A Corpus-based Cognitive Analysis of the Radial Category GREEN in Arabic

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Introduction

From a Cognitive linguistic perspective, language is a communication system that mirrors human beings' understanding of the world around them (Cienki, 2007). Words are not containers of meaning, but rather they provide access to a cognitive network (Langacker, 1987). The senses that words have are not fixed or restricted, but they evoke a variety of cognitive domains based on context (Langacker, 1999). The senses of a word are not discrete. Rather, they fall into a continuum along which they overlap and share some common properties. The meanings that exhibit more common features are typical while those that show less common attributes are peripheral. Within this approach, a semantic change takes place when a peripheral sense becomes the core meaning of a lexical unit, or a typical meaning is excluded from the prototype structure of the word (Carpenter, 2013).

The present paper analyses the polysemy of the Arabic colour term أَخْضَر (aḫḍar) (green), one of the basic colour terms (Berlin and Kay, 1969). The literature on colour categorization, perception and semantic extension of colour terms across cultures show that there are commonalities and variations in meanings of colour terms and in the ways individuals categorize colours across languages (e.g. Kikuchi, 1983; Xing, 2009; Gieroń-Czepczor, 2010). This diversity is the usual outcome of semantic change. In general, language change is a result of intrinsic features of the human mind and social interaction (Blank & Koch, 1999).

The current study compares and contrasts the prototype structure of the word أَخْضَر (aḫḍar) in premodern Arabic texts and modern Arabic texts. This is to determine whether the prototype structure of the lexical category concerned underwent a semantic change. The green colour has been chosen for this study because it is one of the most symbolic colours in Arabic culture. It is more associated with positive connotations like nature, paradise and goodness (Hasan, 2011). There is a considerable literature on colour terms and polysemy across languages; however, research on the semantic change in colour terms across languages in general and in Arabic in particular is lacking.

Methodology

The current paper aims to identify the semantic change that may have occurred in the prototype structure of the term أَخْضَر (aḫḍar). To this end, the study employs Rosch's (1973, 1975) prototype theory to explore the polysemy of the term under study. It also uses image schemas (Johnson, 1987), conceptual metonymy and conceptual metaphor (Lakoff & Johnson, 1980/2003) to establish the cognitive mechanisms that motivate change in meaning.

The data on the term أَخْضَر (aḫḍar) was compiled from the *ArabiCorpus* (Arabic Corpus Search Tool). The *ArabiCorpus* (173.600.000 words) comprises newspapers, pre-modern texts, modern literature and non-fiction. However, the current article utilises three subcorpora: premodern, mainly the 'Adab Literature' (2,073,071 words), the 'Grammarians' (1,210,614

words) and the 'Medieval Philosophy and Science' (1,576,860 words), modern texts, i.e. literature (1,026,171 words) and nonfiction (27,945,460 words), and newspapers (135,360,804 words). These subcorpora were selected to explore the polysemy of the colour term أَخْضَر (aḫḍar) because they reflect the language used in different eras.

The corpus data analysis uses frequency and concordance to identify the most frequent collocates of the term. This is to compare the prototype structure of أَخْضَر (aḫḍar) in premodern texts and modern texts. To collect all the data on the adjective أَخْضَر (aḫḍar) from *ArabiCorpus*, all the diverse forms of the term were individually searched in the corpus. Adjectives in Arabic grammar inflect for grammatical gender, number, case and definiteness (Ryding, 2005). The adjective أَخْضَر (aḫḍar) has different forms, namely أخضر (masculine, singular), خُضْر (masculine, plural), خضراء (feminine, singular), خَضْرَاوات and خُضْر (feminine, plural). All these adjectives can be definite or indefinite based on whether the definite article ال (al) (the) is added to their beginning, as in أَخْضَر and الأَخْضَر. It is worth noting that no examples of the form خَضْرَاوات were found in premodern texts or modern literature.

Results

The results obtained are outlined in the tables below.

Table 1: The frequency of أَخْضَر (aḫḍar) in the selected subcorpora

Subcorpus	Total number of occurrences	The average number per ten thousand words
Premodern	383	0.79/ten thousand
Modern literature	131	1.28/ten thousand
Nonfiction	1287	0.46/ten thousand
Newspapers	10780	0.80/ten thousand

Table 1 shows that there is a high occurrence of the word أَخْضَر (aḫḍar) in all the subcorpora, ranging from modern literature (0.46/ten thousand) to nonfiction (1.28/ten thousand). The word أَخْضَر (aḫḍar) scores highly in its average occurrence in both premodern texts (0.79/ten thousand) and modern texts (0.74/ten thousand, including literature, nonfiction and newspapers).

Table 2: Collocate frequency of أخضر (aḫḍar) in premodern texts

Collocate	Collocate frequency
الدمن (ad-diman) (a beautiful woman that is of bad origin)	15
طائر (ṭāir) /طيور (ṭoyūr) /طير (ṭayr) (bird(s))	12
الأشجار/ الشجر (aš-šajar/ al-ašjār) ((the) tree(s))	7
روضة (rawḍa) (garden)	7
الأرض/الغبراء (al-ġabrāʾ)/(al-arḍ) (the earth)	6
الجلدة (al-jilda) (the skin)	5
الليل (al-layl) (the night)	5
البقل (al-baql) (the herb)	4
الورق (al-waraq) (the grass)	4
يابس (yābis) (dry)	4

Table 2 indicates that the most frequent collocate of أُخْضَر (aḫḍar) is الدمن (ad-diman), which is a metaphorical semantic extension, meaning 'a beautiful woman who is of bad origin'. This constitutes the only negative meaning with which أُخْضَر (aḫḍar) is associated in premodern texts. All the following frequent collocates have positive associations with paradise, as in bird(s), and grass or other plants. The sixth and seventh most frequent collocates of أُخْضَر (aḫḍar) are associated with the black colour, as in peoples' dark skin and the colour of the night.

Table 3: Collocate frequency of أُخْضَر (aḫḍar) in modern literature

Collocate	Collocate frequency
الأرض (al-arḍ) (the earth)	4
زربية (zarbiyya) (carpet)	3
الطائر (aṭ-ṭāir) (bird)	2
البصل (al-baṣal) (onion)	2
الحشيش (al-ḥašīš) (grass)	2
اليابس (al-yābis) (the dry)	2
واحة (wāḥa) (oasis)	2
حقول (ḥuqūl) (fields)	2
العروق (al-ʿurūq)	2
الأشجار (al-ašjār) (the trees)	2

In modern literature, the most frequent collocate of أُخْضَر (aḫḍar) is *earth*, being covered with grass. This meaning is supported by many following collocates like الحشيش (al-ḥašīš) (grass) and واحة (wāḥa) (oasis). The sixth most frequent collocate اليابس (al-yābis) (the dry) marks the creation of the idiomatic expression, preceded by أتى على (atā ʿalā) (finish) and conjoined with اليابس (al-yābis) (the dry), meaning 'to destroy completely/everything'.

Table 4: Collocate frequency of أُخْضَر (aḫḍar) in nonfiction

Collocate	Collocate frequency
اليابس (al-yābis) (dry)	95
الدنيا (ad-dunyā) (the world)	42
(ال)ضوء (aḍ-ḍaw') (the light)	41
(العلم)ين (al-ʿalamayn)/ (الميل)ين (al-maylayn) (the signpost(s))	41
الأرض (al-arḍ) /الغبراء (al-ġabrāʾ) (the earth)	41
(ال)جنة (al-janna) (heaven)	35
طير (ṭayr) (birds)	28
الدمن (ad-diman) (a beautiful woman that is of bad origin)	22
سندس (sundus) (fine silk)	16
الخط (al-ḫaṭ) (the line)	15

The sixth most frequent collocate اليابس (al-yābis) in modern literature seems to be the most frequent collocate in nonfiction texts. The second most frequent collocate الدنيا (ad-dunyā) (the world) shows another metaphorical extension of أُخْضَر (aḫḍar) as in this sense the world, compared with fruit, is fresh, sweet and attractive. The third most frequent collocate (ال)ضوء (aḍ-ḍaw') (the light), forming an idiomatic expression, is extended to the meaning of 'permission'. Some frequent collocates are associated with positive concepts like paradise, birds (in paradise) and fine silk (worn in paradise). The ninth most frequent collocate الخط (al-ḫaṭ) (the line) is idiomatically used to denote 'the Green Line, the border which separates pre-1967 Israel from the Occupied Palestinian Territories. This meaning underwent a kind of

specialisation as it has been extended from any green line to the border between Israel and Palestine.

Table 5: Collocate frequency of أَخْضَر (aḫḍar) in newspapers

Collocate	Collocate frequency
(ال)ضوء (aḍ-ḍaw') (the light)	1344
المسطحات (al-misāḥāt) (ال)مساحات (al-musaṭṭaḥāt) (spaces)	517
الخط (al-ḫaṭ) (the line) (the Green line, the border which separates pre-1967 Israel from the Occupied Palestinian Territories)	506
(ال)يابس (al-yābis) ((the) dry)	325
المنطقة (al-minṭaqa) (the area)	292
(ال)مستطيل (al-musta((the) rectangle) (the green rectangle, the football pitch)	253
الجبل (al-jabal) (the mountain)	251
منطقة (minṭaqa)/ (ال)مناطق (al-manāṭeq) ((the) area(s))	202
الحزام (al-ḥizām) (the belt)	107
ثورة (ṯawra) (revolution)	72

The third most frequent collocate of أخضر (aḫḍar) in nonfiction texts is the most frequent collocate in newspapers. The second most frequent collocate is *spaces*, meaning 'land covered with plants which are undeveloped'. This association with the grass is supported by the frequent collocates *area(s)*, *mountain* and *belt* (in a compound modified by الأخضر, (which is extended to the meaning of 'the land around a city in which building is not allowed'. The tenth most frequent collocate further supports this association as the green revolution conveys the change in agriculture to increase food production. The fifth most frequent collocate المنطقة (al-minṭaqa) (the area) projected the meaning to 'the International Zone of Baghdad', cordoned off for protecting it from attacks during the war.

Conclusion

The results show that there is a high frequency of occurrence of أُخْضَر (aḫḍar) in both premodern texts and modern texts. The data retrieved from the *ArabiCorpus* show that the most frequent collocate of أُخْضَر (aḫḍar) is الدمن (ad-diman) (a beautiful woman that is of bad origin) in premodern texts, الأرض (al-arḍ) (the earth) in modern literature, اليابس (al-yābis) (dry) in nonfiction texts, and (ال)ضوء (aḍ-ḍaw') (the light) in newspapers. The word الدمن (ad-diman), which is the highest scoring collocate of أُخْضَر (aḫḍar) in premodern texts, ceases in modern texts, except for modern nonfiction in which it is the eighth most frequent collocate. Given the polysemy of أُخْضَر (aḫḍar), it can be concluded that this word is favourable. This can be attributed to the religious and cultural associations with this colour, e.g. paradise, peace and oasis. The results also suggest that the expansion of the polysemy of أُخْضَر (aḫḍar) is mostly motivated by conceptual metaphor. Finally, some up-to-date semantic extensions like الضوء الأخضر (the green light), الحزام الأخضر (the green belt) and الخط الأخضر (the Green Line) are deemed to be loan translations due to language contact.

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