterion</th>
<th>Degree of Metaphoricity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP (open)</td>
<td>SR (semi-restricted)</td>
</tr>
<tr>
<td>1</td>
<td>(12:18) sauwalat lakum /musaw̱alat ḻakum</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>(12:30) yaYafahae hubban</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>(12:44) dYaθu ḫla̱min</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>(12:52) jahdi kaid</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5</td>
<td>(12:76) narfa darad\d'a#tin</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>(12:87) rauhil la#hi</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>(12:107) ta#tijahum ya#jiatun</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8</td>
<td>Candidate metaphor no. 30</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>9</td>
<td>(13:6) xalqin d'a#di:d</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>10</td>
<td>(13:8) ta#yi:du l#hæmu</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>11</td>
<td>(13:15) yas\d'ud u man fissama\æwi:ti wa l#rd</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>12</td>
<td>(13:17) jadribu la#hu lhaqqu wa alba#tila</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>13</td>
<td>(13:17) jadribu la#hu l#mææl</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>14</td>
<td>(13:33) qa#m u#n yala kullu nafsin</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>15</td>
<td>(13:41) l#ard nanqus#ha</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

The analysis of data shows that 1 of the candidates is an open collocation and, consequently, it is non-metaphorical; 8 are semi-restricted collocations and therefore are considered metaphorical, while 6 are restricted collocations and therefore are considered highly metaphorical. Of the three groups, the least metaphorical is the candidate of open collocation; those of medium metaphoricity are the 8 candidates of semi-restricted collocations, while the highly metaphorical are the 6 candidates that are of restricted collocations.
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From the above investigation of candidate metaphors in the corpus and the degree of metaphoricity achieved by each, it is found that metaphors of different degrees of metaphoricity share different features. Restricted and semi-restricted collocations denote non-basic meaning and range from metaphorical to highly metaphorical, while candidates of open collocations denote basic meaning and are non-metaphorical. The study showed that the “collocational criterion” hypothesized that what proved to be metaphorical from the candidates are “restricted or semi-restricted” collocations.

5. Conclusion

This work represents a novel direction for research on metaphor towards its computational identification. Linguistic metaphors used to be hypothesized only through restricted examples in short corpora. Following the analysis of findings and interpretations of results of the collocational criterion, the study proposed a software rule for the computational metaphor identification of metaphor in the (EGQ). The rule summarized the input for computationally identifying metaphors. This study attempted to propose a collocational criterion to be employed as a marker of metaphoricity toward a computational identification of metaphor. Notably, the development of large corpora of computer-searchable features enables researchers to accurately identify metaphors based on linguistic markers. The present study proposed that linguistic metaphor has different degrees of metaphoricity that are determined by the degree of its collocational strength (i.e. open, semi-restricted, and restricted collocation). It aims at proving that clusters of words could be computationally metaphorically mapped by using this criterion as a marker to be fed to software for the analysis of large corpora. Further studies should contribute to the corpus techniques that could be utilized to analyze other linguistic markers of metaphor.

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