ARABIC ROOT FORMS OF DEGREE ADJECTIVES AND COGNITIVE SEMANTICS

By

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Submitted in partial fulfillment of the requirements for the degree of

Master of Arts

Department of Cognitive Science

CASE WESTERN RESERVE UNIVERSITY

January 2020

CASE WESTERN RESERVE UNIVERSITY

SCHOOL OF GRADUATE STUDIES

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Abstract

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Morphological analysis is most often the first step of natural language processing. Difficulty in analyzing words from a lexical standpoint can be compounded in the Arabic language. This paper will model select Arabic adjectives of degree to examine their root form and how those words can be conceptualized differently based on differences in semantic knowledge, cognitive semantics and the symbolic thesis. These differences occur when compared to the same words modeled using the English language.

Introduction

Cognitive semantics is a field within cognitive linguistics that allows meaning to be developed between the word and the surrounding world. In standard linguistics, words can be examined as containing several different sub-systems, such as phonology or lexicon. Using a cognitive semantics approach, meaning is developed from organized mental representations.

The first thought one may have when seeing meaning being developed from the surrounding world and organized mental representations is that the language itself as well as the culture of the individual can affect how meaning is developed for the individual language speaker. While research into language and thought is an ever-expanding field, this research will focus on similarities and differences in cognitive semantics of a select amount of Arabic words that contain simple root forms where meaning can be derived from.

How meaning is developed is a major part of cognitive linguistics research. In his writing of Conceptualization, Symbolization and Grammar, Ronald Langacker discusses the role of conceptualization in language (Langacker 2017). One of these areas discussed is the background phenomena, such as categorization and metaphor, where a target domain is construed in relation to a source domain. We see this often in English, where there is a source and target domain, and the background information from that source domain is construed onto the target. An example of this in English is provided by Evans and Green (2008) using THE SURGEON IS A BUTCHER. English speakers can identify the background information of the source domains and apply those to a target domain:

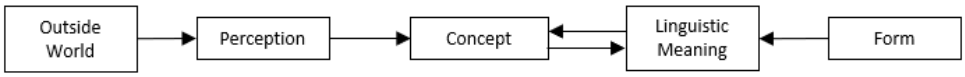
Source Domain to Target Domain
Butcher – Surgeon
Cleaver – Scalpel
Animal Carcass – Human
Dismembering - Operating

At the most basic level, we see that the background information associated with words can interpret meaning by having a target domain instantiate a conceptual frame that exists. As Langacker points out, this is used within political speech, where even if the behavior is the same, there is a difference in conceptualization when certain conceptual frames are activated. When someone gives money to a candidate, they can be gaining access (positive or neutral connotation) or buying influence (negative connotation).

This paper is going to look at the previous research in cognitive linguistics involving cognitive semantics and conceptualization and apply that to a language models of select Arabic adverbs. The difference with using Arabic words, however, when looking at how background information is instantiated, is the Arabic root form of these words. Each Arabic adverb has a three-letter root that has a defined meaning that the adverb is built from. Meaning is developed beyond just the word itself. Meaning is embodied in experience, and how this reality is presented from foreground and background information can be construed using metaphor, categorization and metonymy among others (Janda 2010).

Mission

Language is the expression of thoughts and ideas, and these expressions are made up of forms that have meaning. These forms can be written words, speech or symbols, all of which contain meaning. This is the basis of the form-meaning pairing:



Expanding on meaning into other languages and how form and meaning is developed was initially introduced as linguistic relativity, or commonly as the Sapir-Whorf hypothesis, which states that "The structure of anyone's native language strongly influences or fully determines world-view he will acquire as he learns the language (Brown 1976)." Initial studies tended to support the idea that semantic systems can vary, and many were tested in the semantics of color, to include Ray (1952), Conklin (1955), Bohannan, Gleason (1961) and Berlin and Kay (1969).

Near the end of the 1960's, linguistic research began to disagree with linguistic relativity in favor of universal grammar and the belief that differences in languages were separate from cognitive processes (Chomsky 1965). This would, however, change again in the 21st century beyond research from linguists as studies on communication, culture and beliefs between American English and Arabic-script language speakers became more involved, as the U.S. government and military began publishing their own manuals and research based on language and thought.

Recent studies in Arabic and Persian semantics have focused on systems beyond form meaning pairs to include embodiment (Maalej 2007, 2008), translation semantics (Osman 2015, Kayyal and Russell 2013), conceptualization (Al-Murshidi 2013), and the

Arabic root system (Al-Kaabi 2013). This recent research has agreed on the common theme that there are differences in meaning between languages, but the reason is still not fully agreed upon. These differences can be because of cultural differences, such as the associations an American would derive from the word 'bachelor' versus that of a conservative religious society. The differences can also be from how society views a word or action, as the words 'fear' and 'shame' can be related depending on the society. Important to this study is the Arabic root system, something that clearly defines the grammar of Arabic from other languages.

This paper will examine the cognitive semantics of a select amount of degree adjectives in Arabic and how these words are modeled using the Arabic root structure. The purpose of using degree adjectives in that much like the recent research in Arabic script languages, words are used that have a greater chance to be conceptualized differently based on their ambiguous nature. Using a three-consonant Arabic root, the larger word's semantics and conceptualization can then be mapped out. Using the root can provide a similar format to Langacker's study of profiling, where an individual word evokes an array of a conceptual content (Langacker 2004). The purpose is to examine differences in semantics and conceptualization between these Arabic and English words and further the current studies of language and thought that go beyond the very direct constraints linguistic relativity to include other areas of cognitive linguistics.

The Arabic Language

The Arabic language can be viewed as a language that is morphologically complex due in part to the numerous dialects and differences in the written versus spoken

forms. In the written form, Arabic has twenty-five consonants, three vowels and short vowels that are written as diacritic marks above and below the consonants. The usual form of Arabic writing omits these short vowels, since most Arabic speakers can read Arabic texts without the short vowels explicitly written.

The morphological structure of Arabic exists as a root composed of three consonants with letters affixed to the beginning, end or middle of the root. The root is where the word is given its base meaning. Arabic is classified as a phonetic language since there is one-to-one mapping between the letters that make up a word and how the word is pronounced, however, there is little punctuation, no capitalization, and changes in the vowel sounds depending on its place in the word (Farghaly 2009).

Review of Literature

In reviewing the literature on language and thought, two areas will be looked at. First, issues of meaning with translation between languages will discuss differences in word meaning, particularly looking at when the same word carries different connotations and conceptualizations across two languages. Second, how linguists have research putting thoughts into language will be discussed. Previous *empirical research in translation* focuses on how meaning can be misconstrued between different languages, cultures, etc., and the *research in language and thought* will move towards research that is closer to this paper's subject matter. This will focus on different areas on areas of cognitive linguistics such as mental representations and views of meaning.

In order to establish how meaning is conceptualized, language will be analyzed from previous work in cognitive linguistics, where linguistic structure is research by way

of systems such as perception and categorization, and not simply phonology and morphology. This comes from the underlying principles discussed in Ronald Langacker's 2004 work, "Form, Meaning, and Behavior: The Cognitive Grammar Analysis of Cognitive and Communicative Approaches to Linguistic Analysis," which looks at the conceptual bases of words. What this literature review and research will develop further is how Arabic words and their root forms give them a different conceptual base than their English counterparts, while still maintaining the underlying principles of Langacker's work.

Empirical Research in Translation

Cross-cultural differences exist in languages when speaking metaphorically. Many concepts are defined metaphorically and allow one experience to be understood through another type of experience. From this, conceptual systems will differ across cultures since experience is comprehended differently though conceptual metaphor (Lakoff and Johnson 1980). An example of this provided in Lakoff and Johnson's *The Metaphorical Structure of the Human Conceptual System* shows the metaphors used in English to conceptualize an argument using the conceptual metaphor ARGUMENT IS WAR. In American culture, this metaphor is widely used, such as:

ARGUMENT IS WAR metaphors:

1. He attacked my position
2. I demolished his argument
3. He shot down my argument
4. If you use that strategy, he'll wipe you out.

As Lakoff and John point out, it is not just through talk that ARGUMENT IS WAR, but we do in an argument is structured in war. We win and lose against an opponent, attack, defend and counter-attack. They further detail how this metaphorical concept of ARGUMENT IS WAR shapes how we understand arguments and what we do during an argument. Lastly, Lakoff and Johnson show how this structure can be implemented differently across cultures. If another culture discussed arguments in terms of a dance and not a war, they would view arguments differently, and important to the discussion of language and thought, they would carry them out and talk about them differently.

Translation issues continue to be studied, especially in areas where translation between two certain languages is common and does not always produce the expected result. Translation issues can include experience (Rivière 1971), context (Hanrahan et al 2015) and cultures and world views (Oklander 2011). Additionally, previous studies (Gentner, 1981; Van Hell & De Groot, 1998) have all supported the idea that translation of verbs was harder than nouns due to their ambiguity and that verbs tend to have a less direct meaning when translated over different languages. This meaning can also be affected by differences between two languages such as a lack of vocabulary, lack of media for linguistic development and metaphorical differences (Osman 2015).

This issue of a languages available vocabulary has also been looked at for decades. When comparing the semantics of Arabic and English, particularly with regards to translation, there are different factors theorized as to why Arabic-word meaning may appear vaguer than their English counterparts. These issues of translation were looked at as the Arabic language had to contend with a rapidly changing world that produced

numerous new words, usually from the leading language of international business, English (Shoulby 1951).

Language and Thought Research

A common question that results from the language spoken and the beliefs of the speaker is whether language influences thought. Different words and concepts have been looked at across languages and cultures to try and determine how different languages perceive different meanings. Time is a concept that should be consistent in meaning as unidirectional and continuous. This has been researched in metaphorical mappings from domains grounded in experience (Boroditsky 2000), differences in conceptualization (Slobin 1996), the dimension in which time is thought in (Scott 1989), and how a native language influences thought about abstract concepts (Boroditsky 2001).

One of the difficulties in this research is the inability for one to understand completely the culture and language of another, to include metaphor, abstract concepts and native language proficiency. Past experiments involved using poorly made translations between to different groups and language speakers that give malformed results (Bloom 1981) and finding discrepancies in the vocabulary that other languages actually use (Pullum 1991). Given these constraints, any attempt to create two identical scenarios with perfectly translated material across two languages can lead to results that are hard to interpret (Casasanto 2008, Slobin 2003).

Linguistic differences among languages are obviously real, not just in the structure but also in the depth and use of vocabulary. Arguments differ as to what the effect of language is on thought and cognition, whether the use of the language itself defines this, or the drastically different cultures where these languages are spoken.

Research has been conducted asserting that maintains the influence of culture in defining thought (Lambert 1973), while other modern theories has focused on the expansiveness of the English language and the unsuccessful attempts of English speakers to translate complex words into a language whose vocabulary does not yet expand into those complex areas (Osman 2015).

Perceptual information available in the world becomes a representation to the consciousness of an individual, known as a mental image (Evans and Green, 2006). These mental representations are produced by an individual's cognitive abilities processing this information in the outside world. Jackendoff (1983) described this individual meaning as a projected reality, which is a mental representation built by an individual human mind that is unique to their conceptual systems.

These mental representations defined in cognitive linguistics have been researched with Semitic languages, particularly looking at how Arabic words, which are born from a root system (usually 3-letters). The question asked by linguists with regard to Arabic mental representations is whether the mental lexicon of Arabic speakers contains words that are formed from roots with different operations, prefixes and suffixes, or if this mental lexicon is populated by the roots and morphemes. Using bilingualism on Arabic and another language has attempted to show that one individual can have two separate mental representations for each language they speak (Prunet et al 2000).

The focus of this research is on the semantic and grammatical structure of a language and how that effects conceptualization and meaning in different languages. There is another important aspect to take in consideration when looking at semantics,

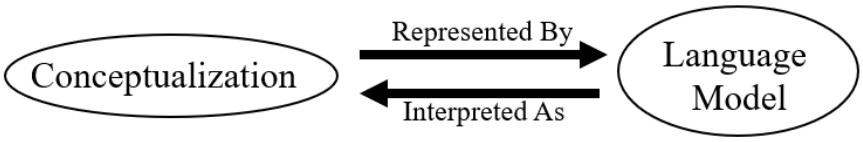
however, and that is the cultural aspect of abstract words, to include the use of metaphors. One of the most common abstractions in this is with time. Time differs in meaning across cultures, varying both in people's idea of what time means. In the West, time is usually a more rigid structure, where time is defined in exact terms (i.e. an appointment at 3:00 PM starts at 3:00 PM). Towards some eastern cultures, time tends to be a more relaxed concept, with defined times being a more general term on when an event will take place.

Method

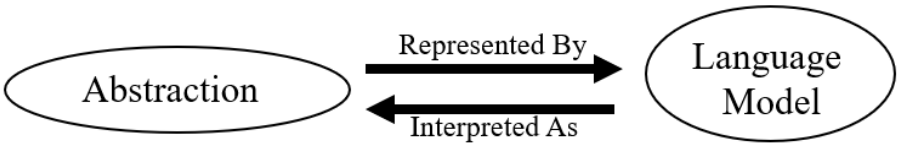
Nine different Arabic adverbs of degree have been examined to look at a root form of their encyclopedic view, particularly at how the root form can add to meaning construction. This will show that Arabic root verbs agree with the four basic assumptions of cognitive semantics: conceptual structure is embodied, semantic structure is conceptual structure, meaning representation is encyclopedic and meaning construction is conceptualization. In terms of identifying how language modeling, from a cognitive linguistics perspective, can show how Arabic adjectives of can be conceptualized differently through several different cognitive factors. These language models examine how Arabic words and their root forms align with previous research in conceptualization.

> ***Arabic Root Form:*** *A 3-letter form that Arabic words are derived from. There are approximately 5,000 to 6,500 lexical roots in Arabic. (Ryding 2005)*

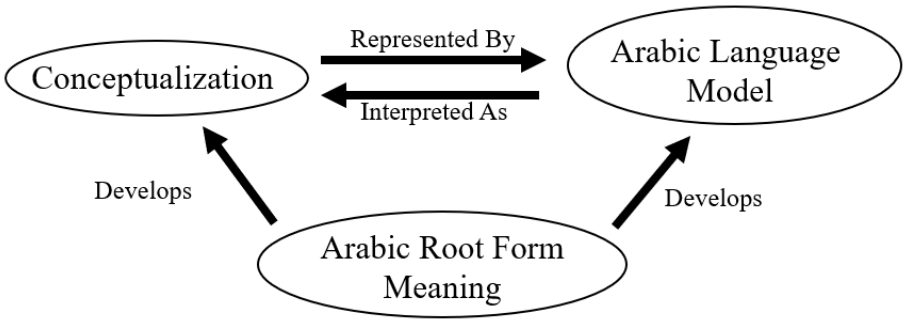
At the most basic level of modeling con conceptualization, we see the processing of a word and how that word is interpreted:



A language model showing conceptualization will show how conceptualization is represented using words and those words are interpreted/conceptualized (Guizzardi 2007).



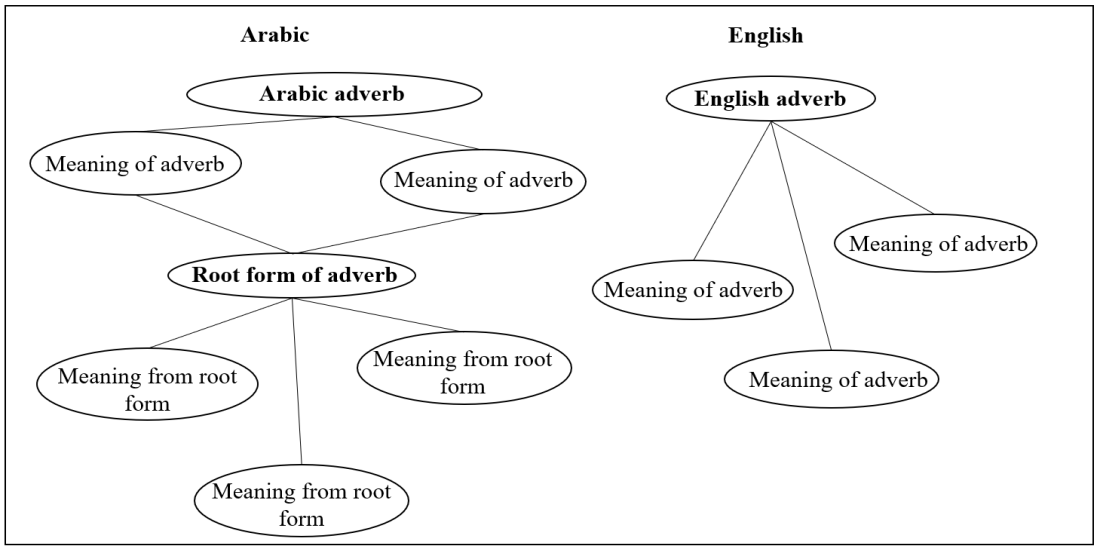
Abstract concepts can be represented in a similar fashion, where the abstract concepts are represented by words, and those words are interpreted into the abstract concepts.



When modeling Arabic words for conceptualization, the same factors of words conceptualizing meaning apply, but there is also the three-letter Arabic root word, which the Arabic words are developed and built from. This research will focus on the possibilities of that root form developing the conceptualization of meaning.

In the perspective of cognitive linguistics, there exists many different structures of conceptualization. These can include categories, frames, mental representations and cognitive models. When attempting to define meaning from adverbs and the root form, we look at the work on categorization from Ronald Langacker. In his research on categorization, he finds that cognitive categories have a different structure than standard linguistics categories. These cognitive categories do not have a specific boundary, and that membership into a category is not "all-or-nothing," which means that some members of a category may have a more central membership, whereas others are more peripheral. Additionally, "A given category is motivated by and organized around a prototypical member, to which all other members ultimately bear some relationship." This is the first area to examine when looking at Arabic root forms.

In order to model these root forms in an encyclopedic way, the format for the English and Arabic model will be discussed as follows:



Sample encyclopedic view of Arabic and English adverb with the root form modeled below the Arabic word

The Purpose of Adverbs of Degree. The reason for choosing adverbs of degree is that many adverbs in Arabic take a modified form of the root and add an 'ān' sound to the end of the word. This produces an adverb in Arabic. An example is the root ka-the-ra which is the root form for words dealing with much, many, increasing, multiplying and so on. A slight modification to the root form, along with the addition of 'ān' to the end of the word produces the adverb 'frequently.

Arabic Word	**Pronunciation**	**Definition**	**3-Letter Root**
كَثِيْرا	kāṯirān	Frequently	ك-ث-ر

The purpose of using adverbs of degree is that they provide an easy way to map root meaning in an encyclopedic form and show that Arabic words maintain the central assumptions of cognitive semantics, in particular that meaning representation is encyclopedic and that meaning construction is conceptualization.

Avoiding Abstract Words. It would be all too easy to show mistranslations between abstract words or concepts that don't mirror each other exactly across cultures and languages. As discussed in the literature review, there has been research in cross-culture conceptualization. These words certainly would not map evenly between Arabic and English, so instead, the focus is on adverbs of degree in order to present a basic encyclopedic view.

In cognitive linguistics, there have been different proposed theories of semantics. In the abstract, when analyzing conceptualization, we find conceptual domains, a body of knowledge

within our conceptual system that organizes related ideas and experiences (Evans and Green 2006). Lakoff and Johnson (1999) further examined conceptual systems and found that conceptual domains derive form the human experience and the behavior of objects, which can involve motion and proximity among other terms. An example of this in English is in words involving friendship, which resides in the domain of physical proximity, particularly where closeness is associated with friendship.

1. We are friends.
2. We are close.
3. We are not close.

The root form will show the basic, root meaning of the word and the differences in conceptualization between Arabic and English words.

Arabic Word	**Pronunciation**	**Definition**	**3-Letter Root**
حَقًّا	ha'ān	really	ح-ق-ق

Conceptual domains such as space and time contain a 'quantity' to the degree of their existence, which can be either continuous or discrete. This quantity can also be displayed in adverbs of degree, which can offer a quantity that gives a conceptualization that is either continuous or discrete. Consider the following sentences and their continuous degree of their conceptual domain:

1. He believes that.
2. He really believes that.
3. He really, really believes that.
4. He really, really, really believes that.

5. He truly believes that.

The adverb 'really' adds a degree that increases the certainty of the sentence and increases the degree to which the subject believes in the object. In English, there is no shortage of words that can be used to increase the degree to which the subject does the verb action to the object. The conceptualization of these adverbs all apply a degree to which the subject does the verb, implying degree only. They do not add to the reason for the belief, or whether the belief is rightful.

1. He certainly believes that.
2. He definitely believes that.

The Arabic word for really comes from the root word for 'truth,' which is used in words dealing with truth, rights, justice and achievement, among other areas. This can provide a different quantity to the conceptual domain, one that is discrete and not continuous. Truth is a discrete domain with only two choices, true or false. Justice can be continuous in its structure, but the conceptualization of justice is far different than that of 'really' or 'definitely.'

1. He justly believes that.
2. He rightly believes that.

Arabic Word	**Pronunciation**	**Definition**	**3-Letter Root**
دَائِمَا	dā'eemān	always	د-م-و

Another property to look at in conceptual domains is one of movement, which can be static or progressive. Much like the continuous or discrete quantity of the conceptual

domains, this property can change between translations of the same word from English to Arabic.

The property of progression can be defined as "quantity within this domain is made up of a sequence of distinct representations because it changes from one instance to the next." This can imply a repeated action being done on an object where the object does not change as a result of this continued action. Consider the following:

1. She always does that.
2. She continuously does that.

'Always' can refer to a static action that a subject does time and time again. Words derived from the word 'continue' imply a progressive action, one that is repeated over and over during the same instance. This progressive action is done repeatedly on an object, without any conceptualization as to how often the subject does that action over time. By using the word 'always' in English, we imply that the subject has done the action repeatedly in the past, and will do it again in the future.

1. She always ordered coffee.
2. She continuously ordered coffee.

These two sentences give a different conceptualization to the degree in which the coffee is ordered, where one is implied to happen in the past, present and future, and the other happens all in one instance.

Arabic Word	**Pronunciation**	**Definition**	**3-Letter Root**
إطلاقا	eetlā'ān	absolutely	ط-ل-ق

Root definition: This definition ranges widely, depending on form. This can include happiness, release, divorce and repudiation.

Using the world "eetlaqaa" in can be done in the same way in both English and in Arabic, such as in the sentence, "You absolutely must not go." The main difference between the two languages would be structure, where in Arabic the adverb is placed at the end of the sentence. However, the root for "eetlaqaa" can take on a wide variety of meanings, such as "telaqtu" (I got divorced) and "eteleqa" (to open, relax, liberate).

Arabic Word	**Pronunciation**	**Definition**	**3-Letter Root**
الثَّابِت	ālthābit	hard	ث-ب-ت

Root definition: firm, stationary, resist.

The root form from althaabet contains different meanings, to include set, reinforce, resist, demonstrate and verify.

Arabic Word	**Pronunciation**	**Definition**	**3-Letter Root**
فقط	fa'āt	just/only	ف-ق-ط

Root definition: Only, merely, …and that ends it. Used as a postpositive.

Using the adverb just or only in Arabic is done by adding faqat to the end of a sentence.

1. هذا الفيلم مخصص للقلوب القوية فقط

hatha al-feelm mek̲ṣeṣ al-'loob al-'weya fa'aṭ.

This movie is for strong hearts only.

2. يخدم هذا المكان واحد وعشرين وأكثر فقط

yek̲dim hatha al-mukān wāhed wa 'shreen wa akthir fa'aṭ.

This place serves twenty-one and over only.

When looking at the meaning provided in the context, it defines an in-group/out-group. In English, it also can be applied as an adverb in the same context as yet:

1. He likes the car, only he can't afford the payments.
2. She wants to attend class, only her schedule won't allow it.

In Arabic, sentences such as those will use a different word since faqat is defined from its root form as being used for the in-group/out-group descriptions. The sentences in Arabic would instead translate to:

1. إنه يحب السيارة ، في النهاية ، لا يستطيع تحمل المدفوعات.

ina yehub al-siyara fil-nihāya lā yesteṭi' teḥmel al-mudfe'āt

He likes the car, in the end, he can't afford the payments.

2. إنها تريد حضور الفصل ، في النهاية ، جدولها لن يسمح بذلك.

ina tareed ḥeḍoor al-feṣel fil-nihāya ğedoolehā len yesmeḥ biḏelek

She wants to attend class, in the end, her schedule won't allow it.

Arabic Word	**Pronunciation**	**Definition**	**3-Letter Root**
جدا	ğadān	very/much/too	ج-د-ا

Root definition: seriousness, earnest, eager.

Jadan is used commonly used to mean very or much ("I am very happy, very good, etc."), but the root contains a wide variety of meanings outside of just a modifier (The seriousness is understood, etc.).

Arabic Word	**Pronunciation**	**Definition**	**3-Letter Root**
تماما	tamāmān	completely	ت-م-م

Root definition: completeness, perfection, independent, precise.

The Arabic adverb for completely can be used in the same context as in English (It was finished completely) but the root expands beyond the meaning of just complete, to include perfectly and altogether.

Words that are developed from a root form can be used in the same way as their English counterparts while still having a different conceptual domain:

1. المجلس العسكري السوداني: الحكومة الجديدة ستكون مدنية تماما

al-meğles al-'skree al-soodānee: al-ḥekooma al-ğedeeda sitkoon medeena temāmān

Sudanese Military Council: The new government will be completely civilian.[1]

2. … والذي تمم تأسيسه في…

...wāleḏee temem tāseesa fee...

…which was founded in…[2]

Arabic Word	Pronunciation	Definition	3-Letter Root
كافية	kefeeyān	enough	ك-ا-ف

Root definition: equal, alike, adequate, suitable.

Kefeeyān can be used in a similar way to English (I've had enough, etc.). The root, however, expands beyond that initial meaning into the words appropriate, due and suitable.

Discussion

The Arabic root forms that these words are built from provide a different conceptual domain than their English counterparts. Work on how abstract concepts differ between languages have been conducted focusing on the cultural differences (Maalej 2014) to the actual neural responses in the brain (Wilson-Mendenhall et al 2013). What is shown in the research of Arabic and English words is a difference in conceptual domain in some of the words.

[1] Retrieved from https://ara.reuters.com/article/topNews/idARAKCN1RO12E

[2] Retrieved from https://sabq-sa.com/Ksa/post-3315275

It is important to note during these examinations of words and their root forms that we are looking to see differences in the conceptual domain of the root word and aren't seeking to expand the possible definitions of words that are translated to another language. Semantic differences and translation issues have been studied at length, showing differences between the same sentence translated into two different languages. What this research looks at are the concepts associated with the root words of a language that is vastly different from English (both in structure and the related culture of its speakers). The concepts associated with these words agree with what Lakoff wrote about concepts and different cultures, that concepts are not all universal, even the basic ones (time, space), but also, they are all not specific to every different culture (Lakoff 1989). These Arabic words, along with the other studies in Arabic that were previously looked at, all seem to agree, at least in some length, with that statement. Concepts are not all universal, but every different language and culture does not have a completely different set of concepts.

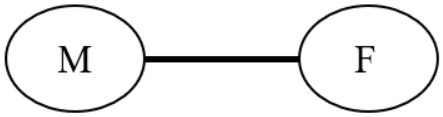
Lakoff and Fillmore have written on the subject of frames which can be defined (Fillmore 1982, Lakoff 1989), according to Lakoff as an idealized cognitive model. This differs from the work of Fillmore, who defines words that require a necessary set of conditions. Using the case of the word 'bachelor', Fillmore defines a set of conditions that require one to be a bachelor (male, unmarried, etc.). As Lakoff points out, one can meet these conditions but not be an ideal model of the word in reality. Examples of technically speaking bachelors would be the Pope or a patient in a long-term coma. They meet the requirements of the definition, but are not the ideal case.

This argument of frames and ideal conditions can relate to the examination of root words based on what is the set of conditions that must be met for something to be 'haqa' (truth) and what is the idealized condition that it is used in. Using Lakoff's discussion of what is an idealized concept for a word can pave the way for further research in translation, where it is possible that the translation is correct, but the concept is lost.

The next step when examining the rules of meaning representation being encyclopedic and meaning construction being conceptualization is to provide a language mapping of the adverbs presented earlier, with the Arabic root forms and their meanings being added to the diagram.

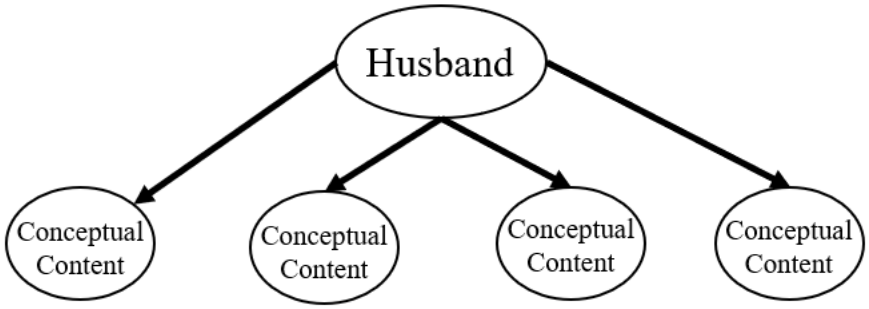
As stated earlier in Langacker's work on profiling, an individual word evokes an array of a conceptual content. This conceptual base is the basis for meaning. In his 2004 work "Form, meaning, and behavior The Cognitive Grammar analysis of Cognitive and communicative approaches to linguistic analysis," Langacker states the need for profiling, saying that "I see know way to properly characterize and distinguish linguistic meaning without it." Looking at these different Arabic words, their root forms give them a different conceptual base than their English counterparts.

Continuing with the work on conceptual content, words with the same conceptual base will have a profile that distinguishes them semantically. Using Langacker's model of profiling, it can be seen how two words with the same base can have a different profile.



The words 'husband' and 'wife' share the same conceptual base, the union of a male and a female, however, each word evokes a different array of a conceptual content (Langacker 2004).

The first step in the difference in profile would be the word husband evokes the conceptual content of a married male, and the word wife evokes a married female.



Further use of profiling would result in looking at one 'node' in a syntactic tree (Langacker 2004).

If word meaning requires a necessary set of conditions, and a conceptual domain, which exists as "a body of knowledge within our conceptual system that contains and organises related ideas and experiences." (Evans and Green 2008) then differences in these can alter meaning. This exists in Arabic on two fronts:

1. Arabic root forms provide differences in the conceptual domain of words. These differences arrive from the fact that the root form offers a variety of words that can be developed from a single root. These words are diagrammed in their connectionist format below.

2. The root form of Arabic words essentially offers a different set of conditions for the word. This is because every word is associated with its root form, so it is therefore associated with the conditions of that root form.

It is this further development into profiling that these Arabic words can be examined to see how they will have a different conceptual base than their English counterparts, which results in a different array of conceptual content being produced by the word due to its root form.

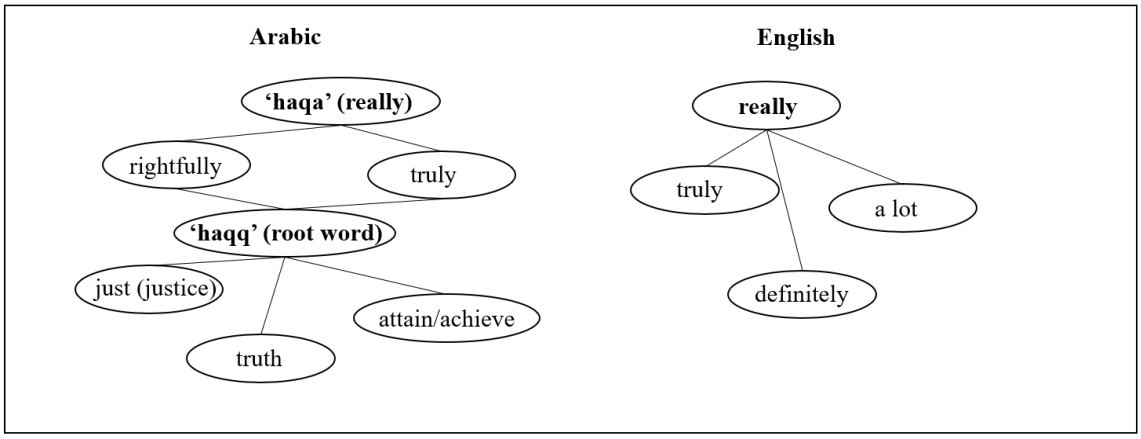


Figure 1.1: Encyclopedic meaning representation of 'really' in Arabic and English. The three-letter root used to form the word in Arabic is presented in Arabic. These words are all mapped from a root whose meaning involves truth and justice. The meaning structure can be mapped encyclopedically, showing the assumption of cognitive semantics. Verbs from this root include, to be true, to verify and to merit or deserve.

Usage of words formed from the root haqq:

1. المواطنة المشاركة في الاستفتاء على الدستور حق من حقوق

al-mūwāṭina al-mūšārika fee ales-tiftā ʿla al-dustoor ha' min ha'oo'

Participation in the referendum on the Constitution is a right of citizenship.[3]

2. الحق

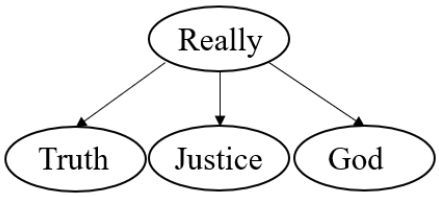
al-ha'

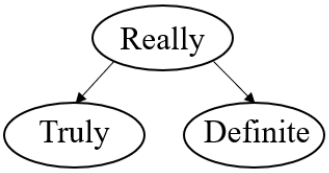
The truth, the reality [4]

Within Islamic texts, the root for truth is also used to mean reality and rights, and even God is referred to as al-Haqq, the Truth, in the Quran:

"For that is Allah, your Lord, the Truth. And what can be beyond truth except error? So how are you averted? (Verse 10:32)"

Therefore, conceptualization of these words becomes vastly different due to their conceptual content when looking at Arabic and English:





This encyclopedic meaning can show the differences between Arabic and English words when the meaning of the root form is added to the representation. These words are all mapped from a root whose meaning involves truth and justice. The meaning structure can be mapped encyclopedically, showing the assumption of cognitive semantics:

[3] Retrieved from https://www.alderaah-news.net/world/4591732

[4] Retrieved from the Quran: 22:6, 23:116, 24:25

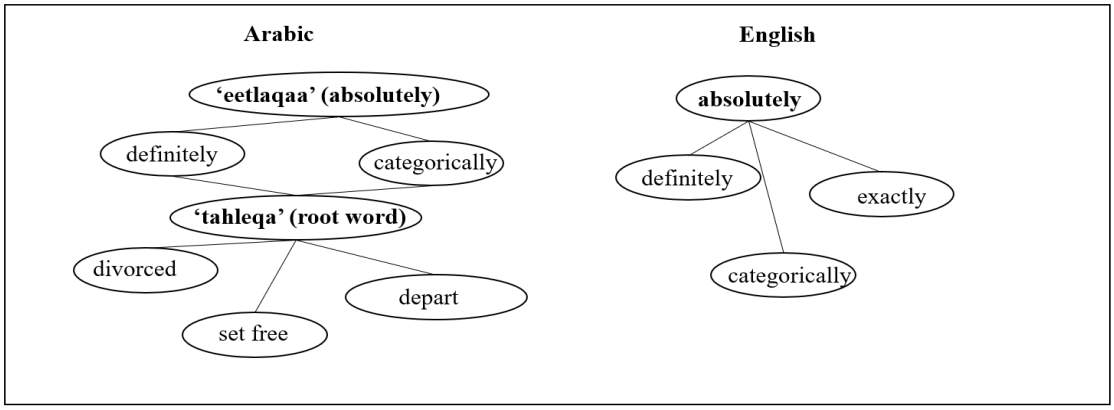


Figure 1.2: Encyclopedic meaning representation of 'absolutely' in Arabic and English.

Use of words formed from the root taleq:

1. زوجته رجل طلق

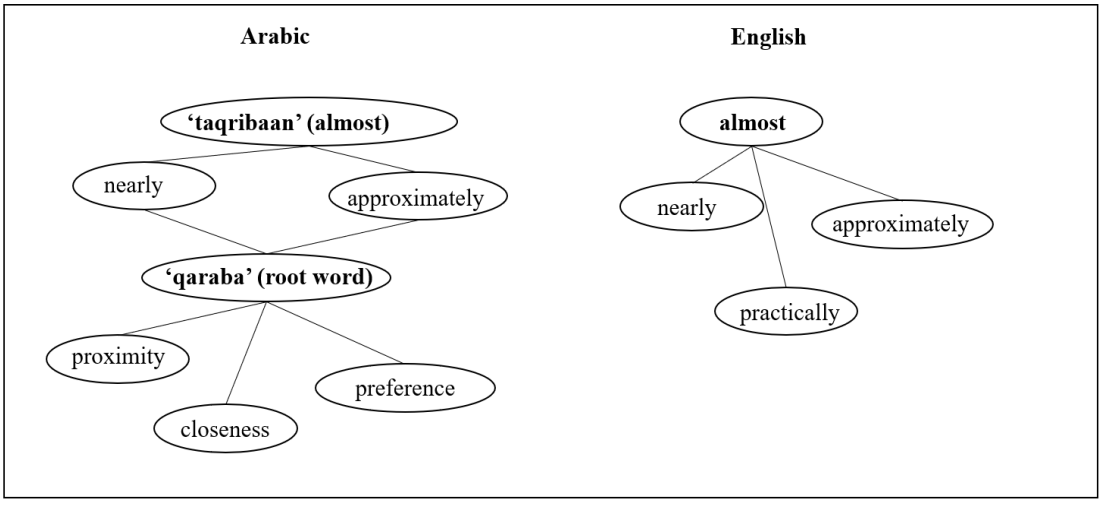
zouğeta reğel ṭale'

… a man divorced his wife… [5]

2. لم يبخل إطلاقا

lem yebk̲el iṭlā'ā

He neglected nothing. [6]



[5] Retrieved from https://www.alderaah-news.net/saudi-news/4579520

[6] Retrieved from https://www3.shorouknews.com/news/view.aspx?cdate=18032019&id=d29b154e-f5de-43e9-9ea3-8dbe0a052371

Figure 1.3: Encyclopedic meaning representation of 'almost' in Arabic and English.

Use of words formed from the root qarab:

1. قريب

'ereeb

The closeness, the one who is close [7]

This religious conceptual content provides a difference in meaning, as Langacker wrote, "Within the conceptual content it evokes as the basis for its meaning (it's conceptual base), and expression profiles some substructure. (Langacker 2006)." This research agrees with the work put forth by Langacker as it relates to the Arabic language.

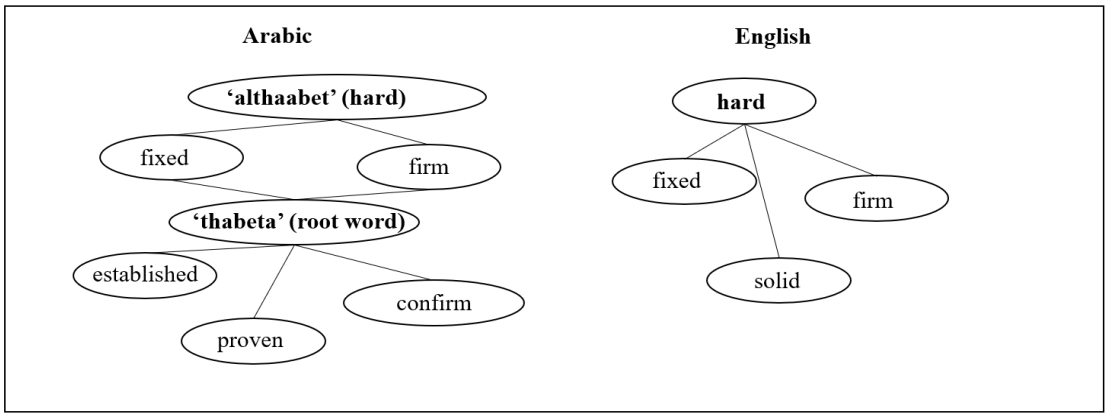


Figure 1.4: Encyclopedic meaning representation of 'hard' in Arabic and English.

1. احوال ثبت

al-howāl ṯebet

Proven conditions[8]

2. الموقف المصري ثابت بحل الدولتين

[7] Retrieved from the Quran: 34:50

[8] Retrieved from https://www.radiofarda.com/a/29881792.html

al-muwe'ef al-mu-ṣooree ṯābit behel al-doolteen

The Egyptian position is consistent with the two-state solution.[9]

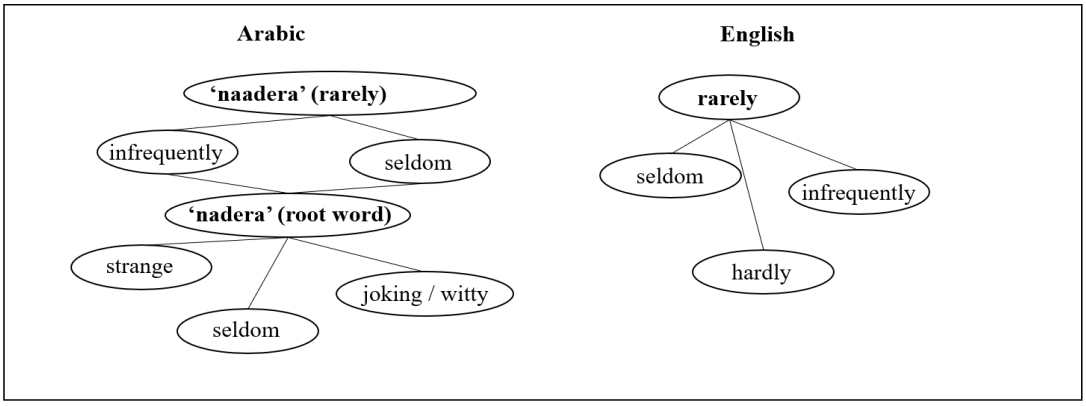


Figure 1.5: Encyclopedic meaning representation of rarely in Arabic and English.

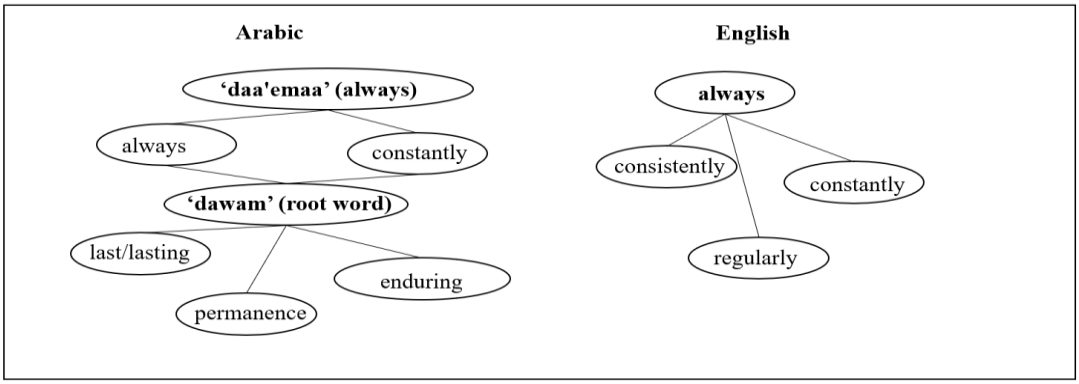


Figure 1.6: Encyclopedic meaning representation of 'always' in Arabic and English.

1. Every one of these adverbs of degree show some type of deviation in the conceptual domain when compared to English. The connections to the Arabic root word show how the Arabic conceptual domain expands the meaning associated with a word beyond the singular use of the adverbial form.

[9] Retrieved from http://maannews.net/Content.aspx?id=980823

2. This agrees with the Lakoff view that all concepts are not all universal. The connections in the diagrams of these words show how the word contains different concepts when compared to their English counterparts.

What is seen in these words is an expanded view of conceptual content that is produced from the Arabic root form. As we associate words with various arrays of conceptual content, this will form the basis of meaning. In Arabic, the word 'really' is derived from the root word for 'truth,' which contains numerous other words in its array of conceptual content that may not exist in English. Within the root of 'truth' in Arabic contains the words (and conceptual content) of justice and achievement. This provides a different basis in meaning when compared to English.

The Arabic adverb for 'almost' provides a similar religious conceptualization within its array of conceptual content (al-Qareeb, the one who is close).

The differences in conceptual content of these words can be seen in their usage. Consider two of the adverbs that have a root form associated with a religious text, particularly as a name for God.

Conclusion

Differences in translation between languages have been studied at length. These differences that are documented can be caused by cultural or semantic differences of abstract words, or by just having a different encyclopedic view of a word. The concept of fear can be seen as being scared justifiably, whereas the concept of fear can be associated with shame in other cultures, where the idea of expressing fear is viewed as shameful. The idea of meaning not being conveyed between translations is nothing new, however,

the use of root cases in Arabic provides an interesting foundation in the field of cognitive linguistics.

In English, words can be examined to see how meaning is encyclopedic and how meaning construction is conceptualization. This is true when examining the often used word 'bachelor' as an example and one see the additional meaning associated with the word. These principles of cognitive semantics seem to exist just as well in the Arabic language, where meaning is encyclopedic and meaning construction is conceptualization, however, there is the addition of what the root form of the word adds to the conceptualization and the encyclopedic knowledge of the word. This root form adds definite meaning to the word, not just additional meaning construction based on conceptualization. This means that an Arabic speaker will have an entire set of associated words that come from the root form that are added to the meaning construction of the word. In simpler terms relating to English, one could imagine how the word bachelor would be conceptualized by English speakers if the word itself, bachelor, was built from a root word that meant "unmarried male" as well as all the other idealized conditions that are conceptualized from the word.

Further analysis of Semitic languages that use a root system, and how native speakers of those languages are taught, show that root perception and awareness of the root structure are taught during primary school instruction. The root is self-evident, and formally taught in school as being the initial structure of verbs and nouns. The use of these roots as an independent, morphological construct is still examined and open to interpretation among linguists. Studies among Semitic language speakers have shown the

root to have its own mental representation. Root awareness and the ability to identify roots was known by native speakers beginning at the kindergarten level (Ravid 2003).

Conceptualization of the root and root awareness of Semitic languages has been studied in different areas beyond the research presented here (Acquaviva 2014, Ravid 2003, Saidegh-Haddad & Geva 2008). The research presented here does not argue that Arabic conceptualization is unique among all other languages due to its root structure, but rather that the four principles of cognitive semantics can be applied to Arabic, including the use of the root structure in conceptualization, and that conceptualization in Arabic agrees with the previous research by Ronald Langacker. What the research presented here seeks to do is show that the root form can add to the conceptualization of the word by providing its own conceptual base, particularly with the principle that linguistic units serve as prompts for an array of conceptual operations and background knowledge.

Throughout the words examined, we looked at adverbs that show the degree or extent to which an action is performed. At first examination, the conceptualization seemed to just show exactly that, the degree to which the verb was being done. Looking at the principles of cognitive semantics, where meaning construction is conceptualization, we can see that even something as seemingly simplistic as degree or extent can have a different conceptual domain. Within these Arabic adverbs and their three-letter roots, they fit within the principals of cognitive semantics, showing differences in domain and encyclopedic meaning representation.

Glossary

Definitions taken from The Hans Wehr Dictionary of Modern Written Arabic (1994)

دَائِمَا - always (adverb form)
dā-imān

دوم - continuance, permanence, duration (pp 350)
da-wam

كَثِيْرا - frequently (adverb form)
keṯeerān

كثر - to be much, outnumber, increase (pp 954)
keṯir

حَقًّا - really (adverb form)
he'ān

حق - truth, rightfulness, claim (pp 224)
he'

إطلاقا - absolutely (adverb form)
iṭlā'ān

طلق - open, free, unrestrained, generous, liberal (pp 663)
ṭele'

الثَّابِت - hard, with steadiness
al-ṯābit

ثبت - fixed, stable, reliable, certainty, proven, authentic, verified (pp 122)
ṯebet

فقط - only (adverb / postpositive form)
fa'aṭ

فقط - to write (verb form)
fa'aṭ

فقط - total, merely, solely, and that ends it (pp 846)
fa'aṭ

جدا - very, too (adverb form)
ğidān

جد - seriousness, earnestness, diligence, eagerness (pp 135)
ğed

تماما - completely (adverb form)
temāmān

تمام - completeness, perfection, independent, separate (pp 117)
temām

كافية - enough (adverb form)
kāfeeya

كف - suitable, match, equivalent, appropriate, efficient (pp 974)
kef

نادرا - rarely (adverb form)
nādirān

ندر - rare, unusual, strange, extraordinary, joking (pp 1116)
nadir

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