

# Natural Language Processing for Arabic Metaphors: A Conceptual Approach

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**Abstract.** Metaphor is a literary device that allows us to express a concept in terms of another. In other words, it is based on similarity between concepts. Metaphorical expressions represent a great variety and they are used in conventional metaphors, which we reproduce and comprehend every day, poetic, novel, and Holy Qur'an. The use of metaphor is ubiquitous in natural language text and it is a serious bottleneck in automatic text understanding, and developing methods to identify and deal with metaphors is an open problem in Arabic natural language processing, especially Machine Translation. Due to the complexities involved in metaphor, it semantically influenced the meaning of machine-translated text. This makes metaphor an important research area for computational and cognitive linguistics, and its automatic identification and interpretation is indispensable for any semantics-oriented Arabic natural language processing. In this paper, we present the challenges of Arabic NLP of metaphors, which is very important in developing a computational NLP-based system for in Classical Arabic, Modern Standard Arabic and Dialect Arabic. We also highlight main problems that arises when translating an Arabic metaphor to another language.

**Keywords:** Arabic · Natural language processing · Metaphors · Holy qur'an · Modern standard arabic · Dialect arabic

## 1 Introduction

Arabic is the language of a large part of our planet. It is the main language in 22 countries, spoken by more than 250 million people (Shaalan 2014). It is also the second language in many Islamic countries because it is considered the spiritual language of Islam-one of the world's major religions. It is one of the official languages in the United Nations. However, separating it from another components of Arabic such as grammar, orthography, morphology, literature, writing, reading and conversation is necessary in order to facilitate a focus on its teaching and learning. The different NLP approaches for metaphor interpretation mainly depend on how the relation between the source and the target is viewed as a(n): analogy, novelty, or anomaly. Metaphorical expressions represent a great variety, ranging from conventional metaphors, which we reproduce and comprehend every day such as "السيارة دي لهلوبة بنزين" (This car consumes a lot of

petrol), to poetic, and novel such as "وليلٍ كمّوج البحر أرخى سُدولَه" (Like heavy waves, long nights 'pon me descend), and to Holy Qur'an (HQ) "وَجَعَلْنَا سِرَاجًا وَهَّاجًا" (and we placed a radiant lamp). In this paper, we present the Arabic metaphors that are in use in Holy Qur'an, Modern Standard Arabic (MSA) and Dialect Arabic (DA), which should be addressed by scholars interested in Arabic computational linguistics.

## 1.1 Definition of Metaphors

Metaphor is an expression used in everyday life in languages to compare between two dissimilar things. It signifies a situation in which the unfamiliar is expressed in terms of the familiar. In addition, it is a central concept in literary studies. A metaphor is sometimes confused with a simile especially for translators who may translate metaphor into simile or the vice versa. However, it is not too difficult to decide the case of simile because of the correlative existence of the simile markers like "as, similar to and like" which are not found in the metaphor (Eldin 2014).

Metaphors are figurative expressions that have specific cognitive and cultural significances. It has been generally contemplated and analyzed inside the schema of verbal discourse, scholarly works and humanistic studies (Eldin 2014). Lakoff (2008) indicates that no one can imagine any language without metaphor, so it has an inherent value in the use of any language. It is pervasive in everyday life, not only in language but also in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature.

It is agreed that a metaphor involves two concepts: a source concept, which is related to the words used metaphorically, also called the vehicle of the metaphor, and a target concept, which is what the metaphor is used for and tries to describe, also called the tenor of the metaphor (BEUST 2003).

All languages contain metaphors (so-called in Arabic الاستعارة, Al-Isti'ara or المجاز, Al-Majaz). A lot of them are used in their own language. Ahmed Yasen (2013) claims that "the metaphorical statement and the corresponding similarity statement cannot be equivalent in meaning because they have different truth conditions". There is a difference between a simile التشبيه, and metaphors (الاستعارة); a simile is where two things are directly compared because they share a common feature. The use of the prefix letter (ك) as or the word like (مثل) compares two words, but a metaphor compares two things directly without using them. It is more eloquent than simile. In translation, it exists in a source language (SL) such as Arabic and in a target language (TL) such as English. However, each language is created from the culture of their people in which the metaphor is different (Muttalib 2014).

In the linguistic view of metaphor, there are three components that form a metaphor. They have been referred to as topic (tenor), vehicle and ground. The topic is an entity referred to, and the vehicle is the notion to which this entity being compared. The base in which this comparison is being made from is called the ground. Knowles and Moon (2005) also identify these three components, they stated that metaphor consists of the metaphor (a word, phrase, or longer stretch of language); its meaning (what it refers to metaphorically); and the similarity or connection between the two.

In linguistics, the terms vehicle and tenor are replaced by ‘source’ and ‘target’, respectively. The commonality between the target (or tenor) and source (or vehicle) may be referred to as a ‘ground’ (Eldin 2014).

## 1.2 Types of Metaphors

Metaphor can function as a means of formatting language in order to describe a certain concept, an action or an object to make it more comprehensive and accurate.

Ahmed Yasen (2013) classifies metaphors, i.e. *isti’ara* (الاستعارة), into two groups:

1. Declarative metaphors (تصريحية, *Tasrihiyya*) in which, only the vehicle is mentioned and the tenor is deleted. In this type of *isti’ara*, the vehicle is explicitly stated and used to make a comparison between two different concepts that share a feature or a property in order to reveal the senses. Declarative Metaphor is also considered as a decorative addition to the ordinary plain speech. It is also used at certain times to achieve aesthetic effects (ibid). For example, in Arabic language one might say (غزالة, *gazalleh*, a deer) instead of saying (a beautiful woman), which is the vehicle in a metaphor based on the similarity between this animal and the person in terms of beauty and elegance.
2. Cognitive Metaphor (مكنية, *Makniya*) in which, only the tenor is mentioned and the vehicle is deleted. In this type of *isti’ara*, the vehicle is only implied by mentioning a verb or a noun that is always accompanies it. The Cognitive Metaphor is used as a means of formatting language in order to describe a certain concept, an action or an object to make it more comprehensive and accurate. In this case, it focuses on the denotation rather than the connotation of the metaphor that addresses the receptor in order to highlight its cognitive function.

Another classification of metaphor is that of Newmark (1988:105-113) which includes six types of metaphors: dead, cliché, stock, adapted, recent and original.

## 2 Arabic Language

### 2.1 Classical Arabic

Classical Arabic is the language of the Qur’an. The Quran is held by Muslims to be a single-authored text, the direct words of God (Allah), conveyed by the angel Gabriel to Mohammed 1355–1378 years ago, and later transcribed verbatim to be used as the sole authoritative source of knowledge, wisdom and law. “أَنْزَلْنَاهُ فَرَأَانَا عَرَبِيًّا لَعَلَّكُمْ تَعْقِلُونَ إِنَّا”، “We have sent it down as an Arabic Qur’an, in order that you may learn wisdom”.

### 2.2 Modern Standard Arabic

Modern Standard Arabic (MSA) is the official Arabic language nowadays. It is either written or spoken without any difference in the form. MSA is the language of literature

and the media; books, newspapers, magazines, official documents, private and business correspondence, street signs and shop signs – all are written in Modern Standard Arabic. MSA has been developed out of Classical Arabic, the language of the Quran. During the era of the caliphate, Classical Arabic was the language used for all religious, cultural, administrative and scholarly purposes. The linguistic features for this holy book provided unique aspects to MSA from literary, structural and stylistic points of view. MSA omits some classical grammatical constructs, has a stricter word order, uses a simpler numeral system, and obviously includes some more recently coined or borrowed words (Diab and Habash 2014).

### 2.3 Dialect Arabic

Tongues are the essential type of Arabic utilized as a part of all unscripted talked classifications: conversational, television shows, interviews, and so on. Dialects are progressively being used in digital media like newsgroups, weblogs, discussions and the like. Different countries such as Syria, Lebanon, Jordan, Palestine, Gulf and Egypt though uses Arabic, but in reality they all are differ in dialects. Researchers need to consider this as a major fact and should not assume if a system is designed for Arabic dialect in Syria, then the same could benefit Morocco. Dissimilitude dialect is seen in terms of the variations from one another, which could be phonologically, lexically, morphologically, and linguistically; many sets of variations are commonly muddled. In unscripted circumstances where spoken MSA would typically be required (e.g. television shows on TV), the users more often than not depend on rehashed code-exchanging between their tongue and MSA, as almost all local speakers of Arabic cannot create supported unconstrained talk in MSA (Habash and Rambow 2006), (Diab and Habash 2014). For Example the sentence “how are you?” in different dialect: Egypt dialect “ازايك” (azyk), in Gulf “شو اخبارج” (shw akhbarij), in Syria and Lebanon “كيفكن” (kifakun) and in Jordan and Palestine “كيفكم” (kayfakum) or “شيفكم” (shayfkum).

The following is only one of many that covers the main Arabic dialects (Habash and Rambow 2006):

- **Gulf Arabic (GLF)** includes the dialects of Bahrain, Kuwait, Qatar, United Arab Emirates, Saudi Arabia, and Oman. It is the closest of the regional dialect to MSA, perhaps because the current form of MSA evolved from an Arabic variety originating in the Gulf region
- **Iraqi Arabic (IRQ)** is the dialect of Iraq. In some dialect classifications, Iraqi Arabic is considered a sub-dialect of Gulf Arabic; though it has distinctive features of its own in terms of prepositions, verb conjugation, and pronunciation.
- **Levantine Arabic (LEV)** includes the dialects of Lebanon, Syria, Jordan, and Palestine. It differs somewhat in pronunciation and intonation, but are largely equivalent in written form; closely related to Aramaic.
- **Egyptian Arabic (EGY)** covers the dialects of the Nile valley: Egypt and Sudan. It is the most widely understood dialect, due to a thriving Egyptian television and movie industry, and Egypt’s highly influential role in the region for much of 20th century.

- **Maghrebi** Arabic covers the dialects of Morocco, Algeria, Tunisia, Mauritania, and Libya. It is a large region with more variation than is seen in other regions such as the Levant and the Gulf, and could be subdivided further, even though it is heavily influenced by the French and Berber languages.

Socially, it is common to distinguish three sub dialects within each dialect region: city dwellers, peasants/farmers and Bedouins. The three degrees are often associated with a class hierarchy from rich, settled city-dwellers down to Bedouins. Different social associations exist as is common in many other languages around the world.

### 3 Metaphors in Arabic

#### 3.1 Metaphors in MSA

Metaphors are of great importance for all aspects of life, newspapers, TV, Magazines, Internet news...etc. This applies, in particular, to politics, since politics and political discourse are domains of high abstraction and complexity, and metaphors can provide ways of simplifying complexities and making abstractions accessible, "Politics without metaphor is like a fish without water" (Torlakova 2014). Metaphor (and figurative language) may heavily influence not only people's general perceptions of reality but also impact or manipulate their attitudes, ideas and value systems. News is a representation of the world in language; because language is a semiotic code, it imposes a structure of values, social and economic in origin, on whatever is represented; and so inevitably news, like every discourse constructively patterns that of which it speaks. News is a representation in this sense of construction; it is not a value-free reflection of facts (Torlakova 2014).

For instance, "طار الخبر في المدينة" (the news flew in the city) there is (isti'ara makniya) in which the news which is the tenor is likened to a bird flying in the city which is the vehicle and absent in the sentence. It means that the news spread quickly in the city as a bird flying in the sky very fast. Another examples in the poem: the face of the moon *وجه القمر* and the hand of the fate "يد القدر". Where the metaphors are the expressions temporarily created by authors or speakers, which can inspire readers or audiences rich imagination; rained pearls and watered flower "أمطرت لؤلؤا وسقت وردا" that means tears as a pearls and cheeks as red flowers.

#### 3.2 Metaphors in Holy Qura'n

The Quran uses a lot of metaphors and figurative language. Throughout the history, different critics have rarely defined this word alike (تشبيه، tashbeh). The first who is known to have used the term Al-majaz is Abu Ubayda in his book, "Majazal-Quran". However, he did not mean by that the counterpart of haqiqa and figurative language. He mostly uses the word in the formula: "A, its majaz is B", where A denotes the Qur'anic word or phrase and B its "natural" equivalent. In fact, Ubayda was concerned with the first meaning of the term "majaz" which means 'explanatory re-writing' in 'natural' language, of idiomatic passages in the Scripture, while the second sense of

“majaz” is figurative language which was developed later. In his Majaz alQur’an, Ubayda does not define majaz, but at the beginning of his work he does give a list of thirty nine cases of deviation from the ‘natural’ language that can be found in the Qur’an (Alshehab 2015). The following is an instance of the word “آية” Ayah from Qur’an which is interpreted as a metaphor; a device for presenting a concept.

(وَأَيَّةٌ لَهُمُ اللَّيْلُ نَسْلَخُ مِنْهُ النَّهَارَ فَإِذَا هُمْ مُظْلِمُونَ)

“The night also is a sign unto them: we withdraw the day from the same, and behold, they are covered with darkness” (Qur’an: Surah Yasin, Verse: 37). Here the tenor (المستعار له) is the appearance of the day after the darkness of the night; the vehicle (المستعار منه) is the appearance of something or an animal after its skin has been pulled off. To strip is “to remove a layer or layers of coverings, clothes, ... from sth” (Hornby 1995). The word (يسلخ) use the word withdraws where its meaning is to move away something. Despite the words strip & draw forth are more compatible to the Arabic word but using withdraw gives a metaphorical sense of meaning, i.e. when the day comes, an army of darkness will withdraw (Ahmed Yasen 2013).

Example

(وَإِخْفُضْ لَهُمَا جَنَاحَ الذَّلِّ مِنَ الرَّحْمَةِ وَقُلْ رَبِّ ارْحَمْهُمَا كَمَا رَبَّيَانِي صَغِيرًا)

“HE sends down out of heaven water, and the wadis flow each in its measure, and the torrent carries a swelling scum.” (Qur’an: Surah Al-Ra’d, Verse: 17). One of the beautiful metaphors in Qur’an, in this ayah, the expression رَبَّيَا رَابِيَا is the vehicle being the main figure of speech utilized. The tenor, as clarified in the ayah itself, and confirmed by common interpretation (tafaseer such Ma’arifur Quran, is Falsehood (actually, false beliefs) (Alshehab 2015).

Another metaphor in the verse:

(لَا تَعْمَى الْأَبْصَارُ وَلَكِنْ تَعْمَى الْقُلُوبُ الَّتِي فِي الصُّدُورِ)

IT IS not the eyes that are blind, but it is the hearts in the bosoms, that are blind. (Qur’an: Surah Al-Hajj, vese 46). It shows two absolute metaphors. Heart is a well-known idiomatic reference to ‘sense’, ‘affect’, and ‘feeling’. Blindness is also a rather common representation of the state of senselessness, lack of insight, and affective insensitivity (Al-Ali et al. 2016).

Another metaphor in the verse:

(وَإِخْفُضْ لَهُمَا جَنَاحَ الذَّلِّ مِنَ الرَّحْمَةِ وَقُلْ رَبِّ ارْحَمْهُمَا كَمَا رَبَّيَانِي صَغِيرًا)

“And, out of kindness, lower to them the wing of humility, and say: My Lord! bestow on them they Mercy even as they cherished me in childhood.” (Qur’an: Surah Al-Isra’a, Verse 24). The Arabic metaphor here is embedded in the wing of the bird (جناح الطائر). The wing is used in Arabic as a metaphor in many expressions just as in English language. The far meaning here is evidence in obeying our parents and to be humble with them, saying nothing to annoy them. Their rendering meets the Arabic interpretation in (Al-Jalalain) من الرحمة لرفقتك عليهما “leniency to them the wing of humility and forbearance upon them”.

The Qur'anic text is a linguistic miracle and was intended to challenge Arabs who are fluent in classic Arabic analogy, and what makes the Qur'an a miracle, is that it is impossible for a human being to compose something like it, as it lies outside the productive capacity of the nature of the Arabic language. The productive capacity of nature, concerning the Arabic language, is that any grammatically sound expression of the Arabic language will always fall within the known Arabic literary forms of prose and poetry. All of the possible combinations of Arabic words, letters and grammatical rules have been exhausted and yet its literary form with metaphors have not been matched linguistically. The Arabs, who were known to have been Arabic linguists par excellence, failed to successfully challenge the Qur'an (Mohaghegh and Dabaghi 2013).

### 3.3 Metaphors in Dialect Arabic

Arabic dialects, collectively henceforth Dialectal Arabic (DA), are the day to day vernaculars spoken in the Arab world. The pervasiveness of metaphor expressions in day-to-day speech. The Arabic language is a collection of historically related variants, that live side by side with Modern Standard Arabic (MSA). As spoken varieties of Arabic, they differ from MSA on all levels of linguistic representation, from phonology, morphology and lexicon to syntax, semantics, and pragmatic language use. The most extreme differences are at the phonological and morphological levels. We can see the difference in meaning with the use of the word white in metaphor expressions. For example, the expression سامي قلبو أبيض "Sami's heart [is] white" expresses that Sami is a good person, whereas the expression "كذبة بيضة" "a white lie" means a lie which is "honest and harmless", respectively. Another example is the praise with the word "donkey" in the expression سامي حمار شغل "Sami is a donkey at work" which means "Sami is a very patient and hard worker". The same as the donkey in his patience and hardworking. Describing a person as donkey in Arabic is very offensive which has meaning such as foolish or stupid. In dialect metaphors, we usually use the bad words (bad expressions) to express a good adjective and the vice versa.

Dialect Metaphors expressions are day-to-day speech, that we are using all the time (Biadisy et al. 2009):

- **Arguments** "مافيك تدافع عن موقفك" (You cannot **defend** your position), the word "تدافع" (defend), it must be for something like country, building. We consider the person in the argument with us as an opponent and we attack his position. Another example, "حكيو صدمني", His speech shocked/blew me
- **Ideas and Speech are Food and Commodities:** "أفكاره لذيذة وحلوة" (His ideas [are] tasty and sweet), it means his ideas are good, while "أفكاره بلا طعمه" (his ideas [are] without taste) it means not useful. Another example "حط الموضوع على نار هادية" (He put the subject on a low fire), it means work on it slowly without a rush. Also "أكل الكتب أكل" (He ate the books), it means he studied the books thoroughly.
- **Time** "إجا وقت الجد" (the time of seriousness has come), it means it is the time to work hard and be serious. Another example "راح آذار" (March went away), it means March ended. Also "الابواب" "رمضان صار على" (Ramadan has reached the doorsteps) it means Ramadan month will start soon.

- **Times are location** "طلع فوق التسعين" (He stepped over ninety), it means his age more than ninety, and "العمر الو حدود" (Age has limits), it means each age period has capabilities.

The dialect metaphors are difficult to understand and comprehend, unless we are familiar with them and we are from the same culture with the same dialect, as each country has its own metaphor dialect.

## 4 Arabic Metaphors in Natural Language Processing

In general, there is an agreement that a metaphor involves two concepts: a source concept, related to the words used metaphorically, also called the vehicle of the metaphor, and a target concept, which is what the metaphor is used for and tries to describe, also called the tenor of the metaphor. This is best illustrated by examples. In Example (1):

"طار الخبر بالمدينة" (the news flew in the city).

The source of the metaphor is the action of flying, and the target might be the description of the news. Arabic NLP approaches for metaphor interpretation are mainly different in the views of the relation between the source and the target concepts: as an analogy, as a novelty, or as an anomaly. This relation is mostly viewed as an analogy. Thus, interpreting a metaphor requires deeply structured knowledge representations in order to trace back and describe the analogy between concepts. The relation between the source and the target is viewed as a novelty: it is not a pre-existing similarity but one created by the existence of the metaphor. Thus, interpreting it requires the dynamic selection and transfer of knowledge from the source domain to the target domain. Metaphor may also be viewed as a semantic anomaly. In Example(1), there is an anomaly if one considers that "flying" does not normally apply to unphysical thing such as the news, but on physical objects such as a bird. Metaphors are not always anomalies, and the vice versa. In Example (2):

"كلامو قتلني" (his talk killed me)

There is no anomaly, nonetheless "قتلني" (killed me) may be viewed as metaphoric. Only contextual information can help for disambiguating the whole sentence. It is not necessary to focus on relation between the source and the target to interpret metaphors. The meaning of a metaphor can be interpreted and represented by a multi-dimensional vector, exactly like other meanings in the Latent Semantic Analysis approach (BEUST 2003).

Automatic processing of metaphor can be clearly divided into two subtasks: metaphor recognition, and metaphor interpretation. The Metaphor recognition distinguishing between literal and metaphorical language in text. Whereas, the Metaphor interpretation (identifying the intended literal meaning of a metaphorical expression. Both of them have been repeatedly addressed in NLP (Shutova 2010).

The Arabic NLP community has been especially interested in analyzing text-based inputs and outputs, primarily because computers readily accept text inputs in standard

orthographies, not inputs in a phonetic alphabet (without special provision). Using text inputs is also standard practice in linguistics among those who study syntax, semantics, pragmatics, and discourse theory. NLP is complementary to and has much to contribute to the success of speech recognition, speech synthesis, and handwriting recognition technologies, but, from the NLP point of view, these are extended capabilities. Consider the following questions: What do we mean by understanding when we talk of language understanding? Can Arabic NLP understand the metaphors? What would it take to convince us that our computer understands Metaphors language? It is hard to answer precisely, since there is no exact formulation of what we mean by ordinary human understanding of language (Hoard 1998).

#### 4.1 Machine Translation for Arabic Metaphors

Machine translation (MT) is simply defined as the translation of human languages, such as English and Arabic, using the area of information technology and applied linguistics. In Arabic language, machine translation is bound to face many problems in producing meaningful coherent translations between Arabic and English language. When evaluating the output of MT, the transferred meaning is the most significant point of focus. Semantics is a very important aspect in translation both as a theory and application; thus, it requires our utmost attention. Besides, Arabic Language is also challenging in that it is a derivational or constructional language rather than a concatenative one. Arabic has relatively free word order, mainly, nominal Sentence Subject-Verb-Object (SVO) and Verbal Sentence Verb-Subject-Object (VSO) (Shaalan 2010). As an example of a sentence that has the same meaning but differ in word order, consider the verbal sentence “طار الخبر في المدينة” (flew the news in the city) versus the nominal “المدينة الخبر طار في” (the news flew in the city).

Metaphor is common in the Qur’an, but its use in scripture takes on a special meaning because of the creedal presumption that the entire Qur’an is the direct articulation of God. The classical scholar Ibn Qutaibah also thought that no one could accurately translate the Holy Quran (HQ) into another language because he felt that there is no other language that can capture as many metaphorical patterns as Arabic. Holy Quran is considered the most rhetorical holy book; it is a challenge for the whole world. Allah sent His HQ to His Messenger Profit Mohammed with an Arabic tongue, it is full of rhetorical styles that cannot be compared to any holy scripture as Allah said in (Qur’an: Surah AL Baqarah, Verse: 23):

”وَإِنْ كُنْتُمْ فِي رَيْبٍ مِّمَّا نَزَّلْنَا عَلَىٰ عَبْدِنَا فَأْتُوا بِسُورَةٍ مِّن مِّثْلِهِ وَادْعُوا شُهَدَاءَكُمْ مِّن دُونِ اللَّهِ إِنْ كُنْتُمْ صَادِقِينَ“

that might be translated as: produce a surah of the like thereof and call your witnesses besides Allah, if you are truthful. Translation of the Qur’an has always been a problematic and difficult issue in Islamic theology. Since Muslims revere the Qur’an as miraculous and inimitable (i’jaz al-Qur’an), they argue that the Qur’anic text should not be isolated from its true form to another language or form, at least not without keeping the Arabic text along with (Fatani 2006). To build a machine translation for the Holy Quran we have to adhere, to one of the four Sunni Schools Shafi’i, Hanafi, Maliki, and Hanbali, and the rule based approaches will be based on them.

MSA has a wealth of resources in terms of morphological analyzers, disambiguation systems, annotated data, and parallel corpora. In comparison, research on dialectal Arabic (DA), the unstandardized spoken varieties of Arabic, is still lacking in NLP in general and metaphor Machine Translation in particular. Translating MSA is much easier than DA. MSA has a standard orthography and is used in formal settings; while DA does not have standard orthographies, and at the same time it has an increasing presence on the web. For example the translation of the sentence *قلبه توقف* using google translator produces “His heart stopped”, but when we try this sentence in its Dialect Arabic form: *البر ونف* it gives “Albu refraining”, or an another form “*كليه وكف*” it gives “My dog and keeping”. The machine translation system either changes the meaning of the sentence completely or produces an output that has no meaning. The translation of metaphor is not an exception and likewise, we can get the same results. For example, the metaphor “*احمر وجه الفتاة خجلاً*” which means “the girl blushed away in shyness” can be expressed Dialect Arabic form as “*ألب وش البيت طماطمايه*”. When give both metaphorical sentences to google translator as input it produces the following English translation as output:

- Red girl's face in shame احمر وجه الفتاة خجلاً
- No translation ألب وش البيت طماطمايه

The first sentence is translated literally by google translate and; hence, is not correct. However, for the second one it does not produce any output.

To build an Arabic machine translation we have to follow the three different approaches of rule-based translation systems: direct, transfer, and interlingual (Abdel-Monem et al. 2009). Which one is preferred depends on the availability of the linguists with the required knowledge and background and/or a large tagged datasets for training and testing.

Metaphor holds a number of connotative meanings, and conveying these meanings is not an easy task for MT. The system should match the translation close to the source text’s connotative meaning. The problem of translating an Arabic metaphor to another language, is basically derived from finding a target language equivalent that reflects the meaning, effect, and image of the original. For example, in rule-based MT, we have to put rules of translation that match between words, with their indicates of simile “التشبيه” like in.

- Colours
  - red to blush in shyness
  - white to kindness and something good
  - black to darkness, night, and bad things.
  - Yellow to illness and weaknesses
- Vegetables
  - Tomato to shyness
  - Limon to illness
  - Watermelon to bigness
- Objects
  - Sun to shine
  - Moon to shine and beauty
  - Palm to tallness

## 5 Conclusion

The present paper has tackled the challenges of metaphor in the Qur'an, Modern Standard Arabic (MSA) and Dialect Arabic (DA) within the theoretical framework. Metaphor is an expression in everyday life in languages to compare between two dissimilar things. It signifies a situation in which the unfamiliar is expressed in terms of the familiar. All languages contain metaphors, and a lot of them are used in their own language. The use of a metaphor makes the reader clarify and define the relationship between object and image. Meanwhile, this process serves two purposes: first, it forces the reader to participate actively in the Qur'an, i.e. consider its message and follow its teachings. Second, it gives him knowledge about something he did not know or only partly knew by making it analogous to something he can imagine. Moreover, the concept of the metaphor as a means of transferring meaning continues to be its principal function in current linguistic theories. Therefore, if this is not done, we would not understand them. Thus, as we have seen, the linguistic creativity of the Qur'an is extraordinary. Dialectal Arabic (DA), are the day to day vernaculars spoken in the Arab world. Dialect Arabic metaphors show the pervasiveness of metaphorical expression in our daily speech to the extent it is sometime not easy to recognize them.

In the Arabic NLP of metaphors, we do not have to focus on the relationship between the source and the target concepts, we have to use a symbolic representation in order to provide an understandable Arabic metaphors, as the meaning of a metaphor can be interpreted and represented by a multi-dimensional vector, exactly like other meanings representation in the semantic analysis approach. Furthermore, the Arabic NLP of metaphors requires the same interpretation process as other meanings. It is especially important for translators and researchers in the field of translation, with particular emphasis on the translation of metaphor and simile in Arabic. This might need certain rules in both linguistic and cultural phenomenon especially that Arabic metaphor is not given special consideration and the study of metaphor in the context of machine translation studies has not, unfortunately, kept pace with the discoveries about the nature and role of metaphor in Arabic language.

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