Antonymy in Modern Standard Arabic

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to the soul of my father

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Summary

Lexical relations have been thoroughly investigated cross-linguistically (Lyons, 1977; Cruse, 1986; Murphy, 2003). Antonymy is particularly interesting because antonymous pairs share both syntagmatic as well as paradigmatic relations. Studies (such as Raybeck and Herrmann, 1996) agree on the universality of this lexical relation; however, different perspectives towards opposition have been noted among different cultures (Murphy et al., 2009; Jones et al., 2012; Hsu, 2015).

The present corpus-driven study investigates antonym use in Modern Standard Arabic text using an on-line corpus (arTenTen12) and a newspaper corpus (arabiCorpus). This thesis shows that antonym functions in Arabic are to a certain degree similar to those found in other languages. A new classification of these functions is presented and compared to previously identified functions in English text (Jones, 2002; Davies, 2013). The main difference between this classification and previous ones is in the category Ancillary Antonymy. In this category, canonical antonyms trigger contrast in non-contrastive pairings. The ancillary use of antonyms is presented as an effect projected on other words regardless of the hosting construction. As a consequence of removing this category, other functions of antonym use were identified.

The present study also shows that a Sign-Based Construction Grammar (SBCG) account of antonyms can capture their syntagmatic and paradigmatic properties. Antonyms lend themselves well as pairings of meaning and form and therefore can be treated as constructions (Jones et al., 2012). Therefore, a treatment of antonyms using SBCG is presented in this study . Based on this treatment, I present a SBCG account of Arabic coordination as a contrastive construction in which antonyms frequently occur. The coordination construction is then compared to one use of coordination that presents antonym pairs as units referring to one concept.

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Conventions

The Modern Standard Arabic data investigated in this study are presented either within the text lines of the thesis or as separate examples. The in-text examples are written in Arabic script followed by an italicised transliteration of it and an English translation in single quotes. However, sometimes only English examples are provided, in which case italics are used when the English word is referred to and quotes are used when these words are translations of Arabic ones. When syntactic structures, such as coordination as in *X and Y*, are discussed, the letters *X* and *Y* are used in place of the antonym pair hosted in these structures. In addition, names of categories of antonym functions begin with a capital letter. The following is an explanation of how examples are presented.

presentation of examples

The dataset investigated for this dissertation is comprised of three thousand corpus lines. The examples from this dataset are presented as numbered examples. Each example consists of four lines; the first line providing the Arabic script. After that come the three lines of transliteration, gloss, and translation. Sentence (1) shows these four lines.

(1) فالخوف من الموت لا يمنع الموت بل يمنع الحياة (arabiCorpus: *Ghad02*, ref: A{427304}S{MainPage}D03-28-2011)

fa-al-xawfu min al-mawti lā   yamnaʕu **al-mawt**   bal yamnaʕu **al-ḥayāt**
for-the-fear of   the-death not prevent   **the-death** but prevent   **the-life**

fear of dying does not prevent death but prevents life

The first line in the examples is the corpus excerpt in Arabic script. Diacritics are not used in the Arabic script, and therefore, short vowels are not represented. The examples presented in this dissertation are taken from an Arabic on-line corpus and an Arabic newspaper corpus. The ones from the on-line corpus featured a number of spelling mistakes which were corrected in the Arabic script.

The second line is a transliteration of the examples. The letters and symbols used in the transliteration are drawn from the literature and listed in Table 1. Short vowels are represented in the transliteration. Hyphens are used to indicate word boundaries and separate pronoun clitics, the definite article, conjunction, and prepositions. Although transliterations in the examples are not phonemic transcriptions, some assimilation in the article and conjunction are represented. In the case of the definite article, moon letters show no assimilation with the article, such as الإسلام *al-ʔislām*. Sun[1] letters, however, do show assimilation, such as النمل *a-nnaml*; so in the transliteration of this word, the letter ل *l* in the article is deleted and the letter after it is doubled.

Table 1: Transliteration conventions

Arabic letter	symbol	Arabic letter	symbol	Arabic letter	symbol
ء	ʔ	ب	b	ت	t
ث	ṯ	ج	ʤ	ح	ḥ
خ	x	د	d	ذ	ḏ
ر	r	ز	z	س	s
ش	š	ص	ṣ	ض	đ
ط	ṭ	ظ	ḍ	ع	ʕ
غ	ġ	ف	f	ق	q
ك	k	ل	l	م	m
ن	n	هـ	h	و	w
ي	y	short vowels	a, i, u	long vowels	ā, ī, ū

Conjunction is separated from the word with a hyphen, too; such as in the word وإذا *wa-ʔiḏā*. However, the particle *wa-* can change to *w-* when it occurs along with the definite

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[1]The letters in the Arabic alphabet are divided into two groups. These two groups are called in the literature 'moon' and 'sun' letters. The definite article is assimilated when added to a word starting with one of the 'sun letters'. The article is not assimilated when used with words starting with 'Moon letters'.

article. For example, when the two words الإسلام *al-ʔislām* and النمل *a-nnaml* are connected using *wa-* they are written as والإسلام *w-al-ʔislām* and والنمل *w-a-nnaml.*

A hyphen is also used in the gloss to indicate the same boundaries in the transliteration to enable the reader to see the word order in Arabic. Each word is glossed with the same category as it is in Arabic, but does not include more detailed grammatical information such as agreement, voice, case, mood, etc. except in cases where this information is needed. For example, a verb like اكتشف *iktašafa* is glossed as 'discovered' reflecting the part of speech and tense but no information on number, gender, or mood are shown in the gloss. However, possessive clitic pronouns do show some agreement, such as the third-person singular pronoun ها in the two words بدايتها *bidāyata-hā* and صغيرها *ṣaġīra-hā*. The word بدايتها *bidāyata-hā* is glossed as 'beginning-its' while the word صغيرها *ṣaġīra-hā* is glossed as 'baby-her' in order to agree with the referent of the pronoun.

Dots are used in the gloss to separate multi-word translations of a single Arabic word, such as تقم *taqum* is glossed as 'carry.out'.

The last line the numbered example provides is the free translation into English. In the translation, word order and word choice can differ from the gloss. However, the translation of the antonymous pair and the grammatical construction that hosts it depicts the ones in Arabic. The antonymous pair is in bold face in the transliteration and gloss but not in the translation.

Chapter 1

Introduction

Antonymy is a lexical relation of contrast between a pair of lexemes. This relation has received much attention in different fields of research (Jones et al., 2012), such as lexical semantics (Lyons, 1977; Cruse, 1986), lexicography (Paradis and Willners, 2007), pragmatics (Murphy, 2003), rhetoric (Jeffries, 2010), computational linguistics (Lobanova, 2012; Mohammad et al., 2013), and psycholinguistics (Weijer et al., 2012). Jones (2002) and Davies (2013), among others, have explored antonymy and opposition from a lexico-syntactic approach investigating the contrastive lexical items in their syntactic environment.

The present thesis is a corpus-driven study that takes a constructionalist perspective to antonym relations in text. The data are obtained using corpus methodology with the general aim of drawing on their lexico-syntactic interface investigated in previous studies but with a Construction Grammar theoretical mindset. I explore how conventionalized pairs of words that share a contrastive relation (canonical antonyms (Murphy, 2003)) are used in Modern Standard Arabic (MSA) text. I build upon previous work investigating antonym behaviour and provide a way for accounting for this behaviour using Sign-Based Construction Grammar (SBCG).

One goal of this thesis is to investigate antonyms as constructions in MSA text using SBCG. The other goal of this thesis is to find the schematic constructions that pairs of antonyms usually fill, then to classify these schematic constructions, called 'frames' in previous research (Mettinger, 1994; Jones, 2002; Davies, 2013), according to their

function in text building on two previous studies - Jones (2002) and Davies (2013). After that, I compare the use of antonyms in MSA with antonyms in other languages previously investigated especially English.

This introductory chapter starts with a general overview of research on contrastive relations in text. It introduces the goals of this study and presents why these goals are worth achieving.

1.1 Contrastive relations in text

The term *antonymy* is used in a number of ways in the literature. Sometimes the terms *antonymy* and *opposition* refer to any pair of words with a contrastive relation (Jones, 2002; Kostić, 2011; Lobanova, 2012). However, in some of the literature, *antonymy* is confined to gradable pairs of adjectives sharing a contrary relation, such as *hot/cold*; as opposed to complementaries or 'non-gradable' pairs such as *alive/dead* (Lyons, 1977; Lehrer and Lehrer, 1982; Cruse, 1986). In this thesis, the term *antonymy* refers to binary canonical relations of contrast where the pair is conventionalized in the mental lexicon as a contrastive pair based on both its semantic and lexical forms. For example, the pair *hot/cold* is referred to as a canonical antonym pair while the pair *hot/freezing* is said to have a relation of opposition (Murphy, 2003; Davies, 2013). Thus the terms *antonymy* and *opposition* refer to canonical vs. non-canonical relations of contrast, respectively.

Pairs of antonyms are found to co-occur in text in rates higher than expected (Charles and Miller, 1989; Justeson and Katz, 1991; Fellbaum, 1995; Lobanova et al., 2010; Jones, 2002; Murphy et al., 2009). For example, Justeson and Katz (1991) found that antonymous adjectives in the Brown Corpus co-occur far more frequently than chance would allow (Justeson & Katz, 1991:18); and Fellbaum (1995) found that the high rate of antonym co-occurrence extends to nouns, verbs, and across categories, too. Antonymous pairs, therefore, stand in a syntagmatic relation in addition to their paradigmatic one (Murphy, 2003). Murphy (2006), therefore, presented a constructionist account of canonical antonyms introducing the Antonym Construction which explains the syntagmatic relation of these pairs.

The approach in this thesis follows mainly the approach in Jones (2002). Jones (2002) was not the first to investigate antonym relations in text; other research includes Charles and Miller (1989), Mettinger (1994), and Fellbaum (1995). Jones's study, however, was the most systematic and was done on a large scale. Therefore, it triggered a lot of research on antonyms based on its methodology and classifications of antonym functions. Jones (2002) searched 56 pairs of antonyms in an English corpus of newspapers and classified the discourse functions of the co-occurring pairs according to the meaning they convey and the grammatical structures these antonyms are used in. Jones's taxonomy of antonym functions had three parts. The first part is the two major categories of Ancillary Antonymy and Coordinated Antonymy. These two categories comprise 77.1% of his dataset. The second part is the minor categories of antonym functions, including Negated Antonymy and Comparative Antonymy among others, and the third part is a residual category with types that have very low frequency in his data or that could not be categorized.

The largest category in Jones's (2002) classification is a category he names Ancillary Antonymy. In Ancillary Antonymy, the contrast within a particular pair of antonyms triggers another contrast in the same sentence. For example, in a sentence like *I love to cook but I hate doing the dishes*, the pair of antonyms *love/hate* triggers an opposition between *cooking* and *doing the dishes*. Thus, the two acts of *cooking* and *doing the dishes* are placed in opposing grounds against each other, and as a consequence they become opposites at least in that particular context. Triggering opposition between canonically unopposed phrases in this way has been found in all genres and languages investigated so far, including the present study.

Following Jones (2002), a number of studies were conducted on corpora of different genres of English; e.g. spoken English (Jones, 2006) and child speech and child-directed speech (Murphy and Jones, 2008), and on corpora of other languages, e.g. Swedish (Murphy et al., 2009), Japanese (Muehleisen and Isono, 2009), Serbian (Kostić, 2011), and Chinese (Hsu, 2015). Arabic antonymy has also been considered in the context of the Qura'an (Hassanein, 2012). All these studies used the same categories in Jones's study and classified the antonymy functions they found accordingly.

A study that takes a different approach is Davies (2013), where he investigated contrastive structures and how they trigger opposition in context. The importance of Davies's classification of opposition in context lies in the fact that grammatical constructions can be contrastive and therefore create oppositions that are not considered to be opposites in other non-contrastive frames. For example, there is no canonical pair of opposites to trigger the opposition between *bemused* and *offended* in sentence (2). This opposition, however, is triggered by the comparative construction which creates a common ground for the two adjectives to be measured against. The common ground is the reaction of the marchers:

(2)   The marchers seemed more **bemused** than **offended**. (Davies, 2013: 69)

The sentence in (2) presents a comparison between the expected reaction of the protesters and their actual reaction. The two adjectives *bemused* and *offended* are put on one scale and the protesters are described to be closer to one end than to the other end of that scale using the comparative structure.

Based on this argument, Davies (2013) presented a new taxonomy of opposition in discourse, taking the frame rather than the canonical antonymous pair as a starting point. Davies then classified grammatical structures hosting oppositions according to their function in text. Most of the categories in Davies' taxonomy can be found in Jones's, such as the comparative structure discussed above. Sentence (3) shows a canonical pair of antonyms used in a comparative structure.

(3)   Dr Higgs was a lot more **right** than **wrong** in her diagnoses. (Jones, 2002: 77)

In (3), the canonical pair *right/wrong* is used in comparative structure and in (2) the comparative structure triggers the opposition between *bemused* and *offended*.

The similarities between the two classifications indicate that the frames hosting these oppositions, such as the comparative structure, have a contrastive meaning. This study aims to make use of the two classifications (Jones, 2002; Davies, 2013) in order to present a new categorised functions of antonyms in text and explain the differences between the previous two classifications. The next section discusses why this new categorisation is important.

1.2 The need for a new taxonomy

Jones and Davies provide competing classifications of frames that host or trigger opposition. The taxonomy of schematic constructions hosting canonical antonymous pairs presented in this thesis aims to overcome shortcomings in Jones's classification while making use of the insights of Davies'. Bringing the two classifications together is achieved through two measures. The first step involves explaining the compatible categories in the two taxonomies, e.g. comparative structure; and eliminating any discrepancies by adding categories to Jones's classification. The second step is identifying any categories in Jones's classification that should be removed. These two measures are discussed below.

Some categories are found in both classifications presented by Jones (2002) and Davies (2013). The similarities between the two taxonomies can be explained through frequency of use. Usage-based models of linguistic theory, such as construction grammar, view language as dynamic and fluid; and therefore, repetition of certain linguistic items has a tremendous effect on their acceptability, form, and semantics (Bybee, 2007). For example, acquisition of both grammatical structures and novel uses of linguistic items depends on frequency of use; and even constituent structure is determined by frequency of co-occurrence, such as the change of *want to* to *wanna* (Bybee, 2007: 218). What is more relevant to my argument is that frequency is an indicator of conventionalization enough to say that a particular form-meaning pairing is a construction (Goldberg, 2006).

I argue that when structures host canonical antonymous pairs frequently, they acquire the contrastive meaning. Therefore, these structures carry the contrastive meaning to the pairs of words/phrases that they host, thus triggering contextual oppositions. For example, Negated Antonymy is one of the categories in Jones's classification where one word is negated for emphasis of its antonym, as in sentence (4a) below. This category is also found in Davies' classification of contextual opposition, sentence (4b) below.

(4) a. However, the citizen pays for services to work **well**, not **badly**. (Jones, 2002: 87)
    b. Make **tea**, not **war**. (Davies, 2013: 14)

The two sentences in (4) feature the use of negation to augment the meaning of

one word over the other. In sentence (4a), the frame *X not Y* hosts the canonical antonyms *well/badly*. In sentence (4b) the same frame is used to trigger an opposition between *tea* and *war* which would not be considered contrastive outside this context. Contrast between them is caused here by the same construction in (4a): *X not Y*. Similar constructions, in addition to negation, are found throughout the two classifications.

Jones's classification of frames hosting antonymous pairs and Davies' classification of frames triggering opposition can be brought together. In this thesis, I present a new taxonomy of frames referred to as *schematic constructions*. I revise Jones's classification taking into account the contrastive frames in Davies' (2013) study and base my classification on MSA text. The main outcome of the revision of Jones's classifications is the removal of the category Ancillary Antonymy.

Jones (2002) identified an important function of antonyms where 'the familiar opposition is used to signal a more important contrast between a pair of words [...] which have a less inherit dissimilarity' (Jones, 2002: 60). The drawback of putting this function as one category in a classification of syntactic frames is that '[m]any of the examples of ancillary antonymy [...] rely on other triggers such as "but" [and] "while"' (Davies, 2013: 87). Moreover, the inclusion of sentences in that category is subjective. Jones (2002) found that there is no specific frame that is common among the sentences of this category as is the case in other categories; and some of the sentences can make use of frames found in other categories. For instance, the sentences in (5) are all from Jones's Ancillary category and they can be classified in other categories. These sentences feature an ancillary opposition between non-opposed phrases.

(5)   a. Kennedy **dead** is more interesting than Clinton **alive**. (Jones, 2002: 49)

      b. It is meeting **public** need, not **private** greed. (Jones, 2002: 46)

      c. [...] one can only hope that the next few years prove Puttnam's **optimism** justified and his **pessimism** groundless. (Jones, 2002: 53)

Sentence (5a) shows the pair *dead/alive* in a comparative frame but Jones did not classify the sentence under the category Comparative Antonymy. Instead, it is under Ancillary Antonymy because the pair triggers an ancillary opposition between *Kennedy* and *Clinton* modified by the antonym pair. Similarly, sentence (5b) can be classified as an example

of Negated Antonymy while triggering an ancillary opposition between the nouns *need* and *greed* that are modified by the antonyms *public/private*. However, the sentence in (5c) cannot be classified into any of Jones's categories, even though it clearly exhibits a pair of canonical antonyms in a coordinated structure. Jones's Coordinated Antonymy category does not include sentences with coordinated clauses similar to (5c). Instead, pairs of antonyms are used in an *X and Y* frame that hosts either single word antonyms or short phrases; as in (6a) and (6b) respectively.

(6) a. He took **success** and **failure** in his stride. (Jones, 2002: 64)

  b. I've had **difficult matches** and **easy matches** with Mat (Jones, 2002: 69)

The function in the two sentences is the same but sentence (6b) shows an absence of ellipsis. Such 'contexts show how writers vary antonymous frameworks for rhetorical effects' (Jones, 2002: 69). In my taxonomy, the sentence (5c) is classified in the category Antithesis.

As stated earlier, in the classification presented in this thesis, the category of Ancillary Antonymy is removed because there is no objective criteria for including a sentence under Ancillary Antonymy and many sentences where antonyms can trigger an ancillary opposition can be easily classified under other categories. As a result of removing this category form the classification, new categories were needed to account for sentences that Jones (2002) would have included in Ancillary Antonymy.

I view the Ancillary function as a very important function of canonical antonyms but it is not on par with other categories. Categories like Inclusiveness or Comparison are functions reflected by syntactic structures that host antonymous pairs. Others are grammatical functions occupied by pairs of antonyms.[1] However, the Ancillary function is an effect projected by antonyms on neighbouring words and phrases. Therefore, from now on, the Ancillary function is referred to as the Ancillary use of antonyms because it is not considered as one of the functions in my classification of antonym functions in Arabic text.

Previous studies on antonym functions show some differences in antonym use across languages. For example, some functions such as Simultaneity, where a pair of antonyms

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[1]The category Antonyms in Grammatical Relation is an example of this, see chapters 4 and 5.

are used to describe the same referent, are used more in some languages than others. In addition, the order antonyms appear in differs among languages. These differences in antonym use have been attributed to cultural effects. The next section, therefore, discusses cultural aspects of Arabic that make it worth investigation.

1.3   Some cultural considerations of Arabic

Studies on opposition suggest that 'cultural factors may be affecting our motivations for using antonyms' (Jones et al., 2012: 41). This section starts with what these studies tell us about how culture affects the use of antonyms and moves on to explore some aspects of Arabic culture that might affect the use of antonyms in Arabic text.

Different cultures agree upon the existence of opposites and view them as different from other semantic relations (Raybeck and Herrmann, 1996). However, opposition is viewed differently by different cultures. For example, in Confucian philosophy, the *yin* and *yang* are opposites to each other but have a fluid relation that one can become its opposite and vice versa. As an example of this fluid relation, Ye (2014) presents an investigation of complementaries in Chinese using cultural scripts. Ye (2014) explains that there are three types of complementaries in Chinese. First, a category where a reversal of antonyms is not possible such as 'human male/human female'. The second category includes complementaries where reversal of members is possible in one direction, as in 'familiar' and 'unfamiliar'. The third type allows membership reversal as in 'insider' and 'outsider'. People often regard anybody they come across as either *zìjǐrén* 'insider' or *wàirén* 'outsider'. This categorization is not stable because a certain person referred as *zìjǐrén* can turn to *wàirén* one day and vice versa (Ye, 2014).

In addition, antonyms are viewed in some western cultures to be stable with clear cut distinction between them (Murphy et al., 2009). However, in their investigation of Swedish antonyms, Murphy et al. (2009) link the use of antonyms to refer simultaneously to the same property to its *lagom* culture. In Swedish culture, moderation and compromise is preferred (see Murphy et al. (2009)) and therefore in comparison to English, Swedish antonyms are used less as extreme points and more when balanced together

(Murphy et al., 2009). The function Simultaneity was also found in Japanese with a higher frequency than both English and Swedish (Muehleisen and Isono, 2009), which can be attributed to cultural factors, too.

Antonym sequence can also be determined by socio-cultural values. For example, the word *young* precedes *old* in more instances of their co-occurrence in English (Jones, 2002) arguably because of their temporal relation, everything starts out young then becomes old. However, *old* precedes *young* in Chinese because 'the concept OLD can be considered positive in the Chinese culture because it is associated with maturity, wisdom, caution and responsibility' (Hsu, 2015: 75).

Arabic presents a different cultural perspective to antonymy. A study on antonymous pairs in the Qura'an by Hassanein (2012) shows that the Qura'an exhibits a great amount of opposition. In fact, 'almost 1425 (22.85%) of the 6236 Qura'anic verses include antonymous pairs' (Hassanein, 2012: 147). The linguistic features of the Qura'an pervade Arabic prose and literature generally since its revelation (Gibb, 1963). Therefore, great use of contrasts is predicted in Arabic text.

In Arabic tradition, the middle point between two opposing concepts or situations is considered better and more preferable than the extreme points. The word وسط *wasaṭ* 'middle' is defined in *Almaany* on-line dictionary as 'middle centre, average' when it is a noun. As a verb *wassada* means 'to intercede'; and as an adverb *wasaṭ* is translated as 'between'. As an adjective, however, this word is used to refer to a person as being 'the best of his people, a noble person'. Therefore, the expression أواسط الناس *Ɂawāsiṭ annās* 'average people' roughly means 'the best of the people' as opposed to علية القوم *ʕilyat alqwm* which literally means the highest people and translates to English as 'elite' ("elite", 2016). Moreover, it is customary in Arab gatherings that the seat in the middle of the sitting area is given to the most important guest. While this piece of information is anecdotal, it does reflect the association of 'middle' and 'best' in Arabic culture.

In Arabic Ethics, one is expected to stick to the middle with no deviation from it (Al-Naraqi, 2006). This is similar to Aristotle's view of virtue as being the mid-point between two vices. However, the Arab view of virtue prescribes sticking to that mid-point and any deviation from it is considered vice. Therefore, there is a sense of 'all or nothing' and a sense that compromise is not valued.

In order to explore the idea of Arab ethics further, I use examples of Arabic proverbs[2] that, though not specifically from MSA, may give a glimpse of the cultural values (White, 1987). 'The fact that proverbs represent generalized knowledge, applied to the interpretation of particular events, suggests that they may tell us something about enduring cultural models of experience' (White, 1987: 152). The cultural model discussed in the following proverbs reflect how opposing situations are viewed in Arab culture. Some of these proverbs are listed in (7).

(7)   a.   إما حبا وإلا برك وإلا مشى بالنوطزة (http://www.banyzaid.com/vb/t42136.html)

ʔimmā ḫabā willā barak willā mišā b-a-nnoṭazih
either crawl or   sit   or   walk in-the-hurry
It either crawls or sits, or walks very fast.

b.   يما سراجين وإلا ظلما (http://www.alqasab.org/vb/archive/index.php/t-35394.html)

yummā srāǧen   willā ḍalmā
either two.lamps or   dark
Either two lights, or darkness.

The two proverbs in (7) show how two extreme situations are not preferred. The first one, in (7a), refers to an animal that either moves slowly or not at all, which is not preferred as there is no progress, or moves very fast, which is also not preferred because one gets tired quickly when travelling fast. In this proverb, crawling and sitting are put together as the same even though, logically, there is progress in crawling. This proverb expresses

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[2] I refrain from using verses from the Qura'an and sayings by Prophet Muhammad about opposites because that would reflect Islamic teachings and Islamic ethics which are not necessarily similar to Arab culture, though the two are entwined sometimes.

how moderation is desired and that deviation from it is not. The second proverb, in (7b), is also used for the same meaning. In this one, the two extremes of darkness and using two lights at the same time are not desired, but the middle ground of using one light is.

This preference for moderation does not include preference for compromise as in the *lagom* culture in Sweden. Adhering to one's values all the time with no compromise is important in Arab culture because any deviation from virtue is a vice on its own. This is because Arab culture promotes doing something well or not doing it at all as the following proverb shows.

(8)   طخه وإلا اكسر مخه (http://www.toratheyat.com/vb/showthread.php?t=766)

ṭuxxu-h   willā ʔiksir muxxu-h
leave-him or   break brain-his

leave him or break him.

The proverb in (8) is used to advise people to do things they undertake well or not to attempt them; to either tackle your opponent until you break them or not to confront them at all. This proverb seems to contradict the previous two because it refers to extremes with no mid-point. However, taking the mid-point as a reference, one should stick to their beliefs and values because deviation from one value is similar to deviation from all values. On an opposite direction, when one decides to behave badly then there are no degrees to vice as the following proverb shows.

(9)   إذا أكلت بصل فكثر (http://www.vb.eqla3.com/showthread.php?t=36769)

ʔidā ʔakalt baṣal fa-kattir
if   you.eat onions then-a.lot$_V$

If you eat onions, eat a lot.

The proverb in (9) is used as a response to when one points out that what they did is a small sin. Because onions will make breath smell bad, the amount one eats is not relevant. Similarly, doing something bad once stains one's reputation as much as repeating it does.

To conclude, the relevant aspects of Arab culture that might affect the use of antonym pairs in text are that the mid-point between two opposites is preferred, and that sticking to that middle is very important because any deviation from one aspect is a deviation from the whole. During data analysis, these cultural cues are found to be reflected on antonym use in MSA text which will be discusses in chapter 8.

1.4   Structure of the thesis

This thesis is divided into eight chapters. The second chapter is divided into three sections. The first section presents in more detail an overview of what contrastive lexical relations are, how antonymy is defined, what different classifications of antonyms are available in the literature, and which of these classifications is relevant to the present study. The second section explores previous work on contrastive relations in context. This section is arranged chronologically starting with earlier studies such as Charles and Miller (1989), Mettinger (1994), Fellbaum (1995), to more recent ones such as Kostić (2011) and Hsu (2015). Particular focus is on Jones's (2002) and Davies' (2010) studies, their methodology, and outcomes. The third section discusses studies of opposition in Arabic.

Chapter 3 presents the corpora used to obtain the data for this thesis. Methodology used for choosing search-word pairs and for extraction of dataset examples is also explained in this chapter. Towards the end of this chapter, the data are described briefly and the method of data analysis is discussed.

Chapter 4 serves three objectives. Firstly, it introduces the new classification of antonym functions. Secondly, this chapter compares previous classifications presented by Jones (2002) and Davies (2013) and discusses parallelism and Ancillary use of antonyms more closely. Thirdly, towards the end of this chapter, a comparison between antonyms in Arabic and other languages regarding antonym sequence and part of speech is presented.

Chapter 5 extends the discussion of the new taxonomy of antonym functions that is presented in chapter four. In chapter five, the different grammatical constructions hosting antonymous pairs are discussed with examples from the dataset. The sections in

this chapter represent different categories of antonym functions. They are arranged in descending order based on the number of sentences in each category.

Chapter 6 introduces Sign-Based Construction Grammar. This chapter serves as part of the background literature. This part of the literature is situated in chapter 6 in order to be closer to the construction grammar analysis presented in chapter 7. Chapter 6 starts with a brief overview of constructionist approaches to grammar, then explains how SBCG as a formalized framework of Construction Grammar works. Finally, this chapter reviews work on antonyms from a constructionist point of view.

Chapter 7 introduces a formalized treatment based on Sign-Based Construction Grammar of both canonical antonym pairs and coordination in Modern Standard Arabic. It also presents a discussion of Inclusiveness and Unity as conventionalised uses of coordination of antonyms in MSA.

The conclusion is presented in chapter 8. This chapter reviews relevant parts of the research and sets the ground for future work. This chapter also discusses how Arabic cultural aspects affect how antonyms are used in MSA text.

Chapter 2

Contrastive relations

Earlier studies on lexical semantics viewed contrast as a sense relation. Cruse (1986) and Lyons (1977), for instance, define different types of antonyms based on logical relations and native speaker intuitions. Other studies show that it is an association relation between lexical items, too. For example, pragmatic and cognitive approaches, such as (Murphy, 2003) and Jones et al. (2012), show that both sense and lexical item are in relation. The chapter starts with different definitions and classifications for contrastive relations.

The second part of this chapter discusses the studies on contextual use of antonyms. Antonyms behave differently in text, different from other relations because they have both syntagmatic and paradigmatic relation. Therefore, researchers turned their attention to contextual uses of antonyms. For example, Deese (1964) proposed that antonymous pairs can be substituted for one another in certain contexts and that this substitutability is a cue for learning antonym relations. The adjective *big* in the sentence *This book is big.* can be replaced with its antonym *small* and the sentence remains semantically sensible and syntactically correct. However, Charles and Miller (1989) found that antonym pairs co-occur in the same sentence and proposed the co-occurrence hypothesis instead. Both paradigmatic and syntagmatic properties of antonyms are of equal importance and this is shown in studies such as Jones (2002) and Davies (2013).

The chapter ends with an overview of what has been done on antonymy in Arabic so far, including Hassanein (2012), which is a study on antonymy in the Qura'an following

Jones's (2002) methodology.

2.1   Defining and classifying antonyms

This section reviews some definitions of antonymy, starting with definitions based on different types of contrast such as Lyons (1977) and Cruse (1986). Then I move on to presenting a pragmatically oriented definition and pay some attention to the property of canonicity of antonymous pairs.

Earlier research on lexical relations in general and antonymy in particular, such as Lyons (1977) and Cruse (1986), was introspective. It defined antonymy according to the type of the relation between lexical items. Although the approach of the present study looks at antonyms in context, a look at antonym pairs out of context is essential because this study takes stand-alone antonym pairs as a starting point. Therefore, different relational kinds of contrast are presented before presenting the definition of antonymy adopted here.

Contrast between lexical items can be of different relational kinds, and a very detailed classification of them is presented by Lyons (1977). In his classification, contrast can be either *binary* or *non-binary*. In binary contrast, the relationship is between a pair of lexical items, while in non-binary contrast, the relationship involves multiple items that can be *cyclically* or *serially* ordered sets. According to Lyons (1977), *contrast* is a general term referring to any type of opposition, the term *opposition* is restricted to binary contrast, excluding sets of contrastive terms like *summer/autumn/winter/spring*; and more specifically *antonymy* is restricted to gradable oppositions, such as *hot/cold* or *tall/short*.

Cruse (1986) also presents a detailed typology of contrastive relations with definitions for each type. He presents three major types of contrasts. First, *complementaries* are pairs of words that 'exhaustively divide some conceptual domain into two mutually exclusive compartments' (Cruse, 1986: 198). The pairs *alive/dead* and *pass/fail* are examples of complementaries. The second group of contrasts is *antonymy* which refers to gradable oppositions that can be used in comparative structure, such as *hot/cold* and *tall/short*.

The third group is *directional opposites* like *up/down*.

Research on antonymy moved away from being introspective to looking at lexical relations in context in which antonymy is not defined as gradable opposition only. For example, Murphy (2003) presents a theoretical model for defining antonymy as well as other lexical relations from a pragmatic point of view. In her model, antonymy is viewed as 'a sub-type of contrast in that it is contrast within a binary paradigm' (Murphy, 2003: 9). The antonymy relation can be explained through the principle of Relation by Contrast in (10).

(10) **Relation by Contrast–Lexical Contrast** (RC-LC)

A lexical contrast set includes only word-concepts that have all the same contextually relevant properties but one. (Murphy, 2003: 170)

The general principle of RC-LC is that antonymy is a relation between concepts that is affected by pragmatic constraints. These constraints determine what is relevantly similar and what is different between the two concepts. So in the sentences *This book is big* and *This book is small*, the two adjectives predicate an attribute of the book pertaining to its size. They differ in one aspect in this context. However, in other contexts antonyms can differ in more than just one property as long as their difference is minimal compared to their similarity.

Generally, antonymy can be defined through both semantic opposition and minimal difference (Murphy, 2003); the (RC-LC) principle states that this is determined contextually. Semantically opposed lexical items are incompatible, which means that one cannot truthfully refer to the same concept, action, or property in any particular moment using both words. For example, *optimism* cannot also be *pessimism*, a person who is *walking* is not *running*. If a building is *tall*, it cannot be *short* at the same time using the same measuring reference, and if some books are *heavy* for someone to carry, they cannot be *light* for the same person, too.

Minimal difference constrains the meaning of *antonym* because it is not enough to say that antonyms have incompatible meanings. For example, *tall* is not the opposite of *heavy* because they differ in too many relevant ways. *Tall* refers to height while *heavy* refers to weight. Although *tall* and *heavy* are incompatible, they refer to different dimensions and

one can be both tall and heavy at the same time. *Tall* and *short*, on the other hand, are similar enough to be antonyms because they both refer to height. Similarly, *light* and *heavy* both refer to weight and therefore they are better candidates to be antonyms.

Davies (2013) presents an explanation of the relationship between opposites that elaborates what is meant by *minimal difference*. He argues that two dimensions or poles compose the relationship between opposing words. He calls these two dimensions the 'Plane of Equivalence' and the Plane of Difference. He explains that in the Plane(s) of Equivalence, the opposing 'pair can co-exist in the same conceptual domain' (Davies, 2013: 108). For some pairs, only one plane can be identified, but others can share several planes of equivalence. The 'Plane of Difference,' on the other hand, identifies how the two opposites differ from each other. One example that Davies presents is the antonymous pair *unity/division*. The two words:

> are equivalent in that they are both abstract nouns and examples of the cohesive qualities which organic or non-organic bodies can possess in relation to each other. They differ in the level of cohesion attained from maximum ('unity') to minimum or none ('division'). (Davies, 2013: 110)

Incompatibility and minimal difference are useful properties for defining antonymy. They are, however, dependent on contextual use of antonyms. Auto-antonyms are words that are opposites to themselves and therefore seemingly violate the incompatibility condition; but they refer to two different concepts that are minimally different from each other. For example, to *cleave* means to bring together or to separate from each other (Murphy, 2003: 173). However, contextual cues determine the senses and thus the incompatibility is revealed.

On the other hand, minimal difference can also be seemingly violated by new oppositions that are contextually contrasted. For example, in the sentence (11), the phrasal opposition between *colony* and *equal and valued part of this nation* is not minimally different if taken out of context.

(11)   We are not a <u>colony</u>, we are <u>an equal and valued part of this nation</u>. (Davies, 2013: 13)

Incompatibility and minimal difference are suitable criteria to describe canonical antonym

pairs which stand in both a semantic and lexical relation.[1]

In the present thesis, the term *antonymy* is not confined to gradable contrastive pairs as in Lyons' and Cruse's typologies. Instead, gradability is considered as one attribute of some antonym pairs. Antonyms can be gradable like *tall/short* because they measure the dimension in different directions, in this case the dimension of height. So, even something that is short can be taller than something else (Bierwisch, 1989). On the other hand, antonyms can be non-gradable such as *alive/dead* or *married/unmarried*. There are no degrees between the opposing words, rather, they divide one conceptual space.

Gradability of antonymous pairs, however, is affected by context. A gradable pair like *hot/cold* can be used exclusively, i.e. with no reference to their gradability, as in sentences like *I put the hot drinks on the table and the cold ones on the counter.* On the other hand, non-gradable pairs like *alive/dead* can be used with a scalar meaning as in *He is more dead than alive.* Paradis et al. (2015) investigated this property in antonymous adjectives and found that when the adjective is descriptive it is scalar, but when it is a classifier it is non-gradable, as the sentences in (12) below.

(12)   a. The book is thick. (Paradis et al., 2015: 156)

      b. Put all the thick books in the box to the left and the thin ones in the one to the right. (Paradis et al., 2015: 157)

The adjective *thick* in sentence (12a) above describes the book, and this description refers to a scalar property. However, the same adjective is used in (12b) as a classifier where two distinct groups are referred to: thick books and thin ones. Paradis et al. (2015), therefore, reject polysemy of adjectives and argue that the meaning of an adjective is evoked by its integration with the meaning of the noun it modifies along with the contextual frame (Paradis et al., 2015: 157).

Other classifications of antonymy, such as directional, complementary, etc., will not be discussed further as they are not relevant to this study. This is because despite attempts to categorise antonyms according to their semantic properties, all these types (complementary, gradable, directional, etc.) have similar functions in text and co-occur in similar types of contexts (Jones, 2002). However, one property of antonyms is related

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[1]Canonicity is discussed below in section 2.1.1.

to this study and that is their canonicity as antonymous pairs. This property is discussed in the following section.

2.1.1 Canonicity

Antonymy, as defined here, is a relationship between a pair of incompatible words that are minimally different. Some antonym pairs form a canon through conventionalization. This section reviews what is meant by an antonym canon. It also reviews how canonicity is determined and how canonical antonyms differ from non-canonical oppositions. Canonical antonymous pairs have become conventionally contrasted and therefore do not need a context to be understood as antonyms while non-canonical ones are context-bound oppositions (Murphy, 2003).

Studies based on their authors' native-speaker intuitions, such as Lyons (1977) and Cruse (1986), as well as psycholinguistic studies, such as Deese (1964) and Charles and Miller (1989), agree that some antonym pairs are better representatives of the relation of contrast than others. The notion of canonicity in these studies is referred to as good vs. bad antonyms (Cruse, 1986), systemic vs. non-systemic (Mettinger, 1994), and canonical vs. peripheral (Murphy, 2003).

I will use the canonical pair *hot/cold* as an example in the discussion of canonical vs. non-canonical antonyms. This pair refers to the temperature scale represented in figure 2.1 when they are used to describe liquids.

Figure 2.1: Temperature scale
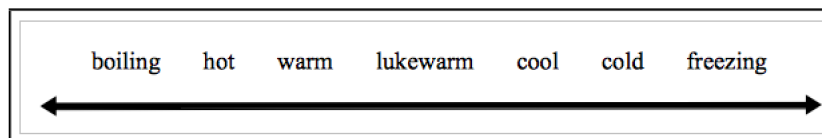
The adjectives in each side of this scale can be considered opposites: *warm, hot* and *boiling* are all opposites of *cool, cold,* and *freezing*. However, not all pairs are canonical antonym pairs. For example, *hot/cold, cool/warm,* and *freezing/boiling* are canonical; but *freezing/warm* is not. Moreover, some pairs are 'better' antonyms than others, such as *cool/warm* is considered better than *freezing/boiling*. The criteria for determining this

goodness of antonymy are discussed below, but first I discuss how canonical antonyms differ from non-canonical ones.

Mettinger (1994) differentiated between systemic and non-systemic opposition. According to Mettinger, systemic opposites relate to Saussure's *langue* and can be recognized by native speakers in a 'neutral' context. The non-systemic opposites '[c]ontrast on the level of parole' (Mettinger, 1994: 69), and need to be understood from the context in which they appear. The notion of systemic vs. non-systemic opposites is similar to the notion of canonicity.

Psycholinguistic studies find that canonical antonyms elicit each other in free word association tests (Deese, 1964; Charles and Miller, 1989). Canonical antonyms are also recognised as opposites faster than non-canonical ones (Herrmann et al., 1979). Moreover, in priming tests canonical antonym pairs prime each other (Becker, 1980; Weijer et al., 2012). Weijer et al. (2012) also found that co-occurrence frequency per se does not fully explain the priming effect that has been seen within antonym pairs. In neurolinguistic tests, canonical antonyms also stand out as different from contextually bound oppositions. Weijer et al. (2014) conducted a neurophysiological study in which they measured N400 amplitudes of the participants' brain responses. They found that brain responses to canonical antonyms showed significantly different N400 effects than brain responses to non-canonical antonyms (Weijer et al., 2014). They conclude that members of an antonym pair 'exhibit different levels of strength of relatedness' (Weijer et al. 2014: 4).

Paradis et al. (2009) combined different methodologies to investigate antonym canonicity. They used corpus methods to retrieve highly co-occurring canonical antonym pairs in the British National Corpus and used these words in two types of tests: an elicitation experiment and a judgement experiment. The elicitation experiment involved asking participants to provide the best opposite for the test items. In the judgement experiment, the participants were presented with pairs of antonyms and were asked how good each pair is as opposites. A cluster analysis of the results from both experiments showed that there are a few pairs strongly associated on both the lexical and semantic levels, e.g. *bad/good, heavy/light,* and *young/old* (Paradis et al. 2009: 405). There are also

pairs of opposites that are less lexically associated even though they are semantically associated. An example of these opposites is *alert/tired* (Paradis et al. 2009: 408). They conclude that this is 'an indication of a core canonical antonyms and a large number of pairings from more to less strongly lexically coupled' (Paradis et al., 2009: 414). These core canonical antonyms are used to express domains that are relevant to human life in different cultures (Weijer et al., 2014; Paradis et al., 2015). The findings in Paradis et al. (2009) confirm the canonicity continuum; which explains the different levels of 'goodness' of opposition in the pairs *hot/cold*, *boiling/freezing*, and *warm/cool* discussed above.

Finally, corpus studies have shown that canonical antonyms co-occur in certain contrastive constructions (Fellbaum, 1995; Mettinger, 1994; Jones, 2002). Examples of these constructions include: *X but Y*, *turning X to Y*, and *more X than Y*. Moreover, canonical antonym pairs co-occur in more types of these contrastive constructions than non-canonical antonyms (Jones et al., 2007).

The studies discussed above, whether based on native-speaker intuitions, psycholinguistic experiments, or corpus studies, all agree on a continuum of canonicity and that strongly canonical antonym pairs differ from non-canonical ones. I move now to discuss what makes an antonym pair canonical and how goodness of representation is determined.

Cruse (1986) lists three criteria that determine the 'goodness' of the opposing pair: uni-dimensional scale, purity of opposition, and semantic range. A scale with one dimension, that is with two ends on one line, is important for the judgement of an antonym pair as 'good'. The pair should also be symmetrically distributed along this scale. The pairs *hot/cold*, *boiling/freezing*, and *warm/cool*, for example, all share a uni-dimensional scale which is the temperature scale. They are also symmetrically distributed as is shown in Figure 2.1 above. The words *cold* and *hot* are further apart with the same distance from the mid-point of the scale. This is also true for *boiling/freezing* and *cool/warm*. Kotzor (2010) adds that symmetrical distribution is not enough for canonicity, but the overall distance between the pair is important, too. The greater the distance between lexemes the better they are as representatives of canonical antonyms. For this reason, *hot/cold* is a better antonym pair than *warm/cool*. However, symmetry of distribution and over all distance do not explain why *hot/cold* is higher in the canonicity scale than

boiling/freezing.

The second of Cruse's criteria for goodness of opposites is purity of opposition which refers to the 'proportion of the meanings of the opposed terms is exhausted by the underlying opposition' (Cruse, 1986: 262). For example, according to Cruse (1986) the pair *male/female* is considered more pure than *man/woman* because there is more shared componential meaning in the former than the latter: *male/female* refer to all living creatures of any age, while *man/woman* refer to human adults only. The last factor is semantic range which refers to the non-propositional meaning of the pair as opposed to their logical meaning. If the pair share their non-propositional meaning and have the same connotations, they are regarded as better antonyms, 'that is why, for instance, *tubby* and *emaciated* are not fully satisfactory opposites, although they incorporate a binary directional opposition' (Cruse, 1986: 262).

Determining the goodness of antonymy helps to determine pairs of antonyms that are representative of the prototypical antonym pair. Therefore, cognitive studies such as Paradis et al. (2009) and Kotzor (2010) used Goodness-of-Exemplar judgement tests to find the properties of the antonym prototype. Moreover, Cruse (2011) updates his criteria of good antonym pairs. In his later work, Cruse lists three features for the prototypical opposing pair: binarity, inherentness, and patency. He argues that a prototypical antonym pair consists of only two members, and distinguishes between inherent binarity and accidental binarity. The pair *up/down* is inherently binary because 'the possibilities of movement along a linear axis are logically limited to two' (Cruse, 2011: 154). So, an inherently binary opposite pair is better than an accidentally binary one. The third feature is patent binarity which means that the opposition is in the pair's meaning not in their contextual meaning. For example, the pair *yesterday/tomorrow* is a better antonym pair than their referents *Monday/Wednesday*, if today is Tuesday. The reason behind this is that *yesterday/tomorrow* has patent binarity while in *Monday/Wednesday* the opposition is contextual and not in their meanings.

The criteria discussed so far have an effect on the canonicity of antonymous pairs represented conceptually. These conceptually salient oppositions are reflected in the canonicity of lexical items. However, what makes certain lexical pairs more canonical

than another pair is their degree of conventionalization (Murphy, 2003).

The degree of conventionalization depends on two factors. First, in order to become conventionalized, opposing pairs must co-occur in context, so that their pairing may be learnt. Thus, more conventionalized pairs co-occur more frequently than other possible oppositions in the semantic field (Jones et al., 2012). Second, the two items share a mutual relationship (Jones et al., 2007). For example the antonym of *heavy* is *light* and the antonym of *light* is *heavy.* Murphy (2003) adds stability across a number of senses as an indicator of canonicity. For example, the pair *black/white* are used to refer to colour, race, and as adjectives describing coffee with or without milk. Moreover, semantic properties of the pair are not the only relevant properties, morphological and phonological properties of the lexical items can contribute to their canonicity (Murphy, 2003). For example, the pair *awake/asleep* is judged as a better antonym pair than *awake/sleeping* or *up/asleep* (Murphy, 2003: 34).

In summary, antonym canonicity lies on a continuum rather than clear cut groups of 'good' antonyms and 'bad' ones (Jones et al., 2012). Highly canonical antonyms are generally very parallel in their semantic characteristics, and they are conventionalized through use. Highly canonical antonyms are recognized as antonyms out of context while pairs of antonyms lower in the canonicity scale need contextual cues to frame them as contrastive. The next section presents studies that have investigated antonyms in context.

2.2 Antonymy in context

Since the introduction of corpus and computational tools, a lot of research on antonymy has been conducted using corpora. This section reviews these studies with special reference to Jones (2002) and Davies (2013), which have described particular uses of antonyms in text. After that, other studies based on Jones (2002) are briefly discussed.

Charles and Miller (1989) used the Brown corpus (Francis and Kučera, 1982) to search for antonym pairs in text and found that antonymous adjectives tend to co-occur together in the same sentence more frequently than predicted by chance. They reject the

substitution hypothesis and add that the 'the cue for learning to associate direct antonyms is not their substitutability, but rather their relatively frequent co-occurrence in the same sentence' (Charles and Miller, 1989: 357). Justeson and Katz (1991) used the same corpus to examine Charles and Miller's (1989) co-occurrence hypothesis. Their findings supported the co-occurrence hypothesis, but they added that antonymous adjectives tend to co-occur in the same sentences in contexts where each antonym could be grammatically substituted for the other.

Fellbaum (1995) also used the Brown corpus to investigate antonymous pairs from different word classes, and found that semantically opposed words from different word classes, such as the noun *life* and the verb *die*, co-occur at high rates. Therefore, she claims that antonymy is a property of concepts (which can be realized in different word classes) rather than words. Fellbaum (1995) describes the syntactic structures where antonyms co-occurred and presents these syntactic structures as a possible explanation for the co-occurrence of antonyms in context. Some of the frames she found include 'X and Y' as in *all creatures great and small*, 'X or Y' as in *a matter of life or death*, and 'from X to Y' as in *from the first to the last* (Fellbaum, 1995: 295). These syntactic frames can be filled by contrasting nouns, verbs, or adjectives. However, some verb-verb pairs do not have the same arguments or the same syntactic form, as in (13); and some noun-noun pairs do not agree in number and some occur in different syntactic environments. In sentence (13), *ending* is a gerund while *began* is a verb in the past tense.

(13)   The couple were married last Saturday, thus **ending** a friendship that **began** in their schooldays. (Fellbaum, 1995: 292)

Mettinger (1994) conducted the first systematic study on antonymous pairs and identified grammatical frames hosting antonyms. He analysed 350 pairs of antonyms taken from the 1972 edition of *Roget's Thesaurus* and 350 pairs from a corpus of novels (Mettinger, 1994: 2). He divided his data into two groups. The first group comprises 61.5% of the antonym pairings in his data. This group included the antonym pairs that were classifiable into categories. These categories were labelled according to their functions: simultaneous validity, cumulative validity, confrontation, choice, retrospective correction, comparison, mutation, and reversal. The remaining 38.5% of his data were unclassifi-

able and were labelled as instances of cohesion where 'the context stresses the contrast constituted by the juxtaposition of X and Y' (Mettinger, 1994: 41).

These studies show how research on antonymy shifted from being introspective based on intuition to more pragmatic approaches using corpus methodology that show antonym pairs as used in context. From here, I focus more on Jones (2002) and explain the methodology he used and his classification of antonym functions in text. I move then to Davies (2013) to highlight differences and similarities between his study and Jones's. I focus on these two studies because the classification presented in this thesis builds on their work. After that, studies on antonym functions in other languages are reviewed before I end this section.

Jones (2002)

At its time of publication, Jones's (2002) study was the largest systemic study of antonym co-occurrence using a corpus methodology. One goal of the study was to identify the syntactic structures in which antonyms co-occur and to classify their functions. Jones selected 56 antonymous pairs, including both frequently and less-frequently used antonyms, and including both morphologically related and unrelated antonyms. He searched for co-occurrences of these words in a newspaper corpus of about 280 million words taken from the *Independent* newspaper (1988-1996). He then selected 3000 sentences to form the dataset for his analysis.

Jones (2002) classified the functions of grammatical frames hosting antonym pairs in his dataset into eight categories listed in Table 2.1. The table lists the more frequent categories in the first column and the most frequent frames used in each category.

The first category is Ancillary Antonymy, where a canonical antonym pair triggers another opposition between words that otherwise might not be opposed to each other. He labels the antonymous pair as A-pair, and the opposing words as the B-pair. So in the sentence from Jones's data *I **love** to cook but I **hate** doing the dishes*, the pair *love/hate* is the 'A-pair' and *to cook* and *doing the dishes* is the 'B-Pair' (Jones, 2002: 46). There is no specific frame for Ancillary Antonymy, but parallelism plays an important role in the presentation of the opposition in these sentences. Murphy et al. (2015) re-examined the

Table 2.1: Jones's (2002) grammatical frames hosting canonical antonyms.

antonymy category	grammatical frame
Ancillary Antonymy	no specific frame
Coordinated Antonymy	X and Y; X or Y
	X but Y
Comparative Antonymy	more X than Y
	X rather than Y
Distinguished Antonymy	the difference between X and Y
	separating X and Y
Transitional Antonymy	from X to Y
	turning X to Y
Negated Antonymy	X not Y; X instead of Y
	X as opposed to Y
Extreme Antonymy	the very X and the very Y
	either too X or too Y
Idiomatic Antonymy	(idiomatic expressions)

effect of parallelism on creating a secondary opposition in the sentence. They examined both semantic and formal parallelism in addition to the connective used between the two parallel parts. Their findings supported Jones's finding that formal parallelism diminishes the need for a contrastive connector. Their findings also confirm their hypothesis that lexically related words in B-pair position reduce the need for contrastive connectives even further.

The second category in Jones's categories is Coordinated Antonymy where the antonym pair 'signal[s] inclusiveness or exhaustiveness of scale' (Jones, 2002: 75). The two major frames in this category are 'X and Y' as in *He took **success** and **failure** in his stride* (Jones, 2002: 64); and 'X or Y' as in *Yet, **win** or **lose**, he could fade faster than Donny Osmond* (Jones, 2002: 66).

Ancillary Antonymy and Coordinated Antonymy are the two largest categories in Jones's classification with almost the same percentage, 38.7% for Ancillary Antonymy and 38.4% for Coordinated Antonymy. Jones et al. (2012) compared the discourse functions found in six corpora from previous research: adult-produced writing in English, Swedish, and Japanese; English adult-produced speech; English child-produced speech; and English child-directed speech. They found that the two classes of Ancillary Antonymy and Coordinated Antonymy are the most dominant of the discourse functions in all these corpora.

The other six classes are called *minor classes* by Jones. The sentences in (14) are examples of each minor category in Jones's classification.

(14)   a. **Small** monk tails are cheaper than **large** ones. (Comparative Antonymy; Jones, 2002: 78)

       b. The difference on grain imports between **fast** and **slow** economic growth... (Distinguished Antonymy; Jones, 2002: 81)

       c. The mood in both camps swung from **optimism** to **pessimism**. (Transitional Antonymy; Jones, 2002: 85)

       d. The public has cause for **pessimism**, not **optimism**, about the Government plans. (Negated Antonymy; Jones, 2002: 88)

       e. Nothing, it seemed, was too **large** or too **small** for Mr. Al-Fayed. (Extreme Antonymy; Jones, 2002: 92)

Comparative Antonymy constitutes only 6.8% of Jones's (2002) dataset. This category includes sentences with antonyms put in comparison to each other such as the one in (14a). In this sentence, *small/large* monk tails are compared against each other. The category Distinguished Antonymy (5.4%) includes sentences with an explicit distinction between pairs of antonyms. The sentence in (14b) is one of the examples Jones provides for this category. Transitional Antonymy (3%) presents a shift or movement from one antonym's meaning to the other as in sentence (14c) above. Negated Antonymy (2.1%) is used to affirm a word's meaning by negating its opposite. This use dominates in spoken discourse more than in written text (Jones et al., 2012). Examples of Negated Antonymy include sentence (14d) above. In Extreme Antonymy, the structures are similar to Coordinated Antonymy. The difference is that there is a comparison between the far two ends of the scale expressed by the antonym pair, such as in sentence (14e). The last category in the minor classes is Idiomatic Antonymy. This category includes sentences where the antonym pair is used as a part of 'a familiar idiom, proverb, or cliché' (Jones, 2002: 93).

The remaining sentences in Jones's data, 160 sentences, are grouped in a Residual Category. Even within this group, there are some functional subcategories: Unity (seven sentences), Conflict (eighteen), Simultaneity (eight), Association (seventeen), Specifica-

tion (sixteen), Oblique stroke (seventeen), and Equivalence (five sentences). The remaining nineteen sentences receive no further classification.

Later work added a category to Jones's classification: Interrogative Antonymy (Jones and Murphy, 2005; Jones, 2006; Murphy et al., 2009) . This category involves forcing a choice between the two words in the antonym pair. Sentence (15) is an example of this category. In this sentence, there is a choice between *good* and *bad*.

(15) Is she a **good** mommy or a **bad** mommy? (Jones and Murphy, 2005: 414)

The classification presented by Jones helped in understanding antonym behaviour in text. First he pointed out that antonym pairs can trigger novel oppositions. His Ancillary Antonymy category featured unconventional contrasts that are context bound which directed research to elicitation of non-canonical antonyms from text and to how these non-canonical antonyms occur in text, not just in an Ancillary context but in the frames found in his study. Jones (2002) also shows how a corpus driven approach is suitable for investigating sense relations. His functional approach linked form and meaning which also made antonymy subject to accounts based on Construction Grammar. I move now to discuss Davies' (2013) study on opposition in context.

Davies (2013)

Davies (2013) also investigated frames and their functions in English. He explored the syntactic frames identified by Jones and reclassified their functions. However, rather than investigating these frames with reference to canonical antonyms, Davies searched for the frames to look for new oppositions. Davies (2013) categorized the discourse functions of oppositions in context into eight categories, listed in Table 2.2. The first column of the table lists the categories proposed by Davies. The second column lists the grammatical frames used for each category.

In Davies' (2013) typology, the first category is Negated Opposition. The sentences in this category generally present the negation of something in favour of another as in sentence (16) below. The underlined words are hosted in the frame *not X, Y* which triggers a contrast between them.

Table 2.2: Davies' (2013) grammatical frames (triggers) for non-canonical opposition.

opposition category	grammatical frame
Negated Opposition	X not Y
	not X, Y
Transitional Opposition	X turns into Y
	X becomes Y
Comparative Opposition	more X than Y
	X is more A than Y
Replacive Opposition	X rather than Y; X instead of Y
	X in place of Y
Concessive Opposition	X but Y; despite X,Y
	while X,Y; although X, Y; X, yet Y
explicit Opposition	X contrasted with Y; X opposed to Y
	the difference between X and Y; X against Y
Parallelism	no specific frame
Binarized option	whether X or Y
	either X or Y

(16)   We are not a <u>colony</u>, we are <u>an equal and valued part of this nation</u>. (Davies, 2013: 13)

The second category is Transitional Opposition. In this category, a transition is expressed from a state to a later state, as in sentence (17) below.

(17)   British marchers have spurned <u>isolation</u> for <u>solidarity</u>, and <u>fear</u> for <u>fury</u>. (Davies, 2013: 76)

The third category is Comparative Opposition. As in Jones's typology, this category involves a comparison between one opposite and another which indicates gradability of that pair. Sentence (18) below shows non-canonical oppositions in a comparative structure in which the marchers' attitude was inclined towards being *bemused*.

(18)   the marchers seemed more <u>bemused</u> than <u>offended</u> by the occasional shouts of 'go home, scum.' (Davies, 2013: 69)

The category Replacive Opposition includes sentences with the frame *X rather [than] Y.* Jones (2002) includes this frame in his Comparative Antonymy category but Davies assigns a category for it. The category Replacive Opposition 'sits functionally somewhere in-between the negations and comparison' (Davies, 2013: 65). Sentence (19) below is an example of this category.

(19) That they had made <u>tea</u> - and coffee - rather than <u>war</u> was borne out last night
(Davies, 2013: 66)

The next category is Concessive Opposition. This category involves the use of a concessive conjunct such as *although*, *but*, *yet*, *however*, and *despite*. An example from Davies' data is presented in (20) below, in which there is a subversion of an expectation that large numbers of marchers entails that the march in not peaceful.

(20) Despite <u>the numbers</u>, the march was <u>peaceful</u>. (Davies, 2013: 186)

Another category in Davies' classification is Explicit Opposition with sentences using a frame that refers explicitly to the opposition between the pair as in (21). This category is similar to Jones's Distinguished Antonymy.

(21) <u>The country people</u> came to London to join in a well-organized, well-behaved march through the streets. They contrasted dramatically with <u>the crowds who sat down for CND</u>, ... (Davies, 2013: 77)

The category Parallelism includes sentences with a formal parallelism between the two parts of the sentence, as in (22) below. Davies attributes the triggered opposition to the parallel structure that foregrounds the opposing pair. Parallelism is an important feature of antonym co-occurrence and proves important for non-canonical opposition co-occurrence, too. Parallelism will be discussed in detail in section 4.2.

(22) If <u>Mrs. Thatcher presided over the collapse of heavy industry</u>, <u>Tony Blair has watched the slow death of farming</u>. (Davies, 2013: 82)

The last category is Binarized Option which is Davies' update of Interrogative Antonymy introduced to Jones's classification by Jones and Murphy (2005). In this category a choice is presented as in sentence (23).

(23) The only question now is whether <u>Mr Blair still treats those hundreds of thousands of people as an irrelevant minority</u>, or <u>accepts that this time, the countryside really has spoken</u>. (Davies, 2013: 89)

The main difference between the two approaches is that 'Jones is [...] treating his frames as environments in which to house co-occurring pairs rather than as triggering oppositions' (Davies, 2010: 29). However, the category Coordinated Antonymy which is one of Jones's major categories does not appear in Davies' classification. Jones (2002) lists the form *X and Y* as one of the frames in the category of coordinated antonymy. Davies (2013), on the other hand, does not include this frame in his taxonomy because he claims it does not trigger other oppositions and only canonical antonyms appear in this frame. In addition, Davies (2013) removed Ancillary Antonymy from his classification and adopted Parallelism instead. He explains that parallelism foregrounds a pair of lexical items/phrases and invites the reader to contrast them (Davies, 2013: 51).

It is argued throughout this thesis that schematic constructions host canonical antonyms frequently; therefore, these constructions acquire the contrastive sense and trigger oppositions between non-opposed words. The degree of contrastiveness, however, is different from construction to another. For example, 'coordinate constructions [with and] may be weaker than other constructions associated with coordinated antonymy [...] in terms of their contrastiveness' (Hsu, 2015: 69). It is because the coordination construction is weaker in its contrastive meaning that it is not found in Davies' study on emerging oppositions.

The works of Jones (2002) and Davies (2013) are important to the present study because they explain how emerging oppositions are construed in text whether through canonical antonym pairs or syntactic structures. I return to these two studies in section 4.1 in order to highlight the differences between them and the analysis carried out in this thesis.

studies on other languages

Other corpus studies have been conducted on languages other than English in response to Jones's work. For example, Murphy et al. (2009) conducted the first cross-cultural study that showed Jones's categories were applicable to languages other than English by comparing Jones's findings to Swedish. They used Swedish translations of the antonym pairs in Jones's study as search words in a Swedish corpus. They found that discourse

functions of antonymy in Swedish are similar to those in English with somewhat different frequencies for each function.

Muehleisen and Isono (2009) investigated antonym functions in Japanese, but they did not translate the 56 pairs listed by Jones. Their study focuses on twelve antonym pairs. The reasons they provided for their choice all pertain to the fact that Japanese has a very different syntactic structure compared to English. They then identified the syntactic structures where these antonyms are found. Similar to the findings of Murphy et al. (2009), they found that discourse functions of antonymy in Japanese are similar to those in English and Swedish; but the proportions of antonyms in each category is different.

Lobanova et al. (2010) investigated antonyms in Dutch. They used a number of antonymous pairs to extract grammatical structures from a corpus, and used these structures to find more antonyms. Most of these extracted pairs were nouns, and some were co-hyponyms that acted as antonyms in context.

Kostić (2011) conducted a corpus study on antonym co-occurrence in Serbian. She used the Untagged Electronic Corpus of the Serbian Language that contains 22 million words of written text from different genres. She found that the two largest categories of antonym functions in Serbian are as a signal of inclusiveness (Coordinated Antonymy) in 44.4% of the dataset; and as a signal of contrast (Ancillary Antonymy) in a third of the dataset.

Hsu (2015) investigated Chinese antonyms in the Chinese Gigaword Corpus and also found that the sentences in his data fit the classification in Jones (2002) with a dominance of the Coordinated Antonymy category. Hsu (2015) also found 'that the morphosyllabic structure of an antonym pair in Chinese can influence how it is used' (Hsu, 2015:70). For example, some syntactic structures prefer one syllable antonym pairs.

These studies showed how Jones's work, both methodology and categorization of antonym functions, is applicable across different languages. The major categories of Ancillary Antonymy and Coordination Antonymy identified by (Jones, 2002) in his English data were also major categories in the other investigated languages with some variation on which one is used more than the other. Other categories were also found in differ-

ent frequencies which can be due to cultural factors. The present study adds another cross-linguistic perspective.

Similar to Jones (2002), some of these studies, e.g. Muehleisen and Isono (2009) and Lobanova et al. (2010), used syntactic frames in order to extract antonymous pairs form corpora. However, none of them presented a different taxonomy for contextual oppositions. The present study makes use of Davies' (2013) work on emerging oppositions to identify weaknesses in Jones's (2002) taxonomy and to present a taxonomy of antonym functions in MSA. The following section reviews work done on antonymy in varieties of Arabic.

2.3   Previous studies on Arabic antonyms

The present study contributes knowledge about antonymy in general as well as about Arabic linguistics because antonymous relations among words in Arabic are under-investigated. In addition, this study proposes to take different angles from previous research on opposition in Arabic in fields like auto-antonyms, translation, and rhetoric.

Much of the work done on Arabic antonyms has investigated auto-antonyms.[2] An auto-antonym is a lexical item with two opposing senses; context alone can determine the meaning intended by the speaker. The most comprehensive work on auto-antonyms in the present day is AlKhamash's (1991) thesis on the phenomenon in Arabic. Al-Khamash (1991) presents a review of earlier work on auto-antonyms by eight traditional Arabic linguists such as Qutrub, Abu Ubaydah, AlTawwazi, Ibn al-Sikkit, Abu Hatim, and others. Al-Khamash (1991) then classified the homonymous opposites taken from the eight sources he reviewed. He then explained the different views regarding their development as auto-antonyms. Al-Khamash (1991) attributes the formation of auto-antonyms and their high frequency in Arabic to a number of reasons. Some of these reasons are related to phonetic and morphological aspects of Arabic words. For example, some auto-antonyms are homonyms that have opposite meanings formed through the interaction between roots and some templates of the active and passive participles or through some verb conjugation processes. Other auto-antonyms in Arabic are the result

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[2]also called *homonymous opposites*

of semantic processes like semantic shift, metonymy, and euphemism.

Another angle in the existing research on opposition in Arabic is the translation point of view. For example, Ali (2004) investigated antonyms and synonyms in irreversible binomials in MSA and how they can be translated into English. Irreversible binomials are words that come in a fixed order such as *odds and ends* (not *ends and odds*) (Malkiel, 1959). Malkiel (1959: 113) defines binomials as 'two words pertaining to the same form-class, placed on an identical level of syntactic hierarchy, and ordinarily connected by some kind of lexical link'.

The antonymous couplings in the Arabic irreversible binomials investigated by Ali (2004) relate to universally familiar concepts like time, space, size, and number (Ali, 2004: 348). Ali (2004) provides four reasons behind this 'sequential fixedness' in Arabic irreversible binomials: near vs. distance as in هنا وهناك *hunā wa hunāk* 'here and there', positive/constructive vs. negative/destructive as in الخير والشر *alxayr waššar* 'good and evil', valuable/desirable vs. less valuable/desirable as in في الأفراح والأتراح *fi alʔafrāḥ walʔatrāḥ* '(in times of) happiness and (in times of) sadness', and the last reason is the syntactic structure as in أين هذا من ذاك *ʔayna haḏā min ḏāk* 'what is <u>this</u> compared to <u>that</u>'. Ali (2004) also states that the sequence of these couplings is sometimes the same in both Arabic and English, like 'good and evil'; while others are culture-specific.

The third angle from which antonyms are usually looked at in Arabic is from the point of view of rhetoric. Antithesis is a major device used in Arabic poetry where opposing words are employed to show contrast (Ali, 2004: 352). Arabic studies on antithesis (e.g. Ali, 2004; Abdul-Raof 2006; Abdunabi, 2010) treat antithesis as an embellishment that adds good style to Arabic text. They classify antithesis into two types: negated and non-negated antithesis. In negated antithesis, the same lexical item is used twice: once in the affirmative and another in the negative forms. A usually cited example is the

following verse of the Qura'an: فلا تخافوهم وخافون *flā taxāfūhum waxāfūn* '<u>Do not fear</u> them, but <u>fear</u> Me' [Qura'an, 003: 175].

On the other hand, in non-negated antithesis, a pair of antonyms is used in the same sentence. An example that Ali (2004) presents for this type of antithesis in Arabic poetry is presented in (24) below:

(24) (*Aššafiʕī*; Ali 2004: 352) وعين الرضا عن كل عيب كليلة ولكن عين السخط تبدي المساويا

wa-ʕaynu **a-rriđā**   ʕan kulli ʕaybin kalilatun wa-lakinna ʕayna
and-eye **the-approval** from all   blemish tired   and-but eye
a-ssuxṭi   tubdī al-masāwiyā
the-resentment reveal the-shortcomings

The eye of **approval** is blind to all blemishes. But the eye of **resentment** reveals shortcomings.

Antithesis was discussed in detail centuries ago by AlQazweeni[3] who (as cited in Abdunabi (2010)) presents three rhetorical devices where opposites are used in text. One of these devices is antithesis in its negated and non-negated forms. The second type is multiple antithesis in which two pairs of antonyms are used in parallel with each other as in the following verse of the Qura'an: فليضحكوا قليلا وليبكوا كثيرا *falyađḥakū qalīlan walyabkū katīran* 'Therefore they shall **laugh** *little* and **weep** *much*' [Qura'an, 009: 82]. In this verse, the verb *laugh* is contrasted with the verb *weep* and at the same time, the adjective *little* is contrasted with the adjective *much*. Multiple antithesis is similar to Ancillary Antonymy when both the A-pair and B-pair are canonical antonyms.

The third use of opposites is what AlQazweeni refers to as 'fake opposition' where a pair of opposing lexical items are used but these lexical items do not have the same arguments which is similar to what Fellbaum (1995) found in her data. An example of 'fake opposition' is cited in (25). In this example, the two verbs *laughed* and *cried* do not have the same agents.

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[3]AlQazweeni's (1268-1338 AD) terminology for different types of antithesis are طباق السلب *ṭibaq assalb* 'negated antithesis', طباق الإيجاب *ṭibaq ʔalʔīǧāb* 'non-negated antithesis', المقابلة *ʔalmuqābalah* 'multiple antithesis', and إيهام التضاد *ʔīhām ʔattađād* 'fake opposition'.

(25) **لا تعجبي يا سلم من رجل ضحك المشيب برأسه فبكى** (*Daʕbal*; Abdulnabi, 2010: 80)

lā taʕʤabī yā salmu min raʤulin **ᵭaḥika** al-mašību bi-raʔsi-hi
not wonder oh Salma about man laughed the-grey.hair in-head-his
fa-bakā
so-he.cried

Oh, Salma! Do not wonder about a man who in his head 'grey hair' **laughed**, so he **cried**.

AlQazweeni also states that parallelism is a major rhetorical device where antonyms can be found. Parallel phrases similar in their syntactic structure are juxtaposed for rhetorical purposes. AlQazweeni defines parallelism as two phrases that are similar in rhythm but not rhyme (Abdunabi, 2010). Studies on Arabic rhetoric as well as studies on translation to and from Arabic can benefit from studies that investigate the functions of grammatical frames of opposites and antonyms such as the present study.

Hassanein's (2012) study of antonymy in the Qura'an has found many rhetorical devices using antonymous pairs such as parallelism, repetition, deixis, euphemisms, and ellipsis. His study is similar to the studies discussed in the second section because it is based on Jones (2002) but I include it here with the discussion of Arabic antonymy for clarity because it is a study on a variety of Arabic.

Hassanein (2012)

Hassanein's research takes Jones's (2002) study as a starting point to classify the discourse functions of opposites found in the Qura'an. However, Hassanein did not preselect the antonymous pairs as Jones (2002) did, but rather searched manually for co-occurring oppositions that exist in the Qura'an. Hassanein (2012) covered a different range of opposite types than what is covered in the present study, such as deictic expressions, active/passive verbs, and active/passive participles. He identified the antonyms found in the Qura'an and the syntactic frames they appear in, and grouped them according to Jones's (2002) classification. The goal of his research was to enhance the English translation of the Qura'an. The main idea behind his research is that if the grammatical structure hosting the antonyms added to the meaning of the pair, this structure should be kept in the target language in order to maintain the same function.

Hassanein's (2012) classification of antonym functions in the Qura'an is listed in Table 2.3.

Table 2.3: Hassanein's (2012) classification of functions of antonyms found in the Qura'an.

antonymy category	grammatical frame	English frame
Ancillary antonymy		no specific frame
Coordinated antonymy	أو ,و	X and Y; X or Y
	لا ... ولا	neither X nor Y
Comparative antonymy	أفعل من	X ADJ-er than Y
	على ,ليس	X not as Y, prefer X over Y
Distinguished antonymy	يعلم ... من	know X from Y
	يميز ... من	distinguish X from Y
Transitional antonymy	بعد ,من ... إلى	from X to Y; X after Y
	ثم	X then Y
Negated antonymy	ليس ... لكن ,ولا	X and not Y; not X but Y
	ليس ... و	not X and Y
Extreme antonymy	لا ... ولا	too X and too Y
Idiomatic antonymy	من ... ومن	from X and from Y
	من أو و	X and Y; X or Y; X from Y
Subordinated antonymy	وإن ... فـ ,إذا ... فـ	if X then Y; when X then Y
Exchanged antonymy	اشتروا ... بـ ,باعوا ... بـ	buy X for Y; sell X for Y
	يتبدل ... بـ	substitute X for Y
Case antonymy	لا ... ولا	neither X nor Y
	و	X and Y

There are some differences between the data from the Qura'an and Jones's data. First, in Ancillary Antonymy, Hassanein found instances where the A-pair is present but the B-pair is not (Hassanein, 2012: 149). The verses in (26) represent one of the examples he provides for this case.

(26) • وَمَا يَسْتَوِى الْأَعْمَى وَالْبَصِيرُ • وَلَا الظُّلُمَاتُ ولا النُّورُ • وَلَا الظِّلُّ وَلَا الْحَرُورُ •
(022 - 019 ,035 :Qura'an) وَمَا يَسْتَوِى الْأَحْيَاءُ وَلَا الْأَمْوَاتُ

wa-mā   yastawī al-ʔaʕmā wa-l-baṣīru   • wa-lā   a-ḍḍulumātu wa-lā
and-not equal   the-blind and-the-seeing • and-not the-darkness and-not
a-nnūru • wa-lā   a-ḍḍillu wa-lā   al-ḥarūru • wa-mā   yastawī al-ʔaḥyāʔu
the-light • and-not the-shade and-not the-heat   • and-not equal   the-living
wa-lā   al-ʔamwātu
and-not the-dead

The **blind** and the **seeing** are not alike, nor are **darkness** and **light**, **shade** and **heat** are not alike, nor are the **living** and the **dead**

Hassanein (2012) explains that an abstraction of the B-pair is represented by concrete instances in the A-pair. The verses in (26) compare a set of instances with another set and states that they are not equal. A blind person is not equal to someone who can see, darkness is not equal to light, shade is not equal to heat, and the living are not equal to the dead. In Ibn-Kathir (2002)[4], the two contrasted sets in these verses represent a believer on one hand and a non-believer on the other. Therefore, Hassanein (2012) claims the contrasted words present in these verses are B-pairs to an absent A-pair which is *believer* and *non-believer*.

I do not agree with Hassanein's argument. There is no deleted or absent A-pair, rather, these contrasted pairs are instances of Coordinated Antonymy which are used figuratively. In fact, Hassanein classifies another verse, in (27) below, with a similar structure under Coordinated Antonymy because the antonyms in that verse were not used figuratively.

(27)   قُلْ لَا يَسْتَوِي الْخَبِيثُ وَالطَّيِّبُ وَلَو أَعْجَبَكَ كَثْرَةُ الْخَبِيثِ (005,100 :Qura'an)

qul lā   yastawī al-xabīṯu w-a-ṭṭayyibu wa-lawu   ʔaʕdʒaba-ka kaṯratu
say not equal   the-bad   and-the-good and-even.if like-you   abundance
al-xabīṯ
the-bad

Say [Prophet], **bad** cannot be likened to **good**, though you may be dazzled by how abundant the bad is.

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[4]Ibn Kathir (1300-1373) is an exegesis of the Qura'an. Different exegesis have different interpretation of the Qura'an. He is the most well-known exegesis because he linked the verses of the Qura'an with sayings of Prophet Muhammad peace be upon him and the sayings of the Sahaba, the prophet's followers.

The structure in (26) and (27) is the same لا يستوي (مان) 'X and Y are not equal'. However, in (26) the pair are used in a figurative sense to refer to something else, while (27) the pair is used literally.

Hassanein (2012) presents another discrepancy between his and Jones's (2002) data. In Comparative Antonymy, there are examples of elliptical comparison where one antonym is mentioned but not the other. This is not a case of antonym co-occurrence because there is only one antonym in the sentence. However, Hassanein claims that because the second pair is understood these sentences are counted as co-occurrence of antonymous pairs. An example that Hassanein presents is repeated in (28) in which the next life is compared to this life.

(28)   وَلَلْآخِرَةُ أَكْبَرُ دَرَجَاتٍ وَأَكْبَرُ تَفْضِيلاً (Qura'an: 017, 021)

wa-l-al-āxiratu   ʔakbaru daraʤātin wa-ʔakbaru tafdīlā
and-verily-the-hereafter bigger   degrees   and-bigger favour

But the **hereafter** holds greater ranks and greater favours.

In (28), the verse states that the hereafter holds greater favours but does not say than what, but exegesis tell us that it is this life that is contrasted here (Ibn-Kathir, 2002). The method Hassanein used to extract co-occurrence of antonyms is different from Jones's and the present study. He manually went through the Qura'an to identify sentences for his analysis, and therefore, included such sentences. However, in a corpus study where co-occurring pairs of antonyms are searched for, such sentences will not be retrieved.

Moreover, three categories were added by Hassanein (2012) to account for functions not identified by Jones (2002) as table 2.3 shows. The first category Hassanein adds is Subordinated Antonymy. In this category, one antonym of the pair is in a main clause and the other is in a subordinated clause. It 'signals subordination of either of the two antonymous pair members to the other' (Hassanein, 2012: 204). An example of this is in (29).

(29) وَإِنْ كَانَ ذُو عُسْرَةٍ فَنَظِرَةٌ إِلَى مَيْسَرَةٍ (Qura'an: 002, 280)

wa-ʔn kāna   ḏū   ʕusratin fa-naḍiratun ʔilā maysarah
and-if he.was owner.of difficulty then-delay   to   easy_N

If the debtor is in **difficulty**, then delay things until matters become **easier** for him.

The structure in Subordinated Antonymy as presented by Hassanein is found in the MSA data of the present study. However, I classify the structure according to the meaning it conveys; and in this case, there is a meaning of Consequence. The situation presented through the second member of the antonym pair should happen as a consequence of the situation expressed by the first member of the pair.

Another category Hassanein presents is Exchanged Antonymy, in which there is a process of exchanging a referent of one antonym in place of its opposite such as a process of transaction as in the verse in (30) below.

(30) أُولَٰئِكَ الَّذِينَ اشْتَرَوُا الضَّلَالَةَ بِالْهُدَى فَمَا رَبِحَتْ تِجَارَتُهُمْ وَمَا كَانُوا مُهْتَدِينَ (Qura'an: 002, 16)

ʔulāʔika alladīna ištara-w   a-ḍḍalālata bi-l-hudā   fa-mā rabiḥat
those   who   bought-they the-straying with-the-guidance so-not win
tiǧāratu-hum wa-mā kān-ū   muhtadīn
trade-their   and-not were-they guided

They have bought **error** in exchange for **guidance**, so their trade reaps no profit, and they are not rightly guided.

The last category Hassanein introduces is Case Antonymy an example is presented in (31). 'Case is used here in a generalized sense to indicate either the syntactical function, such as *subject* and *object*, or the semantic role, such as *agent* and *patient*, a noun carries out within the framework' (Hassanein, 2012: 212).

(31) (Qura'an: 022, وَإِنْ يَسْلُبْهُمُ الذُّبَابُ شَيْئاً لَا يَسْتَنْقِذُوهُ مِنْهُ ضَعُفَ الطَّالِبُ وَالْمَطْلُوبُ
073)

wa-?in yaslub-hum a-ddubābu šay?an   lā   yastanqidū-hu min-h đaʕufa
and-if rob-them   the-fly   something not retrieve-it   from-it weak
a-ṭṭālibu   wa-l-maṭlūb
the-requester and-the-requested

And if a fly took something away from them, they would not be able to retrieve
it. How feeble are the **petitioners** and how feeble are **those they petition**!

In this verse, the two words الطالب *aṭṭālibu*, 'seeker' and المطلوب *almaṭlūb* 'sought' are
the active and passive participles of the verb meaning 'to seek'.

Hassanein's study shows that Jones's typology is also applicable on Arabic. However,
this thesis investigates MSA which presents a different variety of Arabic. In addition,
the present study aims to overcome the shortcomings in Jones's classification which will
be discussed in chapter 4.

2.4 Concluding remarks

I started this chapter with some definitions of *antonymy* and *opposition*. Antonymy is a
binary relation of contrast between words; opposition, on the other hand, is the novel con-
trastive relation triggered contextually. Section 2.1.1 focused on canonicity as a defining
factor of antonymy in this thesis. An antonym canon is a conventionalized antonym pair
that native speakers usually recognize out of context. Canonicity of antonym pairs lies in
a continuum. Pairs of antonyms can be conventionalized pairings of form and meaning;
they also can be ad hoc couplings opposed to each other on the basis of their context
only. The relevance of canonicity of antonym pairs to this study is twofold. First, the
investigation starts with searching pairs of canonical antonyms in an MSA corpus. Sec-
ond, one aim of this study is to present a constructionist account of canonical antonyms.

Therefore, it is vital to specify what is meant by canonical antonyms prior to choosing pairs of Arabic antonyms, and prior to specifying their features as constructions.

This study is based on Jones's (2002) study on antonymy and Davies' (2013) study on opposition, so a differentiation between the two studies is vital. Therefore, I discussed Jones's and Davies' work as well as work done on antonym pairs co-occurrence in context in different languages based on Jones's study. They give valuable insight into the similarities of antonym functions cross-linguistically. Antonym pairs were found to co-occur in coordinated structures to indicate inclusiveness of the whole domain shared by the pair. They also trigger contrast between other pairs in the sentence. Antonyms were also found in negated structures for emphasis and in comparative structures where one antonym is measured against the other. These similarities of antonym use cross-linguistically suggest the universality of antonym functions. However, these functions occurred in different proportions which indicates linguistic or cultural effects.

The present study investigates MSA written text. Therefore, section three reviewed previous work investigating antonymy in Arabic. Contrast was investigated in Arabic as a relation between words regardless of context. However, contextual cues were considered in the case of auto-antonyms. Moreover, Hassanein's (2012) study followed Jones's approach to investigate antonymy in the Qura'an with the goal of arriving at a better translation of it.

Generally, the focus of this chapter is to present a discussion of how previous work on antonymy relate to the present study. The next chapter explains the corpus methodology used in this investigation and how it is similar or different from what has been discussed here.

Chapter 3

Methodological considerations

Antonymy, as Fellbaum (1995) stresses, is more pervasive among adjectives than among other parts of speech, but she also notes that 'there is nothing special about antonymous adjectives [...] rather, there is something special about antonymous concepts, no matter in what form these concepts are lexicalized' (Fellbaum 1995: 285). From this perspective, I investigate antonymous concepts from different word classes in Modern Standard Arabic. This chapter discusses the methodological choices that were made prior to this investigation. These choices include choosing the corpus, the pairs of concepts, and the forms these concepts are lexicalized in. Throughout the discussion relevant linguistic properties of MSA are introduced.

3.1 Choosing the corpora

This section starts with a brief introduction of the language under investigation. After that, it introduces the corpora arTenTen12 and arabiCorpus which are used for this investigation.

Modern Standard Arabic

This study investigates antonymy in context in Modern Standard Arabic. This variety of Arabic is often described as 'a functional written standard for all Arab countries' (Ryding, 2005: 9), and is defined as 'the written language of contemporary literature, journalism,

and "spoken prose"' (El-Hassan, 1978, as cited in Ibrahim, 2009: 17). A more detailed definition is adopted by McLoughlin (1972, as cited in Ryding, 2005: 9), which states that MSA is 'that variety of Arabic that is found in contemporary books, newspapers, and magazines, and that is used orally in formal speeches, public lectures, learned debates, religious ceremonials, and in news broadcasts over radio and television'. Investigation of any phenomenon in written Arabic has to be on MSA, as the other varieties are primarily spoken rather than written. Though vernaculars can be found written in chat rooms and social networks and in limited printed form as part of local culture, these written sources can hardly be considered to be representative of the vernacular because of MSA interference (Holes, 1995).

Words in Arabic are derived through the interaction of lexical roots and phonological templates; i.e. circumflexion. The phonemes of the lexical root, mostly consonants, are arranged into a template of vowels, and sometimes certain consonants, that operate as discontinues morphemes (Ryding, 2005). A familiar example from English is the different forms related to *to sing*: *sing, sang, sung, song, singing, singer, unsung, songs*. The difference between these forms involves only one vowel in the stem and the addition of prefixes and suffixes. In addition, this process is not productive in English. However, Arabic morphemes can involve several discontinuous vowels (Ryding, 2005). A famous example from Arabic is the different derivations from the root *ktb* given in Table 3.1. Inserting the root *ktb* into the template *CaCaCa* yields the word *kataba* 'wrote', while inserting it in the template *CiCāC* yields the noun كتاب *kitāb* 'book'.

Table 3.1: Words derived from the root *ktb*

كَتَبَ	*kataba*	write (PERF. SING. MAS.)
يَكْتُبُ	*yaktubu*	write (IMPER. SING. MAS.)
مَكْتَب	*maktab*	desk (SING. MAS.)
كِتَابَة	*kitābah*	the act of writing
كِتاب	*kitāb*	book
مَكْتَبَة	*maktabah*	library (SING. FEM.)
مَكْتَبات	*maktabāt*	library (PL. FEM.)
مَكْتوب	*maktūb*	written

In addition to this circumflexion, there is a system of suffixes and prefixes that inflect words for gender, person, and number. For example, the suffix ات- *āt* changes a singular noun to the feminine plural as in Table 3.1, the word for library (singular) *maktabah* to libraries (plural) *maktabāt* and the prefix ـيـ *ya-* indicates masculine imperfective when it occurs verb initially as in *yaktubu* 'he writes', also in Table 3.1.

Some words in Arabic do not fit precisely to the root and template system explained above, such as pronouns, function words, and loan words (Ryding, 2005). None of the words investigated in this study are of this type. However, the interaction between root and template is the basic morphological method of word formation in Arabic. This interaction is also employed by writers to create literary devices that give texts written in MSA the 'poetical feel' that Holes (1995) mentions in the following quote:

> Arabic was characterized by recurrent patterns of language which to the western eye (and ear) have a rather 'poetical' feel to them. Assonance, rhyme, paranomasia (i.e. root-pattern echo and repetition) are intricately interwoven to produce balanced juxtapositions of sounds, words, phrases and sentences. These surface structural effects are counterbalanced by semantic patternings of various degrees of synonymy and antonymy. (Holes, 1995: 269)

In this study antonymous roots are chosen to be searched in a corpus in order to obtain words in the different word classes: verbs, nouns, adjectives, and adverbs. Two corpora were chosen for data collection, which are introduced in the following section.

arTenTen12 and arabiCorpus

To collect data for this study, a corpus with a comparable size to previous studies was needed. However, such corpus was not found. Therefore, two corpora are used to obtain data: the arTenTen12 sample of on-line text (Kilgarriff et al., 2004) and the All Newspaper part of arabiCorpus (*arabicorpus.byu.edu*). The arabiCorpus is an online corpus developed by Dilworth Parkinson at Brigham Young University (BYU). Neither corpus

provides means to search for the Arabic triliteral root. In the absence of a tool that searches for the root, a tagged corpus is the best resource to search for words with the same root in different word classes. Both corpora used here are tagged.

A tagged corpus enables the researcher to search for the base form of the word (not the root) without inflectional prefixes or suffixes. The number of search strings needed for each root differs depending on whether the written form of the root contains vowels or semivowels, or whether all its letters are consonants. To illustrate why this is, Tables 3.2 and 3.3 show the search strings for the root ط ا ل *ṭāl* 'tall', and the ones for the root ق ص ر *qṣr* 'short'. Because the root *ṭāl* involves a vowel, more search strings are needed because vowels in the root change when they interact with the vowels in the templates. In these tables, the search words represent the base form of the word. For example, the search word قصر *qaṣur* can yield words like يـ قصر ان *ya qṣur ān*, and يـ قصر *ya qṣur* , and قصر هما *quṣru humā*.

Table 3.2: Search strings needed for the root *ṭāl*

resulting words	search string
طويل، طويلة ، طويلات	طويل
طول، يطول، تطول، يطولون	طول
طوال	طوال
طال، طالت	طال
طل، يطلن	طل

Table 3.3: Search strings needed for the root *qṣr*

resulting words	search string
قصير، ة ، ات، ان، تان	قصير
قصر، ه، هما، هم، هن	قصر
يـ ، تـ قصر ، ان، ون	

Because this study required a tagged corpus, I used arTenTen12 which is a sample of the arTenTen five-billion-word Arabic on-line corpus. TenTen corpora are created by Web-crawling for different languages with a designated target of 10^{10} (10 billion) words (SketchEngine, 2012). While arTenTen itself is still an initial version and not yet tagged, the arTenTen12 sample is. The arTenTen12 sample consists of 50 million words, and the SketchEngine (Kilgarriff et al., 2004) tools are used for searching it (*http://www.sketchengine.co.uk*).

The arTenTen12 corpus presents MSA as it is used today. At the time of data collection, starting at January 2013, arTenTen12 had fifty million words from on-line

sources. This sample has been updated as of August 2015, and the number of word tokens in it is 115 million words.

The other corpus used for this study is the All Newspapers corpus at *arabicorpus.byu.edu*. The arabiCorpus in the BYU website has corpora in five genres: Newspapers, Modern Literature, Non-fiction, Egyptian Colloquial, and Pre-modern. The total number of words in the whole corpus is 173,600,000. The newspaper section contains over 135 million words taken from newspapers from Egypt, Syria, Morocco, Kuwait, Jordan, and the Saudi-owned newspaper *Al-Hayat*, published in London. Issues from these newspapers span from 1996 to 2010. I chose to use the newspaper sub-corpus because earlier studies of antonymy (such as Jones (2002) and Davies (2013)) used newspaper corpora for their studies. Also, Egyptian Colloquial and Pre-modern sub-corpora represent other varieties of Arabic not MSA. The All newspapers corpus was updated in July 2012 when new sections were added and parts of the corpus underwent some de-duplication.

In combination, the arTenTen12 corpus and the arabiCorpus provide about 200 million words for investigation. Using two corpora allows for comparison between newspaper use of MSA and how MSA is used on the web. Previous studies on antonyms were conducted on newspaper corpora. So using a newspaper corpus is also good for cross-linguistic comparison.

After choosing the corpora, the next step was to decide on the words to be searched in it. This is the topic for the next section.

3.2 Search strings

The list of antonymous pairs from Jones's 2002 study was used as a guide for choosing MSA search strings in this study. In order to reflect MSA, search words must be used across all Arabic dialects and familiar to speakers from different Arabic-speaking regions. Because Arabic is rich in synonyms, one dialect may adopt a certain word and another dialect its synonym and this is reflected on MSA used in that region (Ibrahim, 2009: 5). Therefore, one person translating the words in Jones's list into Arabic is not enough because this might reflect only one dialect of Arabic. My solution for this was to present

a questionnaire to people from different regions where they are asked to provide the antonym of potential search words. A translation of the first word from each pair in Jones's (2002) list, which was arranged alphabetically, was used in the questionnaire and participants were asked to provide an antonym for each (see Appendix A for the questionnaire used and Appendix B for a translation of it in English). In order to ensure enough exposure to MSA, the participants targeted in this stage of the study are university graduates from different Arabic-speaking countries who took their degrees in a subject taught in Arabic.

Two hundred questionnaires were received; some were hand-written and some were completed on-line through the Bristol Online Survey tool. Fifty-five of these questionnaires were removed for different reasons. Two on-line questionnaires were written in a font that neither Internet Explorer nor Firefox were able to identify. Ten questionnaires were not completed because the participants left some unanswered questions, so they were excluded from the study. Eighteen participants were younger than twenty years old. Their answers were excluded also because enough exposure to MSA cannot be guaranteed. Twenty-five questionnaires were completed by participants whose course at university was not taught in Arabic. As enough exposure to MSA cannot be guaranteed, their participation was excluded.

The participants were from different Arab countries in order to make sure that the major dialects in Northern Africa, the Levantine, the Persian Gulf, and different parts of Arabia are included. Although this study investigates MSA and not the different dialects, it is important to include participants from different dialectal regions because according to Ibrahim (2009), use of MSA does differ according to the background of its users. The participants are from Saudi Arabia (110 participants), Egypt (14), Kuwait (1), Syria (7), Tunisia (1), Jordan (2), Morocco (6), Yemen (2), and Sudan (2). The majority of participants are from Saudi Arabia because Saudi Arabia is home of four major Arabic dialects: Gulf Arabic, Najdi Arabic, Hijazi Arabic, and Yemeni (or Southern) and Tohaman. Moreover, two other dialects are also spoken there: Bahraini in the east and Levantine in the north (Prochazka, 2010; Watson, 2011).

The countries above cover the major regions of Arabic dialects. Egypt, Sudan,

Tunisia, and Morocco represent the dialects of North Africa. Syria and Jordan represent the Levantine. Saudi Arabia and Kuwait represent Najd and the Persian Gulf. The last region is the western and southern parts of Arabia represented by Saudi Arabia and Yemen. Of course there may be further dialectal variation among speakers from each country, but I consider this a small limitation of my data.

Based on the results of the questionnaire, 37 pairs of antonyms from Jones's list were used to feed search strings in this study. They are enumerated in Table 3.4 overleaf with their Arabic counterparts. This leaves out 19 pairs of words in his list which will not be used in this study. These are discussed further below.

Words used in this study:

The questionnaire identified 28 pairs of Arabic roots that semantically correspond to 37 English pairs of antonyms from Jones's list. Because roots in Arabic do not stand alone (Ryding, 2005), they appear in Table 3.4 as words corresponding to the word class of the English ones. For example, both the adjectival pair *fast/slow* and the adverbial pair *quickly/slowly* can be transferred into Arabic using words from the roots *srʕ/bṭʔ* producing the pairs سريع / بطيء *sariīʕ/ baṭiīʔ* and بسرعة / ببطء *bibuṭʔ/ bisurʕah.* Other pairs of words that share the same root in Arabic include the ones in rows 2, 6, 8, 12, 13, 15, and 29 in Table 3.4. In these rows, the Arabic word class corresponds to the first English pair of antonyms. The pairs *old/young* and *large/small* in row 8 are grouped together because the roots *kbr/ṣġr* are used to express both 'size' and 'age' in Arabic.

The Arabic words for the pairs *good/bad* and *advantage/disadvantage* in row 2 are exceptional because two roots are assigned for 'good'. The words *badly, bad,* and *disadvantage* were all translated using words formed from the root *sāʔ* producing the words مساوئ، سيء، بسوء *bisūʔ, sayyiʔ, masāwiʔ,* respectively. However, participants were divided when it came to the MSA words for *well, good,* and *advantage.* Some participants used words from the root *ḥsn* for all three. Others used words from the root *ǧād* for

Table 3.4: Search words used in this study.

1	attack/defend	يهاجم / يدافع
2	bad/good badly/well advantage/disadvantage	جيد (حسن) / سيء
3	confirm/deny	يؤكد / ينفي
5	difficult/easy	صعب / سهل
6	right/wrong rightly/wrongly	حق / باطل
7	new/old	جديد / قديم
8	old/young large/small	كبير / صغير
9	punishment/reward	عقاب / ثواب
10	alive/dead	حي / ميت
11	fast/slow quickly/slowly	سريع / بطيء
12	feminine/masculine female/male	مؤنث / مذكر
13	fail/succeed failure/success	يفشل / ينجح
14	happy/sad	سعيد / حزين
15	optimism/pessimism optimistic/pessimistic	تفاؤل / تشاؤم
16	peace/war	سلام / حرب
17	poor/rich	فقير / غني
18	strength/weakness	قوة / ضعف
19	hate/love	يكره / يحب
20	high/low	عالي / منخفض
21	long/short	طويل / قصير
22	dry/wet	جاف / رطب
23	married/unmarried	متزوج / أعزب
24	dishonest/honest	خائن / أمين
25	lose/win	يخسر يفوز
26	heavy/light	ثقيل / خفيف
27	hard/soft	قاسي / لين
28	begin/end	يبدأ / يتهي
29	private/public privately/publicly	خاص / عام

the first two and *ḥsn* for the third. Still others used a word from the root *māz* for the third word. I decided to use the root *sāʔ* for the 'bad' sense and both *ḥsn* and *ǰād* for the 'good' sense. This way the pairs corresponding to *bad/good*, *badly/well*, and *advantage/disadvantage* are all searched for.

Four words in the questionnaire elicited antonyms with the same root but in different morphological templates. These four words are listed in Table 3.5 where the first column shows the word used in the questionnaire, the second column shows the antonym produced by the respondents, and the third column shows the root that the words in column two share. This same-root-different-pattern phenomenon is not surprising because one type of variation existing in MSA among different regions is that the same root can be used with different templates for the same meaning (Ibrahim, 2009: 5). This provides another justification for the method adopted in this study of searching for roots rather than words.

Table 3.5: Words with the same root but different phonological template

seed word		antonyms		root
privately	خصوصي *xuṣūṣī*	publicly	عام , عمومي *ʕumūmī*, *ʕāmm*	ع ا م *ʕām*
married	متزوج *mutazawiǰ*	unmarried	عازب , أعزب *ʔaʕzab*, *ʕāzib*	ع ز ب *ʕzb*
incorrect	خاطئ *xāṭiʔ*	correct	صاءب , مصيب ,صواب *ṣawāb*, *muṣīb* , *ṣā ʔib*	ص و ب *ṣwb*
feminine	أنثوي *ʔunṯawī*	masculine	ذكري ذكوري *ḏukūrī*, *ḏakarī*	ذ ك ر *ḏkr*

All participants unanimously agreed on the antonyms of 14 words. These pairs are listed in Table 3.6. However, a note should be made about the pair *active/passive*. The MSA words produced from the questionnaire correspond more to the pair 'positive'/'negative' and therefore they are excluded from this study.

Another eight words, listed in Table 3.7, produced two antonyms or more because they are polysemous, but the sense corresponding to the sense in Jones's list was always opposed to the same word. For example, the pair *attack/defend* corresponds to / يهاجم يدافع *yudāfiʕ/ yuhāǰim*, but participants produced another word as an antonym for 'to

Table 3.6: Antonym pairs with 100% agreement

English	Transliteration	Arabic
fast/slow	*baṭīʔ / sarīʕ*	سريع / بطيء
quickly/slowly	*bibuṭʔ / bisurʕah*	بسرعة / ببطء
new/old	*qadīm / ǯadīd*	جديد / قديم
hate/love	*yuḥibb / yakrah*	يكره / يحب
strength/weakness	*ḍaʕf / quwwah*	قوة / ضعف
heavy/light	*xafīf / ṯaqīl*	ثقيل / خفيف
alive/dead	*mayyit / ḥayy*	حي / ميت
large/small	*ṣaġīr / kabīr*	كبير / صغير
private/public	*ʕām / xāṣ*	خاص / عام
active/passive	*salbī / ʔiǯābiy*	ايجابي / سلبي
long/short	*qaṣīr / ṭawīl*	طويل / قصير
fail/succeed	*yanǯaḥ / yafšal*	يفشل / ينجح
feminine/masculine	*ḍakar / ʔunṯa*	أنثى / ذكر
right/wrong	*bāṭil / ḥaqq*	حق / باطل

attack', namely يتراجع *yatarāǯaʕ* 'to retreat'. This word is an antonym of a different sense of the word 'to attack' than is indicated by the English antonym pairing; so by removing all counts of it, the other word scores 100% as an antonym for 'to attack'.

Table 3.7: Words with a 100% agreement on one of their senses

English	Transliteration	Arabic
attack: defend, retreat	*yuhāǯim : yudāfiʕ, yatarāǯaʕ*	يهاجم: يدافع، يتراجع
difficult: easy, simple	*ṣaʕb : sahl, basīṭ*	صعب: سهل، بسيط
begin: finish, procrastinate	*yabdaʔ: yantahī, yataqāʕas*	يبدأ: يتهي، يتقاعس
failure: success, winning	*fašal : naǯāḥ, fawz*	فشل: نجاح، فوز
hard: soft, kind	*qāsī : layyin, ḥanūn, ṭayyib*	قاسي: لين، حنون، طيب
high: low, below	*ʕālī : munxafiḍ, ʔasfal*	عالي: منخفض، أسفل
peace: war, hostility	*salām : ḥarb, ʕidāʔ*	سلام: حرب، عداء
optimism: pessimism, depression	*tafāʔul : tašāʔum, ʔiḥbāṭ*	تفاؤل: تشاؤم، احباط

The remaining three words showed some variation but a single lexical item was present in the majority of the questionnaires. This group of words complete the list of words used in this study. I move next to discuss the reasons for excluding the pairs that were not used in my study.

Words excluded from this study:

Table 3.8 shows a list of the 19 pairs of antonyms from Jones's list that were excluded from this study. Their exclusion was for different reasons. First, two pairs are rarely used in the corpus for the sense used in Jones (2002): *drunk/sober* and *gay/straight*. While the words *drunk* and *gay* have counterparts in Arabic ثمل *ṯaml* and شاذ *šāḏ* respectively, there is no straightforward lexical item for their antonyms.

Table 3.8: Words left out from this study.

active/passive	agree/disagree	cold/hot
boom/recession	officially/unofficially	correct/incorrect
discourage/encourage	gay/straight	rural/urban
fact/fiction	false/true	permanent/temporary
guilt/innocence	explicitly/implicitly	directly/indirectly
illegal/legal	drunk/sober	major/minor
prove/disprove		

Excluding the pair *active/passive* was discussed above. The pair *prove/disprove* was excluded at a later stage of data collection. After tagging, most sentences with co-occurring *yuṯbit/yuʔakkid* 'prove/disprove' had the same meaning as *confirm/deny*. It turned out that the word for 'prove' was used synonymously as the word for 'confirm'. The remaining fifteen pairs in Table 3.8 exhibited so much variation that a decision on which word to choose is difficult, and may affect the results of this study. Six of these words are enumerated in Table 3.9. The first column in this table shows the antonym pair taken from Jones's list. The second column shows the word that was used in the questionnaire. This word is a translation of the first word in the English pair. The third column shows the number of responses from the questionnaire.

Having decided which words of Jones's (2002) list were to be included in the study, the next step was to decide on the seed strings to be used when searching the corpus. The next section discusses this step.

Table 3.9: Words showing too much variation in the questionnaire.

antonym pair in English	word	antonym responses
boom/recession	ازدهار *ʔizdihār*	تأخر، انحطاط، انخفاض، تخلف، كساد، خراب، انحسار، انكماش، اندثار، تردي، تدهور، تراجع، دمار، ذبول، ركود، اضمحلال، انحدار،هبوط
guilt/innocence	اجرام *ʔiʤrām*	براءة، مسالم، حسن السلوك، أمان، احسان، اصلاح، انصاف، رحمة، سلام، طيبة، عدالة، نظام، هدوء، محترم، مثالية
permanent/ temporary	دائم *dāʔim*	أحيانا، زائل، فاني، مؤقت، منقطع، متهي، نادر،مستقر، أبدا، بين فينة وأخرى، متقطع، غالباً
directly/ indirectly	مباشرة *mubāšarah*	آجلا، إعادة، اخفاء، بحائل، بعد حين، بواسطة، تأخر، خلف، لاحقا، مؤجل، غير مباشر، مسجل، مراوغة، متراخي، موكل، ملتوي، منقول، من وراء ستار، مفاصلة، مماطلة، وسيط
major/minor	أساسي *ʔasāsyy*	احتياط، بديل، ثانوي، فرعي
fact/fiction	حقيقة *ḥaqīqah*	خيال،كذب، زيف، وهم، خرافة، باطل

3.3 Seed strings

In this study different word classes are searched for. Therefore, seed strings are selected in a way that they can elicit words form different word classes. Seed strings are the strings entered in the search tools to elicit different forms of both words in the antonym pair. Due to circumflexion in Arabic words, discussed in section 3.1, the number of seed strings differs for each root. The morphological properties of the major word classes are discussed below in order to show how these properties affect the decision of choosing seed words.

Verbs

Verbs in Arabic take three forms: imperative, perfective, and imperfective. Both perfective and imperfective forms[1] inflect for gender, number, person, and voice (Ryding, 2005). The imperative form inflects for gender and number only and is always in the second person. There are ten verb forms in Arabic each expressing a different aspect, such as progressive, habitual, etc. Form I is the simplest with the template *CaCaCa*, as

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[1]The perfective and imperfective forms of the verb are also referred to in the literature as the past and non-past forms, respectively.

in شرب *šaraba* 'drink', which is a regular verb in Arabic. Table 3.10 shows the different inflections of the verb *šaraba* 'drink'. The table shows that the three consonants from the root ش ر ب are always next to each other with no consonants or long vowels in between. Because only affixes are involved in the formation of the different forms of the verb, a search in the corpus with a query word شرب would yield all the forms shown in Table 3.10. The short vowels can be ignored as texts in corpora are not vocalized, which means that short vowels are not represented in the corpus.

Table 3.10: Different inflections of the verb *šaraba* 'to drink' in MSA.

person	perfective FEM.	perfective MAS.	imperfective FEM.	imperfective MAS.	imperative FEM.	imperative MAS.
(singular)						
first	šarabtu شَرَبْتُ		ašarabu أَشْرَبُ			
second	شَرَبْتي *šarabtī*	شَرَبْتَ *šarabta*	تَشْرَبِينَ *tašrabīn*	تَشْرَبُ *tašrab*	اشْرَبِي *išrabī*	اشْرَبْ *išrab*
third	شَرَبَتْ *šarabat*	شَرَبَ *šaraba*	تَشْرَبُ *tašrabu*	يَشْرَبُ *yašrabu*		
(dual)						
first	šarabnā شَرَبْنا		našrabu نَشْرَبُ			
second	šarabtumā شَرَبْتُما		tašrabān تَشْرَبان		išrabā اشْرَبا	
third	šarabā شَرَبا		تَشْرَبان *tašrabān*	يَشْرَبان *yašrabān*		
(plural)						
first	šarabnā شَرَبْنا		našrabu نَشْرَبُ			
second	شَرَبْتُنَّ *šarabtunna*	شَرَبْتُم *šarabtum*	تَشْرَبْنَ *tašrabn*	تَشْرَبون *tašrabūn*	اشْرَبْنَ *išrabna*	اشْرَبوا *išrabū*
third	شَرَبْنَ *šarabna*	شَرَبوا *šarabū*	يَشْرَبْنَ *yašrabna*	يَشْرَبونَ *yašrabūn*		

However, irregular verbs change some root sounds as they interact phonologically with the sounds of the morphological template, and this is reflected in the orthography. Irregular verbs include the **geminate** verb root where one consonant is geminated (doubled) like

هزّ *hazza* 'shake', the **hamzated** verb root where one letter is a glottal stop such as سأل *saʔala* 'ask'; the **hollow** root, in which the second written sound of the root is a vowel, e.g. قال *qāla* 'say'; the 'defective' verb root, that ends with a vowel such as مشى *mašā*

'walk'; and the **assimilated** verb root where the root starts with a glide, as in ولد *walada* 'give birth'.

In this study, I use 28 antonym pairs, which would mean 56 roots, though because I use two roots for the sense 'good' the total number is 57 roots. Of these 57 roots, 37 are regular and 20 are irregular. None of these irregular roots is an assimilated root, therefore, this root type is not discussed further. The first group of irregular verbs in my list have the geminate root. The consonant is written once with a shaddah ّ over it to represent gemination (Ryding, 2005: 458). When this type of root is used in a template that would put a vowel between the doubled consonant, the consonants are both written. This process is called the 'split stem' (Ryding, 2005: 458). For example, the three geminate verbs in my list are جفّ *ǰaff* 'to dry', خصّ *xaṣṣa* 'to make private', and عمّ *ʕamma* 'to make public'. However, because text in the corpora are not vocalized, only one search word for each verb is enough to elicit all forms of these verbs. However, this form contained only two letters, e.g. I used *xṣ* to search for the roots *xṣ* and *xṣṣ*.

The second type of irregular verbs in Arabic is the hamzated root, which refers to a root that contains a glottal stop. These roots are quadriliteral, i.e. with four letters instead of three. There are many types of hamzated roots but only two types appear in my words. The first is the one word in my list that ends with a glottal stop يبدأ *yabdaʔ* 'begin'. In this case, the internal state of the root does not change and only one form is needed. The second group contains four verbs أحق *ʔaḫaqqa* 'to make right', أحب *ʔaḫabba* 'loved', أكد *ʔakkada* 'confirm', and أمن *ʔammana* 'to ask somebody to be honest'. The glottal stop in these words is word-initial, which means that it is deleted in the imperfective form of the verb. Therefore, two forms are needed for each of these verbs. For example, the perfective verb أحب *ʔaḫabba* 'loved' changes to يحب *yuḫibbu* 'loves' in the imperfective form.

The third group of irregular verbs is the hollow verb root, where the second letter of a triliteral root is a vowel. The verbs in my list belonging to this group are لان *lāna* 'soften', ساء *sāʔa* 'to become bad', مات *māta* 'die', طال *ṭāla* 'become long', خان *xāna* 'be dishonest', and فاز *fāza* 'win'. There are five types of hollow verbs, but the ones in my

list are of two types. The verbs لان and ساء belong to one group where the vowel *ā* changes to *ī* in the imperfective form of the verb. The perfective verb لان *lāna* becomes يلين *yalīn* in the imperfective and ساء *sāʔa* becomes يسيئ *yasīʔu*. Therefore, two search strings are needed to elicit verbs from this root. The second group includes مات *māta* 'die', طال *ṭāla* 'become long', خان *xāna* 'be dishonest', and فاز *fāza* 'win'. These verbs change the vowel *ā* to *ū* in the perfective, and also need two search strings each.

The last group of irregular verbs in my list has a defective verb root, which means that the last letter of the triliteral root is a vowel. Four verbs in my list belong to this group, all of which end with the vowel *ā*. Two change from *ā* to *ī*: نفى *nafā* 'deny' and حيا *ḥayā* 'live' become ينفي *yanfī* and يحيي *yuḥyī*. The other two change from *ā* to *ū* قسى *qasā* 'to harden' and علا *ʕalā* 'to go higher' become يقسو *yaqsū* and يعلو *yaʕlū*, respectively. This group of verbs need two search strings, too.

Nouns

Nouns in Arabic are of two types: derived and primitive. Derived nouns are derived from a verb root, but primitive nouns are not. Primitives are considered to be part of the core lexicon of the language (Ryding, 2005: 92). Examples of primitives include طاولة *ṭāwilah* 'table', كرسي *kursī* 'chair', and نخلة *naxlah* 'palm tree'. All nouns in my study are derived nouns.

Nouns inflect according to five features: gender, humanness, number, definiteness, and case (Ryding, 2005: 119). Gender and humanness are inherent in the noun's meaning. Gender, however, can be marked or unmarked on the noun. For example, طاولة *ṭāwilah* 'table' has the feminine marker ة *ah* while شمس *šams* 'sun' does not have a feminine marker but is considered to be a feminine noun by convention. On the other hand, number and definiteness are determined semantically according to the referent of the noun. Number can be singular, dual (masculine or feminine), or plural (masculine, feminine, or broken). Definiteness can also be of three types: proper nouns دعد *daʕad*,

definite by encliticisation بنته الذكية *bintuhu aḏḏakiyah* 'his smart daughter', and definite

by procliticisation البنت الذكية *albintu aḏḏakiyah* 'the smart girl' (Ryding, 2005).

Case is syntactically determined according to the position of the word in the sentence. There are three cases in Arabic: nominative, accusative and genitive. Case is marked on singular nouns and on feminine and broken plurals[2] using diacritics which do not affect the search process in a corpus because text in both corpora used here is not vocalized. The suffixes of dual and masculine plural nouns, however, change according to the noun's case, and thus they have been counted as different words in a corpus. The examples in Table 3.11 show the difference between the three plural patterns. Three words are used in the table to show the differences in the three plural patterns. The word سيارة *sayyāra* 'car' is feminine and therefore takes the feminine plural, adding -*āt*. The word قلم *qalam* 'pen' takes the broken plural. The third word is مهندس *muhandis* 'engineer' which takes the masculine plural, adding -*īn* to the word. Of the 57 words in my list, 21 words need an additional search string to account for the noun form in both its singular and plural forms. The rest are covered by searching for the form of the verb from which it is derived.

Adjectives

Adjectives inflect for gender, number, definiteness and case; some adjectives also inflect for degree (Ryding, 2005). They agree with the noun they modify, but this agreement depends on their function. Adjectives in Arabic have two functions: attributive and predicative (Ryding, 2005). Attributive adjectives follow the noun to form a noun phrase, and agree with the noun in gender, number, case and definiteness. Ryding (2005: 239) provides the following examples for attributive adjectives: فوز سهل *fawzun sahl* 'an easy win' and البحر الأحمر *albaḥru alʔaḥmar* 'the Red Sea'. Predicative adjectives, on the other hand, follow the noun to form a clause, and agree with it in gender, number, and

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[2]The broken plural is a cover term for many rules that change the template of the word to make it plural. It 'involves a shift of vowel patterns within the word stem itself, as in English "man/men," "foot/feet," or "mouse/mice." It may also involve the affixation of an extra consonant' (Ryding, 2005: 144).

Table 3.11: Cases in Arabic ('car', 'pen', 'engineer'), showing the three number patterns.

number	nominative	accusative	genitive
car			
singular	sayyāratu سيارةُ	sayyārata سيارةَ	sayyārati سيارةِ
dual	sayyāratān سيارتان	sayyārataīn سيارتين	sayyāratā سيارتا
plural	sayyārātu سياراتُ	sayyārāti سياراتِ	sayyārāti سياراتِ
pen			
singular	qalamu قلمُ	qalama قلمَ	qalami قلمِ
dual	qalamān قلمان	qalamuīn قلمين	qalamā قلما
plural	ʔqalāmu أقلامُ	ʔqalāma أقلامَ	ʔqalāmi أقلامِ
engineer			
singular	muhandisu مهندسُ	muhandisa مهندسَ	muhandisi مهندسِ
dual	muhandisān مهندسان	muhandisaīn مهندسين	muhandisā مهندسا
plural	muhandisūn مهندسون	muhandisīn مهندسين	muhandisī مهندسي

case, but not definiteness. Examples include القائمة طويلة *alqāʔimatu ṭawīlah* 'the list is long' and هي ذكية *hiya ḏakiyyah* 'she is intelligent' (Ryding, 2005: 240). The adjectives in the investigated dataset serve both predicative and attributive functions.

Thirty-two of the 57 words in my list need an additional search word because a vowel is inserted into its root in the adjective form.

Adverbs

Very few words in Arabic are adverbs by themselves (Ryding, 2005), e.g. فقط *faqaṭ* 'only' and جداً *ǰiddan* 'very'. The majority of adverbs are nouns and adjectives in the accusative case functioning as adverbs. The accusative case is formed using diacritics or suffixes, as explained above for nouns. However, some adverbs are formed in a phrase using words meaning 'manner', 'way', or 'form' with the adjective (Ryding, 2005). For

example, the phrase خاص بشكل *bi-shakilin xāṣ* literally means 'in a private manner' but functions as 'privately'. No additional search strings are needed for extracting adverbs because nouns and adjectives are searched for.

Based on this review of different word classes in Arabic, the seed strings are chosen. Appendix C shows different forms of each part of speech. The last column of the table in Appendix C records the number of seed strings needed for each root. The next step is to use these seed strings to search the corpora.

3.4 Searching the corpora

Generally, the method for searching the corpora is the same in both arTenTen12 and the arabiCorpus. The first word of each pair is searched for and a concordance of its occurrences is elicited. The antonym of the search word is searched for within that concordance list and the lines containing both words of the pair within a +9/-9 span of words are saved in a file. This proximity window was chosen after experimenting with smaller and larger search spans. A very short span of words would skew the results towards shorter structures such as coordination where single-word antonyms appear in such frames as *X and Y*. The three windows -5/+5, -9/+9, and -11/+11 were compared. The search spans -5/+5 and -9/+9 had considerable difference in the number of elicited sentences. However, a very small difference was witnessed between the windows -9/+9 and -11/+11.

The initial search in both corpora is the same. However, differences in the SketchEngine and the BYU search tools forced some variation in the search method. For arTenTen12 in the SketchEngine, a string is entered into the search bar at 'simple query' as the 'part of speech filter' was not yet available at the time of data collection. The concordance lines are then shown in the SketchEngine tool. The list of citations for that word is generated and all antonymous word forms co-occurring within the chosen window of +9/-9 words are copied into a file. I used the function *collocates* in the SketchEngine to arrive at the co-occurrences. After all seed strings for the root are searched for, I move to another root and so on.

The BYU is a learner corpus designed for language learners. It does not provide advanced ways to manage the results as the SketchEngine is intended to do. However, I devised a method for dealing with the results which made it manageable. First a search string is entered in the search box choosing 'string' in the part of speech filter to elicit different forms of the word. The results file is then downloaded and saved. After that, the antonym is searched for in that file using shell script in bash terminal.

After all co-occurrences of antonym roots are collected from both corpora, I go through the data manually to filter it and remove unwanted lines based on the following conditions:

1. Verses from the Qura'an are removed. Some verses tend to be repeated several times for various reasons. The main reason for removing verses of the Qura'an is that they represent a different form of Arabic than MSA.

2. Duplicates are removed. Duplicate sentences were present more in the arabiCorpus but some arTenTen12 files had them, too. This is because newspapers report the same news and certain forms tend to be repeated.

3. Some words had homonyms, and therefore sentences containing these words with different senses of the search words than intended were removed. An example of this is the pair خاص/عام *xāṣ / ʕām* 'private/public'. The word عام *ʕām* can be an adjective meaning 'general, public, or not specialized'; a noun meaning 'a year or a period of twelve months'; or a perfective form of a verb meaning 'to float' (*http://www.almaany.com/ar/dict/ar-en/عام/*).

4. Searching for some strings sometimes caused elicitation of unwanted words that contained the same letters in the same order as the search string. For example, when the word خاص *xāṣ* 'private' was entered in the search engine, there were words like أشخاص *ʔašxāṣ* and خاصرة *xāṣirah* among the results. These words were

removed manually.

The filtered data is ready to be tagged, as discussed in the next section.

3.5 Tagging

The resulting data contained over 52 thousand concordance lines from the All Newspapers corpus in the BYU and over 19 thousand lines from the arTenTen12 in SketchEngine. The co-occurring antonymous pairs in these sentences were tagged according to part of speech: verbs, nouns, adjectives, adverbs, and sentences with co-occurring antonyms of different word class. The data were also tagged according to whether there is an identifiable schematic construction or frame that the pair appears in and what this construction is. For the purposes of this study, the frames I refer to as *schematic constructions* are syntactic structures that contain an antonymous pair. Finally, the data were tagged according to which word of the pair appears first. After the process of tagging, an extract of the data is chosen to be the sample dataset for analysis.

3.6 Building the dataset

In Jones's study, three thousand sentences were chosen for the dataset. His procedure for choosing these sentences is reflected in the one used in my study. Jones (2002) started by deciding how many sentences of each pair is required for each antonym pair. This, to an extent, reflected the actual occurrences in the data, but at the same time Jones followed some general guidelines:

- no more than 60 per cent of database sentences should feature adjectival antonyms; at least 10 per cent should feature antonymous nouns, at least 10 per cent should feature antonymous verbs, and at least 10 per cent should feature antonymous adverbs;

- at least 250 database sentences should feature non-gradable antonyms;

- at least 250 database sentences should feature morphologically related antonyms;

- where possible, while still meeting the criteria above, sample size should reflect co-occurrence frequency. (Jones, 2002: 32)

In Jones's study, the antonym pair *new/old* had the highest number of sentences in the dataset because this pair had the highest frequency of co-occurrence in the corpus. However, not all antonym pairs reflect their frequency in the corpus because the above conditions had to be met. For example, the pair *directly/indirectly* co-occurred 492 times in the corpus and was sampled 79 times in the dataset, while the pair *old/young* co-occurred 2,704 times but only 69 sentences were sampled. 'The explanation for this is twofold: first, *indirectly/directly* is a morphological pair; and second, *indirectly/directly* is an adverbial pair. Both of these factors contribute to "up-weight" the database representation of *directly/indirectly*' (Jones, 2002: 32). After deciding on how many sentences of each pair is required, the next step is to select the sentences from the sub-corpus. Jones chose every n^{th} sentence where n represents the number of actual occurrences of a certain pair in the corpus divided by the number of sentences required from that pair.

On a similar line, the conditions for choosing the data for my study should account for the proportion of each part of speech and the number of occurrences in each corpus. The question remains on the best procedure to follow in order to obtain a dataset that is representative of the co-occurrences of these pairs in the corpus and at the same time somewhat compatible with procedures followed in previous studies in order to facilitate comparison.

One option is to follow the same percentages for each pair in Jones's study. This option would allow for better comparison with previous studies on English and other languages since they too have a similar data selecting method. This method would also allow for comparison of individual corresponding antonymous pairs in two or more languages. A major drawback for this method is that the data selected would not reflect the occurrences of the search words in the corpora used in this study. Moreover, Jones used 56 pairs of antonyms, but in this study only 28 pairs are used.

Another option is to devise my own strategy for selecting the data set in order to ensure that the chosen sentences are representative of the corpus. The general procedure is similar to that of Jones's where the percentages of important factors are calculated,

and then the number of required sentences are decided. For example, the percentage of the antonym 'large/small' is 12.7% in the corpus, therefore, 12.7% of the 3000 sentences contain the pair 'large/small', i.e. 356 sentences. I then go to my 'large/small' sub-corpus and choose 356 lines of that file by selecting every 25th sentence because 9117 (the actual number of 'large/small' co-occurrences in my data) divided by 356 is around 25. The same method is used to decide on how many sentences of these 356 are verbs, nouns, adjectives, or adverbs.

This procedure is an adaptation of Jones's (2002) general system. However, since each pair in my study can have more than one part of speech and since all antonym pairs in my study are lexical ones and there are no morphologically negated antonyms, the general conditions Jones devised as guidelines for choosing the sentences in his study are not needed here. The condition of assigning a minimum number of sentences for non-gradable antonyms is also discarded because fourteen of the antonymous pairs in my study are gradable and fourteen of them are non-gradable. Therefore, the general plan here is to adhere to the proportion of pairs in the corpus, and to reflect the proportion of each part of speech for each pair individually.

A final point is due here. I am using two corpora, therefore, this procedure has been carried out twice; once for the data from the arTenTen12 corpus to obtain 1500 lines and once for the data from the arabiCorpus also 1500 lines. Tables D.1 and D.2 in Appendix D show the numbers for each part of speech for each pair in the sub-corpus and in the dataset for each corpus.

The following section presents a discussion of the dataset that was obtained.

3.7   Data description

The search for antonym pair roots in both corpora elicited 72 thousand concordance lines. The distribution of antonym pairs in these occurrences is shown in Tables 3.12 and 3.13 for the arTenTen12 corpus and the arabiCorpus newspaper corpus, respectively. The first column in these two tables shows the corresponding antonym pair in English, the second column shows how many times this pair co-occurs in the corpus, the third

column shows the percentage of that co-occurrence. The last column lists the number of sentences in the analysed dataset.

Table 3.12: Co-occurrences of antonym pairs in arTenTen12.

antonym pair	no. in corpus	percentage	no. in dataset
alive/dead	1497	7.6	114
attack/defend	657	3.3	50
bad/good	378	1.9	29
begin/end	2042	10.4	154
confirm/deny	103	0.5	8
difficult/easy	295	1.5	23
dishonest/honest	173	0.9	13
dry/wet	84	0.4	6
fail/succeed	414	2.1	32
fast/slow	116	0.6	9
feminine/masculine	1454	7.4	111
happy/sad	89	0.5	7
hard/soft	17	0.1	3
hate/love	474	2.4	36
heavy/light	209	1.1	16
high/low	163	0.8	12
large/small	3153	16	239
long/short	527	2.7	40
lose/win	334	1.7	25
married/unmarried	47	0.2	4
new/old	1318	6.7	100
optimism/pessimism	68	0.3	5
peace/war	641	3.3	49
poor/rich	1075	5.5	82
private/public	1272	6.5	97
punishment/reward	300	1.5	23
right/wrong	1294	6.6	98
strength/weakness	1512	7.7	115
Total	19706	100	1500

Table 3.12 shows the distribution of antonym pairs in the arTenTen12 corpus. The search strings elicited 19706 concordance lines from this corpus. The pair with the highest co-occurrence is ص غ ر/ك ب ر *kbr/sġr*; the root for 'large/small' co-occurring 3153 times. The pair with the lowest co-occurrence is ل ا ن/ق س ى *qsā/lān* the roots for 'hard/soft'

with as little as 17 co-occurrences only.

Table 3.13: Co-occurrences of antonym pairs in All Newspapers in arabiCorpus.

antonym pair	no. in corpus	percentage	no. in dataset
alive/dead	2470	4.7	70
attack/defend	3728	7.1	104
bad/good	68	0.1	4
begin/end	4167	8	122
confirm/deny	1196	2.3	34
difficult/easy	938	1.8	27
dishonest/honest	162	0.3	8
dry/wet	112	0.2	3
fail/succeed	1824	3.5	52
fast/slow	300	0.6	9
feminine/masculine	1882	3.6	54
happy/sad	125	0.2	4
hard/soft	32	0.1	1
hate/love	793	1.5	23
heavy/light	460	0.9	13
high/low	355	0.7	10
large/small	5964	11.4	171
long/short	1383	2.6	40
lose/win	3017	5.8	86
married/unmarried	132	0.3	4
new/old	4110	7.9	118
optimism/pessimism	326	0.6	9
peace/war	4344	8.3	125
poor/rich	2146	4.1	63
private/public	7254	13.9	206
punishment/reward	336	0.6	10
right/wrong	886	1.7	25
strength/weakness	3791	7.2	107
Total	52301	100	1500

The distribution of antonym pairs in the arabiCorpus is shown in Table 3.13. There were 52301 concordance lines elicited from this corpus. The highest rate of co-occurrence in this corpus is in the pair خ ا ص/ع ا م $ʕām/xāṣ$ 'private/public'. This pair co-occurred 7254 times in the BYU but only 1272 times in the on-line corpus arTenTen12. This high co-occurrence is understandable in a newspaper corpus as there is an ongoing debate

about the privatization of public sectors in Arabic-speaking countries during this period. Similar to the arTenTen12, the lowest co-occurring pair in the arabiCorpus is the pair for 'hard/soft' with a co-occurrence of 32 times.

The normalized frequency per million words for these co-occurring antonym pairs in both corpora is calculated by dividing the number of concordance lines featuring co-occurring antonyms by the number of words in that concordance and multiplying the result by a million. This means that an antonym construction (a single co-occurrence of a pair of antonyms) is found 394.12 times in a million words in the arTenTen12 and 387.41 times in a million words in the arabiCorpus. The ratio of their co-occurrence in the two corpora is 1.017, which means that antonyms co-occur in almost the same frequency in both corpora.

Table 3.14 records the frequency numbers and rates in both corpora. The first column lists the pairs in English arranged in descending order from the pair with the highest frequency of co-occurrence to the pair with the lowest. The six columns record the frequency of each pair in the arTenTen12 and the arabiCorpus and then in both corpora in actual frequency numbers and in percentages.

The table shows that the pair for 'large/small' is the highest co-occurring pair. This pair co-occurs 3153 times in arTenTen12 and 5964 times in All Newspapers. In combination this pair co-occurs 9117 times which makes almost 13 per cent of the data. This is the highest rate of co-occurrence than any other pair in my data. This high rate of co-occurrence can be attributed to the fact that this pair is used for a number of senses. In *almaany online dictionary*, كبير *kabīr* 'large' as an adjective means 'big, of large size, capacity, importance; wicked, cruel, monstrous; middle-aged, rather old, senior; respectable', and as a noun it means 'a great sin' or 'a significant issue' ("big", 2016). So the root ك ب ر can refer to either 'size,' 'age,' or 'issue.' The root ص غ ر also refers to the same senses but of smaller or less quality or quantity.

Table 3.14: Frequency of co-occurrence arranged in descending order.

antonym pair	arTenTen	%	BYU	%	BOTH	%
large/small	3153	16.0	5964	11.4	9117	12.7
private/public	1272	6.5	7254	13.9	8526	11.8
begin/end	2042	10.4	4167	8.0	6209	8.6
new/old	1318	6.7	4110	7.9	5428	7.5
strength/weakness	1512	7.7	3791	7.2	5303	7.4
peace/war	641	3.3	4344	8.3	4985	6.9
attack/defend	657	3.3	3728	7.1	4385	6.1
alive/dead	1497	7.6	2470	4.7	3967	5.5
lose/win	334	1.7	3017	5.8	3351	4.7
feminine/masculine	1454	7.4	1882	3.6	3336	4.6
poor/rich	1075	5.5	2146	4.1	3221	4.5
fail/succeed	414	2.1	1824	3.5	2238	3.1
right/wrong	1294	6.6	886	1.7	2180	3.0
long/short	527	2.7	1383	2.6	1910	2.7
confirm/deny	103	0.5	1196	2.3	1299	1.8
hate/love	474	2.4	793	1.5	1267	1.8
difficult/easy	295	1.5	938	1.8	1233	1.7
heavy/light	209	1.1	460	0.9	669	0.9
punishment/reward	300	1.5	336	0.6	636	0.9
high/low	163	0.8	355	0.7	518	0.7
bad/good	378	1.9	68	0.1	446	0.6
fast/slow	116	0.6	300	0.6	416	0.6
optimism/pessimism	68	0.3	326	0.6	394	0.5
dishonest/honest	173	0.9	162	0.3	335	0.5
happy/sad	89	0.5	125	0.2	214	0.3
dry/wet	84	0.4	112	0.2	196	0.3
married/unmarried	47	0.2	132	0.3	179	0.2
hard/soft	17	0.1	32	0.1	49	0.1
Total	19706		52301		72007	

3.8   Data analysis

The three thousand concordance lines were analysed according to which function they convey. Sentences were recorded in a spread sheet and each sentence was assigned a number from 1 - 1500 in addition to the corpus name. In a different spread sheet corresponding numbers and corpus names were listed. Consequent columns record the tagging for that particular sentence regarding its: part of speech of antonyms, whether they carry a gradable meaning, whether they appear parallel to each other, the frame they appear in, and finally the function of the pair. Sentences with similar antonym functions are then grouped together and these groups represent the categories of antonym functions in MSA. Chapter 5 discusses these groups in detail.

3.9   Concluding remarks

This chapter started with a discussion of the language under investigation, the corpus used for data collection, and how the sampled data was managed. The chapter ended with a description of the data and analysis method. A corpus that can provide comparable data to previous studies in terms of genre and number of tokens was not found. Therefore, two corpora were used. Seed strings in Jones (2002) were used as a starting point in this study, but not all of Jones's list of antonym pairs were used. However, pairs used in this study elicited enough data because different parts of speech of each pair was searched for.

The next chapter introduces the new classification of antonym functions that emerged from data analysis. It also explains how co-occurring antonymous pairs in Arabic are similar or different from those in English regarding their use, formal parallelism, ancillary effect, and sequence.

Chapter 4

A new classification of antonym functions in text

The purpose of this chapter is to present the new classification of antonym functions, to present a discussion of the common features found across categories such as parallelism and ancillary function, and lastly to look into word order and word class of the co-occurring antonyms. In the first section, a new classification of schematic constructions hosting antonym pairs is presented. In section 1.2 of the introduction, a justification for introducing a new taxonomy of antonym functions was discussed. However, I start the first section of this chapter by explaining how previous taxonomies can be brought together.

I argue that form and meaning of the schematic constructions are equally important for the classification of how antonymy is used in text. Therefore, the new classification presented in this chapter is based on both form and meaning as composites of each category. The forms that occur in more than one category are discussed briefly.

Section two of this chapter presents the main differences between the classification proposed in section one and previous classifications presented by Jones (2002) and Davies (2013) which were discussed in chapter two. In this section, an argument is presented for the removal of some categories found in Jones's classification, with special attention to the Ancillary Antonymy category.

The third section compares the dataset in this study to Jones's dataset regarding

antonym order and word class in order to identify any differences between the two languages. Antonym sequence has been linked to culture-specific factors (Jones, 2002; Hsu, 2015; Kostić, 2015a), and is therefore worth investigating in Arabic as it brings a different cultural perspective.

This chapter serves two objectives of the present thesis, namely how Jones's (2002) taxonomy of antonym functions can be updated in light of the MSA data, and what a comparison between English data and Arabic data can help in understanding antonym pair behaviour in text.

4.1   A new classification of antonym functions in text

This section starts with a discussion of how a taxonomy of antonym functions can cater for both canonical antonyms and contextual oppositions. It then introduces the classification of antonym functions proposed in this study. A detailed description of these classes with examples from the dataset is presented in the next chapter.

4.1.1   Antonymy functions and opposition functions

This section points out the similarities and differences between Jones's (2002) and Davies' (2013) classifications in order to set the stage for introducing the new classification. Jones arrived at his system by classifying syntactic frames hosting canonical antonym pairs, while Davies' was achieved by classifying syntactic frames triggering novel oppositions. Table 4.1 contrasts the categories proposed by Jones (2002) and Davies (2013).

A quick glance at Table 4.1 shows that Jones's classification has more categories than Davies'. This is because canonical antonyms are found in more types of contrastive frames than non-canonical antonyms (Jones et al., 2007). However, the similarities between the two classifications are numerous.

Five categories (with slightly different names) are found in both classifications of contrast relations in text. Although there are minor differences within these categories, the general functions of antonymy and opposition in them are the same. The first category in Table 4.1 involves the use of negation to cancel one item of the pair to emphasize

Table 4.1: Classifications of antonym and opposition functions as presented by Jones (2002) and Davies (2010).

Jones's categories	Davies' categories
Negated Antonymy	Negated Opposition
Transitional Antonymy	Transitional Opposition
Comparative Antonymy	Comparative Opposition
Interrogative Antonymy	Binarized Option
Distinguished Antonymy	Explicit Opposition
Extreme Antonymy	Replacive
Ancillary Antonymy	Parallelism
Coordinated Antonymy	Concessive Opposition
Idiomatic Antonymy	
Conflict	
Oblique stroke	
Association	
Specification	
Simultaneity	
Unity	
Equivalence	

the other. The second category involves a transition from one state or situation to its opposite. In the third category, one item of the opposing pair is compared against the other or against a shared scale, and in the fourth category there is a choice between the two items of the opposing pair. In the fifth category, there is an explicit use of a word that points out the distinction between the two items in the pair.

Three categories in Davies' classification seem not to be used in hosting canonical antonyms. This is not the case, however. The frame used in Replacive Opposition is included under Comparative Antonymy in Jones's classification, and the category Parallelism is covered by Ancillary Antonymy. Concessive Opposition involves the use of adversative *but* which is included in Coordinated Antonymy in Jones's classification. Thus the eight categories in Davies' classification are all used to host antonyms in Jones's.

The fact that some of the frames found to host antonyms in Jones (2002) are not found to trigger oppositions in text reflects that contrastive constructions differ in their strength. For example, negation is a very productive construction. It is used to augment one antonym over the other, as in (32a); and it also triggers novel oppositions in text, as in (32b) where one opposite is emphasized over the other (Jones, 2002; Davies, 2013).

(32)   a. We are striving for the withdrawal to facilitate the re-establishment of **peace**, not **war**. (Negated Antonymy: Jones, 2002: 88)

        b. 'Notts County supporters say Make **Love** not **War**', said one. (Negated Opposition: Davies, 2013: 64)

However, even though coordination is a major use of antonymy in all of the languages investigated so far, this construction is not found to trigger contrast in text in either English (Davies, 2013) or Chinese (Hsu, 2015). Hsu (2015) regards coordination as a weak trigger of opposition because it serves many other functions in text that it is not conventionalized as a trigger for opposition. Moreover, in Murphy and Jones (2008), Coordinated Antonymy is counted as a 'non-contrastive' use and it does not seem to aid children's understanding of opposition. Therefore, schematic constructions hosting antonym pairs are on different levels of strength regarding their potential to trigger novel oppositions in text.

Antonym pairs co-occur within some schematic constructions in rates far greater than is expected (Charles and Miller, 1989; Fellbaum, 1995; Jones, 2002). Therefore, these constructions acquire a contrastive meaning that allows them to act as triggers of opposition in text. The mechanisms of the conventionalization of contrastive implicature are discussed in chapter 6. It is enough here to say that schematic constructions differ in their conventionalization as triggers of contrast. The classification of these constructions is presented in the next section.

4.1.2   Classification of schematic constructions hosting antonyms

An explanation of how data analysis was carried out was presented in section 3.8 in the previous chapter. The categories that emerged from this analysis represent the new taxonomy of antonym functions. In the taxonomy introduced here, schematic constructions hosting antonym pairs are classified according to both their form and function. Therefore, the word *Antonymy* in Jones's categories is removed as it can suggest that the function is reflected by antonym pairs alone. The new classification of antonym functions

in text is presented in Table 4.2 overleaf.[1] Column one in Table 4.2 presents forms used in schematic constructions. These forms are *coordination, negation, interrogative, comparative structure, subordination, conditional, adversative devices, equational sentences, annexation, asyndetic adjectives*, and *preposition phrases*. Column two presents the function(s) of each form. Column three lists how these form-function pairings are lexicalized in Arabic and column four shows these frames in English. Names of the categories are indicated in bold.

Table 4.2 shows that coordination structure is used for a number of categories. These categories include Inclusiveness, Antithesis, Specification, Unity, Distinction, Conflict, and Association. Coordination also indicates option with or without the interrogative structure. Lastly, coordination combines with negation to indicate cancelling or inclusiveness of antonyms. The second structure under column one is negation. Negation can indicate the functions of emphasis or correction. Next, the forms preposition phrase and some adverbial expressions are used to indicate Transition from one state to its opposite. The two forms comparative and subordination are used in the Comparison category. The category Antonyms in Grammatical Relations includes antonym pairs that co-occur in a sentence and the relation between them is grammatical. There are three types of relations. First, two antonyms act as the subject and object of a verb. Second, two antonyms constitute an equational sentence. The third group is a group of sentences with a co-occurring pair of different parts of speech: a verb and its nominal argument. Forms hosting antonym pairs and indicating cause and effect along with the conditional form are used in the function Consequence. The Replacive function is reflected by the adverbial 'instead of'. Adversative concessive devices are used to indicate Concession. The three forms: equational sentences, annexation structure, and asyndetic adjectives indicate Simultaneity of antonyms. The last category in the table is Idiomatic where any form of the ones mentioned above is used.

Two forms in Table 4.2 are used for multiple functions: coordination and negation. The following is a brief description of these forms.

---

[1]The antonym pairs in these schematic constructions may be embedded in a phrase in some cases as will be discussed in chapter 5.

Table 4.2: Classification of antonym functions as presented in this study

form	function	frames in Arabic	English
coordination	**inclusiveness**	و	X and Y
		أو	X or Y
	antithesis	و	X and Y
	specification	و	X and Y
	unity	و	X and Y
	distinction	بين .. و	(between X
	conflict	بين .. و	and
	association	بين .. و	Y)
(with) interrogative	**option**	أم	X or Y
with negation	**cancelling**	لم .. أو	neither X nor Y
	inclusiveness	لا .. ولا	
negation	**emphasis**	ليس/لا /لم	X not Y
	correction	ليس .. بل	not X but Y
preposition phrase	**transition**	من .. إلى /لـ	from X to Y
adverbial expressions	(from a state	ثم	X then Y
	to another)	بعد	X after Y
		قبل	X before Y
comparative	**comparison**	*ʔaCCaC min*	more X than Y
subordination		أما	X while Y
		مثلما يشبه	X like Y
		بعكس	X as opposed to Y
gram. relations agent - patient	one antonym acts upon the other	parallel structure	
subject - complement verb - object	provides info reversing state or degree of antonym		
cause and effect conditional	**consequence**	إن ، لو	If X then Y
	replacive	بدل	X instead of Y
adversative devices	**concession**	لكن، بالرغم من	although, but
		حتى ولو	X even though Y
equational sentences annexation asyndetic adjectives	**simultaneity**		
prepositional phrase	**spatial proximity**	بـ ، في	X in Y
any form above	**idiomatic**		

coordination

Coordination is the most used form to host antonym pairs. It is used in a number of categories which represent 49.33% of the data. Coordination is polysemous and can reflect different functions. The Arabic schematic constructions used for these functions are similar to the English frames *X and Y* and *X or Y*. Coordination can also be part of larger constructions such as in *between X and Y*. This construction can have the functions of Distinction, Conflict, and Association depending on the larger context it appears in. As an example, sentence (33) below shows the construction *between X and Y*.

(33) فكانت المباراة بين هجوم الوثبة ودفاع المجد (arabiCorpus: *Thawra*, ref: archive44209)

> fa-kānat al-mubārāh bayna **huǧūm** alwat̲bah **wa-difāʕi** almaǧd
> so-was the-match between **attack** Alwathbah **and-defence** Almajd

> So the match was between Alwathbah's attack and Almajd's defence

The sentence (33) shows a use of antonym pairs in the category Conflict which shows there is a situation of going back and forth between antonym pairs. However, the sentence in (34) below shows a use of the same schematic construction in another function: .

(34) والفارق بين الأغنياء والفقراء يزداد اتساعا (arabiCorpus: *Hayat97*, ref: NEW1997:24173)

> w-al-fāriq bayna **al-ʔaġniyāʔi w-al-fuqarāʔi** yazdādu ʔittisāʕan
> and-the-difference between **the-rich and-the-poor** increases width

> and the difference between the rich and the poor grows wider.

In sentence (34), the word الفارق *alfāriq* 'the difference' precedes the construction *between X and Y*, and therefore it indicates Distinction.

In the two sentences in (33) and (34) above, coordination hosts antonyms to reflect different functions. In addition, coordination of negated antonyms gives different meanings such as Inclusiveness and Cancelling both antonyms. The schematic construction

for this type of coordination is ﻻ .. وﻻ *not X and not Y*. Examples are presented in (35) and (36) below.

(35) (arTenTen: ولا عبد ولا حر لا ذكر ولا انثى فإنكم جميعا واحد في المسيح يسوع doc.id: 1038051, s.id: 24932171)

wa-lā   ʕabdun wa-lā   ẖur   lā **dakarun** wa-lā   **ʔunt̲ā** fa-ʔinna-kum
and-not slave   and-not liberal not **male**   and-not **female** for-indeed-you
ǧamīʕan fī lmasīẖi yasūʕ
all   in Christ Jesus

not a slave and not a liberal not a male and not a female, you are all the same in Jesus the Christ

(36) (arTenTen: doc.id: وهي لا تحمل انتماء إلى جنس معين، فلا هي بالأنثى ولا هي بالذكر
1350601, s.id: 32182300)

wa-hiya lā   taẖmilu intimāʔan ilā ǧinsin muʕayyan fa-lā   hiya
and-she not carry   association to gender particular for-not she
bi-l-ʔunt̲ā   wa-lā   hiya **b-i-ddakar**
in-the-female and-not she **in-the-male**

she does not hold any association to a particular gender, so she is not a female and not a male

In sentence (35) the coordination of negated antonyms gives the meaning of inclusion, while in (36), it gives the meaning of exclusion. In (35) BOTH male and female are equal, and in (36) the person is NEITHER male nor female. The schematic construction corresponding to the English frame *not X and not Y* is another polysemous structure.

Lastly, coordination can also be used with or without interrogative structure to present an Option. The Arabic frames used for this function are أو ... إما or أم ʻ(either) or'. The sentences (37) and (38) below provide examples for each.

(37) بالمشاركة إما مع القطاع الخاص أو مع القطاع العام (arabiCorpus: *Hayat96*, ref:BUS1996:36906)

bi-l-mušārakah   ʔimmā maʕa al-qiṭāʕi **al-xāṣ**   ʔaw maʕa al-qiṭāʕi
by-the-participation either with the-sector **the-private** or   with the-sector
al-ʕām
the-public

by participating either in the private sector or the public sector

(38) هل ينتمي المثقف إلى فئة كبيرة من المواطنين أم أنه سليل النخبة الصغيرة (arabiCorpus: *Hayat96*, ref: GEN1996:14043)

hal yantamī al-muṯaqqaf ʔilā fiʔatin **kabīratin** min al-muwāṭinīn ʔam
does belong the-literate to group **big**   of   the-citizens   or
ʔanna-hu salīl   a-nnuxbah **a-ṣṣaġīrah**
that-he descendant the-elite **the-small**

Does literate people belong to a big group of citizens or are they part of the small elite group?

The example in (37) shows coordination with إما ... أو 'either ... or indicating choice. In (38), however, choice is indicated through coordination with أم 'or' in an interrogative structure.

To conclude, the data shows that coordination is used widely to host antonym pairs and that it is polysemous because it can reflect different functions. With almost half of the data using coordination, this structure deserves more attention than other structures hosting antonyms. Therefore, a constructionist account of it is presented in chapter 7.

negation

Negation is another polysemous structure used for different functions when hosting antonym pairs. In Arabic, three negation particles are used to negate one antonym

for Emphasis of the other. These particles are لم *lam* for negating verb phrases, and لا *lā*, and ليس *laysa* for both verb and noun phrases. When the affirmative antonym is introduced with *bal*, negation functions for Correction of a cancelled proposition. Other uses of negation include inclusiveness of or cancelling both antonyms, which are discussed above with coordination.

The two forms of coordination and negation are discussed above because they are polysemous structures. A full discussion of different constructions is presented in the following chapter. However, a group of sentences remains unclassified. The categories presented in the classification in Table 4.2 describe 96.4 per cent of the dataset. The remaining 3.6% is a group of sentences that do not fit into any of the categories and do not constitute categories with each other.

Table 4.3 presents the antonym functions found in the present study in order of the most-used to the least-used categories. The first column lists the categories, the second column the frequency of that category in arabiCorpus, and the third column records the percentage of that category in this corpus. The next two columns show the frequency and percentage of the categories in arTenTen12 corpus. The last two columns record the total frequency and percentage of the categories in both corpora. Inclusiveness is the largest antonym function in text taking 21.7% of the dataset. The least-used functions are Replacive (1.3%) and Option (0.7%).

Many categories in the new classification of antonym functions are similar to categories in Jones's (2002) taxonomy. These categories are Inclusiveness (which he called Coordinated Antonymy), Specification, Unity, Distinction (Distinguished Antonymy), Association, Emphasis (Negated Antonymy), Transition (Transitional Antonymy), Comparison (Comparative Antonymy), Simultaneity, and Idiomatic.

Three of Jones's categories do not appear in the new classification of antonym functions; Oblique Stroke, Equivalence, and Ancillary Antonymy. Oblique stroke is a residual category that contains sentences where the antonyms are separated by a stroke '/' only. There were no instances of antonyms used this way in the Arabic dataset, and therefore it does not appear in this classification. The second (also residual) category is Equivalence. Jones (2002) provides examples of Equivalence such as *a feminine equivalent of the cur-*

Table 4.3: Distribution of different classes of antonym functions in both corpora

	arabiCorpus		arTenTen12		Total	
function	frequency	%	frequency	%	frequency	%
inclusiveness	293	19.5%	370	24.6%	663	22.1%
antithesis	259	17.3%	296	19.7%	555	18.5%
grammatical	127	8.5%	116	7.7%	243	8.1%
comparative	112	7.5%	115	7.7%	227	7.6%
negation	111	7.4%	95	6.3%	205	6.8%
transition	98	6.5%	103	6.9%	201	6.7%
simultaneity	82	5.5%	64	4.3%	146	4.9%
consequence	72	4.8%	47	3.1%	119	4.0%
unclassified	66	4.4%	42	2.8%	108	3.6%
spatial	32	2.1%	56	3.7%	88	2.9%
idiomatic	33	2.2%	37	2.5%	70	2.3%
concessive	32	2.1%	28	1.9%	61	2.0%
specification	41	2.7%	12	0.8%	53	1.8%
unity	26	1.7%	25	1.7%	51	1.7%
distinction	21	1.4%	30	2.0%	51	1.7%
association	34	2.3%	17	1.1%	51	1.7%
conflict	31	2.1%	16	1.1%	47	1.6%
replacive	20	1.3%	20	1.3%	40	1.3%
option	10	0.7%	11	0.7%	21	0.7%
Total	1500	100%	1500	100%	3000	100%

rent masculine realism and *the rural version of the urban folk-myth* (Jones, 2002: 101). Only five sentences in Jones's data are classified under this category, but no sentences in the Arabic dataset show a pair of antonyms presented as equals as in Jones's examples.

The main category that differs from Jones's analysis is Ancillary Antonymy. In this category, pairs of antonyms function as triggers of other oppositions in text. Antonyms can function this way in any frame; sentences with an ancillary contrast are 'semantically, syntactically, and grammatically distinct' (Jones, 2002: 45). However, this distinction is due to parallelism and the fact they have a similar effect of triggering another opposition. It is not because of a common frame. Therefore, assigning a category for the ancillary use of antonyms amounts to grouping all ancillary sentences together and then classifying the sentences that do not have that function. I do not include this category in my classification of antonym functions and classify sentences according to form and meaning of the frame. One can then look out for the additional ancillary use that can or cannot exist alongside the main function of the construction. Ancillary use of antonyms is discussed in detail in section 4.3 below as a function of canonical antonyms in general

rather than as a separate category.

Another difference between the classifications of antonym functions is how parallelism is treated. Davies (2013) assigns a separate category for parallelism. However, the data, along with findings from previous studies (Jones, 2002; Murphy et al., 2015), show that antonym pairs more often than not are presented parallel to each other in text regardless of the constructions they appear in.

In this section I have discussed the common structures used to host antonym pairs in MSA. I have also presented the new taxonomy of antonym functions and compared it to Jones's (2002) taxonomy. I have identified two important features of co-occurring antonym pairs: parallelism as discussed in Davies (2013), and the ancillary effect of canonical antonyms as discussed in Jones (2002). The following section 4.2 discusses parallelism as a common feature found in many of the structures hosting antonym pairs. The ancillary effect is discussed in section 4.3.

4.2   Parallelism

Antonyms are found to co-occur in parallel structures repeatedly in many studies and in the present study. This section presents an account of parallelism as a feature that is often found alongside antonym co-occurrence. First, a definition of parallelism is presented with some examples from English. Then the effect of parallelism on sentence processing is discussed along with the effect of parallelism in creating ancillary opposition. Lastly, the parallelism effect is exemplified by sentences from Arabic data that illustrate some idiosyncratic properties of Arabic syntax.

4.2.1   Parallelism in English

Parallelism takes place when two structures that are similar to each other in terms of their formal and semantic components are juxtaposed. Parallelism is not confined to sentence-internal instances, but because of how the data was collected in this study, all examples are on the sentence level. The similarity between structures can occur in one or more levels of analysis: phonology, morphology, syntax, and semantics. Short (1996:

14) notes that parallelism 'invite[s] the reader to search for meaning connections between the parallel structures, in particular in terms of the parts which are varied'.

Parallel structures are found in many contexts such as coordination, as in (39a), comparison in (39b), and along with correlative expressions in (39c).

(39)   a. The **Spanish, French, Italian** and **Portuguese** language learning books are available in book stores.

        b. **The display screen** is smaller than **the monitor screen** in that lab computer.

        c. **What you see** is **what you get**.

The sentences in (39) show that parallelism can be on the word level as in (39a), phrase level as in (39b), or on the clause level as in (39c). When two structures are parallel, some of the identical words are removed resulting in ellipsis because ellipsis is governed by resemblance (Kehler, 2001). For example, in (40) the second part of the sentence is shortened form *but she has been to London* to *but she has* because the deleted words resemble the ones in the first clause.

(40)   I haven't been to London, but she has.

Psycholinguistic experiments have found that parallelism facilitates comprehension of the second part of a parallel structure. This facilitation is referred to as the parallelism effect. This is further discussed in the following section.

Parallelism effect

The term *parallelism effect* is taken from Frazier et al. (1984). They investigated coordinated noun phrases and found that the second noun phrase in a coordinated construction is processed faster if it is syntactically parallel to the first. Similar parallelism also facilitates processing of verb phrases (Tutunjian, 2010; Callahan et al., 2010). The parallelism effect is thought to result from a reactivation of material which had been recently activated in the first clause (Callahan et al., 2010: 102). For example, in (41) the second conjunct *the short thug hit Sam* is processed faster because the reader has just processed

the transitive *subject - verb - object* structure and, within the subject, the *article - adjective - noun* structure in the first noun phrase. The *objects* in the two parts are also parallel because they are both proper nouns.

(41)   The tall gangster hit John and the short thug hit Sam. (Frazier et al., 1984: 423)

Following these experimental studies on parallelism in coordinated phrases, Dubey et al. (2008) used a corpus methodology to investigate parallelism with and without coordination in two studies. Their hypothesis in the first study was that coordinated noun phrases are more likely to be structurally parallel in a corpus; they then compared their corpus findings to the experimental results of the studies discussed above. Dubey et al.'s hypothesis in the second study in their paper was that parallelism is independent of coordination and can be found iner- as well as across- setencially. The parallelism effect was found to be the same in both situations, with and without coordination; and coordination had a peripheral role in terms of triggering a parallel structure.

Knoeferle (2014) and Jones (2002) found similar results regarding parallelism and coordination. Parallelism is more dominant when parts are conjoined using *and* or *while* but not so when conjoined by *but*.

The studies considered so far took syntactic parallelism in consideration. Knoeferle and Crocker (2009), however, investigated both syntactic and semantic parallelism and found that both were associated with the parallelism effect. Their study has found also that even though syntactic parallelism was found to be stronger than semantic parallelism, the strongest parallelism effect was found when both syntactic and semantic properties were parallel. This suggests that parallelism has an additive nature.

The additive nature of parallelism refers to the strength of the parallelism effect when more linguistic levels are involved. More evidence for the additive nature of parallelism is found in Murphy et al. (2015), in which they investigate syntactic, semantic, and phonological properties of parallel parts of sentences hosting antonymous pairs. In their study, a method was introduced in order to quantify the parallelism of sentences. In this study, contrastive coordinating devices such as *but* were found to be less common when the two parts are highly parallel, arguably because the parallelism contributes to

the contrast.

4.2.2 Parallelism in Arabic

In the Arabic linguistic literature, parallelism is viewed as either an 'embellishment' in literary writing or as a coordinating device (Abdul-Raof, 2006). Parallel clauses where a pair of antonyms co-occur create an antithesis between two situations or points of view. The sentence in (42) is a complex sentence composed of two parallel independent clauses with antonymous verbs. The two clauses are joined by the connector و *wa* 'and'. The structure of the two clauses is shown in Table 4.4.

(42) بعض الأفلام صور الننجا كالمجرم الذي **يهاجم** الأبرياء، والبعض الآخر صوره كالمنتقم
الذي **يدافع** عنهم (arTenTen12: doc.id: 3805101, s.id: 84165150)

baʕḍu al-ʔaflām ṣawwar a-nninǧā ka-l-muǧrim alladī **yuhāǧim**
some the-films present the-Ninja as-the-criminal who **attack**
al-ʔabriyāʔi wa-l-baʕḍu al-āxar ṣawwara-hu ka-l-muntaqim alladī
the-innocent and-the-some the-other present-him as-the-avenger who
yudāfiʕu ʕan-hum
defend from-them

Some films present the Ninja as a criminal who **attacks** the innocent, and others
present him as the avenger who **defends** them.

Table 4.4: An example of parallel clauses from arTenTen12

الأبرياء	يهاجم	الذي	كالمجرم	الننجا	صور	بعض الأفلام
al?abriyāʔi	**yuhāǧim**	alladī	kalmuǧrim	anninǧā	ṣawwar	baʕḍu al?aflām
innocent	**attack**	who	as.criminal	Ninja	present	some films
عنهم	يدافع	الذي	كالمنتقم	ه	صور	والبعض الآخر
ʕanhum	**yudāfiʕu**	alladī	kalmuntaqim	hu	ṣawwara	walbaʕḍu alāxar
them	**defend**	who	as.avenger	him	present	and.some other

The two parallel parts in (42) are similar to each other morphologically, syntactically, and semantically. At the morphological level, both antonymous verbs *yuhāǧim* 'attack' and *yudāfiʕ* 'defend' are of the pattern *yuCāCiC*. Syntactically, the two verbs have similar argument structure. In the first part, كالمجرم اللذي يهاجم الأبرياء *kalmuǧrim alladī yuhāǧim al?abriyāʔi* 'like a criminal who attacks the innocent', the verb has an agent

'criminal', and a patient 'the innocent'. In the second part, كالمنتقم اللذي يدافع عنهم

kalmuntaqim alladī yudāfiʕu ʕanhum 'like an avenger who defends them', the verb يدافع

'defend' has an agent 'avenger' and an anaphoric patient where the patient of the first

part is referred to using the clitic pronoun هم *hum* 'them'. Besides argument structure,

the pair is also in the same type of relative clause structure. The two coordinated parallel

parts in (42) differ minimally in the semantics of the antonymous pair يهاجم 'attack' and

يدافع 'defend'.

Abdul-Raof (2006) defines parallelism as a coordinating device where two parallel

clauses are conjoined with or without the use of a coordinating particle. He also notes

that this use of parallelism is widely used in written Arabic which refers to the paratactic

nature of Arabic. Unlike English, Arabic makes more use of coordination (parataxis) than

subordination (hypotaxis). In the following quote, Baklouti (2011) explains the difference

between parataxis and hypotaxis:

> Structurally, the clauses paratactically combined have equal status; they
> are both free, and the relation between them is symmetrical and transitive,
> whereas in hypotaxis, a clause of lower status is bound to a clause of a higher
> status which is free; so, the relation is nonsymmetrical and non-transitive.
> (Baklouti, 2011: 506)

The sentence in (43) is an example of two phrases connected paratactically without

the use of a coordinator to present the judgement for both males and females.

(43) إن هذين حرام على ذكور أمتي حل لإناثهم، (arTenTen12: doc.id: 3269251, s.id: 73120124)

ʔinna hādayni ḥarāmun ʕala **dukūri** ʔummat-ī ḥillun
indeed these.two prohibited for **males** nation-my allowed
li-ʔināthi-him
for-females-theirs

These two are prohibited for the **males** of Muslims, allowed for the **females**

The structure of the two parallel parts in (43) is composed of adj + prep+ noun. The

two antonymous adjectives حرام *ḥarām* 'prohibited' and حل *ḥil* 'allowed' are predicative.

A predicate adjective in Arabic 'is used in an equational (verbless) sentence to provide

information about the subject of the sentence, thus completing the clause' (Ryding, 2005: 240). The two predicate adjectives are used asyndetically as complements for the same subject هذين *hāḏayni* 'these two'. The antonymous nouns ذكور/اناث 'females/males' are parallel to each other in the same construction ADJ + preposition + N-N.

The corpus data show extensive use of coordination and additive coordinating devices are almost always present. Only twenty sentences of the 1500 in the arTenTen12 dataset have the asyndetic structure of two parallel parts with a comma between them and no coordinating device. The sentence in (43) is one of these twenty. In the All Newspapers corpus of arabiCorpus, this type of sentence is so scarce that only eight of the 1500 sentences in the dataset have it. These sentences are included in the category Antithesis.

Another example of parallel independent clauses is presented in (44). Here, the clauses are coordinated with 'and'. This sentence differs from the previous two in that the antonymous pairs in (42) and (43) occurred once in each clause. In the sentence (44), however, each clause can be looked at individually as an instance of antonym co-occurrence. This sentence is counted once according to the internal structure of each clause. So this sentence counts for two co-occurrences of antonyms: once in 'our elders have compassion for our youngsters' and once in 'our youngsters respect our elders' .

(44) كلنا أبناء عائلات كبيرنا يعطف على صغيرنا وصغيرنا يحترم كبيرنا (arTenTen12: doc.id: 781010, s.id: 6607412424)

kullu-na ʔabnāʔu ʕāʔilāt **kabīru-nā**   yaʕṭifu   ʕalā **ṣaġīra-nā**
all-us   sons   families **elders-ours** have.compassion on   **young-ours**
wa-ṣaġīru-nā   yaḫtarimu **kabīra-nā**
and-young-ours respect   **elders-ours**

We are all parts of families our **elders** have compassion for our **youngsters** and our **youngsters** respect our **elders**.

The sentence in (44) has two coordinated clauses. In the first clause, the antonymous nouns 'elders' and 'youngsters' act as arguments of the verb 'have compassion for'. In the second clause, the antonymous nouns act as arguments of the verb 'respect'. There is an internal morphological parallelism within each clause between the subjects and objects of the verbs. Both words are of the pattern *CaCiC*. Both are also nouns with the same

clitic pronoun نا *nā* 'our'.

Moreover, there is parallelism across the two coordinated clauses, which triggers an ancillary contrast between the verbs يعطف على *yaʕṭifu ʕalā* 'to have compassion for' and يحترم *yaḫtarimu* 'to respect'. The two verbs are presented as qualities that families have to act according to. Everyone is expected to respect those older than themselves and to act compassionately towards those younger than themselves.

Ancillary contrast refers to the opposition triggered by antonymous pairs co-occurring parallel to each other (Jones, 2002). Antonyms in parallel structures can trigger other oppositions in a pair of words or phrases that otherwise would not be considered opposites as in the verbs 'have compassion' and 'respect' in (44). The ancillary use of antonym pairs is discussed further in the following section.

4.3   Ancillary effect of canonical antonyms

Jones (2002) introduced the ancillary use of canonical antonyms where they trigger a secondary opposition in the sentence. He proposed that the more canonical antonym pair is the A-pair, and the triggered opposition is the B-pair. For example, Table 4.5 shows the A-pair and B-pair in the sentence *they're too old to play Hamlet but too young to play butlers in Hollywood movies.*

Table 4.5: A-pair and B-pair as presented in Jones (2002: 48)

		A-pair		B-pair
clause 1	they're too	old	to play	Hamlet
clause 2	[they're] too	young	to play	butlers in Hollywood movies

Jones (2002) presents a taxonomy of B-pairs. Three groups of sentences in his data feature nominal B-pairs that have a common noun as referent. These three groups are *political*, *human* or *geographic* B-pairs. Other groups include B-pairs with a relation that brings them together such as *temporal*, *quantitative*, *synonymous*, *meronymous*, and *linguistic* B-pairs. This taxonomy has been revised by Kostić (2015b) where she introduces the term *reciprocally ancillatory* referring to the canonically antonymous B-pairs. In some of the ancillary antonymy cases both A-pair and B-pair can be identified

as antonymous outside the context resulting in a reciprocally ancillatory relation between the A-pair and the B-pair. For example, both contrasts حل/حرام *ḥarām/ḥil* 'prohibited/allowed' and ذكور/اناث *ʔināṯ/ḏukūr* 'females/males' in (43) above are canonical antonyms outside of context. An example from English is presented in (45) below.

(45) The problem of evil: usually other people's; too **many bad** people are doing it to too **few good** people. (In Kostić, 2015: 147)

In the other group of ancillary sentences, according to Kostić (2015b), the B-pair can be either related, synonyms or meronyms, or non-related words. B-pairs in the related words group can be interpreted as co-hyponyms because of their relation to the antonymous A-pair (Kostić, 2015: 152). For example, the B-pair *acquaintances/friends* in (46) below are near-synonyms. In the context of this sentence they are co-hyponyms because they represent different types of social relations.

(46) Archer was a formal, eccentric man, **long** on <u>acquaintances</u> and **short** on <u>friends</u>. (In Jones, 2002: 51)

The near-synonyms *acquaintance* and *friend* are contrasted in sentence (46) which presents them in this context as opposites rather than synonyms. Near-synonyms[2] were investigated by Storjohann (2009) where she found that there is a variation in the relational type between these pairs. In some cases they are projected as synonyms and in others they are used as contrasts. This variation depends largely on the contextual cues around the pair. In an ancillary context, they are contrastive due to their vicinity to antonym pairs as in (46) above.

The ancillary function of antonyms is found in all investigated languages. In Jones's (2002) English data, Ancillary and Coordination have roughly equal frequency. However, sentences with Ancillary were more common in Swedish data than Coordination (Murphy et al., 2009: 2175). The opposite is found in Serbian where Coordination is used in more frequency than the Ancillary function (Kostić, 2011). Similarly, in Japanese and Chinese Coordination is used to host antonyms more than the Ancillary function is used (Muehleisen and Isono, 2009; Hsu, 2015). These differences among languages might not

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[2]Storjohann (2009) calls for using the term *plesionymy* (Cruse, 1986) to refer to near-synonyms.

be the result of how often the ancillary effect is actually present in the languages. There is the possibility that different people doing the coding could affect the degree to which they noticed and prioritized ancillariness.

Towards the end of their paper, Murphy et al. (2009) asked the following question for future research. '[S]hould the Ancillary function be considered as belonging to a different taxonomical level than the other categories, since (arguably) the Ancillary categorization focuses on the antonyms effect on other elements in the sentence (the B-pair) rather than the contextual relation between the antonyms themselves (the A-pair)?' (Murphy et al., 2009: 2181).

My answer to this question is: yes, it should. I view ancillary as an effect of canonical antonyms co-occurring in parallel structures that extends the contrast to nearby phrases. For this reason, the Ancillary Antonymy category in Jones's (2002) classification does not appear in the new classification of antonym functions presented in this study. However, any co-occurring antonyms from other categories can trigger another opposition between nearby phrases. The question remains: is there a common structure for the triggered opposition? In Japanese and Chinese, a preference for the B-pair to be syntactically close to the A-pair has also been observed (Muehleisen and Isono, 2009; Hsu, 2015). Hsu (2015) argues that processing may be faster when the items to be mapped together (i.e., AX and BY) are syntagmatically close to each other (Hsu, 2015: 70). In Chinese, Hsu (2015) has found that ancillary oppositions commonly have the order XAYB where X and Y stand for the A-pair and A and B stand for the B-pair in Jones's terminology. However, in English, Swedish, and Serbian no specific construction can be identified (Jones, 2002; Murphy et al., 2009; Kostić, 2011). In the Arabic dataset, the triggered opposition can be the subject of an antonymous A-pair, an adjunct of the A-pair, or annexed to the A-pair. These are some of the constructions that B-pairs appear in, but they are not limited to these.

Jones (2002) provides 57 sentences as examples for his Ancillary Antonymy category. In order to test my approach, I have reclassified these sentences according to the new classification of antonym functions. I provide some examples in (47) below, but a full list can be found in Appendix E.

(47)   a. But a couple of Libyans are only likely to be **small** minnows in a very **large** pond. (p. 52)

       b. Now these orders of time have been reversed: the **rich** rise at dawn, the **poor** sleep late. (p. 54)

       c. While **success** is sexy; **failure** is on a par with cheesy feet. (p. 58)

In (47a), the canonical antonym construction *small/large* is used in the schematic construction *XP in YP* where the noun phrases *small minnows* and *large pond* are parallel to each other. The A-pair is the adjectives *small/large* and the B-pair is the modified nouns *minnows/pond*. This creates an ancillary opposition because *minnows* are contrasted with *pond*. I classify this sentence in the category Overlapping and Spatial Proximity. This category includes sentences where the referent of an antonym member is described to be inside or near the referent of its antonym. The sentence in (47b) is an example of the category Antithesis. It is similar to sentence (43) discussed above. The sentence features two parallel structures that present a contrast between two situations rich people rising at dawn and poor people sleeping late. There is no lexical coordination device here, however, the studies on parallelism discussed in section 4.2 show that sentences with parallel structures are similar with or without a coordination device.

Lastly, I classify sentence (47c) in the category Comparison. One of the forms used in Comparison is the use of a subordination structure. *Success* and *failure* are compared to each other; one is described as *sexy*, the other is *on a par* with the opposed *cheesy feet*.

In the dataset investigated in this study, there are 267 ancillary sentences in arTenTen12 (17.8%) and 224 in arabiCorpus (14.9%). Altogether, the dataset contains 491 sentences where an ancillary contrast is triggered. This makes 16.63 percent of the dataset, which is far less than the percentage of ancillary sentences in Jones's (2002) dataset (38.7%).

So far, the new classification has been presented and the differences between previous classifications of antonym functions and the present classification discussed. This section also discussed common features found in many instances of antonym co-occurrence: parallelism and ancillary use of antonyms. The next sections present a description of the

co-occurring antonymous root pairs regarding the order of the pair and their word class.

4.4   Antonym sequence

Antonym sequence is the relative order of the antonyms in the schematic constructions. Previous studies have shown that co-occurring pairs of antonyms have a tendency for a preferred sequence in English (Jones, 2002), Serbian (Kostić, 2015a), and Chinese (Hsu, 2015). In Jones's data, three pairs co-occurred in the same sequence in all of their co-occurrences. These pairs are *correct/incorrect*, *prove/disprove*, and *rightly/wrongly* and the pairs *directly/indirectly*, *confirm/deny*, *officially/unofficially*, and *married/unmarried* co-occur in this order in more than 90% of their co-occurrences. The pairs that show the least tendency to have a preferred order are *weakness/strength*, *urban/rural*, *dead/alive*, *implicitly/explicitly* which co-occur in this order in less than 55% of their co-occurrence. The pair *implicitly/explicitly* co-occurs in the least stability regarding its order in Jones's data with the pair *implicitly* preceding *explicitly* 53.3% of the time. Generally, the binomial test performed in Jones's study showed more regularity in antonym sequence in English than in Arabic.

Jones (2002) gives a number of reasons behind antonym sequence in his data. The first sequence rule is Morphology which is '[t]he most dominant single factor affecting antonym sequence' (Jones, 2002: 123). Morphologically related antonyms feature the root word first then its morphological antonym. In English, this means any antonym formed by a prefix, such as *un-*, occurs after the unprefixed form. Morphology is an important factor in Chinese, too. Monosyllabic (and therefore monomorphemic) pairs of antonyms adhere to the frequent sequence more than disyllabic ones (Hsu, 2015: 76). The second factor affecting antonym sequence in Jones's data is Positivity. The word that occurs first generally has more positive connotations than its antonym, so *good* precedes *bad*. Magnitude is another factor where *large* precedes *small* and *long* precedes *short*. A counterexample to magnitude that Jones found in his data is *heavy/light*, in which *light* occurs first 57.1% of the time. Another factor affecting the sequence of antonyms is Chronology where 'one antonym is prone to precede the other in the real

world' (Jones, 2002: 127). In Jones's data, in most cases, *begin* precedes *end*, *old* precedes *new*, and *young* precedes *old*. Gender also plays a role in affecting antonym sequence where *male* precedes *female*. Another factor is Phonology. In the majority of Jones's pairs, the word with shorter syllabic formation precedes the longer antonym similar to Chinese. Only four of the fifty-six word pairs sampled act as counterexamples: *begin/end*, *succeed/fail*, *innocence/guilt*, and *happy/sad* (Jones, 2002: 129). Other factors, such as Chronology and Positivity, might be at play in these counterexamples. The last factor is Idiomaticity where the pair favours a certain sequence because they occur in a phrase that has developed an idiomatic status.

Two further factors are also discussed by Jones: Frequency and Markedness. Frequency estimates that the most frequent of the pair would come first in the sequence. Markedness, which Jones defines in terms of semantic neutrality only, does affect antonym sequence but only marginally and might be as Jones states 'a symptom rather than a cause of the sequence' (Jones, 2002: 129). This is because more positive words tend to be the unmarked of the pair. However, (Kostić, 2015a) found that frequency does affect antonym sequence in 80% of her Serbian dataset sentences. Also twelve out of the 33 pairs she investigated are affected by markedness where the unmarked word precedes the marked one.

The Arabic data also show the tendency to have a preferred sequence, albeit to a lesser degree. Table 4.6 records the information regarding pair sequence, except for the root pair for *large/small* which will be investigated separately. The first two columns in Table 4.6 list the English translations of the Arabic roots in descending order of their stability in ordering. The *R1* column lists the roots that appear first in most cases, and the *R2* column lists the roots that appear second in most cases. Column three records the number of total occurrences of each pair in both corpora. The fourth column records the number of occurrences of each pair in the order R1-R2. The fifth column shows the percentage of the R1-R2 sequence. The last column shows the results of the Exact Binomial Test done to determine the chance of seeing the most frequent order. A score of 0.05 or less means that the pair tends to appear in the order R1-R2.

The antonym root pair represented in the table by 'reward/punishment' had the high-

Table 4.6: Sequence statistics for antonym pairs in the dataset.

R1	R2	occurrences	R1-R2	percent	p-value
reward	punishment	33	30	90.9%	<0.0001
masculine	feminine	165	132	80.0%	<0.0001
love	hate	59	46	78.0%	<0.0001
good	bad	33	25	75.8%	0.0023
right	wrong	123	93	75.6%	<0.0001
succeed	fail	84	63	75.0%	<0.0001
high	low	22	16	72.7%	0.0262
public	private	303	220	72.6%	<0.0001
optimism	pessimism	14	10	71.4%	0.0898
win	lose	111	79	71.2%	<0.0001
light	heavy	29	20	69.0%	0.0307
begin	end	276	189	68.5%	<0.0001
long	short	80	54	67.5%	0.0012
dishonest	honest	18	12	66.7%	0.1189
deny	confirm	42	28	66.7%	0.0218
married	unmarried	8	5	62.5%	0.3633
strength	weakness	222	136	61.3%	0.0005
hard	soft	5	3	60.0%	0.5000
defend	attack	154	91	59.1%	0.0146
alive	dead	184	104	56.5%	0.0448
wet	dry	9	5	55.6%	0.5000
old	new	218	119	54.6%	0.0990
sad	happy	11	6	54.5%	0.5000
rich	poor	145	79	54.5%	0.1595
slow	fast	17	9	52.9%	0.5000
difficult	easy	50	26	52.0%	0.4439
peace	war	174	87	50.0%	0.5302

est degree of consistency in their sequence. The words for 'reward' preceded 'punishment' in 90.9 per cent of their co-occurrences. On the other hand, the words for 'peace/war' had no preference for their order. The table shows that the words for 'peace' preceded 'war' half of the time; and so 'war' preceded 'peace' half of the time, too.

In what follows, I look into the specific case of صغير/كبير 'large/small' 'old/young' to show whether different senses of a pair have different sequences. In Jones's data, *large* precedes *small* and *young* precedes *old*. Because these two senses are expressed by the same lexical items in Arabic, it is worth investigating this pair separately by breaking the occurrence frequency according to its senses rather than at the level of lexical item.

For this reason it was not included in Table 4.6 above. The pair ص غ ر ك ب ر *kbr/ṣġr* 'large/small' is used for four senses in the dataset. These senses are shown in Table 4.7 along with their sequence statistics. Column one in the table shows the sense that the pair refers to. Column two shows the number of times this sense occurred in the dataset. Columns three and four show the pair in English in the most frequent order. Next the column 'frequency' records how many times the order R1-R2 occurred, and the column 'percentage' records the percentage of this frequency. The last column records the Exact Binomial Test results for the order R1-R2.

Table 4.7: Occurrences of different senses of صغير/كبير *kabīr/ṣaġīr*

sense	occurrence	R1	R2	frequency	percentage	p-value
ISSUE	41	small	large	32	78%	0.0002
AGE	85	young	old	52	61%	0.0251
STATUS	21	large	small	12	57%	0.0814
SIZE	251	small	large	134	53%	0.1563

The pair *kbr/ṣġr* does not show significant tendency regarding its sequence when it refers to physical size or the figurative size of someone's status in society or career. However, this pair shows a tendency towards the sequence صغير *ṣaġīr* 'small' 'young' - كبير *kabīr* 'large' 'old' when it refers to AGE or ISSUE.[3]

The last column in Tables 4.6 and 4.7 records the p-value results for the sequence of the co-occurring pairs. A score of 0.05 or lower indicates that the antonym pair sequence recorded in the table represents the normal behaviour of that pair. A score higher than 0.05 shows significant difference between the expected behaviour and the behaviour observed here. The Tables 4.6 and 4.7 show that eighteen pairs out of the thirty-one pairs of antonym roots appear in the order with the highest frequency and that this order is representative of their normal behaviour.

The eighteen pairs are studied further below in order to identify the factors that contribute towards their preferred sequence. The factors used here are the ones presented by Jones (2002). However, unlike Jones, I use semantic neutralization as only one of the factors of markedness. Neutralization occurs when one member of the pair is used to

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[3]The sense I refer to as ISSUE is the meaning of the nominal pair صغيرة وكبيرة usually in the feminine; as in يعرف كل صغيرة وكبيرة *yaʕrifu kulla ṣaġīrah wakabīrah* 'He knows every little and large [issue or thing]'.

carry the meaning of the opposition scale as in questions like *How long is it?*; whereas the question *How short is it?* would be marked. In her investigation of the concept of markedness, Lehrer (1985) presents six factors included in the meaning of markedness with 'neutralization' as the general criterion of the unmarked member of an antonym pair. Another criterion that Lehrer presents is morphology, e.g. *happy* is unmarked, while *unhappy* is marked. The third criterion is that ratios can be used with the unmarked member, *John is twice as tall as Bill* but not **Sally is twice as short as Sue.* Positivity is one criterion discussed by Lehrer (1985); so the unmarked member is evaluatively positive as in *happy* vs. *sad.* Another criterion is similar to Jones's magnitude factor where the unmarked member has more of a certain quality, e.g. *big* vs. *small* and *tall* vs. *short.* The last in Lehrer's criteria is that the unmarked member is less biased, which means that it does not reflect the speaker's true attitude towards compared items, as in *The steak is better than the chicken, but both are bad.* as opposed to **The chicken is worse than the steak, but both are good* (Lehrer, 1985: 398-400).

An important factor that affects the markedness of a member of antonym pair but was regarded as peripheral by Lehrer (1985) is its frequency. The principle of frequency was first proposed by Greenberg (1966). It refers to how often a linguistic item is used in text, and it was argued that frequency is the single most influential factor affecting linguistic phenomenon not markedness (Greenberg, 1966; Haspelmath, 2006; Bybee, 2007). In fact, Haspelmath (2006) calls for the abandonment of the term markedness in favour of frequency of use vs. rarity of linguistic items in text in addition to detailed semantic descriptions and pragmatic analyses of members of a given pair (Haspelmath, 2006: 64).

Based on this brief overview, the factors included in this investigation are frequency, positiveness, magnitude, temporal and spatial ordering, and neutralization of semantic scale. These factors are evaluated in relation of the eighteen pairs that showed significant tendency regarding their order. Table 4.8 lists the pairs of roots in English and identifies which of these factors is relevant for each. For frequencies of members of each pair used in this study refer to Appendix F. Table F.1 in Appendix F shows the frequency of each pair member of the antonym roots as used in the arabiCorpus. The frequencies of antonym members in arTenTen12 are not cited as the size of the corpus has changed

since data collection.

Table 4.8: Factors affecting antonym sequence in MSA.

antonym pair	frequency	positivity	gender	magnitude	order	neutral
reward/punishment		x				
masculine/feminine	x		x			
love/hate	x	x				
good/bad	x	x				x
right/wrong	x	x				
succeed/fail	x	x				
high/low	x				x	x
public/private	x			x		
win/lose	x	x				
light/heavy	x					
begin/end	x				x	
long/short	x			x		x
deny/confirm						
strength/weakness	x	x				x
defend/attack	x	x				
alive/dead		x				
young/old	?				x	
small/large	?					

Table 4.8 shows that frequency is a dominant factor for antonym sequence but there are a few exceptions. For example, in the pairs 'reward/punishment', 'deny/confirm', and 'alive/dead' the less frequent member appears first in the sequence. In the case of the pairs 'young/old' and 'small/large', frequency cannot be determined because they are expressed using the same lexical items. In addition to frequency, some pairs adhere to the factors presented in Jones (2002): Positivity as in 'reward/punishment', 'love/hate', 'right/wrong', 'succeed/fail', and 'win/lose'; Chronology as in 'begin/end'; Gender as in 'male/female'; and Magnitude, in the pairs 'public/private' and 'long/short'.

Kostić (2015a) suggests that grammatical gender might be an indicator for markedness where the unmarked masculine gender precedes the marked feminine one. In Arabic grammatical gender as well, the masculine is unmarked while feminine gender is marked. Most of the antonym pairs in my data had the same grammatical gender. However, grammatical gender difference is present in the nouns خسارة/فوز *fawz/xasārah* 'winning/losing', ضعف/قوة *quwwah/ḍaʕf* 'strength/weakness', and موت/حياة *ḥayāh/mawt* 'life/death'. In these three pairs the feminine is marked with a ة *ah* at the end of the

word. However, only the pair خسارة/ فوز *fawz/xasārah* 'winning/losing' exhibits an unmarked masculine grammatical gender preceding the feminine one. Therefore, grammatical gender can be eliminated as a possible indicator of markedness.

Some antonym pairs in MSA do show a preference towards a specific order. However, this preference is less stable than what has been observed in other languages such as English (Jones, 2002) and Serbian (Kostić, 2015a). Statistics for antonym sequence in the two corpora used here are presented separately in Tables G.1 and G.2 in Appendix G. However, no further comment is made on these tables because the difference between the antonym sequence in each corpus does not show a specific pattern.

One probable reason behind the lesser tendency of Arabic antonyms towards a specific antonym sequence relates to the data at hand. The dataset contains roots of different word classes while antonyms in previous studies are of the same class. Therefore, a test was carried out on antonyms co-occurring in the same word class more than ten times in the dataset. Tables 4.9, 4.10, and 4.11 below show the results of the Exact Binomial Test that was carried out for adjectives, nouns, and verbs, respectively. The pairs that show consistent behaviour appear in the list of pairs that showed consistent behaviour in the overall corpus, in Table 4.8, except for the adjectival pair جديد/قديم *qadīm/ǧadīd* 'old/new'.

Table 4.9: Antonym sequence of co-occurring adjectives in the dataset.

W1	W2	frequency	W1-W2	percentage	binomial test
good	bad	17	14	82.4	0.0064
high	low	12	9	75.0	0.073
public	private	283	209	73.9	< 0.0001
masculine	feminine	14	10	71.4	0.0898
defend	attack	28	18	64.3	0.0925
strong	weak	64	41	64.1	0.0164
light	heavy	19	12	63.2	0.1796
alive	dead	16	10	62.5	0.2272
old	new	200	113	56.5	0.0384
rich	poor	115	62	53.9	0.2279
long	short	53	28	52.8	0.3919
small	large	311	161	51.8	0.2854
easy	difficult	24	12	50	0.5806

Table 4.9 shows the thirteen pairs of adjectives that co-occurred more than ten times in the whole dataset. Of these thirteen adjectival pairs only four pairs have a p-value less

than 0.05, which indicates a significant inclination towards the tested behaviour. These four pairs can be translated in English as: 'good/bad', 'public/private', 'strong/weak', and 'old/new'.

Table 4.10: Antonym sequence of co-occurring nouns in the dataset.

W1	W2	frequency	W1-W2	percentage	binomial test
reward	punishment	31	29	93.5	< 0.0001
success	failure	48	40	83.3	< 0.0001
male	female	147	120	81.6	< 0.0001
right	wrong	122	93	76.2	< 0.0001
winning	losing	50	38	76	0.0002
confirm	deny	12	9	75	0.073
dishonesty	honesty	12	9	75	0.073
love	hate	21	15	71.4	0.0392
small	large	75	53	70.7	0.0002
beginning	end	144	93	64.6	0.0003
strength	weakness	105	66	62.9	0.0054
good	bad	13	8	61.5	0.2905
defend	attack	88	51	58	0.0827
life	death	143	78	54.5	0.1578
rich	poor	22	12	54.5	0.4159
peace	war	153	77	50.3	0.5000

Nouns show more stability in their inclination towards a preferred sequence. Sixteen noun-noun antonym pairs co-occurred more than ten times in the dataset, of which eight pairs have a preferred sequence: 'reward/punishment', 'success/failure', 'masculine/feminine', 'right/wrong', 'winning/loss', 'love/hate', 'small/large', 'beginning/end' and 'strength/weakness'.

Table 4.11: Antonym sequence of co-occurring verbs in the dataset.

W1	W2	frequency	W1-W2	percentage	binomial test
long	short	15	13	86.7	0.0037
love	hate	33	26	78.8	0.0007
deny	confirm	19	14	73.7	0.0318
begin	end	76	54	71.1	0.0002
succeed	fail	17	11	64.7	0.1662
win	lose	35	21	60	0.1553

Verbs co-occur less than nouns and adjectives, only six pairs co-occurred more than ten times. Four of these six pairs have a significant preference to a certain order: 'long/short', 'love/hate', 'deny/confirm', and 'begin/end'.

Information presented in Tables 4.9, 4.10, and 4.11 provides a better view of antonym

order in MSA that is comparable to information on antonym order in Jones's (2002) English data. This is because antonym pairs in different word class are presented separately in these tables. For example, frequency for the nominal pair 'male/female' is separated from frequency for the adjectival pair 'masculine/feminine'. The three tables combined list thirty-five antonymous word pairs, of which sixteen have stable sequence which represents 45.7% of antonym pairs investigated here. In Jones's (2002) data, however, 82.1% of the antonym pairs investigated in his study showed different levels of stability in their sequence.

Antonym pairs with low stability regarding their sequence are found more in Arabic than in English. Out of the 56 pairs in Jones's (2002) study, only ten pairs had a very low preference for a certain order. These pairs co-occurred in the order with high frequency less than 60% of the time. These ten pairs are *war/peace, minor/major, fast/slow, light/heavy, hard/soft, easy/difficult, weakness/strength, urban/rural, dead/alive,* and *implicitly/explicitly.* In the MSA dataset, also ten pairs, but out of 28 pairs, co-occurred in the order with high frequency less than 60% of the time as Tables 4.9, 4.10, and 4.11 show.

To conclude, antonyms in Arabic are less strict in terms of their sequence than antonyms in English. The following section looks more closely at word class and how it affects co-occurrence in different categories.

4.5 Word class

Building the MSA dataset was based on the frequency of word class present in the sub-corpus. The word class frequency in the dataset reflects its frequency in the corpora. This section investigates how many of each word class falls under each category of antonym functions in order to find out whether there is an effect of antonym part of speech on how it functions in text.

Table 4.12 shows how many pairs of each word class appear in each category of antonymy functions discussed above. The first column in this table lists the categories of antonym functions. The second column records raw frequencies for the noun-noun

antonym constructions that appeared in each category for the arTenTen12 corpus then for the arabiCorpus and for the total for both. The subsequent three columns record the same information for adjectives, verbs, and adverbs, respectively. Column six is labelled *mix* and it records information for co-occurring antonyms of different word class. Lastly, column seven provides the total sentences for each category of antonym functions.

Table 4.12 shows adjectives and nouns score the highest in a co-occurring antonym pair. Antonymous adjective pairs co-occurred 1246 times in the dataset and noun pairs 1227 times. Cross-categorical antonyms come next with 333 sentences followed by antonymous verbs co-occurring 225 times in the dataset. Adverbs, however, score the least with only fourteen co-occurring antonym pairs. The reason that adverbs are so scarce might be because adverbs are a very small category in Arabic and are usually expressed through multi-word adverbial expressions or through nouns and adjectives in the accusative case (Ryding, 2005: 276).

Table 4.12: Distribution of word class across categories. (incl: inclusiveness, anti: antithesis, neg: negation, comp: comparison, gram: grammatical relations, trans: transitional, conc: consequence, conces: concessive, replac: replacive, simult: simultaneity, distinc: distinction, place: spacial proximity, idiom: idiomatic expression, spec: specification, associ: association, 10^{10}: arTenTen12, arab.: arabiCorpus.)

	nouns			adjectives			verbs			adverbs			mix			total		
	10^{10}	arab.	both	10^{10}	arab.	both	10^{10}	arab.	both	10^{10}	arab.	both	10^{10}	arab.	both	10^{10}	arab.	both
incl	178	94	272	181	186	367	8	12	20	3	1	4	0	0	0	370	293	663
anti	139	102	241	86	94	180	60	38	98	2	2	4	9	23	32	296	259	555
neg	46	42	88	25	37	62	11	8	19	1	0	1	12	23	35	95	110	205
comp	47	31	78	49	57	106	9	12	21	2	1	3	8	11	19	115	112	227
gram	32	40	72	45	51	96	0	1	1	0	0	0	39	35	74	116	127	243
trans	47	42	89	34	34	68	13	4	17	0	0	0	9	18	27	103	98	201
conc	20	28	48	18	20	38	4	7	11	0	0	0	5	17	22	47	72	119
conces	9	11	20	10	11	21	1	2	3	0	1	1	8	8	16	28	33	61
repalci	4	9	13	15	9	24	0	1	1	0	0	0	1	1	2	20	20	40
simult	34	37	71	25	25	50	0	0	0	0	0	0	5	20	25	64	82	146
distinc	17	4	21	12	17	29	0	0	0	0	0	0	1	0	1	30	21	51
place	12	11	23	29	18	47	1	0	1	0	0	0	14	3	17	56	32	88
idiom	27	15	42	1	0	1	9	9	18	0	0	0	0	9	9	37	33	70
option	5	2	7	4	6	10	2	0	2	0	0	0	0	2	2	11	10	21
unity	22	24	46	2	2	4	0	0	0	0	0	0	1	0	1	25	26	51
spec	5	14	19	6	12	18	1	11	12	0	0	0	0	4	4	12	41	53
conflict	11	21	32	4	6	10	0	0	0	0	0	0	1	4	5	16	31	47
associ	8	8	16	9	26	35	0	0	0	0	0	0	0	0	0	17	34	51
residue	12	19	31	12	19	31	1	2	3	0	1	1	17	25	42	42	66	108
Total	675	552	1227	566	630	1246	121	109	225	8	6	14	130	203	333	1500	1500	3000

A goodness-of-fit test was used to determine if the data are consistent or not consistent regarding the distribution across categories of antonym functions. Table 4.13 below shows the results of this test. A score closer to one means that the word class distributes across categories with little preference for any of them.

Table 4.13: Goodness of fit test of antonym pairs' word class in each corpus.

	nouns	adjectives	verbs	adverbs	mix
arTenTen12	1.000	1.000	0.069	0.000	0.647
arabiCorpus	1.000	1.000	0.158	0.000	0.993
Both	1.000	1.000	0.695	0.000	1.000

Table 4.13 shows that antonymous nouns, adjectives, and adverbs have consistent results across sub-corpora. The following is a discussion of each word-class category investigated here.

Adjectives and nouns

Table 4.13 shows that nouns and adjectives distribute across categories in both corpora with no preference for specific category. The similarity in adjectival and nominal antonym pair behaviour is not surprising. Arabic adjectives and nouns share a number of features, such as inflection and morphological templates. In addition, they have similar distribution in the sentence because they both can form equational sentences and annexation structures. Moreover, 'any adjective, including participles, can function as nouns' (Badawi et al., 2004: 118). In fact, in traditional Arabic linguistics, adjectives are considered as one type of nouns (Ryding, 2005).

Verbs

Table 4.13 also shows that verbs are more biased than nouns and adjectives. Verbs are used more than adverbs across the categories. Nevertheless, similar to adverbs, they tend to be used in coordination structures and comparative ones. Of all the 225 occurrences of verbs, 98 of them are in the category Antithesis, 21 are in Comparison, and 20 are in Inclusiveness. Looking at the two corpora separately, verbs are used relatively more in the arTenTen12 corpus than in the newspaper corpus arabiCorpus especially in the categories

Antithesis and Transition. Nevertheless, the inclination of antonym verbs towards these two categories is not significant because the score 0.069 is > 0.05.

Adverbs

Table 4.13 shows significant results for adverbs. There is a very limited use of adverbs as antonyms in the corpus, but when they are used, they occur mostly in a coordinating structure or less frequently, in a comparative structure. Similarly, in Jones's (2002) data, adverbial antonym pairs 'are disproportionately inclined towards the class of Coordinated Antonymy' (Jones, 2002: 139).

Cross-categorical antonyms

The last column of Table 4.13 shows that in the overall corpus, pairs of antonyms of different parts of speech distribute evenly among different categories. However, this even distribution is found more in the arabiCorpus newspaper corpus than in the arTenTen12 on-line corpus. Most of the cross-categorical antonym pairs occur in the a sub-category of Antonyms in Grammatical Relations category, which by definition contains sentences with co-occurring antonym pairs in different word class. Moreover, cross-categorical antonyms constitute the largest proportion of word class category in the residue sentences with 42 sentences out of 108 (38.8%).

This section discussed how word class of the antonym pairs relates to antonym use. The results show antonymous nouns and adjectives have a similar behaviour, they co-occur in relatively similar proportions and they are evenly distributed across categories. The distribution of other word class categories, however, is not as distributed as nominal and adjectival antonym pairs, which can be attributed to the limited distribution of verbs and adverbs compared to nouns and adjectives.

4.6   Concluding remarks

This chapter covered a number of aspects regarding antonymous pairs in MSA. It started by presenting the classification of how antonym constructions function in Arabic text.

The structures coordination and negation are polysemous structures because they are used for a number of functions. Therefore, they were discussed briefly with some examples. The new classification makes use of insight from previous classifications of functions of canonical antonyms as well as functions found in contextual oppositions. The main contribution of this classification is that it outlines how MSA antonyms are used in text. In addition, in this classification sentences where antonyms trigger an ancillary contrast are classified similar to sentences with no ancillary contrast: according to their structure.

As was found in previous studies, parallelism is very common in these functions. Therefore, the chapter moves to discuss parallelism. Parallelism along with canonical antonym pairs trigger ancillary contrasts in the sentence as was proposed in previous studies. However, parallelism is not a property of the antonyms themselves but imposed on them by the structures they appear in. For example, coordination requires parallel coordinates, and in most cases the comparative structure also requires parallel compared items. Non-parallel antonymy appears best in the co-occurring cross-categorical pairs of antonyms.

Parallelism, however, is dominant when there is an ancillary opposition in the sentence. The new classification proposes a new treatment of the ancillary function of canonical antonym pairs in which this function is viewed as an effect of antonyms that are used parallel to each other. For this reason the ancillary use of antonyms is assigned a section in which I discussed how Jones's ancillary sentences can be reclassified according to the new classification presented in the first section.

Towards the end, the chapter discussed antonym sequence in MSA and found that Arabic antonym pairs are less stable regarding their sequence order than English antonyms. Fewer than half of the investigated Arabic pairs showed a tendency towards having a fixed order. Finally, the chapter took a look at word class of antonym pairs and their distribution among different categories of antonyms.

The next chapter completes the discussion of the new classification of antonym functions. Each category is discussed in detail with several examples from the dataset.

Chapter 5

Antonym functions in MSA

The purpose of this chapter is to present a close look at the categories of antonym functions in MSA that were introduced in the previous chapter. The different classifications of co-occurring antonym pairs are discussed in this chapter with examples. Each section of the chapter represents one category of antonym functions. The sections are arranged in descending order starting from the most frequent categories to the less frequent ones.

5.1   Inclusiveness

The largest category in my classification of antonymy functions is Inclusiveness where a pair of co-occurring antonyms are coordinated to indicate inclusiveness of the pair and exhaustiveness of the scale between them. Studies on other languages have also found that antonym pairs co-occur in an inclusive coordinated construction at high rates. Table 5.1 shows the percentages of coordination categories in these studies. For example, in Serbian, antonyms are found in coordinating frames in more than any other frame (Kostić, 2011). Coordinated antonyms are also found in high rates in Japanese (Muehleisen and Isono, 2009) and Swedish (Murphy et al., 2009). Coordinated Antonymy, where an inclusiveness of the pair is indicated, is one of the largest categories in Jones's (2002) classification.

The Arabic sentences in the category Inclusiveness adhere to Jones's description of inclusion in Coordinated Antonymy. Coordination of antonyms in this category always indicates inclusiveness and exhaustiveness of scale. Single antonymous lexical items co-

Table 5.1: Percentages of the category of Coordinated Antonymy in previous studies investigating antonym functions.

	coordination		coordination
English Jones (2002)	38.4%	spoken English Jones (2006)	31.3%
child-directed English Murphy and Jones (2008)	18.4%	child-produced English Murphy and Jones (2008)	22.9%
Swedish Murphy et al. (2009)	25.4%	Japanese Muehleisen and Isono (2009)	13%
Serbian Kostić (2011)	44.4%	Qura'an Hassanein (2012)	74.6%
Chinese Hsu (2015)	41.5%		

occur in the frames translated to English as *X and Y* or *X or Y*. In this category, ancillary oppositions are not triggered because the coordinated antonyms form a phrase on their own or in short phrases where ellipsis is possible. In my data 663 sentences were found using this frame (293 sentences in the arabiCorpus and 370 in the arTenTen12). This accounts for 22.1% of my data (19.5% of the arabiCorpus and 24.6% of the arTenTen12). The sentences in (48) - (53) below give examples of the sentences included in this sub-category.

(48) واكتشف أن سرعة سقوط الأجسام الخفيفة والثقيلة واحدة (arTenTen12: doc.id: 751, s.id: 20821)

wa-iktašafa   ʔanna surʕat suqūṭ al-ʔaǧsām **al-xafīfah w-a-ttaqīlah**
and-discovered that   speed falling the-objects **the-light and-the-heavy**
wāḫidah
one

and he discovered that the free-fall speed of light and heavy objects is the same.

(49) ويعود ذلك إلى توسيع أعمالها في القطاعين العام والخاص وارتفاع كميات الأدوية الموردة
(arabiCorpus: *Hayat97*, ref: BUS1997:16752) لوزارة الصحة السعودية خلال موسم الحج

wa-yaʕūdu <u>d</u>ālik ʔilā tawsīʕi ʔaʕmāli-hā fī al-qiṭāʕayn **al-ʕām**
and-go.back that to   expansion works-its   in the-two.sectors **the-public**
wa-l-xāṣ   wa-irtifāʕi kamiyyāt al-ʔadwiyah al-muwarradah
and-the-private and-increase amounts the-medicines the-imported
li-wazārat   a-ṣṣi<u>hh</u>ah a-ssuʕūdiyah xilāl   mawsim al-ha<u>ʤʤ</u>
for-ministry the-health the-Saudi   during season   the-pilgrimage

and that goes back to the expansion of its work in the public and private sectors
and the increase in the amount of imported medicines for the Saudi ministry of
health during the pilgrimage season.

(50) وفي السياسة هل هجرنا إملاءات اليهود المغلفة بالشرعية الدولية إلى شرع الله وتحكيمه
(arabiCorpus: *Tajdid02*, ref: 315dinehay-
ate197.txt) على القوي والضعيف على الذات والآخر؟

wa-fī a-ssiyāsah hal ha<u>ʤ</u>ar-nā   ʔimlāʔāt al-yahūd al-mu<u>ġ</u>allafah
and-in the-politics did abandon-we dictates   the-Jews the-covered
bi-a-ššarʕiyah   a-ddawliyah   ʔilā šarʕi allāh wa-ta<u>hk</u>īmu-h   ʕalā
in-the-legitimacy the-international to   law Allah and-arbitration-it on
al-qawiyy w-a-<u>ḍḍ</u>aʕīf   ʕalā a-<u>dd</u>āt wa-l-ʔāxar
the-strong and-the-weak on   the-self and-the-other

and in politics, did we abandon the Jew's dictations which are covered with
international legitimacy to God's law and arbitration of it on the strong and the
weak, on the self and the other?

(51) بالإضافة إلى إدارة خاصة بتمليك الشركات بمعرفة أسباب نجاحها وفشلها (arabiCorpus:
Ahram99, ref: 090199ECON04)

bi-l-ʔi<u>đ</u>āfah   ʔilā ʔidārah   xāṣah bi-tamlīk   a-ššarikāt
in-the-addition to   department special in-possession the-companies
bi-maʕrifat   ʔasbāb **na<u>ʤ</u>ā<u>h</u>i-hā wa-fašali-hā**
in-identifying reasons **success-its and-failure-its**

in addition to a special department for handing possession to companies by know-
ing the reasons behind its success and failure.

(52) نأكل ما نشاء ونأتي على القوي والضعيف من الأرنب إلى الفيل (arTenTen12: doc.id: 3512751, s.id: 78174932)

na?kul mā   našā?u wa-na?tī   ʕalā **al-qawiyy w-a-ḍḍaʕīf**   min
we.eat what we.like and-finish.off on   **the-strong and-the-weak** from
al-?arnab ?ilā al-fīl
the-rabbit to   the-elephant

We eat whatever we want and finish off the strong and the weak, from the rabbit to the elephant.

(53) أين الشجعان من أمة العرب والمسلمين أصبحنا كلنا جبناء جرذان تستحق الغرق والموت المهين أنحيا ونموت كما تموت الأنعام (arTenTen12: doc.id: 2239751, s.id: 51612662)

?ayna a-ššuǧʕān min ?ummat al-ʕarab wa-l-muslimīn   ?aṣbaḥ-nā kulu-nā
where the-brave from nation   the-Arab and-the-Muslims became-we all-us
ǧubunā?a ǧurdān tastaḥiqqu al-ġaraq   wa-l-mawt   al-muhīn
cowards rats   deserve   the-drowning and-the-death the-humiliating
?naḥyā   wa-namūtu kamā tamūtu al-?anʕām
do-we.live and-we.die like die   the-animals

Where are the brave of the Arab and Muslim nation, we all became cowards, rats that deserve drowning and humiliating death, do we live and die like how animals die.

The six sentences above all share the same frame *X wa- Y* hosting antonymous adjectives, nouns, or verbs. In sentence (48), for example, the adjectives الخفيفة *alxafīfah* 'light' and

الثقيلة *attaqīlah* 'heavy' describe the noun الأجسام *al?aǧsām* 'objects'. All objects of any weight are included in the proposition that the free-fall speed is always equal. In sentence (49), the two sectors, the public and the private, are included in the expansion. Similarly, sentence (50) demands the arbitration of Sharia law on both the strong and the weak, sentence (51) asks for finding out the reasons behind both success and failure when they occur, sentence (52) includes both strong animals and weak ones in the diet, and sentence (53) condemns having no noble cause in life and describes it as living and dying as animals.

These sentences combine the antonym construction and the construction *X wa- Y* to indicate the inclusiveness of both antonyms and the area of indifference between them.

Another frame that is also used to indicate inclusiveness is the use of أو *ʔaw* 'or' in the frame *X or Y*. The number of sentences using this frame in my data is 170 sentences (73 sentences in the arabiCorpus and 97 in the arTenTen12). The sentences (54) - (56) give examples of the frame *X or Y* used to indicate inclusiveness.

(54) وفرص كل منهما متساوية فكل منهما من الناحية الفنية خطوطه متكاملة سواء من الناحية
الدفاعية أو الهجومية (arabiCorpus: *Watan02*, ref: 011209t42435SPOR)

wa-furaṣ   kullin min-humā mutasāwiyah f-kullun min-humā min
and-chances all   from-them equal   for-all   from-them from
a-nnāhiyah al-fanniyah   xuṭūṭu-h mutakāmilah sawāʔan min a-nnāhiyah
the-side   the-technical lines-its complete   whether from the-side
a-ddifāʕiyyah ʔaw **al-huǧūmiyah**
the-defending or   **the-attacking**

Both their chances are equal, for technically both of them have equally strong lines whether from the side of defending or attacking.

(55) فيما شكل حرق الشاب التونسي بوعزيزي لنفسه الشرارة التي فجرت مخزون من الغضب
الكامن والذي ما كان أشد المراقبين تفاؤلا أو تشاؤما ليلحظ بعضا من بوادره (arTenTen12:
doc.id: 2960601, s.id: 66916427)

fīmā   šakkala ḫarq   a-ššāb   a-ttūnisī   buʕazīzī li-nafsi-h
whereas formed burning the-young.man the-Tunisian Bouazizi to-self-his
a-ššarārah allatī faǧǧarat maxzūn min al-ġaḍab al-kāmin   wa-lladī mā kāna
the-spark that   exploded reserve of the-anger the-buried and-that not was
ʔšadda al-murāqibīn **tafāʔulan** ʔaw **tašāʔuman** li-yalḫaḍ baʕḍan min
most   the-observers **optimism** or   **pessimism** to-notice some   of
bawādiri-h
indications-its

whereas the Tunisian young man's burning of himself was the spark that ignited a reserve of buried anger which not even the observers with the most optimism or pessimism were to notice some of its indications.

(56) أما النجاح أو الفشل في عمل الحكومة المقبلة فهو شأن الناس (arTenTen12: doc.id: 2690451, s.id: 61018620)

ʔammā **a-nnaǧāḫ** ʔaw **al-fašal** fī ʕamal al-ḫukūmah al-muqblilah
while **the-success** or **the-failure** in work the-government the-coming
fa-huwa šaʔnu a-nnās
then-it matter the-people

as for the success or failure of the government, that's the people's concern

The sentences in (54) - (56) all use the frame *X ʔaw Y* to indicate inclusiveness of antonyms. Sentence (54) refers to the strength of two football teams in both their defending and attacking sides. Sentence (55) refers to the incident that started the Arab Spring and uses the frame *X ʔaw Y* to include all observers whether they are optimistic or pessimistic. The most optimistic and the most pessimistic of the observers all could not predict the Arab Spring to take place. Similarly, in sentence (56) success and failure are both described as the people's concern.

The sentences hosting coordinated pairs of antonyms presented so far all include pairs of antonyms in frames *X wa- Y* and *X ʔaw Y*. The pairs are all single lexical units. However, similar to Jones's Coordinated Antonymy, a group of sentences using the frame *X wa- Y* where the pair of antonyms is found in larger coordinated phrases is included in this category. These sentences are included in coordinated antonymy for three reasons. First, they do reflect the meaning of inclusiveness as stated earlier which is the defining characteristic of this category. Second, an ancillary opposition is not triggered in these sentences because they appear in the same phrases where ellipsis is possible. Lastly, the pair of antonyms are part of a phrase or clause that repeat the same words, and an ellipsis of these words results in the sentences to be similar to the other sentences of this category. Examples are presented below.

(57) ومفهوما شاملا عن الردع تشمل أسلحة هجومية وأسلحة دفاعية (arabiCorpus: *Thawra*, ref: printview61279)

wa-mafhūman šāmilan ʕan   a-rradʕi   tašmil ʔaslihah **hujūmiyyah**
and-notion   general about the-defence include weapons **attacking**
wa-ʔaslihah **difāʕiyyah**
and-weapons **defending**

and a general notion about defence that includes offensive weapons and defensive weapons

(58) لا أتكلم هنا عن كليشة الدولة التي يتنازعها الجميع ويدعيها الجميع ولا يقول أحد أين تبدأ وأين تنتهي. إني أتكلم عن المجتمع، عن العيش، عن المستقبل. (arTenTen12: doc.id: 3091301 s.id: 69555007)

lā ʔatakalmu hunā ʕan   klišat a-ddawlah   allatī yatanāzaʕu-hā al-ǰamīʕu
not I.talk   here about cliche the-country that   dispute-it   the-all
wa-yaddaʕī-hā al-ǰamīʕu wa-lā   yaqūl ʔahad ʔayna **tabdʔu** wa-ʔayna
and-claim-it   the-all   and-not say   one   where **begin** and-where
tantahī ʔinn-ī ʔtakallamu ʕan   al-muǰtamaʕi ʕan   al-ʕayš ʕan
end   indeed-I I.talk   about the-society   about the-living about
al-mustaqbal
the-future

I do not talk about the country cliche that everyone disputes and everyone claims, and do not say where do you begin and where do you end. I am talking about society, about living, about future.

(59) لقد صاغ المجاز خطابي ابن عربي وإخوان الصفاء، إلا أن صياغته وتمثيله تختلف في الخطابين. هناك مجازات كلية عامة، كمجازات العالم الكبير والعالم الصغير، (arTenTen12: doc.id: 2638651, s.id: 59902226)

laqad ṣāġa   al-maǰāzu xiṭābayy ibn ʕarabī wa-ʔixwān   a-ṣṣafā ʔillā
indeed formulated the-allegory discourse Ibn Arabi and-Ikhwaan Assafa unless
ʔanna ṣiyāġatu-h   wa-tamṯīlu-h   taxtalif fī al-xiṭābaīn
that   formulation-its and-representaion-its differs   in the-two.discourses
hunāka maǰāzāt kulliyah ʕāmmah ka-maǰāzāt   al-ʕālam **al-kabīr**
there   allegories broad   general   like-metaphors the-world **the-big**
wa-l-ʕālam   **a-ṣṣaġīr**
and-the-world **the-small**

Allegory formulated the discourse of Ibn Arabi and Ikhwaan Assafa, but its for-
mulation and representation differs in the two discourses. There are broad general
allegories like the metaphors of the big world and the small world,

(60) هو البوابة الرئيسية للعواطف والانفعالات السعيدة والحزينة. الحزن يأتي بعد فكرة ... والفرح يأتي بعد فكرة (arTenTen12: doc.id: 3810551, s.id: 84261559)

huwa al-bawābah a-rraʔīsiyah li-l-ʕawāṭif   wa-l-ʔinfiʕālāt   **a-ssaʕīdah**
it   the-gate   the-main   for-the-affections and-the-emotions **the-happy**
wa-l-ḥazīnah al-ḥuzun   yaʔtī baʕda fikrah **wa-l-faraḥ**   yaʔtī
and-the-sad the-sadness come after   idea   **and-the-happiness** come
baʕda fikrah
after   idea

It is the main gate for emotions: the happy ones and the sad ones. Sadness comes
after a thought and happiness comes after a thought.

The four sentences above show examples of coordinated phrases. The pair of adjectives

هجومية *huǰūmiyyah* 'attacking' and دفاعية *difāʕiyyah* 'defending' in sentence (57) are

both part of noun phrases where they modify the noun 'weapons'. In sentence (58) the

antonymous verbs تبدأ 'begin' and تنتهي 'end' are used in two coordinated questions.

In sentence (59), there is an inclusiveness of both the large world and small world. The

antonym pair here occurs in two noun phrases also. Sentence (60) uses the frame *X and*

Y twice. The first one is for hosting single lexical items in السعيدة والحزينة 'the happy

and the sad'; and the second use of this frame is hosting the clauses الحزن يأتي بعد فكرة

'sadness comes after a thought' and الفرح يأتي بعد فكرة 'happiness comes after a thought'.

A very small number of sentences from the group Coordination (23 sentences: seven in the arabiCorpus and sixteen in the arTenTen12) follow the same pattern as the sentences discussed above but no coordination morpheme is present. Instead, a comma is placed between the parallel structures. This structure is used more in English but in Arabic 'and' is generally needed which makes this group noticeably smaller. Sentences (61) and (62) give examples of these sentences.

(61) فالموت ينهي كل شيء، ينهي قوة القوي، ينهي ضعف الضعيف (arTenTen12: doc.id: 1676551, s.id: 39232502)

fa-l-mawt   yunhī kulla šayʔin yunhī **quwwata al-qawwi**   yunhī **đaʕfa**
for-the-death ends   every thing ends **strength the-strong** ends **weakness**
a-đđaʕīf
the-weak

for death ends everything, it ends the strength of the strong, it ends the weakness of the weak.

(62) كرة القدم، رياضة صحيح، ولكنها تسعد الملايين غالبا، تحزن الملايين غالبا أيضا. (arabiCorpus: *Masri2010*, ref: A259163I1803S300D16-Jun-2010)

kuratu al-qadam riyāđah ṣaḥīḥ wa-lākinna-hā **tusʕidu**   al-malāyīn
ball   the-foot sport   right and-but-it   **make.happy** the-millions
ġāliban   **tuḥzinu** al-malāyīn ġāliban   ʔayđan
occasionally **make.sad** the-millions occasionally also

Football is a sport; but it makes millions happy occasionally, makes millions sad occasionally, too.

In sentence (61) the two clauses are coordinated using the parallelism between them and separated by a comma. The first part of the sentence shows that the coordination of the two clauses indicates inclusiveness. Death ends everything, it ends the strength and weakness of people. Sentence (62) refers to how football can be the cause of many people's happiness and sadness. It has control over both emotions. The antonymous

verbs تسعد *tusʕid* 'make happy' and تحزن *tuḥzin* 'make sad' are coordinated parallel structures.

A small group of sentences, and the last in this category, that use the coordination structure to indicate inclusiveness include negation with *lā*; i.e. both antonyms are negated in the frame لا ... ولا *lā ... walā* 'not X and not Y'. The construction *X and Y* that indicates inclusiveness integrates with the negation construction. This integration produces a construction that still indicates inclusiveness because *not X* is the opposite of *not Y*.[1] There are nine sentences in the arTenTen12 and three sentences in the arabiCorpus that coordinate negated antonyms for Inclusiveness. These sentences indicate inclusiveness of the antonyms and the whole scale between them. Examples are presented in (63) - (65).

(63) على هذا النحو الذي لا يراعي حرمة لا للأحياء ولا للأموات (arabiCorpus: *Ghad01*, ref: A{457592}S{MainPage}D03-31-2011)

ʕalā hāda a-nnaḥwi lladī lā   yurāʕī ḥurmatan lā **li-l-ʔaḥyāʔi** wa-lā
on   this the-way   that not observe respect   not **for-the-alive** and-not
li-l-ʔamwāt
for-the-dead

this way that does not observe respect not for the living and not for the dead

(64) وبتفكك الدول العربية وانعدام التنسيق بينها لمواجهتها لا في زمن الحرب ولا في زمن السلم (arabiCorpus: *Hayat96*, ref: GEN1996:4276)

wa-bi-tafakuk   a-dduwal   al-ʕarabiyyah wa-inʕidāmu
and-with-disconnection the-countries the-Arab   and-lack
a-ttansīq   bayna-hā   li-muāǧahati-hā lā fī zamani **al-ḥarbi**
the-arrangement between-them to-face-it   not in time   **the-war**
wa-lā   fī zamani **i-ssilm**
and-not in time   **the-peace**

and with the disconnection and lack of arrangement between the Arab countries to face this not in times of war and not in times of peace

---

[1]The frame *not X and not Y* functions differently in other sentences in the data. This function is discussed under Negation for Cancelling in section 5.5.3.

(65) ولا عبد ولا حر لا ذكر ولا انثى فإنكم جميعا واحد في المسيح يسوع (arTenTen12:
doc.id: 1038051, s.id: 24932171)

wa-lā   ʕabdun wa-lā   ḫur   lā **dakarun** wa-lā   **ʔuntā** fa-ʔinna-kum
and-not slave   and-not liberal not **male**   and-not **female** for-indeed-you
ʤamīʕan fī lmasīḫi yasūʕ
all   in Christ Jesus

not a slave and not a liberal not a male and not a female, you are all the same in
Jesus the Christ

The three sentences in (63) - (65) show inclusiveness of the antonym pair. Sentence
(63) criticises somebody for being inconsiderate to everyone including all those who are
living and those who are dead. The inclusiveness here is expressed through negating both
antonyms. Similarly, the sentence in (64) explains that there is no arrangement between
the Arab countries in both times of war and peace. The frame used here is again one
that negates both antonyms only to include them. The sentence in (65) also includes
everyone to be equal in the eyes of Jesus: both males and females.

Inclusiveness is the most widely used construction hosting antonym pairs. The sen-
tences in this category feature coordinated antonyms indicating inclusiveness. Coordina-
tion, however, is used widely for a variety of functions as the following category shows.

5.2   Antithesis

The sentences in the category Antithesis feature a co-occurring pair of antonyms in a
coordinated structure hosting phrases or clauses. There is an antithesis created between
the two phrases/clauses. In antithesis, two opposing situations are presented parallel to
each other using antonymous pairs in which opposing propositions are contrasted. This
juxtaposed opposition is regarded as a semantic embellishment that is commonly used
in Arabic discourse (Abdul-Raof, 2006).

In the majority of sentences in this sub-category, a pair of antonyms co-occur in two

parallel clauses coordinated with و *wa* 'and'. The antonym pair in coordinated clauses represent a contrast between two situations. This function appears in 555 sentences in the dataset (259 sentences in the arabiCorpus and 296 in the arTenTen12) which makes 18.5% of the dataset (17.3% of arabiCorpus and 19.7% of arTenTen12). Sentence (66) shows an example of this group.

(66) وظل مذهبي منذ تلك اللحظة في الحياة هو أن أقاوم ما أحب وأتحمل ما أكره
(arabiCorpus: *Masri2010*, ref: A239120I1641S321D5-Jan-2010)

wa-ḍalla   maḏhab-ī munḏu tilka al-laḥḏah   fī al-ḥayāt huwa ʔan ʔuqāwim
and-stayed ideology since that the-moment in the-life it   to   resist
mā **ʔuḥibb** wa-ʔataḥammal mā **ʔakrah**
what **I.love** and-tolerate   what **I.hate**

and since that moment my ideology became to resist what I love and tolerate what I hate.

The writer of (66) describes a turning point in his life when he stopped seeking the pleasures of life. The verbal pair أحب *ʔuḥib* 'love' and أكره *ʔakrah* 'hate' are part of two parallel clauses both of the structure *V what I V*. This sentence presents a contrast between two attitudes *resisting what he loves* and *tolerating what he hates*. These two attitudes are part of his new ideology.

Sentences like the one in (66) are also found in previous studies on antonymy. These sentences were included under an Ancillary Antonymy category. For example, the following sentence from Murphy et al. (2009) shows an ancillary contrast between student and teacher:

(67) *Läraren är aktiv och eleven passiv.*

'The teacher is **active** and the student **passive**.' (In Murphy et al., 2009: 2167)

There is an antithesis in sentence (67) between the student being passive and the teacher being active. More examples from the MSA data are presented in (68) - (70) below.

(68) أن يحب للكافة ما يحب لنفسه ويكره لهم ما يكره لنفسه (arTenTen12: doc.id:479301, s.id: 12023067)

ʔan **yuḥibbu** li-lkāffah   mā   yuḥibbu li-nafsi-h **wa-yakrahu** la-hum
that **love**   for-everyone what love   for-self-his **and-hate**   for-them
mā   yakrahu li-nafsi-h
what hate   for-self-his

that one should love for everybody what they love for themselves, and hate for everybody what they hate for themselves.

(69) من أجل نصرة الحق العربي بكل ما نستطيعه، وإذا نجحنا فلنا أجرنا وإن فشلنا فلنا أجر، ولكن الوقوف على الرصيف باللافتات والشعارات دون عمل (arabiCorpus: *Ahram99*, ref:071799OPIN04)

min ʔaǧil nuṣrat   al-ḫaqq al-ʕarabī bi-kulli mā   nastaṭīʕu-h wa-ʔidā
for sake supporting the-right the-Arab in-all   what we.can-it   wa-if
naǧaḥ-nā fa-l-nā   ʔaǧru-nā   wa-ʔin **fašal-nā** fa-l-nā   ʔaǧr
succeed-we then-for-us reward-our and-if **lose-we** then-for-us reward
wa-lākin al-wuqūf   ʕalā a-rraṣīf   bi-l-lāfitāt   wa-a-ššiʕārāt
and-but the-standing on   the-pavement with-the-signs and-the-banners
dūna   ʕamal
without work

...for supporting the Arab right with all our ability and if we succeed, we have our reward, and if we fail, we have a reward [from God] but standing on the pavement with signs and banners without work...

(70) بحيث يبقى كل في مكانه. يبقى أبناء الأغنياء أغنياء وأبناء الفقراء فقراء. (arabiCorpus: *Ahram99*, ref: 082599OPIN07)

bi-ḫayt   yabqā kullun   fī makāni-h yabqā ʔabnāʔu **al-ʔaġniyāʔi**
in-which stay   everyone in place-his stay   children **the-rich**
ʔaġniyāʔan wa-ʔabnāʔu **al-fuqarāʔi fuqarāʔan**
rich   and-children **the-poor   poor**

and so everyone stays still, the children of the rich stay rich and the children of the poor poor

Sentences (68), (69) and (70) show two coordinated clauses hosting antonymous pairs with no ancillary opposition created. In (68), one is advised to 'love' for everybody to

get the same things they would love for themselves; and 'hate' for everybody everything they would hate for themselves. Similarly, in (69), the verbs 'succeed' and 'fail' are in coordinated clauses. They are presented as distinct possible outcomes of supporting the rights of people. Sentence (70) presents a contrast between two groups, the children of the rich and the children of the poor.

Some sentences in this category feature antonyms triggering another opposition in the sentence. The following are examples of such sentences.

(71) خلق الله تعالى الموت والإنسان لا يريده ولكنه يسلم به وخلق الحياة والإنسان يطلبها
ولكنها لا تدوم (arTenTen12: doc.id:334251, s.id:8580437)

xalaqa allāhu taʕālā **al-mawt** wa-l-ʔinsānu lā yurīd-uh
created Allah Almighty **the-death** and-the-human not want-it
wa-lākinna-hu yusallimu bi-h wa-xalaqa **al-ḥayāh** wa-l-ʔinsānu
and-but-he acknowledge in-it and-created **the-life** and-the-human
yaṭlubu-hā wa-lākinna-hā lā tadūm
desire-it and-but-it not last

God Almighty created death and humans do not want it, but acknowledge it; and created life and humans desire it, but it does not last.

(72) نموت وتحيا فلسطين الحبيبة (arTenTen12: doc.id:4068651, s.id:89359332)

namūtu wa-taḥyā filasṭīn al-ḥabībah
we.die and-it.lives Palestine the-beloved

We die and the beloved Palestine lives.

(73) الأمانة تجر الرزق والخيانة تجر الفقر (arTenTen12: doc.id: 1981951, s.id: 45897458)

al-ʔamānah taǧurru a-rrizq **wa-l-xiyānah** taǧurru al-faqr
the-honesty pull the-wealth **and-the-dishonesty** pull the-poverty

Honesty breeds wealth and dishonesty breeds poverty.

Sentence (71) refers to life and death and to human reaction towards them. It features two clauses coordinated with و *wa* 'and'. In the first clause, God created death, and humans do not want it, but acknowledge it. In the second clause, God created life, and humans want it but it does not last. The whole sentence makes use of multiple

opposition between God and humans, death and life, desiring and not desiring. Sentence (72) coordinates the antonymous verbs نموت *na-mūt* 'we die' and تحيا *ta-ḫyā* 'it lives'. The difference between the verbs is that one starts with 'na' the first-person plural clitic and the other with 'ta' the third-person singular clitic. This difference is important because it shows the ancillary opposition triggered between the people (we) and the country (it). The country is more important than the people. In sentence (73) there is a coordination between 'honesty' and 'dishonesty' and what each one has as a consequence. One brings bounty, they other poverty. An ancillary opposition is triggered between 'bounty' and 'poverty'.

More examples of Antithesis featuring an ancillary contrast are the two sentences in (74) and (75).

(74) لأن المعتقل الصغير الذي تعيش ... والمعتقل الكبير الذي أعيش ... علمنا أن هناك فضاء شاسع للفكر (arTenTen12: doc.id:2690001, s.id: 61009674)

liʔanna al-muʕtaqal **a-ṣṣaġīr** alladī taʕīš   wa-l-muʕtaqal **al-kabīr** alladī
because the-prison   **the-small** that   you.live and-the-prison **the-big** that
ʔaʕīš ʕallama-nā ʔanna hunāka fađāʔun šāsiʕun li-l-fikr
I.live taught-us that there space   vast   for-the-thought

because the small prison you are living, and the big prison I am living taught us that there is vast space for thought

(75) وبالرغم من ضراوته في الهجوم واستماتته في الدفاع، نجد أن هناك علاقات مشتركة بين النمل وغيره من الحيوانات (arTenTen12: doc.id: 1430151, s.id: 33886962)

wa-bi-rruġmi min đarāwati-h fī **al-huǧūm** wa-istimātati-h   fī
and-in-spite from ferocity-his in **the-attack** and-desperation-his in
a-ddifāʕi   naǧidu ʔanna hunāk ʕalāqāt   muštarakah bayna   a-nnamil
the-defence we.find that there relationships shared   between the-ants
wa-ġayruh min al-ḫayawānāt
and-other from the-animals

and in spite of his ferocity in attacking and desperation in defence, we find that there are shared relationships between ants and other animals

In sentence (74), two places for detention are coordinated; one is big, exile, and one is small, prison. Both these places teach the people imprisoned in them to think. An ancillary opposition is created between the speaker and the addressee of the sentence,

or on a larger scale, between the people in exile and the people in prison. The sentence in (75) features an antithesis between 'attacking' and 'defending'. The two nouns are coordinated to describe the ferociousness of ants. This description is enhanced with the use of the near synonyms استماتة *istimātah* 'desperation' and ضراوة *đarāwah* 'ferocity'.

The category Antithesis is the second largest category of antonym functions in MSA. The antonym pair function as triggers of a larger opposition between two situations with or without the use of an ancillary opposition. The third largest category in this classification is Antonyms in Grammatical Relations.

5.3   Antonyms in Grammatical Relations

The category Antonyms in Grammatical Relations is one of the large groups of antonym co-occurrence. It includes sentences with an antonym pair related to each other syntactically. Three types of grammatical relations are found in the data: a pair of antonyms can act as arguments of a verb, as part of equational sentences, or as a verb and its argument in the cases of cross-categorical antonymy. A similar use of antonyms has been reported in Swedish (Murphy et al., 2009). A pair of antonyms co-occurs in a sentence where one member of the pair is the subject and the other is the object. The example in (76) shows this use in Swedish.

(76)   a.   **Stora** köper **små**
             Big   buys   **little**

       b.   Det **gamla** möter det **nya**
            The **old**   meets the **new** (In Murphy et al., 2009: 2173)

Murphy et al. (2009) put the sentences similar to the ones in (76) in the residual category where they are labelled Transitive. This use of antonym pairs is also found in the Qura'an (Hassanein, 2012). Hassanein grouped these sentences as Case Antonymy which he defined as 'the co-occurrence of an antonymous pair within a framework that

signals case roles being played by one of its antonymous members or by both' (Hassanein, 2012: 212).

In my classification, **Transitive** is a subcategory of the class Antonyms in Grammatical Relations. Other subcategories include antonyms in the **Substantive** and **Verbal** forms. The number of sentences in this category is 243 (127 in the arabiCorpus and 116 in the arTenTen12) which accounts for 7.6% of my data (7.5% of the arabiCorpus data and 7.7% of the arTenTen12 data). The three sub-categories are discussed below.

5.3.1   Transitive

The Transitive sub-category includes 118 sentences (53 in the arTenTen12 and 65 in the arabiCorpus). These sentences have a co-occurring pair of nominal antonyms where one is a subject of a verb and the other is its object or a pair of adjectival antonyms where one is a modifier of the subject and the other is a modifier of the object. This sub-category is labelled following Murphy et al. (2009). One sentence in Jones's Ancillary Antonymy category is classified according to the present classification as an example of the Transitive category. This sentence is repeated in (77) below.

(77)   Baxter's **active** *can-do* has been overtaken by the **passive** *why-bother*. (Jones, 2002: 52)

In (77), the pair *active/passive* modify the doer and the receiver of the action. At the same time, an opposition is triggered between the modified nouns. The following are similar sentences from the Arabic data.

(78) كما أن الرعب والخوف يظهر على الأطفال بوضوح. وتابع: حرب يشنها القوي على الضعيف (arabiCorpus: *Tajdid02*, ref: 401isslamic1456.txt)

kmā ʔanna a-rruʕba wa-l-xawfa yaḍharu ʕalā al-ʔaṭfāli bi-wuḍūḥ
as that the-terror and-the-fear appear on the-children in-evident
wa-tābaʕa ḫarbun yašunnu-hā **al-qawiyyu** ʕalā **a-ḍḍaʕīf**
and-added war wage-it **the-strong** on **the-weak**

In addition, terror and fear appeared on children evidently. He added: a war waged by the strong on the weak.

(79) أي بجعل المعادلة حرة بالمعنى السلبي للكلمة، يأكل فيها الكبير الصغير ويستقوي فيها القوي على الضعيف (arabiCorpus: *Hayat96*, ref: GEN1996:4147)

ʔay bi-ǧaʕli al-muʕādalah ḫurrah bi-l-maʕnā a-ssilbiyy
that.is in-making the-equation free in-the-meaning the-negative
li-l-kalimah yaʔkul fī-hā **al-kabīr a-ṣṣaġīr** wa-yastagwī fī-hā **al-qawiyy**
for-the-word eat in-it **the-big the-small** and-intimidate in-it **the-strong**
ʕalā **a-ḍḍaʕīf**
on **the-weak**

that is by making the equation free in the negative sense of the word, where the big eat the small and the strong intimidate the weak

(80) قتل الفشل عدوه النجاح (arabiCorpus: *Hayat97*, ref: GEN1997:33520)

qatala **al-fašalu** ʕaduwa-hu **a-nnaǧāḥ**
killed **the-failure** enemy-its **the-success**

Failure killed its enemy success

<div dir="rtl">

(81) إنه الخريف عندما يفرض شروطه على الربيع فينتصر الذبول على التفتح، والموت على الحياة، والتجاعيد على النضارة، إنه الكبر قبل الأوان والغروب في ساعة الفجر

</div>

(arTenTen12: doc.id: 1197851, s.id: 28682732)

ʔinna-hu al-xarīf   ʕindamā yafriḍu šurūṭa-hu   ʕalā a-rrabīʕi
indeed-it the-autumn when   impose conditions-its on   the-spring
fa-yantaṣiru a-ddubūl ʕalā a-ttafatuẖ   **wa-l-mawt**   ʕalā **al-ḥayāt**
then-win   decay   on   the-blooming **and-the-death** on   **the-life**
w-a-ttaǧāʕīd   ʕalā a-nnaḍārah   ʔinna-hu al-kibar   qabla al-ʔawān
and-the-wrinkles on   the-freshness indeed-it the-ageing before the-time
wa-l-ġurūb   fī sāʕati al-faǧr
and-the-sunset in time   the-dawn

It is Autumn as it forces its conditions on Spring, then decay prevails over bloom, death over life, wrinkles over freshness. It is early ageing, and sunset in dawn.

(82) (arTenTen12: doc.id: 1003701, الملاحظة تؤكد أن النجوم الصغيرة تدور حول الكبيرة s.id: 24114186)

al-mulāḥaḍatu tuʔakkid ʔanna a-nnuǧūma **a-ṣṣġīrah** tadūru ẖawla
the-inspection confirms that   the-stars   **the-little** orbit   round
al-kabīrah
the-big

Inspection confirms that the little stars orbit the big ones.

In sentence (78), حرب *ẖarb* 'war' is waged by 'the strong' (agent) on 'the weak' (patient). Sentence (79) makes use of this Transitive function of antonyms twice. The first use is in the clause 'the big' eat 'the small'; the second is in the clause 'the strong' intimidate 'the weak'. Sentence (80) shows another instance of this use when 'failure kills success'. In (81) 'death' gains victory over 'life' in a transitive form where the pair of antonyms are used contrastively. In this sentence, early ageing is described with a series of canonical pairs of antonyms where one prevails over the other. Similarly, the 'little stars' orbit 'the big ones' in (82).

The sub-category of Transitive use of antonyms includes some sentences where an ancillary contrast is generated between another pair of phrases. Three examples of this are listed in (83) - (85).

(83) هذا ما جعل قوة الإسلاميين ترافق مع ضعف الأنظمة القائمة وقصورها عن إيجاد الحلول الجذرية. (arabiCorpus: *Hayat96*, ref: GEN1996:6441)

hāḏā mā ǧaʕala **quwatu** al-ʔislāmiyīn tatarāfaq maʕa ** đaʕfi**
This what made   **strength** the-Islamists accompany with **weakness**
al-ʔanḏimati al-qāʔimah wa-quṣūru-hā ʕan ʔiǧādi al-ḫulūli   al-ǧaḏriyyah
the-regimes the-existing and-failure-its from finding the-solutions the-radical

this is what made the strength of Islamists accompany the weakness of existing regimes and their failure to find radical solutions.

(84) كن مدققا في أغلب الأمور، فالثعالب الصغيرة تتلف الكروم الكبيرة (arTenTen12: doc.id: 3673801, s.id: 81577112)

kun mudaqiqan fī ʔġlabi al-ʔumūr f-a-ṯṯaʕāliba **a-ṣṣaġīrah** tutlifu al-kurūma
be exact   in most the-issues for-the-foxes **the-little** damage the-vines
al-kabīrah
the-big

Always be careful, for the little foxes damage the big vines.

(85) لكنه أخطأ كثيرا وعميقا؛ فالأكبر يستقوي على الأصغر، والنظام النيابي الضعيف يرفس بالأقدام لبناء ديكتاتورية قوية (arabiCorpus: *Ghad02*, ref: A{428731}S{MainPage}D03-28-2011)

lākinna-hu ʔaxṭaʔa kaṯīran wa-ʕamīqan **f-al-ʔakbar**   yastaqwī ʕalā
but-he   err   a.lot and-deeply **for-the-biggest** intimidate on
al-ʔaṣġar w-a-nniḏāmu a-nniyābī   **a-đđaʕīf** yurfas
the-smallest and-the-system the-parliamentary **the-weak** kick
bi-l-aʔaqdām li-bināʔi   diktātūriyyah **qawiyyah**
with-the-feet to-building dictatorship **strong**

but he made a lot of big mistakes, for the biggest intimidate the smallest, and the weak parliamentary system kicks about to build a strong dictatorship

In (83), the strength of the Islamists goes hand in hand with the weakness of the regimes. The nouns قوة *quwwah* 'strength' and ضعف *đaʕf* 'weakness' are annexed to other nouns which creates an opposition between them, the Islamists on one end and the regimes on the other. In (84), an ancillary opposition is created between foxes and vines that are being modified by antonym adjectives الصغيرة *aṣṣaġīrah* 'little' and الكبيرة

alkabت̄extscirah 'big'.

The first part of sentence (85) 'the biggest intimidate the smallest' is similar to sentence (79). However, the second part is where the ancillary opposition is created between

النظام النيابي 'the parliamentary system' described as weak and دكتاتورية 'dictatorship' described as strong. A parliamentary system is weak and is dying and its death is causing the birth of a strong dictatorship.

5.3.2 Substantive

The Substantive group includes equational sentences where the nominal and/or adjectival antonyms are contrasted. *Equational* refers to verbless sentences in Arabic (Ryding, 2005). The following are some examples of this category.

(86) يمكن أن يسمى بالأصولية الإثنية: فكل من هو طويل القامة عدو مطلق لكل من هو قصيرها، والعكس بالعكس. (arabiCorpus: *Hayat96*, ref: GEN1996:7696)

yumkin ʔan yusammā bi-l-ʔuṣūliyyati   al-ʔiṯniyyah fa-kullu man huwa
can   to called   in-the-fundamental the-ethnic for-all who he
ṭawīlu al-qāmah ʕaduwwun muṭlaq li-kulli man huwa **qaṣīru-hā**
tall   the-figure enemy   absolute for-all who he   **short-its**
wa-l-ʕaksu   bi-l-ʕaks
and-the-opposite for-the-opposite

which can be called the fundamental ethnicity: everyone who is tall is an absolute enemy to everyone who is short, and vice versa.

(87) مطالبين ببناء مدرسة لفصل الذكور عن الاناث (arabiCorpus: *Ghad02*, ref: A{416410}S{Jordan}D03-06-2011)

muṭālibīna bi-bināʔi madrasah li-faṣli   **a-ddukūr** ʕan **al-ʔināṯ**
demanding in-building school   for-separation **the-males** from **the-females**

demanding the building of a school for the separation of males from females

The two sentences above give examples of pairs of antonyms in equational sentences. In (86), 'tall' people are said to be enemies of 'short' people. Sentence (87) calls for the separation of 'males' and 'females'.

Some sentences in this category trigger another contrast in the sentence, such as the sentence in (88) below.

(88) أما صغار المرتشين، فيستحسن تجاهلهم مؤقتا لأن معاقبة اللص الكبير كفيلة بتأديب اللص الصغير (arabiCorpus: *Thawra*, ref: kuttab59172)

Ɂammā ṣiġār al-murtašīn fa-yustaḫsan tad̲ʒāhula-hum muɁaqqatan liɁanna
while small the-corrupt then-be.better ignoring-them temporarily because
muʕāqabat al-liṣṣi **al-kabīr** kafīlatan bi-taɁdīb al-liṣṣ **a-ṣṣaġīr**
punishing the-thief **the-big** enough in-discipline the-thief **the-small**

as for the small bribe takers, it is better to ignore them temporarily because punishing the big thieves disciplines the small ones.

In sentence (88), the pair الكبير *alkab̄textscir* 'large' and الصغير *assaġ̄textscir* 'little' both modify the noun 'thief'. The two phrases are parallel to each other and are part of larger parallel clauses in which the sentence claims that punishing the big thief disciplines the small thief. Both clauses are verbless. There is an ancillary opposition between معاقبة *muʕāqabat* 'punishing' and تأديب *taɁdīb* 'disciplining'.

5.3.3 Verbal

In the group I call Verbal, pairs of antonyms are of different word classes. One antonym in the pair is a verb and the other is a noun object. The verb acts on its antonymous noun. Gradability of the pair plays an important role in the meaning expressed in the sentence. If the pair of antonyms is gradable, this use of the antonyms indicates a lesser degree of the noun. If the pair is non-gradable, then the meaning that this use gives is the reversing of state from one antonym to the other.

The sentences (89) to (91) give examples of gradable pairs of antonyms that fall under this sub-category. They show the verb as if it is moving the noun along the scale of opposition.

(89) وإذا كان أدخل على هذه الدراسة بعض ما يخفف ثقل هذا التيار من لفتات أدبية (arabiCorpus: *Hayat96*, ref: GEN1996:5067)

wa-ʔiḏā kāna ʔudxila ʕalā hāḏihi a-ddirāsah baʕda mā **yuxaffifu**
and-if be introduced on this the-study some what **lighten**
ṯiqla hāḏa a-ttayār min laftāt ʔadabiyyah
heaviness this the-tide of gestures literary

whether there was introduced to this study some of what would lighten the heaviness of this tide of literary gestures

(90) في الموت يكبر الصغار، يصبح حديث المراهقين أكثر جدية (arTenTen12: doc.id: 4950101, s.id: 107277177)

fi al-mawti **yakburu a-ṣṣiġār** yuṣbiḥu ḥadīṯa al-murāhiqīna
in the-death **become.big the-little.ones** become talk the-adolescents
ʔakṯara d͡ʒiddīyah
more serious

in death, the little ones grow up, adolescents' talk becomes more serious

(91) فأبت مدى علياك شأو بلاغتي وقصر عنك طول لساني (arTenTen12: doc.id: 3874501, s.id: 85512431)

fa-ʔabat madā ʕalyā-ka šaʔwa blāġat-ī **wa-qaṣura**
then-reject scope highness-your utmost eloquence-my **and-shortened**
ʕan-ka **ṭūlu** lisān-ī
from-you **length** tongue-my

your high status is above my eloquence and my long tongue fell short from you

In (89), the new introductions to the literary genre lighten its heaviness. It is possible to conceptualize that the 'tide of literary gestures' is pulled down the heaviness scale as an effect of the verb يخفف *yuxaffif* 'lighten'. In (90), the children's age increases when they discuss death and this is expressed using the verb يكبر *yakbur* 'grow up'. The noun الصغار *ṣiġār* 'little ones' is contrasted by its verbal antonym so it is pulled up the scale.

The sentence in (91) is a line of poetry taken from a panegyric poem. Here a figurative use of antonyms expresses the inability of the poet to praise this person regardless of the poet's eloquence. His long tongue (a metonym of poetic ability) is shortened because no one is able enough to praise this person's high status.

The following sentence in (92) uses non-gradable pairs of antonyms where one is a verb and the other a noun. As explained before, this use reverses the state of the referent from one antonym to the other.

(92) وجعله يكلم الناس في المهد ويحيي الموتى، ويبرئ الأكمة والأبرص بإذن الله
(arTenTen12: doc.id: 780951, s.id: 19046065)

wa-ʤaʕala-hu yukallimu a-nnāsa   fi al-mahdi **wa-yuḥyiyi**   **al-mawtā**
and-made-him speak   the-people in the-cradle **and-bring.to.life the-dead**
wa-yubriʔu al-ʔakmaha wa-l-ʔabraṣa bi-ʔiḏni   llāh
and-heal   the-blind and-the-leper in-permission Allah

and He made him [Jesus] speak to people in his cradle, bring the dead back to life, and heal the blind and the leper with God's permission.

(93) فظهرت بجعة سوداء لتنفي ما يعتقد أنه مؤكد (arabiCorpus: *Shuruq*, ref:A37018WmHmdmHmwdAlEmAmD25-Apr-2009)

fa-ẓaharat baʤaʕah sawdāʔu **li-tanfī** mā   yuʕtaqad ʔanna-hu **muʔakkad**
so-appeared swan   black   **to-deny** what think   that-it   **confirmed**

so a black swan appeared to deny what he thought to be confirmed.

In (92), Jesus is able to bring the dead back to life. The verb يحيي *yuḫyī* 'bring to life' acts upon its nominal antonym الموتى *almawtā* 'the dead' and reverses their state from death to life. Similarly, in (93), the adjective مؤكد *muʔakkad* describes the patient of the verb تنفي *tanfī* 'confirmed'.

To conclude the discussion of this category, Antonyms in Grammatical Relations contains three groups of sentences, sentences in a Transitive relation, sentences containing

antonyms in the Substantive, and sentences with cross-categorical antonyms with a Verbal antonym. The sentences in this big category vary in meaning but they are similar in their grammatical relation and this is the reason they are grouped here.

5.4 Comparison

The category of Comparison is defined as 'the co-occurrence of an antonymous pair within a framework that places those words in a comparative contrast or measures one antonym against the other' (Jones, 2002: 76). Jones (2002) classifies his Comparative Antonymy category into four types. The first type is *direct comparison* where antonyms are compared against each other as in (94) below.

(94)   'Well', said Cage, completely unabashed, 'some living composers are more **dead** than **alive**'. (Jones, 2002: 77)

The second type is *indirect comparison* where antonyms are compared against a separate scale as in (95) below.

(95)   The **new** bills are more colourful than the **old** ones, (Jones, 2002: 77)

Direct and indirect comparison make use of the frames *more X than Y* and *X is more ADJ than Y*. The third type is *preferential comparison* that uses the frame *X rather than Y* to indicate a preference towards one antonym as in (96) below.

(96)   Wanting to be **happy** rather than **sad**, I accepted (Jones, 2002: 78)

Lastly, the fourth type of comparison in Jones's typology is *equal comparison* where no distinction exists between the antonyms, using frames similar to *X is the same as Y*, as in (97).

(97)   All fat, **unsaturated** no less than **saturated**, is fattening. (Jones, 2002: 79)

In the MSA data, there are 112 comparative sentences in the arabiCorpus which makes 7.5% of the 1500 sentences there and 115 sentences in the arTenTen12 corpus which makes 7.7% of the 1500 sentences. In Jones's data, comparative antonymy was found in 6.8% of the sentences in his dataset. While these numbers are very similar, it

is not clear that all examples here would have been categorized as 'Comparative' under Jones's criteria.

The comparative function in Arabic is classified into four types. The first one is similar to Direct Comparison where the comparative form is used to evaluate the co-occurring antonyms against each other. In the second type, two subordinating clauses with antonymous pairs are put in parallel to each other creating a comparison between them. The third type is similar to Equal Comparison where two antonyms are presented as similar to each other with no distinction between them. The last type is the opposite of equal comparison. In this type the difference between compared items is pointed out using words like عكس 'opposite'. These types are discussed below.

Direct Comparison

The comparative adjective in Arabic is formed with the use of the morphological pattern $ʔaCCaC$ usually followed by the word من min 'than'. In the examples in (98) - (100), the words أسهل $ʔashal$ 'easier', أكثر $ʔak\underline{t}ar$ 'more', and أكبر $ʔakbar$ 'bigger' are all in the pattern $ʔaCCaC$. The frame in this type of comparison is $X\ ʔaCCaC\ min\ Y$. The morphological pattern here can accommodate any trilateral root used for comparison.

(98) **تذكير المؤنث** أسهل من **تأنيث المذكر** (arTenTen12: doc.id: 350301, s.id: 8965246)

    ta<u>d</u>kīru   **al-muʔanna<u>t</u>i** ʔshalu min **taʔnī<u>t</u>i**   **al-mu<u>d</u>akkari**
    masculine$_V$ **the-feminine**$_N$ easier than **feminine**$_V$ **the-masculine**$_N$

    turning the feminine to masculine is easier than turning the masculine to feminine

(99) أحب عبدالله **القديم** أكثر من عبدالله **الجديد** (arTenTen12: doc.id: 1511551, s.id: 35664987)

    ʔu<u>h</u>ibbu ʕabdallāhi **il-qadīmi** ʔak<u>t</u>ara min ʕabdallāhi **il-ʤadīd**
    I.love   Abdullah   **the-old**   more   than Abdullah **the-new**

    I like the old Abdullah more than the new Abdullah.

(100) آثار فساد المسؤول الكبير أكبر بكثير من فساد صغار الموظفين (arabiCorpus: *Ghad01* ref: A{448789}S{MainPage}D03-31-2011)

ʔāṯāru fasādi   lmasʔūl **il-kabīr** ʔakbar bi-kaṯīr min fasādi   **ṣiġār**
effect corruption the-official **the-big** bigger in-much than corruption **small**
al-muaḍafīn
the-employees

The effect of a big [senior] official's corruption is much bigger than the little [junior] employees'.

Sentence (98) tells a novice in Arabic grammar to, when in doubt about the grammatical gender of a word, make it masculine because making the feminine into masculine is more acceptable than making the masculine into feminine. Here the process of forming a grammatically masculine word is described as 'easier' than forming a grammatically feminine word. In example (99), the sentence compares a person, Abdullah, before and after he changed. The speaker prefers the old Abdullah to the new one. The opposing pair is used as attributive adjectives describing the nouns in each phrase. In (100), corruption is compared in two situations according to who is exercising it. The comparison occurs between the two phrases, the phrase فساد المسؤل الكبير *fasādi lmasʔūli lkabīr* 'a senior official's corruption' and the phrase فساد صغار الموضفين *fasādi ṣiġāri lmuwađafīn* 'the junior employees' corruption'. These two phrases are compared using the frame *X ʔaCCaC min Y*.

Subordination

In another set of sentences, subordination using 'while' or 'when' is used for comparison. In (101), the comparison is between how a strong person is treated and how a weak one is treated. The sentence (101) would be classified under Ancillary Antonymy in Jones's (2002) classification.

(101) ولا يعطي حقاً إلا لصاحب الحق **القوي** أما **الضعيف** فيتم تجاوزه والدوس على كرامته

(arTenTen12: doc.id: 3112251, s.id: 69977584)

wa-lā   yuʕṭī ẖaqqan ʔillā   li-ṣāḥib   al-ẖaqq   **il-qawiyy**   ʔammā   **a-ḍḍaʕīf**
and-not give right   except to-owner the-right **the-strong** while   **the-weak**
fa-yatimmu taǧāwuza-hu   w-a-ddawsu   ʕalā karāmati-h
then-be   bypassed-him and-the-stepping on   dignity-his

He doesn't give one's due except for the strong claimant while the weak would be bypassed and his dignity would be stepped on.

In sentence (101), the 'strong' are compared to the 'weak' using subordination by أما *ʔammā* 'while'. The strong are given their rights while the weak are not.

Equal Comparison

The third type of comparison is *equal comparison*. The frames used for this type are مثلما *miṯlamā*, يشبه *yušbihu* , and کـ *ka* . These frames can be translated as 'X is like Y' or 'similar to X, Y'. Sentences (102) and (103) give examples for this type of comparison where the similarity of the two situations containing the antonyms are pointed out.

(102) كل قصة حب لها **نهاية** مثلما لها **بداية** (arabiCorpus: *Hayat96*, ref:GEN1996:11136)

kullu qiṣṣati ẖubbin la-hā **nihāyah** miṯla-mā la-hā **bidāyah**
every story   love   for-it **end**   like-that for-it **begining**

every love story has an end as it has a beginning

(103) مثلما أفعل أنا في **محياي** ففي **مماتي** ستكون أنت دنياي (arTenTen12: doc.id: 3060201, s.id: 68936369)

miṯla-mā ʔafʕalu ʔanā fī **maẖyā-y** fa-fī   **mamāt-ī** sa-takūna ʔanta
like-that I.do   I   in **living-my** then-in **death-my** will-you.be you
dunyā-y
world-my

Just like what it is while I am living, in my death, you will be my world.

In sentence (102), a love story is described as having an end just like it has a beginning. The similarity of the antonyms pointed out here is that they are boundaries of the two

ends of the story. The frame used here joins the parallel phrases نهاية لها *lahā nihāyah*

'has an end' and بداية لها *lahā bidāyah* 'has a beginning' using the word مثلما *mithlamā*

'like'. The word مثلما *mithlamā* 'like' can also occur at the beginning of the first phrase

as in (103). In this case the second part of the sentence is introduced by ـف *fa* 'then'.

The frame in sentence (103) can be translated to 'similar to X, Y'. The speaker tells her

lover that he is her world during her life and will continue to be after her death.

Unequal Comparison

The last type of comparison is when the frame بعكس *biʕaks* 'in opposition to' is used. In

this type, instead of pointing out the similarities of the compared items, the comparison

between them points out the difference. This can be seen in example (104).

(104) ولذلك ففي فصل الصيف يسخن اليابس بسرعة ويتمدد الهواء الملامس له بسرعة أيضا
بعكس الماء فانه يسخن ببطء ويتمدد الهواء الملامس له ببطء (arTenTen12: doc.id:
661951, s.id: 16331847)

> wa-li-ḏālik   fa-fī faṣl   i-ṣṣayf   yasxan al-yābis **surʕah** wa-yatamaddad
> and-for-that in   season the-summer get.hot the-land **quickly** and-expand
> al-hawāʔu al-mulāmisu la-hū **bisurʕah** ʔayḍan bi-ʕaks   al-māʔi
> the-air   the-adjoining to-it **quickly** also   in-opposition the-water
> fa-ʔinna-hu   yasxunu **bibuṭʔin** wa-yatamaddad al-hawāʔu l-mulāmisu   la-hū
> for-indeed-it get.hot **slowly**   and-expand   the-air   the-adjoining to-it
> **bibuṭʔ**
> **slowly**

> Therefore, in the summer season the land heats up quickly and the adjoining air
> expands quickly also opposite to water which heats up slowly and the adjoining
> air expands slowly.

Sentence (104) compares the reaction of land and water towards heat. Here two parallel

structures on each side of the frame along with the antonyms ببطء *bibuṭʔ* 'slowly' and

بسرعة *bisurʕah* 'quickly' create an ancillary opposition between *land* and *water*. One

might argue that this sub-category is similar to Jones's Distinguished Antonymy category. However, in Distinguished Antonymy, the two antonyms are used as two poles in the comparison of something else but here in Comparative Antonymy the comparison is between the two antonyms themselves. This is discussed later in the category Distinction.

The category of Comparison is the third largest category in the Arabic data. It makes use of the comparative form as well as the subordinating structure to compare between a pair of antonyms.

5.5 Emphasis, Correction, and Cancelling

The functions of Emphasis, Correction, and Cancelling are grouped together in one category because they all make use of negation. In previous studies of antonym functions, such as Jones (2002); Murphy et al. (2009); Davies (2013); Kostić (2011), Negated Antonymy is one of the major categories of antonym functions in discourse. Similar to Jones's Negated Antonymy category, one word is negated in order to emphasise or augment its antonym in the functions Emphasis and Correction, but both antonyms are negated in the function Cancelling. However, there are two differences between this category and Jones's Negated Antonymy. First, Jones includes two frames that do not involve explicit negation, *X instead of Y*, and *X as opposed to Y*. However, Davies (2013) assigned the frame *X instead of Y* a different category, Replacive Opposition. I leave the function of replacing one antonym with the other to a separate category similar to Davies's because it does not involve negation and because the meaning conveyed in the sentence is different from the sentence meaning in this category. The frame *X as opposed to Y* also does not involve negation and therefore it is included in the category of Distinction.

The second difference between this category and Negated Antonymy is that Jones (2002) classifies some sentences containing negated antonyms under Ancillary Antonymy as in sentence (105).

(105)   It is meeting **public** need, not **private** greed. (Jones, 2002: 46)

The sentence in (105) negates one antonym *private* to augment the other *public*. However, Jones classifies this sentence under Ancillary Antonymy not under Negated Antonymy

which makes the number of sentences with negated antonyms in Arabic and English not comparable. In my classification, antonyms can create ancillary contrast in the sentence and this function extends to all categories of antonymy functions. Therefore, a sentence like (105) is classified as Emphasis in my classification.

Sentences containing negation of one antonym have two functions. The first is labelled negation for Emphasis. In this category, one item of the antonym pair is negated to augment and emphasise its opposite. The following is a discussion of this sub-category.

5.5.1   Negation for Emphasis

According to Jones (2002), Negated Antonymy, which accounts for 5% of his data, refers to 'the co-occurrence of an antonymous pair within a framework that negates one antonym as a device to augment the other' (Jones, 2002: 88). The typical framework used for this category is *X not Y*. This subcategory is similar to the Negated Antonymy category in Jones (2002). The frame used in Arabic is also similar to the English frame; a negating particle is used between the two antonyms.

In Arabic, negation involves the use of one of numerous particles. These particles include ما *mā*, لا *lā*, لولا *lawlā*, بلا *bilā*, and ليس *laysa* for negating equational sentences and noun phrases; and لم *lam*, ما *mā*, لا *lā*, لن *lan*, لما *lammā*, and ليس *laysa* for negating verbal sentences and verb phrases (Badawi et al., 2004). The particles that are found in the dataset are لا *lā*, لم *lam*, and ليس *laysa*. So the schematic construction for this subcategory in Arabic is *X not Y* where *not* stands for any one of these three negators. The number of sentences that make use of this frame in my dataset is 136 sentences (62 in the arTenTen12 and 75 in the arabiCorpus) which accounts for 4.5% of my data (4.1% in the arTenTen12 and 5% in the arabiCorpus). Sentences (106) - (110) are examples of such sentences.

(106) وأضاف أن تعدديتنا هي مصدر قوة لا ضعف، وهي مصدر نجاح لا مصدر اخفاق
(arabiCorpus: *Watan02*, ref: 011202t41380EXTR)

wa-ʔaḍāfa   ʔanna taʕaddudiyatu-nā hiya maṣdaru **quwwah** lā   **ḍaʕf**
and-he.added that   diversity-our   it   source   **strength** not **weakness**
wa-hiya maṣdaru naǰāḥ lā   maṣdaru ʔixfāq
and-it source success not source failure

He added that our diversity is a source of strength not weakness, a source of success not a source of failure.

(107) وهذا يتطلب تغيير سياسة استهلاك المياه، إذ يتوجب علينا دعم الفقراء وليس الأغنياء
(arabiCorpus: *Thawra*, ref: archive14758)

wa-hāḏā yataṭallab taġyīr   siyāsati istihlāk   al-miyāh ʔiḏ   yatawaǰab
and-this demand   changing policy   consumption the-water where must
ʕalay-nā daʕmu **al-fuqarāʔi** wa-laysa **al-ʔaġniyāʔu**
on-us   support **the-poor**   and-not **the-rich**

demand of changing the policy of water consumption, because we should support the poor not the rich

(108) ولرغبته في تطويع الاكتشاف للبناء والسلم لا للحروب ولكن هيهات له ما أراد
(arTenTen12: doc.id: 1866001, s.id: 43279972)

wa-li-raġbati-hi fī taṭwīʕi lʔiktišāf   li-l-bināʔi   **wa-a-ssilmi**
and-for-desire-his in recruiting the-invention for-the-building **and-the-peace**
lā **lilhurūbi**   wa-lākin hayhāta la-hū   mā   ʔarād
not **for-the-wars** and-but alas   for-him what he.wanted

because he wanted to recruit the invention for building and peace not for war, but alas what he wanted

In (106), the sentence asserts that diversity is a source of strength not weakness and success not failure. Two nouns are negated, ضعف *ḍaʕf* 'weakness' and اخفاق *ʔixfāq* 'failure', to emphasise and augment their opposites, قوة *quwwah* 'strength' and نجاح *naǰāḥ* 'success'. Similarly, the negator *laysa* is used in sentence (107) between the two antonymous nouns الفقراء *alfuqarāʔ* 'the poor' and الأغنياء *alʔaġniyāʔ* 'the rich' in order to assert that it is the poor who are in need of support. Also sentence (108) emphasises that the purpose of the invention is for 'peace' not for 'war'.

Similarly, the sentences (109) and (110) negate one item of the antonym pair to augment the other. The antonyms in these sentences have an ancillary function, too.

(109) أما المشاريع التي انتهى تصميمها ولم يبدأ تنفيذها فهي: مشروع مبنى المسرح وقاعة المعارض في حرم الجامعة (arabiCorpus: *Watan02*, ref.: 011014t30368FRON)

> ʔammā al-mašārīʕu llatī **intahā** taṣmīma-hā wa-lam **yabdʔu** tanfīḏa-hā
> while the-projects that **ended** design-its and-not **begin** execution-its
> fa-hiya mašrūʕu mabnā al-masraḥi wa-qāʕatu al-maʕāriḍi fī ẖaram
> it project building the-theatre and-hall the-exhibitions in campus
> al-ʤāmiʕah
> the-university

> the projects whose design has ended and whose execution has not begun are the project of the theatre and exhibitions hall in the university's campus.

(110) ويكثر الحديث حولها ويطول سردها فهي تبدأ من لحظة الاعتقال ولا تنتهي بلحظة الافراج (arTenTen12: doc.id: 2943951, s.id: 66568234)

> wa-yakṯuru al-ḥadīṯu ẖawla-hā wa-yaṭūlu sardu-hā fa-hiya **tabdaʔu** min
> and-be.much the-talking around-it and-be.long telling-it for-it **begin** from
> laḥḍat al-ʔiʕtiqāli wa-lā **tantahī** bi-laḥḍat al-ʔifrāʤ
> moment the-arrest and-not **end** with-moment the-release

> telling this story takes a long time for it begins with the arrest and does not end with the release

The antonymous verbs in (109), انتهى *ʔintahā* 'ended' and يبدأ *ybdaʔ* 'begin', along with the fact that they are parallel, create an ancillary contrast between the subjects of the two verbs, تصميمها *taṣmīmuhā* 'its design' and تنفيذها *tanfīḏuhā* 'its execution' respectively. Designing something and executing this design is put in contrast with each other where one ended but the other has not begun.

The verbs 'begin' and 'end' are also contrasted in sentence (110). This sentence refers to abuse of prisoners. The prepositional phrases that follow the two verbs are contrasted

with each other. The 'arrest' and 'release' are the beginning and end of prison time, but abuse stories begin with one but do not end with the other.

The sentences 106 - 110 are examples of how antonyms are used in negation frames to indicate emphasis. The second sub-category is *negation for correction* where one antonym is negated and the other is introduced by *bal*. The word *bal* cancels a previous proposition and introduces a new one.

5.5.2   Negation for Correction

Similar to the previous subcategory, sentences in negation for Correction feature a negated phrase or clause and an affirmative antonym. However, the second clause is introduced with the word بل *bal*, which can be translated to English as 'but rather', 'rather', or 'but actually' (Ryding, 2005). *Bal* cancels a previous proposition and introduces a new one. This corrective sense is present in sentences like *John is not American but British* (Izutsu, 2008: 649).

The corrective sense is lexicalized in some languages. For example, German *sondern* and Swedish *utan* are used for the corrective sense, while German *ober* and Swedish *men* are used for the non-corrective one. In Arabic, one use of the word *bal* is as a connector that strongly contradicts a previous negated statement and asserts what follows it (Badawi et al., 2004). It is also considered as a linguistic tool of restriction, as in ما سالم معلما بل طبيبا *mā sālimun muʕalliman bal ṭabīban* 'Salim is not a teacher but a doctor' (Abdul-Raof, 2006: 116). Ryding (2005) also includes *bal* under a category similar to restriction, which she calls *exceptive expressions*. These expressions introduce phrases that contrast with a previous propositional content (Ryding, 2005: 650).

The excerpt in (111) below shows the corrective sense of *bal* used to contrast the antonym pair التفاؤل *a-ttafāʔul* 'optimism' and التشاؤم *a-ttašāʔum* 'pessimism'. The

excerpt includes the context before the sentence where the antonyms co-occur in order to show the cancelled proposition. The corrected proposition in this excerpt is people's pessimism regarding the visit of the American Secretary of State to the Middle East.

(111) وعن زيارة أولبرايت للقاهرة قال الوزير: أنه لا يشارك في نبرة التشاؤم المثارة حول جولتها في الشرق الأوسط. وقال أن التفاؤل والتشاؤم يكونان نتيجة للزيارة وليس سببا مسبقا لها. وقال أنه لا يصح أن نستقبل السيدة مادلين أولبرايت بالتشاؤم بل يجب أن نستقبلها بالتفاؤل ثم نحكم على نتيجة الزيارة (arabiCorpus: *Ahram99,* ref: 120999FRON10)

wa-ʕan ziyārati ʔulbrayit l-ilqāhirah qāla al-wazīr ʔanna-hu lā
and-about visit Albright to-Cairo said the-minister that-he not
yušārik fī nabrati a-ttašāʔum al-muṯārah ḫaula ʤawlati-hā fī a-ššarqi
participate in tone the-pessimism the-raised around trip-her in the-east
al-ʔawsaṭ wa-qāla ʔanna a-ttafāʔul w-a-ttašāʔum yakūnān natīʤatan
the-middle and-said that the-optimism and-the-pessimism be result
l-i-zziyārah wa-laysa sababan musbaqan la-hā wa-qāla ʔanna-hu lā yaṣiḫḫu
for-the-visit and-not reason before for-it and-said that-it not be.right
ʔan nastaqbila a-ssayyidah mādlīm ʔulbrayit **b-i-ttašāʔum**
to greet the-Ms Madeleine Albright **with-the-pessimism**
bal yaʤibu ʔan nastaqbila-hā **b-i-ttafāʔul** ṯumma naḥkuma
but.rather must that greet-her **with-the-optimism** then judge
ʕalā natīʤati a-zziyārah
on result the-visit

Regarding Albright's visit to Cairo, the minister said that he does not participate in the tone of pessimism raised about her trip to the Middle East. He said that optimism and pessimism must be a result of the visit and not its cause. He said it is not right to greet Ms. Madeleine Albright with **pessimism** but we should greet her with **optimism** then judge the result of the visit.

Excerpt (111) is an example of the schematic construction *(not) X bal Y* where a proposition is introduced only to be cancelled by its opposite which is considered to be the correct proposition. The excerpt shows that people were pessimistic and that they thought that the visit would not have good consequences. The writer here presents what he thinks is the right attitude towards this visit: not to be pessimistic, but to be optimistic.

There are 21 sentences in this group (eleven in the arTenTen12 and ten in the arabi-Corpus). Some examples are presented in (112) - (114) below.

(112) سيظل هناك التزام أمريكي طويل الأمد تجاه العراق، إذ أن الانسحاب لا يعني نهاية الأمر بل بداية مرحلة انتقالية جديدة بعد الحرب (arabiCorpus: *Masri2010*, ref: A266643I1868S299D20-Aug-2010)

sa-yaḍallu   hunāka iltizāmun   ʔamrīkiyy ṭawīlu al-ʔamad   tiǧāha lʕirāq
will-continue there   commitment American long   the-period towards Iraq
ʔiḏ ʔanna al-insiḥāb   lā   yaʕnī **nihāyat** al-ʔamr bal **bidāyatu**
for that   the-withdrawal not mean **end**   the-issue but **beginning**
marḫaltin ʔintiqāliyyah ǧadīdah baʕda al-ḥarb
stage   transitional new   after the-war

There will continue to be an American long-term commitment towards Iraq, for the withdrawal does not mean the end but the beginning of a new transitional stage after the war

(113) فالخوف من الموت لا يمنع الموت بل يمنع الحياة (arabiCorpus: *Ghad02*, ref: A{427304}S{MainPage}D03-28-2011)

fa-al-xawfu min al-mawti lā   yamnaʕu **al-mawt** bal yamnaʕu **al-ḥayāt**
for-the-fear of   the-death not prevent **the-death** but prevent   **the-life**

fear of dying does not prevent death but prevents life

The sentence in (112) reports the speech of the American State Department Spokesman Crowley. Crowley assures the Iraqis that pulling out the American troops from Iraq was not the end, but a beginning of a new relationship between the two countries. The assumption that the American presence in Iraq has ended is cancelled using the antonym 'beginning' introduced by *bal*.

Similarly, the antonym pair الموت *almawt* 'death' and الحياة *alḥayāh* 'life' are used in the same frame in (113). This sentence is part of a letter from one activist in Iraq to his friend who is inside an American prison in Iraq. He promises to come help him out of prison even if this would lead to his death. He states that fear of death does not make one avoid what might cause it, it prevents life itself, because death is inevitable.

Correction of a cancelled sense can also occur in sentences where an ancillary opposition is triggered, as in (114) below.

(114) هذا المسلسل الفاشل من زمان وجد من يدافع عنه من أصحاب الأقلام طبعا ليس حبا
(arTenTen12: doc.id: 2379451, s.id: في طاش و نجومها بل كرها للحية والثياب القصيرة
54526194)

hā_dā al-musalsal al-fāšil   min zamān wa_ǧada man yudāfiʕu ʕan-hu min
this the-series the-failure from time   found   who defend   from-it from
ʔas_hābi   al-ʔaqlām ṭabʕan laysa **huban** fī ṭāš wa-nuǧūmi-hā bal
possessors the-pens   surely not   **love**_ADV_ in Tash and-stars-its   but
kurhan   li-l-li_hyati   wa-ttiyāb   al-qaṣīrah
hatred_ADV_ for-the-beard and-the-clothes the-short

this long-time failing series found writers who would defend it surely not out of love for Tash [name of TV series] and its stars but out of hatred for the beard and short clothes [a metaphor for religious people]

The context of sentence (114) above is that actors in a sitcom are accused of ridiculing the religious culture in Saudi Arabia, and some newspaper columnists are defending these actors. The word ليس *laysa* in (114) negates that these columnists defend the sitcom out of love for it and for the actors in it. The word بل *bal*, then, introduces the real motivation, which is hatred for all that is religious in the culture. There is an additional contrast in this sentence between the sitcom *ṭāš wa-nuǧūmi-hā* 'Tash and its stars' and religion 'the beard and short clothes' which appear as adjuncts to the adverbs حبا *hubban* and كرها *kurhan*.

So far two functions, Emphasis and Correction, were discussed. The third function in this category is Negation for Cancelling. This is discussed in the next section.

5.5.3   Negation for Cancelling

The sentences discussed in this section include instances where both members of the antonym pair are negated. In this sub-category there is a meaning of cancelling both ends of the antonym scale and the area of indifference between them is referred to, as in

sentences (115) - (117). The frame used in these sentences is **لا ... ولا** *lā ... walā* 'not X and not Y'. This frame is used for this function fifteen times in the arTenTen12 online corpus and seventeen times in the arabiCorpus newspaper corpus. This frame is polysemous because it is also used for inclusiveness of both antonyms as was discussed in the category Inclusiveness in section 4.1.

(115) وجدت بريطانيا في حالة لا فوز ولا خسارة وقررت وضع قيود على هجرة اليهود
لفلسطين (arabiCorpus: *Tajdid02*, ref: 514isslamic3503.txt)

wuǧidat brīṭānyā fī ḫālat lā **fawz**   wa-lā   **xasārah** wa-qarrarat waḍˤa
found   Britain in state no **winning** and-no **losing**   and-decided putting
quyūd   ˤalā hiǧrati   al-yahūd li-filisṭīn
restrictions on   migration the-Jews to-Palestine

Britain found itself in a state of no win and no lose, so decided to put restrictions of Jews' migration to Palestine.

(116) وهي لا تحمل انتماء إلى جنس معين، فلا هي بالأنثى ولا هي بالذكر (arTenTen12:
doc.id: 1350601, s.id: 32182300)

wa-hiya lā   taḥmilu intimāʔan ilā ǧinsin muˤayyan fa-lā   hiya
and-she not carry   association to gender particular for-not she
bi-l-ʔunṯā   wa-lā   hiya **b-i-ddakar**
in-the-female and-not she **in-the-male**

she does not hold any association to a particular gender, so she is not a female and not a male

(117) سوى الرغبة في التصعيد وابقاء الشرق الأوسط في حال اللاحرب واللاسلم (arabiCorpus:
Ghad01, ref: A{448193}S{MainPage}D03-31-2011)

siwā   a-rraġbati fī a-ttaṣˤīdi   wa-ibqāʔi   a-ššarq al-ʔawsaṭi fī ḫāli
except the-desire in the-aggravation and-keeping the-east the-middle in state
al-lā-ḫarbi wa-al-lā-silm
the-no-war and-the-no-peace

except the desire for aggravation and keeping the Middle East in the state of no war and no peace

The three sentences (115) - (117) use the frame *not X and not Y* similarly. In (115), Britain is found in a situation between winning and losing; both antonyms are cancelled and a state between them is created. In (116), the woman referred to is described as not a female and not a male, so again an area in between these non-gradable antonyms is created. Finally, sentence (117) refers to a state between war and peace in the Middle East.

Another frame that indicates cancelling both antonyms is the use of أو *ʔaw* 'or' in a negated sentence. This is similar to the English frame *neither X nor Y*. The following examples show the Arabic frame 'not' *X ʔaw Y* used with antonyms of different parts of speech. This frame occurs nine times in the newspaper corpus in arabiCorpus and seven times in arTenTen12 on-line corpus.

(118) وليس ذلك دفاعاً أو هجوماً إنما هو توصيف (arTenTen12: doc.id: 2510901, s.id: 57259622)

wa-laysa ḏālika **difāʕan**   ʔaw **huǧūman** ʔinnamā huwa tawṣīf
and-not that   **defending** or **attacking** but   it   description

and that is not defending or attacking, but rather a description.

(119) لكن فرحان حق المتحدث باسم كي مون رفض تأكيد الخبر أو نفيه (arabiCorpus: *Ghad02*, ref: A{419055}S{Jordan}D03-28-2011)

lākinna farḥān ḥaqq al-mutaḥaddiṯ   bi-ismi bān kī mūn rafaḍa
but   Farhan Haq the-spokesperson in-name Ban Ki Mun refused
taʔkīd   al-xabari ʔaw **nafyi-h**
confirming the-news or   **denying-it**

but Farhan Haq, Ban Ki Mun's spokesperson, refused to confirm or deny the news.

(120) ولم تكن اسرائيل تؤكد أو تنفي ما يعتقده العموم (arabiCorpus: Ghad01, ref A{459766}S{MainPage}D03-31-2011)

wa-lam takun isrāʔīl **tuʔakkid** ʔaw **tanfī** mā   yaʕtaqidu-hu al-ʕumūm
and-not be   Israel **confirm** or **deny** what believe-it   the-public

and Israel was not confirming or denying what the public believes

(121) فإنه يمكن القول دون مبالغة ودون تفاؤل أو تشاؤم بأننا نقدم على مرحلة مفصلية في
الصراع العربي (arabiCorpus: *Ahram99*, ref: 062299OPIN03)

fa-ʔinna-hu yumkinu al-qawla dūna mubālaġah wa-dūna **tafāʔul**
for-indeed-it can the-saying without exaggeration and-without **optimism**
ʔaw **tašāʔum** bi-ʔanna-nā nuqdimu ʕalā marḥalatin mifṣaliyyatin fī
or **pessimism** in-that-we approaching to stage critical in
a-ṣṣirāʕi al-ʕarabiyy
the-conflict the-Arabian

It can be said with not exaggeration and without optimism or pessimism that we
are approaching a critical stage in the Arab conflict.

Sentence (118) above describes the style of a writer and explains that this description is
not defending it against this style's critics nor it is an attack on it. In sentence (119),
the spokesman refused to confirm the news and he refused to deny it, too. Similarly, the
antonymous verbs in (120) 'confirm' and 'deny' are included in the negation using لم *lam*
which is used to negated verbal clauses. Sentence (121) uses the negator دون *dūn*
'without' to eliminate both optimism and pessimism and be in the area in between.

The sentences in this group all use negation of one or both antonyms to indicate the
functions of Emphasis, Correction, and Cancelling. The function Emphasis is the largest
of these three functions. It is similar to Jones's (2002) Negated Antonymy category.

5.6   Transition

The category Transition is similar to Jones's category Transitional Antonymy. 'Transi-
tional antonymy sentences describe a movement from one antonymous state to another'
(Jones, 2002: 146). The number of sentences in this category is 103 in the arTenTen12
(6.9%) and 98 in the arabiCorpus (6.5%). The percentage of the category of Transition
in the dataset is 6.7% compared to 3% in Jones's data. The schematic constructions used

for this function are من ... إلى *min ... ʔilā* and لِ ... من *min ... li* both meaning 'from X to Y'. A common feature among these sentences is that the frame is preceded by a verb denoting change or transfer, as in sentences (122) - (125). The verb indicating transfer is underlined.

(122) وقال أن الانتقال من حل القضايا **الأسهل** إلى حل القضايا **الأصعب** هو مغامرة غير مضمونة النتائج (arabiCorpus: *Hayat97*, ref: NEW1997:29467)

wa-qāla   ʔanna al-ʔintiqāl   min ẖalli   il-qaḍāyā **al-ʔashal**   ʔilā
and-he.said that   the-transition from solving the-issues **the-easiest** to
ẖalli   il-qaḍāyā **al-ʔaṣʕab**   huwa muġāmartun ġayru maḍmūnati
solving the-issues **the-hardest** it   risk   not   guaranteed
a-nnatāʔiǧ
the-results

and he said that moving from solving the easiest issues to the hardest ones is a risk with not-guaranteed results.

(123) وقد تبدل حاله مابين طرفة عين وانتباهتها من **فقر** إلى **غنى** (arabiCorpus: *Shuruq*, ref: A48248WnyfynmscdD3-Sep-2009)

wa-qad   tabaddala ẖālu-hu mābayna ṭarfati ʕaynin wa-intibāhati-hā min
and-already changed   state-his between blink eye   and-opening-its from
faqrin ʔilā **ġinā**
poverty to   **wealth**

and his state changed in a blink of an eye from poverty to wealth.

(124) من قال أن الحنان يجب أن يتدفق من الطرف **الأقوى للأضعف** فقط، كالأم التي تحنو على صغيرها (arTenTen12: doc.id: 322851, s.id: 8303622)

man qāla ʔanna al-ẖanāna   yaǧibu ʔan yatadaffaqa min a-ṭṭaraf
who said that   the-affection must   to pour   from the-end
al-ʔaqwā   **l-il-ʔaḍʕaf** faqaṭ k-al-ʔummi llatī taẖnū   ʕalā
the-strongest to-the-weaker only like-the-mother who has.affection for
ṣaġīri-hā
baby-her

Who said that affection has to pour from the strongest end to the weakest end only, like a mother who has affection for her baby?

(125) وتغير سلوك الثوار من سلوك المبادرة والفعل **والهجوم** إلى سلوك الانتظار والصمود **والدفاع**

(arTenTen12: doc.id: 760251, s.id: 18579671)

wa-taġayyara sulūku a-ttuwwari min sulūk   al-mubādarati wa-al-fiʕl
and-changed attitude the-rebels from attitude the-initiation and-the-doing
wa-al-huǧūm   ʔilā sulūk   al-ʔintiḍāri wa-a-ṣṣumūdi
and-the-attacking to   attitude the-waiting and-the-resistance
wa-a-ddifāʕ
and-the-defending

the attitude of the rebels changed from the attitude of initiation, doing, and attacking to the attitude of suspense, resistance, and defending.

The speaker in sentence (122) talks about the risk in transfer from حل القضايا الأسهل _ḫalli lqađāyā lʔashal_ 'solving easy issues' to the parallel phrase حل القضايا الأصعب _ḫalli lqađāyā lʔaṣʕab_ 'solving difficult issues'. The frame used here is ... الانتقال من ... إلى _moving from X to Y_. Sentence (123) refers to the change in someone's financial situation from poverty to wealth in a short period of time. This change is again expressed by a verb تبدل _tabaddala_ 'changed' along with the frame _from X to Y_. The question in (124) also uses the verb يتدفق _yatadaffaqu_ 'pour' to express movement and the frame _from X to Y_ that indicates the direction of the movement. In this example, affection is poured from the stronger person (mother) to the weaker one (baby) which places mother and baby in ancillary opposition to each other. In sentence (125), the same is repeated, a verb indicating change تغير _taġayyara_ 'changed' and the frame _from X to Y_ to indicate the direction of this change. This time the two opposing ends are not expressed by one pair of antonyms but by three pairs. On one side is the earlier state before the change that occurred in the rebels' behaviour. On the other side is the later state of the change where the rebels' behaviour is expressed by the opposites. The change is presented in parallel structure. The behaviour changed from initiation to suspense, from doing to resistance, and from attacking to defence.

A final note on the frame 'from X to Y' is that when the verb indicating transfer or change is absent, there is no movement from one situation to its opposite in the transition as in sentences (126) and (127) below.

(126)   وكعادة مباريات الجيران، جاء لقاء تشرين وحطين ساخنا ومثيرا من **البداية** إلى **النهاية**
(arabiCorpus: *Hayat96*, ref: SPO1996:2607)

wa-ka-ʕādati mubārayāt al-ǧīrān   ǧāʔa liqāʔu tišrīn   wa-ḥiṭṭīn
and-as-usual matches   the-neighbours came meeting Tishreen and-Hitteen
sāxinan wa-muṯīran min **al-bidāyah**   ʔilā **a-nnihāyah**
hot   and-exciting from **the-beginning** to   **the-end**

and as it is customary in matches between neighbours the match between Tishreen and Hitteen was exciting from beginning to end.

(127)   أكرمتهم من كبيرهم إلى صغيرهم (arTenTen12: doc.id: 1156251, s.id: 27696149)

ʔakramtu-hum   min **kabīri-him** ʔilā **ṣaġīri-him**
I.treated.generosity-them from **elder-their** to   **youngster-their**

I treated them with generosity from the eldest to the youngest.

In sentence (126), the football match was exciting from beginning till the end. Similarly in sentence (127), the speaker states that he treated his guests generously all of them from the eldest to the youngest.

Other less used frames that indicate transition are إلى *ʔilā* 'X to Y', بعد *baʕd* 'X after Y', قبل *qabl* 'X before Y', and ثم *ṯumma* 'X then Y'. These frames are discussed next.

In the frame *X to Y* similar to the frame *from X to Y*, a verb is used to indicate transition or change from one state to another. The only difference is that the preposition *min* 'from' is not used here. Examples (128) and (129) have the noun تحويل *taḥwīl* 'changing' then the frame *X ilā Y* 'X to Y'.

(128) حيث سعى المستشفى إلى تحويل نقاط **الضعف** إلى **قوة** (arTenTen12: doc.id: 810551, s.id: 19719761)

ḥaytu saʕā   al-mustašfā ʔilā taḥwīli nuqāṭi **a-đđaʕfi**   ʔilā **quwwah**
where worked the-hospital to   change points **the-weakness** to   **strength**

where the hospital worked to change the points of weakness to strength.

(129) إلى تفشي الفساد وتحويل بعض المسؤلين للأموال **العامة** لحسابهم **الخاص** (arabiCorpus: *Ahram99*, ref: 102999FRON13)

ʔilā tafašī   al-fasādi   <u>wa-taḥwīli</u> baʕđi al-masʔūlīn l-il-ʔamwāli
to   spreading the-corruption <u>and-transfer</u> some the-officials to-the-moneys
al-ʕāmmati li-ḥisābi-him   **al-xāṣ**
the-public   to-account-their **the-private**

to the spread of corruption and the transfer of some officials of public moneys to their own private accounts.

In sentence (128), the hospital is working on changing weak aspects in the hospital to strong ones. The two nouns on each side of the frame are parallel to each other. In sentence (129), a similar structure is used. This time the clitic preposition لِ *li* 'to' is used. The antonymous pairs in this sentence are adjectives that create an ancillary opposition between the nouns they modify, *money* and *bank accounts*.

The frame بعد *baʕda X after Y* is also used to indicate a transfer from one state to its opposite without a verb indicating transformation or change. An example of the frame is provided in (130). The word بعد *baʕda* can sometimes be followed by the indefinite pronoun ما *mā* as in (131).

(130) الفتور هو سكون بعد حدة ولين بعد شدة **وضعف بعد قوة** (arTenTen12: doc.id: 3825401, s.id: 84557921)

al-futūru   huwa sukūnun baʕda ḥiddah wa-līnin   baʕda šiddah
the-indifference it   calmness after fury   and-mildness after harshness
wa-đaʕfin   baʕda **quwwah**
and-weakness after   **strength**

indifference is calmness after fury, mildness after harshness, and weakness after strength

(131) المسابقة المحلية التي أصبحت ضعيفة جداً بعدما كانت الأقوى (arabiCorpus: *Hayat97*, ref: SPO1997:9289)

al-musābaqatu al-maḥaliyyatu allatī ʔaṣbaḥat **đaʕīfatan** ǯiddan baʕdamā
the-tournament the-local   that became **weak**   very   after
kānat **al-ʔaqwā**
it.was **the-strongest**

and the local tournament that became very weak after it was the strongest.

The frame *X after Y* indicates transfer and points to the order of this transfer. In (130), the sentence describes 'indifference' using parallel phrases all in *X after Y* frame. This sentence was retrieved from the corpus when searching the pair *weak/strong*, but the other phrases, 'calmness after fury' and 'mildness after harshness', are also good examples of transfer of state using this frame. Sentence (131) describes the state of the local tournament using the word بعد *baʕda* 'after' linking two parallel clauses. The two clauses consist of one of the sisters of *kāna*[2] followed by the antonymous pair. In the example, the gradability of the antonyms is made clear. The tournament was the strongest and then its strength decreased and now it is not the weakest, but it is very weak.

Similar to *X after Y*, the frame *X before Y* indicates order of transfer. However, the order here is usually an unexpected one. For example, the two sentences in (132) and (133) show that the people receiving the special treatment go against the expected order.

(132) بقيت متواضعا مع الصغير قبل الكبير (arTenTen12: doc.id.: 3946351, s.id.: 86950481)

baqīta   mutawāđiʕan maʕa **a-ṣṣaġīr**   qabla **al-kabīr**
you.remained humble   with **the-young** before **the-old**

you remained humble with the young before the old

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[2]*Kāna and its sisters* is an expression used in Arabic linguistics literature to refer to a group of verbs that have the same behaviour. They are always followed by two nouns; the first noun is in the nominative case and the second noun is in the accusative case.

(133) أن هذه الاتفاقيات هي ميراث مشترك للإنسانية لأنها تكفل حقوق الضعفاء قبل الأقوياء

(arabiCorpus: *Ahram99*, ref.: 111599FRON05)

ʔanna hāḏihi al-ʔittifāqiyyāt hiya mīrāṯun muštarakun l-il-insāniyyah
that these agreements it heritage shared for-the-humanity
liʔanna-hā takfalu ḫuqūqa **a-ḏḏuʕafāʔi** qabla **al-ʔaqwiyāʔi**
because-it secure rights **the-weak** before **the-strong**

that these agreements are a shared heritage for humanity because it secures the
rights of the weak before the rich

The sentence in (132) is similar to sentence (127) discussed above. The difference is
the frame used. In (132), *qabla* 'before' indicates that what is expected is that it is
more important to be humble with the elders not the young, but this frame indicates an
unexpected order. Similarly, the sentence in (133) puts the weak before the strong.

The last frame used for transfer of state is ثم *ṯumma* 'X then Y' as used in (134).
ṯumma is 'an adverb that indicates a sequential action, coming later in time than the
action in the preceding sentence or clause' (Ryding, 2005:416).

(134) مالم تقم بتجربة بدايتها صعبة معقدة ثم تتحول لسهلة ممتعة (arTenTen12: doc.id:
3810151, s.id: 84256041)

mā-lam taqum bi-taǧrubatin bidāyatu-hā **ṣaʕbatun** muʕaqaddah ṯumma
if-not carry.out in-experience beginning-its **hard** complicated then
tataḫawwalu **li-sahlatin** mumtiʕah
turn **to-easy** fun

if you did not carry out an experiment that starts hard and complicated then
turns to be easy and fun

The sentence in (134) feature a change of an experience from easy to difficult using the
frame *X ṯumma Y*.

The sentences in the Transition category all use five frames that express the function
of transition from one state to its opposite. This transition is gradual and takes place
through steps.

5.7 Simultaneity

In Jones's classification, Simultaneity is one of the minor categories. He describes that 'in a given context the dual properties of X and Y may be applicable to the same referent' (Jones, 2002: 99). Only eight sentences were found in this category in Jones's data. However, simultaneity of antonyms was found in Swedish more frequently than in English (Murphy et al., 2009). Of the 4000 investigated Swedish data, 2.1% fall under this category. In Japanese, Simultaneity was found in 7% of the 600 sentences investigated (Muehleisen and Isono, 2009). The total number of sentences in this category in the MSA dataset is 146 (82 sentences in the arabiCorpus and 64 in the arTenTen12). Simultaneity accounts for 4.9% of my dataset (5.5% of the arabiCorpus data and 4.3% of the arTenTen12 data).

Simultaneity is expressed in the Arabic dataset using three different grammatical forms. The first form is the use of equational sentences, the second is the use of annexation, and the third is the use of asyndetic adjective sequences.

equational sentences

The first grammatical form expressing simultaneity of antonyms is referring to a word as its antonym which is equivalent to the English frame *X is Y*. In Arabic, this can be through the use of an equational sentence or the use of a form of كان *kān* 'be' depending on the tense of the sentence. The number of sentences in this sub-category is 18 in the arabiCorpus and 24 in the arTenTen12. Examples are provided in (135) - (137).

(135)   يرى حياة الذل موتا، والموت للعزة حياة (arTenTen12: doc.id: 109451, s.id: 2883209)

yrā **ḥayāt** a-ḏḏulli   **mawtan wa-l-mawtu**   li-l-ʕizzahti   **ḥayāh**
see **life**   the-degradation **death**   **and-the-death** for-the-honour **life**

He sees: life of degradation is death, and death for honour is life.

(136) وكل ذي عز فغالبه الله وكل ذي قوة فضعيف عند الله وكل جبار فصغير عند الله
(arTenTen12: doc.id: 665401, s.id: 16408144)

wa-kullu ḏī   ʕizzin fa-ġālibu-hu   allāh wa-kullu ḏī   **quwwatin**
and-all   owner dignity then-over.thrown-him Allah and-all   owner **strength**
fa-đaʕīf   ʕinda allāh wa-kullu ǧabbārin fa-ṣaġīrun ʕinda allāh
then-weak near   Allah and-all   great   then-little near   Allah

everyone with dignity is over thrown by Allah and every strong person is weak in
front of Allah and every powerful person is little in front of Allah

(137) وهذه النهاية قد تكون بداية لثورة جديدة (arabiCorpus: *Hayat97*, ref:
GEN1997:5616)

wa-hāḏihi **a-nnihāyah** qad   takūnu **bidāyah**   li-tawratin   ǧadīdah
and-this **the-end**   might be   **beginning** for-revolution new

this end might be the beginning for a new revolution

Sentence (135) is composed of two equational sentences where الموت *almawt* 'death' and
الحياة *ḥayāt* 'life' are equal to each other. The antonymous nouns are used simultaneously
because death is described as not the end of life, but as a type of life. There is another
contrast in the sentence between 'honour' and 'degradation'. Sentence (136) also uses an
equational sentence to express simultaneity. Everyone who is ذي قوة *ḏī quwwatin* 'strong'
(lit. owner of strength) is at the same time ضعيف *đaʕīf* 'weak' when his strength is
compared to that of God. Sentence (137) refers to the end of colonial economy as the
beginning of a new revolution.

annexation structure

The second set of sentences uses annexation structure.[3] Annexation structure is when
'two nouns [are] linked together in a relationship where the second noun determines the

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[3]This structure is referred to differently in the literature. *Annexation structure* is the one adopted
here, but others include *genitive construct*, *ʔiđāfa*, *the construct phrase*, and *status constructus* (Ryding,
2005; Badawi et al., 2004; Abdul-Raof, 2006).

first[...]and thus the two nouns function as one phrase or syntactic unit' (Ryding, 2005: 205). This structure is highly frequent in Arabic, and is similar to noun-noun compounds in English such as *coffee cup* or *taxi driver*, or to phrases using *of* such as *cup of coffee* or *bottle of water*. The use of an antonymous pair in an annexation structure is by definition limited to nouns as the sentences (138) and (139) show. This sub-category contains 17 sentences from the arTenTen12 and 42 from the arabiCorpus.

(138) وأعرب عن اعتقاده بأن الحادث يمثل بداية النهاية للنظام العراقي، وهذه بداية الاغتيالات
الداخلية بين النظام وأفراده (arabiCorpus: *Hayat96*, ref: NEW1996:33661)

wa-ʔaʕraba ʕan ʔiʕtiqādi-hi bi-ʔanna al-ḥādiṯa yumaṯṯilu **bidāyata**
and-expressed on belief-his in-that the-accident represent **beginning**
a-nnihāyah l-i-nniḍāmi al-ʕirāqiyy wa-hādihi bidāyatu al-ʔiġtiyālāt
the-end for-the-regime the-Iraqi and-this beginning the-assassinations
a-ddāxilyyah bayna a-nniḍāmi wa-ʔafrādi-h
the-internal between the-regime and-members-its

He expressed his belief that the incident represents the beginning of the end for the Iraqi regime, and that this is the beginning of internal assassinations between the regime and its members

(139) بعيدا عن أكروبات المصالح الشخصية التي يستغلها كبار صغار الموظفين في قطاع المسرح
في الدولة (arTenTen12: doc.id: 4047301, s.id: 88958165)

baʕīdan ʕan ʔakrūbāti al-maṣāliḥi a-ššaxṣiyyati llatī yastaġillu-hā **kibār**
away from acrobat the-interests the-personal that exploit-it **big**
ṣiġāru al-muwaḍafīn fī qiṭāʕi al-masraḥ fī a-ddawlah
small the-employees in sector the-theatre in the-country

away from the acrobats of personal interests that are exploited by the senior junior employees in the theatre sector in the government

The annexation structure in (138) is بداية النهاية *bidāyatu annihāyah* 'the beginning of the end'. The 'end' of the Iraqi regime happens gradually and its beginning is marked by the assassinations. Similarly, there are different degrees in status for junior employees, and the ones referred to in sentence (139) are the ones in the higher degrees. The two

nouns كبار *kibār* 'big' and صغار *ṣiġār* 'small' are linked to each other by annexation. The same employees are referred to as senior and junior at the same time.

asyndetic adjectival sequences

The third group of sentences in this category is when a noun is described by an adjective and its antonym at the same time. In this group of sentences, as exemplified in (140) - (143), an asyndetic sequence of adjectives is used. 'Asyndetic sequences of adjectives occur when the two (or more) adjectives are inseparable qualities of the noun' (Badawi et al., 2004: 106). This group is by definition limited to adjectives.

(140) أما الآن فقد تحطمت هذه الدائرة لتدخلنا في دائرة جديدة قديمة من العنف والعنف المضاد (arTenTen12: doc.id: 1207501, s.id: 28903095)

Ɂammā Ɂalān faqad taḥaṭṭamat hāḏihi a-ddāɁirah li-tudxila-nā fī dāɁiratin
but now already broke this the-circle to-enter-us in circle
ǰadīdatin qadīmah min al-ʕunfi wa-l-ʕunfi al-muḍād
new old of the-violence and-the-violence the-opposite

but now this cycle was broken just to let us into a new, old cycle of violence and anti-violence

(141) خاصة في ظل وجود أفكار قديمة متجددة في وجدان نتانياهو الذي دوما يفترض أن القدس يسكنها اليهود فقط (arTenTen12: doc.id: 1502501, s.id: 35478215)

xāṣatan fī ḏilli wuǰūdi Ɂafkārin **qadīmatin mutaǰaddidah** fī
especially in shadow presence ideas **old renewing** in
wuǰdāni nitinyāhū llaḏī dawman yaftariḍu Ɂanna Alquds yskunu-hā
heart Netanyahu who always supposes that Jerusalem inhabit-it
al-yahūd faqaṭ
the-Jews only

especially in the presence of old renewing ideas in Netanyahu's heart who always supposes that Jerusalem is inhabited by Jews only

(142) ويدخل عدد من النواب في مناكفات مع الحكومة ومع الصحافة ويغيب العمل العام
الخاص في القوانين المؤقتة التي تحتاج إلى مراجعة شاملة لتواكب التطورات (arabiCorpus:
Ghad02, ref: A{423745}S{MainPage}D03-28-2011)

wa-yadxulu ʕadadun min a-nnuwāb   fī munākafātin maʕa
and-enter number of the-members.of.parliament in arguments with
al-ḥukūmah wa-maʕa a-ṣṣaḥāfah wa-yaġību al-ʕamalu **al-ʕāmu**
the-government and-with the-press and-be.absent the-work **the-public**
al-xāṣ fī al-qawānīni al-muʔaqqatati llatī taḥtāʤu ʔilā murāʤaʕatin
the-private in the-laws the-temporary that need to revision
šāmulatin li-tuwākiba attaṭawurāt
thorough to-keep.up developments

Some members of Parliament would start arguments with the government and
with the press, and the public, private work becomes absent among the temporary
laws that require a comprehensive review to keep pace with development

(143) هل يطرح مواطنوا هذه الدولة الصغيرة الكبيرة على وطنهم تساؤلات صامتة مثل: هل
سيترافق بناء الملاعب مع بناء أشياء أخرى ... مصانع ربما؟ (arabiCorpus: *Masri2010*,
ref: A280429I1980S300D10-Dec-2010)

hal yaṭraḥu muwāṭinū hādihi a-ddawlati **a-ṣṣaġīrati al-kabīrah** ʕalā
do ask citizens this the-country **the-small the-big** on
waṭani-him tasāʔulātin ṣāmitah mitl hal sa-yatarāfaq bināʔu
country-their questions silent like do will-accompany building
al-malāʕib maʕa bināʔi ʔašyāʔa ʔuxrā maṣāniʕun rubbamā
the-stadiums with building things other factories maybe

Do the citizens of this small, big country ask their country silent questions, like:
will the building of stadiums be accompanied with the building of other things,
factories maybe?

The antonymous adjectives used in an asyndetic sequence in (140) are جديدة *ʤadīdah*
'new' and قديمة *qadīmah* 'old'. The violence cycle is describes as 'old' because it has
happened before, but is also 'new' because it is happening again. Sentence (141) also
refers to old things that are also new. The morphological template used for the adjective

'new' is different. The word متجددة *mutaǯaddidah* 'renewing' here is an active participle that is used as an adjective.[4] The active participle refers to the doer of the action (Ryding, 2005), so this is a personification of the old ideas in Netanyahu's mind that renew themselves again and again.

Sentence (142) refers to a period of chaos when there is no clear-cut distinction between the public and the private sectors. In this sentence, workplace is referred to as both public and private by using the two adjectives in an asyndetic sequence. Similarly, Qatar is referred to as both small and big in (143). The country is small in size but it is also big in status because it was able to win hosting the World Cup.

Simultaneity is a function where opposing treats are used to describe the same object or situation. This function is expressed through three structures with antonymous nouns or adjectives or both.

5.8   Consequence

The sentences in the category Consequence feature co-occurring antonyms where one situation induces its antonym. The two antonyms are in a relation of cause and effect or consequence in which the occurrence of one depends on the occurrence of the other. This is a category that has not been identified in Jones's study. The reason for this might be that similar sentences were included in the Ancillary category, which is removed in my classification. However, not all sentences in this category trigger an ancillary contrast. The number of sentences in this category is 119 (47 in the arTenTen12 and 72 in the arabiCorpus), which makes 4% of the dataset (3.1% of the arTenTen12 data and 4.8% of the arabiCorpus data). The meaning of consequence is expressed through either conditional clauses and subordinated clauses. A similar category was identified by Hassanein (2012) and is called Subordinated Antonymy in which 'the subordinator begins the subordinate clause and functions here as a signal of precedence' (Hassanien, 2012: 204). The four sentences in (144) - (146) provide examples from this category.

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[4]Participles in Arabic are based on voice, they can be active or passive. This is different from English where they are based on tense. They are generally substantive, and when they are functioning as adjectives, they can function as noun modifiers or predicate adjectives (Ryding, 2005).

(144) وازدياد قوة الرافضين يعني تلقائيا ضعف حجة الغالبية القابلة (arabiCorpus: *Hayat97*,
ref: GEN1997:30798)

wa-izdiyād **quwwat** a-rrāfiđīn yaʕnī tilqāʔiyyan **đaʕf**
and-increasing **strength** the-rejectors means automatically **weakness**
ḫuʤʤat al-ġālibiyyah al-qābilah
argument the-majority the-acceptor

the increase in the strength of the rejectors means automatically the weakness of
the accepting majority.

(145) فتعم الكراهية والخوف يسـود حين يغيب الحب (arabiCorpus: *Hayat96*, ref:
GEN1996:4066)

fa-taʕummu **al-karāhiyah** wa-l-xawf yasūd ḫīna yaġīb **al-ḫubb**
then-prevails **the-hatred** and-the-fear spreads when absent **the-love**

then hatred prevails and fear spreads when love is absent.

(146) وقد صرح علنا أنه يعتزم استخدام ترسانته للدفاع عن نفسه في حال تعرضه لأي هجوم.
(arTenTen12: doc.id: 2309401, s.id: 53095987)

wa-qad ṣarraḫa ʕalanan ʔnna-hu yaʕtazim istixdām tarasānati-h
and-did declare publicly that-he intend using shield-his
l-i-ddifāʕi ʕan nafsi-h fī ḫāl taʕarruđi-h li-ʔayyi **huʤūm**
for-the-defending of self-his in case encounter-his to-any **attack**

and he declared publicly that he intends to use his shield to defend himself in the
case of any attack.

The three sentences above show that it is possible to replace the frame to *X as a conse-*
quence Y or *X causes Y* to express the same meaning. In sentence (144), for example,
the increase in strength of one group of people means the increase of weakness of another.
In (145), hatred spreads when love is absent. So the absence of one antonym causes the
spread of the other. Finally, defence happens only when there is an attack in (146). So
defence is a consequence of the attack.

In a small number of sentences in this category, the antonymous pair occurs in a
conditional sentence; with one antonym in the protasis and another in the apodosis.

Eleven sentences in the arTenTen12 had the antonymous pair in a conditional sentence, and 18 sentences in the arabiCorpus; which makes 28 sentences in the whole database.

Conditional meaning in Arabic can be expressed in various ways. The most used conditional particles are إن *ʔin* and لو *law* (Badawi et al., 2004). However, particles like إذا *ʔiḏā*, كما لو *kamā law*, and لولا *lawlā* can also be used with conditional meaning. More-over, there are other ways of expressing condition such as using adverbial conditionals (e.g. حيثما *ḥaytamā* and كلما *kullamā*), elliptical conditionals (وإلا..ـف *waʔilla ...fa*), or indefinite conditionals (e.g. متى *matā*, مهما *mahmā*, and من *man*). All these types of conditionals are found in the small number of sentences in my data and each will be explained with its example below.

(147) إذا فاز فريقه باللقب فإن الليقا ستخسر برشلونة (arabiCorpus: *Thawra*, ref: archive32283)

ʔiḏā **fāza** farīqu-h bi-l-laqab fa-ʔinna al-līgā **sa-taxsar** baršalūnah
if **win** team-his in-the-title then-indeed the-Liga **will-lose** Barcelona

If his team won the title, the Liga [the Spanish League] will lose Barcelona

(148) وكلما ازداد أهل الشام قوة ضعف جأش أهل العراق (arTenTen12: doc.id:1570601 , s.id:36961342)

wakullamā izdāda ʔahlu a-ššāmi **quwwatan đaʕufa** ǧaʔšu
whenever increased people the-Levant **strength weakened** equanimity
ʔahlu lʕirāq
people Iraq

The stronger the people of the Levant, the weaker the equanimity of the people of Iraq.

(149) فالسلام يجب أن يكون عادلا وقائما على الحقوق وإلا فإن الحرب للدفاع عن سلامة
الوطن أرضا وموارد وشعب ومصالح ومكانة تصبح واجبا مقدسا (arabiCorpus: *Ahram99*,
ref: 080999FILE02)

f-a-ssalām   yaǧibu ʔan yakūn ʕādilan wa-qāʔiman ʕalā al-ḥuqūq
for-the-peace must   that be   fair   and-based on   the-rights
waʔillā   fa-ʔinna   **al-ḥarb** l-i-ddifāʕi   ʕan salāmati al-waṭan
otherwise that-indeed **the-war** for-the-defending of   safety   the-home
ʔarḍan wa-mawārid wa-šaʕb   wa-maṣāliḫ wa-makānah tuṣbiḥ wāǧiban
land   and-resources and-people and-interest and-status become obligation
muqaddasan
sacred

peace must be fair and based on rights, otherwise war to defend the safety of
one's home; its land, resources, people, interest, and status; becomes a sacred
obligation.

(150) فمن كانت بدايته صحيحة كانت نهايته صحيحة (arTenTen12: doc.id: 855751, s.id:
20781163)

fa-man kānat **bidāyatu-hu**   ṣaḥīḥah kānat **nihāyatuhu** ṣaḥīḥah
for-who was   **beginning-his** right   was   **end-his**   right

for whose beginning was right, his end would be right

Sentence (147) is a conditional sentence using the particle إذا *ʔiḏā* 'if'. The antonymous

verbs فاز *fāza* 'won' and ستخسر *sataxsar* 'will lose' are contrasted in away that if one

happens, then the other will happen as a consequence. If the team wins, then the Spanish

Football League 'Liga' will lose the football team Barcelona. Similarly, sentence (148)

uses the conditional particle كلما *kullamā* 'whenever'. However, in this sentence an

ancillary contrast is generated between the people of the Levant and the people of Iraq.

They are put in contrast to each other because when one is strong the other is weak.

Sentence (149) uses the elliptical conditional وإلا...ف *waʔilla ...fa*. This conditional

'is used in opposition to a preceding statement in the sense of "otherwise"' (Badawi et

al., 2004: 642). In (149), peace must be fair otherwise war becomes sacred. In sentence

(150), an indefinite conditional is used. Indefinite conditionals 'refer to an undefined entity in the protasis that they introduce' (Badawi et al., 2004: 664). The conditional sentence (150) states that anyone who has a good beginning will have a good ending as a consequence.

The sentences in the category Consequence have in common that one antonym takes place as a consequence of its antonym. Structures used in these sentences include conditionals and other subordinated clauses indicating consequence or cause and effect.

5.9   Overlapping and Spatial proximity

The category of Overlapping and Spatial proximity includes sentences where the antonymous pair occur in the same place (overlapping) or near each other (spatial proximity). The number of sentences in this group is 88 (56 in the arTenTen12 and 32 in the arabiCorpus) which makes up 2.9% of my data (3.7% of the arTenTen12 data and 2.1% of the arabiCorpus data). The form used in this category is a prepositional phrase such as بـ *bi-* and في *fī* both meaning 'in', or adverbial expression such as وسط *wasaṭ* 'in the middle of'. The sentences in this category present two contrasting situations in the same place. The antonyms in these sentences do not refer to the same referent as is the case in Simultaneity. However, even though the meaning in these sentences is similar to a coordination of the two antonyms, there is an added reference to their position in relation to each other. The sentences in (151) - (153) provide sample examples from this category.

(151) ما يتم ملاحظته من سياسة الدمج لدينا يتمثل بدمج المؤسسة الفاشلة بالمؤسسة الناجحة، أي
نقل الفشل بدلا من إصلاحه (arabiCorpus: *Thawra*, ref: archive109)

mā   yatimmu mulāḫdatuhu min siyāsati a-ddamǧi   ladaynā yatamattalu
what being   noticed   from policy   the-integration we.have represented
bi-damǧi   al-muʔassasati **al-fāšilah**   bi-l-muʔassasah
in-integration organization   **the-failing** with-the-organization
a-nnāǧihah   ʔay   naqlu   al-fašali badalan min ʔiṣlāḫi-h
the-successful that.is transfer failure   instead of   mending-it

What we notice in our integration policy is the integration of the failing organization with the successful organization; that is, transferring failure instead of correcting it.

(152) فقر مخز في أغنى دولة في العالم (arabiCorpus: *Thawra*, ref: archive26607)

faqrin   muxzin   fī **ʔaġnā** dawlatin fī al-ʕālam
poverty shameful in **richest** country   in the-world

a shameful poverty in the richest country in the world

(153) التي فيما يبدو تأبى إلا وأن تعيش كأنثى في مجتمع ذكوري متسلط (arTenTen12: doc.id: 3642001, s.id: 80909498)

allatī fīmā yabdū taʔbā ʔillā   wa-ʔan   taʕīš **ka-ʔuntā**   fī muǧtamaʕin
that   what appear refuse unless and-that live   **like-female** in society
dukūrī mutasalliṭ
male   dominant

who apparently would only live as a female in a dominant masculine society.

In sentence (151), the failing and successful organizations are integrated together. Replacing the frame in this sentence with a coordination construction leaves out the order intended in the sentence. For instance, the clause 'the integration of the failing organization and the successful organization' indicates that it is the failing one that undergoes change. Similarly, in sentence (152), poverty overlaps with richness. The shameful poverty is inside a rich country and not the other way round. The Iraqi woman referred

to in sentence (153) refuses to live but as a female even though she is inside a masculine society.

Some of the sentences in this category feature an ancillary contrast triggered by the antonym pair. Examples of these sentences are provided in (154) and (155).

(154) لكنها تبقى خطوة صغيرة في دولة كبيرة مثل السعودية بحاجة إصلاح في نظام الحكم
(arTenTen12: doc.id: 3616951, s.id: 80398940)

lākinna-hā tabqā xuṭwah ṣaġīrah fī dawlah kabīrah miṯil a-ssuʕūdiyyah
but-it   stays step   small in country big   like Saudi
bi-ḥāǧati ʔiṣlāḥ fī niẓām al-ḥukum
in-need   repair in system the-regime

but this remains a small step in a big country like Saudi Arabia which is in need of reform in its regime

(155) ويجعله حبيس غرفته الصغيرة وسط البستان الكبير (arTenTen12: doc.id: 508401, s.id: 12709735)

wa-yaǧʕl-hu   ḫabīsa   ġurfatihi **a-ṣṣaġīrah** wasaṭ al-bustān **al-kabīr**
and-made-him prisoner room-his **the-small** middle the-garden **the-big**

and it made him a prisoner in a little room in the middle of the big garden

In (154), 'step' is contrasted with 'country' because they are modified by the antonym pair 'small' and 'big'. In sentence (155), the room is contrasted with the garden. This contrast is triggered by the antonymous pair 'small' and 'big'. The small room is inside the big garden.

This category includes sentences where the spacial position of antonyms is referred to.

5.10   Idiomatic Expression

The category Idiomatic Expression includes sentences where antonymous pairs co-occur in frequently-used multi-word expressions. Jones defines this group as '[t]he co-occurrence

of an antonymous pair within a framework that would be recognised as a familiar idiom, proverb or cliché' (Jones, 2002: 93). The expressions hosting antonymous pairs which were found in the MSA dataset are listed in Table (5.2) that also shows the frequency (column F) of their occurrence in the dataset. This category includes 70 sentences (33 in the arabiCorpus 37 in the arTenTen12).

Table 5.2: Frequency of idiomatic expressions in the dataset.

F	idiomatic expression	
15	issue of **life** or **death**	*masʔalat **ḥayāt** ʔaw **mawt***
12	be it **long** or **short**	*ṭāla ʔam **qaṣur***
8	a **wrong** disguised as **right**	*ḫaqqun yrādu bihi **bāṭil***
7	**denied confirming**	***nafā muʔakidan***
5	seek **death** and be gifted with **life**	*uṭlub **almawt** tūhab laka **alḥayāt***
4	**succeed** where others **fail**	***naʤaḥa** ḫaytu **faṣala** alāxarūn*
3	**right** prospers and **wrong** perishes	*ḍahara **alḫaqq** wazahaqa **albāṭil***
3	**begin** where it **ended**	***nabdʔu** min ḫaytu **intahā***
3	every **beginning** has an **end**	*likulli **bidāyah nihāyah***
3	the best **defending** is **attacking**	*afḍal wasīlah **liddifāʕi alhuʤūm***
2	**death** is part of **life**	***almawt** sunnatu **alḥayāt***
2	**right** is clear and **wrong** is fuzzy	***alḫaqq** ʔablaʤ **walbāṭil** laʤlaʤ*
1	saying what is **wrong** vs keeping silent on **right**	*almutakallim **bilbāṭil** wa assākit ʕan **alḫaq***
1	**wrong** is one hour, **right** is forever	***albāṭilu** sāʕah **walḫaq** liqiyām assāʕah*
1	let us see what's **right** as right and what's **wrong** as wrong	*yurīnā **alḫaq** ḫaqqan **walbāṭila** bāṭilan*

Some of the expressions in Table 5.2 are adaptations from verses from the Qura'an, such as *ḍahara **alḫaqq** wazahaqa **albāṭil*** '**right** prospers and **wrong** perishes', or sayings by famous people, such as ***ḫaqqun** yrādu bihi **bāṭil*** 'a **wrong** disguised as **right**'. Some of them are expressions that were used so many times that they are considered clichés, such as *masʔalat **ḥayāt** ʔaw **mawt*** 'issue of **life** or **death**'. The second type is used more in the All Newspaper corpus in arabiCorpus. Sentences (156) - (157) give examples of the expressions in my data.

(156) ليس هناك ـ إذن ـ على امتداد عمر الإنسان طال أو قصر ـ ما هو أقسى من عقوق المحبة والمودة (arabiCorpus: *Hayat97*, ref: GEN1997:15107)

laysa hunāka ʔiḏan ʕalā imtidād ʕumur al-ʔinsān **ṭāla** ʔaw
not there so on length age the-human **lengthened** or
qaṣur mā huwa ʔaqsā min ʕuqūq al-maḥabbah wa-l-mawaddah
shortened what it harder than disloyalty the-love and-the-compassion

Therefore, there is nothing, however long or short a person lives, harder than disloyalty of loved ones.

(157) إن عمر جابر الأحمد مهما طال الزمن هو عمر إنسان يطول أو يقصر ولكن الأبقى هو عمر الكويت والأهم بقاء الكويت (arabiCorpus: *Watan02*, ref: 011215t43671LOCL)

ʔinna ʕumar ǧābir alʔaḥmad mahmā ṭāla a-zzaman huwa ʕumru ʔinsān
indeed age Jabir Al-Ahmed however be.long the-time it age human
yaṭūlu ʔaw **yaqṣur** wa-lākin al-ʔabqā huwa ʕumru alkuwaīt
be.long or **be.short** and-but the-staying it age Kuwait
wa-l-ʔaham baqāʔu alkuwaīt
and-the-important staying Kuwait

Jabir Al-Ahmed's age, however long it is, is a human age, it might be long or short, but what will stay is the age of Kuwait, and the most important is the stability of Kuwait.

The expressions in this category can vary in different cases and inflections. That is to say, the idioms are not fixed in terms of their morphology, but rather adaptable according to their distribution in the sentence. In sentence (156), for example, the antonymous verbs طال أو قصر 'be it long or short' refer to a period of time that might be long and might be short, but length is not important. The period of time referred to in this sentence is a person's age. Sentence (157) also uses the same pair of antonyms in the same frame to refer to a period of time, also a person's age in this sentence. However, the verb form in these two sentences is different. In (156), the verbs are in the perfective form while in (157), they are in the imperfective. They are counted as one idiomatic expression.

The sentences (158) - (161) below show other idiomatic expressions with antonymous pairs.

(158) والإثارة غير الموفقة والمفضوحة لهذا الموضوع وفق القاعدة التي تقول ﴿حق يراد به :arabiCorpus) باطل﴾، وبانطباق مع المثل المعروف ﴿إن لم تستح فافعل ما شئت﴾ *Thawra*, ref: kuttab34229)

wa-l-ʔitārah   ġayr al-muwafaqah wa-l-mafđūḫah   li-hāđā al-mauđūʕi
and-the-thrill not the-successful and-the-exposed for-this the-subject
wifqa   al-qāʕidah allatī taqūl **ḥaqqun** yurādu bi-hi **bāṭil**
according the-rule   that says **right**   wanted in-it **wrong**
wa-b-intibāqin   maʕa al-matal   al-maʕrūf ʔin lam tastaḫi   fa-ifʕal
and-in-agreement with the-proverb the-known if   not you.be.shy then-do
mā   šiʔt
what you.wanted

and the unsuccessful exposed thrill for this subject according to the rule that says a right intended for a wrong purpose and in agreement with the known proverb if you are not shy do as you like.

(159) وكلنا يعرف أن من يطلب الموت توهب له الحياة (arTenTen12: doc.id: 534451, s.id: 13326655)

wa-kullu-nā yaʕrif ʔanna man yaṭlub **al-mawt**   tūhab   la-hu   **al-ḫayāt**
and-all-us   know that   who pursues **the-death** be.gifted for-him **the-life**

and we all know that who pursues death is endowed with life.

(160) أن مسار الخارجية المصرية تجاه القضية الفلسطينية لن ينحرف عن الطريق الذي رسمه ,arTenTen12: doc.id: 877851) الوزير السابق نبيل العربي وسنبدأ من حيث انتهى s.id: 21331622)

ʔanna masār al-xāriȶiyyah al-maṣriyyah tiȶāh   al-qaḍiyyah al-filisṭīniyyah
that path the-foreign   the-Egyptian towards the-issue   the-Palestinian
lan yanḫarif ʕan a-ṭṭarīq allaḏī rasama-hu al-wazīr   a-ssābiq   nabīl
not deviate from the-way that   drew-it   the-minister the-former Nabeel
alʕarabī **wa-sanabdaʔu**   min ḫaytu **ʔintahā**
Alarabi **and-we.will.begin** from where **ended**

that the path of the Egyptian foreign policy will not deviate from the way drawn by the former minister Nabeel Al-Arabi and we will begin from where he ended.

(161) فالحق أبلج والباطل لجلج لمن أراد أن يفهم ويعي (arTenTen12: doc.id: 2017551, s.id: 46742748)

fa-l-ḥaqqu ʔablaǧ **wa-l-bāṭilu** laǧlaǧ liman ʔarāda ʔan yafham
for-the-right clear **and-the-wrong** stutter for-who wanted to understand
wa-yaʕī
and-comprehend

right is clear and wrong is blurry, for those who want to understand and comprehend

The four sentences above are examples of idiomatic expressions making use of antonymous pairs. Sentence (158) uses the expression *ḥaqqun yurādu bi-hi bāṭil* 'a right intended for a wrong purpose'. This is a saying first said by Ali bin Abi Talib, one of the Prophet's followers, which is still used for legitimate/legal means used to achieve illegitimate/illegal goals. The idiom in sentence (159) contrasts 'life' and 'death' in a conditional sentence, whoever asks for death will get life. Similarly, sentence (160) uses the expression 'to begin where something ended' to refer to continuing on the same strategy of previous management. Lastly, sentence (161) makes use of a famous saying about 'right' and 'wrong' which was first said by Aktham Attamimi who died in 630 AD. This saying states that right is clear and one attempts it with no hesitation, which is opposite to wrong because one hesitates before attempting it.

These expressions make use of other schematic constructions from the categories in my classification. They are grouped in this category because they are multi-word expressions has acquired an idiomatic status.

5.11 Concession

The category Concession is not present in Jones's (2002) categorization of antonymy functions, but it is present in Davies's (2013). The reason behind its absence in Jones's 2002 (and Mettinger's 1994) data according to Davies (2013) is that both Jones and Mettinger focus on canonical antonyms expressed by words rather than non-canonical phrases. Concessive particles, however, 'involve the triggering of contrasts between *circumstances* expressed usually through whole phrases' (Davies, 2010: 72). However, concessive sentences hosting canonical antonym pairs were present in Jones's (2002) data.

They were classified under Coordinated Antonymy. I assign a category for concessive contrastive devices because they enhance the contrast already present in the antonym pair. The number of sentences in this category is 61 sentences (32 sentences in arabi-Corpus and 28 in arTenTen12) which makes 2% of the dataset (2.1% of the arabiCorpus and 1.9% of the arTenTen12).

'Adversative/concessive clauses contrast a previous statement or piece of discourse' (Badawi et al., 2013: 611). This is expressed by words with the meaning of *although*, *but*, and *despite*. Adversative devices are a mix of coordinators, such as ولكن *walākin* 'but', and subordinators, such as بالرغم من *birruġmi min* 'even though'. They earned a category of their own due to the common meaning shared by them.

Some of the concessive particles in Arabic include لكن *lākin* 'but', بالرغم من *birruġmi min* 'even though', إلا أن *ʔillā ʔanna* 'except that', حتى ولو *ḥattā walaw* 'even though', رغم *ruġma* 'although', لكنّ *lākinna* 'but', and وإن *waʔin* 'and even'. This list is not inclusive of all adversative devices; it includes the ones used in the dataset.

The adversative particles لكن *lākin* and لكنّ *lākinna* share their written form. The difference between them in usage is that *lākin* is a connector that connects two sentences, while *lākinna* 'requires a dependant form in its noun and focuses on the subject of the sentence' (Badawi et al., 2013: 322). For this reason, *lākinna* is always followed by a noun, or a clitic pronoun, as is shown in (162) and (163) below.

(162) أناقش قضية بدأت صغيرة ولكنها سوف تكبر وتكبر حتى تصبح صداعاً في رأس الحكومة
(arabiCorpus: *Masri2010*, ref: A260488I1815S297D28-Jun-2010)

ʔunāqišu qaḍiyyatan badaʔat **ṣaġīrah** wa-lākinna-hā sawfa **takburu**
I.discuss issue started **small** and-but-it will **get.bigger**
wa-takburu ḥattā tuṣbiḥu ṣudāʕan fī raʔs al-ḥukūmah
and-get.bigger until it.becomes a.headache in head the-government

I am discussing an issue that started small but it will grow and grow until it is a headache in the government's head.

(163) الرائع الصغير جداً في حجمه ولكن عمله كبير جداً فهو يقوم بتخزين كل ... :arTenTen12)
doc.id: 2331001, s.id: 53537613)

a-rrāʔiʕu   **a-ṣṣaġīru** ʤiddan fī ḥaʤmih wa-lākinna ʕamala-hu **kabīrun**
the-fantastic **the-small** very   in its.size and-but   work-its   **big**
ʤiddan fa-huwa yaqūmu bi-taxzīni kulli ...
very   then-it does   in-save every

which is fantastic and very small in its size but what it does is very big because
it stores

The example in (162) talks about an issue that started small but will not stay that way.
The phrase ولكنها سوف تكبر *walākinnahā sawfa takbur* 'but it will grow' show how the
word *lākin* focuses on the subject. It has a clitic pronoun that refers to the subject. The
antonyms here are not of the same word class. The word صغيرة *ṣaġīrah* 'small' is a
predicative adjective describing the subject 'issue'. However, its antonym تكبر *takbur*
'get bigger' is a verb in the imperfective mood. In (163) the speaker refers to a gadget
that is small in SIZE but what it does is big because it has a large memory. This is a type
of concession because the expected proposition here is that a small size is an indicator of
small capacity. There is an ancillary opposition between size and ability created by the
antonyms كبير *kabīr* 'big' and صغير *ṣaġīr* 'small'.

Sentences in (164) - (166) below provide examples in which two statements with a
co-occurring antonymous pair contrast each other using other adversative devices.

(164) قادرة على اتخاذ قرار **السلام** وإنما تريد جر المنطقة إلى **حرب** أخرى :arabiCorpus)
Hayat96, ref: GEN1996:12999)

qādirah ʕalā ittixāḏi qarāri **a-ssalām** wa-ʔnnamā turīdu ʤarra
able   to taking decision **the-peace** and-but   it.want pulling
al-manṭiqati ʔilā **harbin** ʔuxrā
the-region to **war**   another

It was able to take the decision of peace but it wants to pull the region into
another war.

(165) الشباب في الجزائر رغم قوتهم العددية فإن حضورهم داخل الأحزاب لازال ضعيفاً

(arTenTen12: doc.id: 2921151, s.id: 66101056)

a-ššabābu fī alǧazāʔir ruġma **quwati-him**   al-ʕadadiyyah fa-ʔinna
the-youth in Algeria   though **strength-their** the-number   then-indeed
huđūra-hum dāxil al-ʔaḥzāb lāzāla **đaʕīfan**
presence-their inside the-parties still   **weak**

Although youth in Algeria have a numerical strength, their presence in political parties is still weak.

(166) وحتى لو بقى الكاتب **حياً** فهو في عداد **الأموات** (arabiCorpus: *Hayat97*, ref: GEN1997:42877)

waḥattā law baqā lkātibu **hayyan** fahuwa fī ʕidādi **lʔamwāt**
and.even if   stayed writer **alive**   then.he in number **dead**

and even if the writer stays alive, he will be considered dead.

Sentence (164) refers to a country that it is able to enforce peace, but is willing to cause war. The two clauses are joined by the concessive particle إنما *ʔinnamā* which can be translated to English 'but' or 'however'. Another concessive device, رغم ... فإن *ruġma ... faʔinna* 'although' is used in (165). The strength of the youth is contrasted with their weak presence in political parties. The concessive device here consists of two parts one introduces the first clause and the other introduces the second clause. Sentence (166) also makes use of two part concessive device حتى لو ... فـ *ḥattā law ... fa* 'even if'. The sentence refers to a writer who was near a bomb explosion, who would be as good as dead even if he were still alive, because he would be severely injured.

Jones (2002) classified sentences with adversative 'but' under the residual frameworks for coordinated antonymy. Jones even replaces *but* with *and* to show that what is happening in this sentence is a coordination of two parts. However, unlike other coordinating devices, *but* signals contrast which makes it one of the concessive particles, too. Moreover, putting *and* in place of *but* in the sentence does change the meaning. An example

from Jones's data is presented in (167) below. When the two clauses are coordinated with *and* as in (167a), there is no presupposition that not encouraging something would mean discouraging it. On the other hand, when the two clauses are in a concessive relation as in (167b), not encouraging something presupposes that it is discouraged, and this is what the second part of the sentence negates.

(167) a. They don't encourage it and they don't discourage it either.

   b. They don't encourage it but they don't discourage it either.(In Jones, 2002: 187)

Unlike coordinating with *and*, coordinating with *but* has a concessive meaning. According to Quirk et al. (1972), coordination with concessive but entails that 'in the light of the circumstance in the dependant clause, that in the main clause is surprising' (Quirk et al., 1972: 745). Therefore, *but* is included in the Concessive category, along with other adversative connectors.

5.12   Specification

Jones (2002) assigned the category Specification for the sixteen sentences in his data where a number specifies a quantity for the antonym pair. I follow Jones in assigning this category because the numbers are not contrasted but 'provide further information' to the sentence (Jones, 2002: 99). The number of sentences in this category in my data is 53 (twelve in the arTenTen12 data and 41 in the arabiCorpus data) which constitutes 1.8% of the total number of the dataset. Examples from this category are listed in (168) - (171).

(168) بدل البحث عن العمل حتى يوم أمس منهم ٢١٧٢ أعزبا و ٢٤٢ متزوجا :arabiCorpus)
Watan02, ref: 010703t2109LOCL)

badal   al-ba<u>h</u>t   ʕan al-ʕamal <u>h</u>attā yawm ʔams   min-hum   2712
allowance the-searching for the-work until day   yesterday from-them 2712
ʔaʕzaban wa 242 **mutazawwiʤan**
unmarried and 242 **married**

unemployment allowance until yesterday are 2712 unmarried persons and 242 married persons.

(169) وأضاف جمعة أن سعر العداد القديم ٥٧١ جنيها والجديد ٧٧٢ جنيها، ويتم تقسيط
سعره على الفواتير (arabiCorpus: *Masri2010*, ref: A253732I1761S294D5-May-2010)

wa-ʔđāfa   ʤumʕah ʔanna siʕr al-ʕaddād **al-qadīm** 175 ʤunayhan
and-added Jum'ah that   price the-meter **the-old**   175 pounds
wa-l-ʤadīd   270 ʤunayhan wa-yatimmu taqsī<u>t</u>   siʕru-h ʕalā al-fawātīr
and-the-new 270 pound   and-being   instalment price-its on   the-bills

and Jum'ah added that the price of the old meter is 175 pounds and the new one 270 pounds, and the price appears in instalments on the bills.

(170) وعددهم ٥٦١ شخصا منهم ٤٥ ذكرا و ١١١ أنثى وفقا للمقدم القطاونة :arTenTen12)
doc.id: 619701, s.id: 15346953)

wa-ʕadadu-hum   165 šax<u>s</u>an min-hum   54 **dakaran** wa 111 **ʔun<u>t</u>ā**
and-number-them 165 person from-them 54 **male**   and 111 **female**
wifqan   li-l-muqaddam alqa<u>t</u>āwnah
according to-the-major   Alqatawna

they were 165 persons of whom 54 male and 111 female, according to Major Alqatawna

بلغ عددهم الإجمالي ٢٧٥ موظفا بواقع ١٨٦ من كبار الموظفين و ٩٨ من صغار (171)
الموظفين (arTenTen12: doc.id: 3701351, s.id: 82122637)

balaġa ʕadadu-hum al-ʔiǧmālī 275 muwaḍafan biwāqiʕi 186 min **kibār**
reached number-them the-total 275 employee by 186 from **big**
al-muwaḍafīn wa 89 min **ṣiġār** al-muwaḍafīn
the-staff and 89 from **small** the-staff

the total number was 275 employee: 186 of the senior staff and 89 of the junior staff

The four sentences cited above are typical of all fifty sentences in this category. The frame used is *X and Y* and the antonymous pair are numerically quantified. I do not present an explanation of each sentence separately because they are similar to each other.

5.13 Unity

The category Unity includes sentences that treat the antonymous pair as a unit and not as two different words. The pair occurs in the frame *X and Y*. Jones (2002) points to the inclusiveness apparent in these sentences because of this frame. However, 'this inclusiveness is so familiar that it seems almost over-inclusive' (Jones, 2002: 100). The number of sentences found in Jones's database is very small (only seven) compared to the sentences found in my Arabic database (51 sentences). Studies on other languages also found a small number of sentences in this category, and therefore assigned this category in the residual sentences. In Swedish, for example only 15 sentences were found out of 4300 analysed sentences (Murphy et al., 2009).

The difference in number between Arabic data and the data of English (or other investigated languages) cannot be attributed to removing the Ancillary Antonymy category from my classification, because the frame *X and Y* used in both languages includes one-word antonymous pairs. The reason behind this difference remains unexplained, but can be due to cultural effects as will be treated in section 8.2. However, Jones found that this function tends to be triggered by a noun preceding the pair. Therefore, he expands the frame to be *n of X and Y*, where *n* refers to the noun triggering this function, in order to account for the majority of the sentences in this category (Jones, 2002: 100).

Most of the sentences in my data follow the same frame provided by Jones (2002). The difference is that an annexation structure is used corresponding to the English *n of*. An important difference between Unity and Coordination appears consistently in the noun preceding the antonyms. In Unity, this noun is always singular. Sentence (172) is an example of Unity of antonyms; in contrast, sentence (173) is from the category of Inclusiveness. A comparison between the two shows why this singular noun is an important part of the frame.

(172) مما يعيد من حسابات بعض الدول عند النظر إلى الأردن من زاوية القوة والضعف،
(arTenTen12: doc.id:376201 , s.id:9583744)

mimā yuʕīdu min ẖisābaāt baʕḍu a-dduwal ʕinda a-nnaḍar ʔilā
which repeat from arrangements some the-countries when the-looking to
alʔurdun min zāwiyat **al-quwwah w-a-ḍḍaʕf**
Jordan from angle **the-strength and-the-weakness**

which makes some countries reconsider when looking at Jordan from the angle of strength and weakness

(173) ووضع مختار يده على نقاط القوة والضعف، وبدأ في تدريب لاعبيه على كيفية مواجهته،
(arabiCorpus: *Masri2010*, ref: A277769I1959S297D19-Nov-2010)

wa-waḍaʕa muxtār yada-hu ʕalā niqāṭ **al-quwwah w-a-ḍḍaʕf**
and-put Mukhtar hand-his on points **the-strength and-the-weakness**
wa-yabdʔu fī tadrīb lāʕibī-h ʕalā kayfiyat muwāǧahat-h
and-started in training players-his on how facing-it

Mukhtar put his finger on the points of strengths and weaknesses and started training his players on how to confront...

In sentence (172), strength and weakness are represented as one unit. This is signalled by the word زاوية *zāwiyah* 'angle', which brings to mind the scale of the angle where Jordan is viewed. There is no reference to Jordan being either strong or weak (Binarized Option) or both (Simultaneity). The pair as a unit refers to the scale the writer points to. This scale has its own one angle. This example contrasts with the one in (173) where

the same pair of antonyms are used. In (173), the pair 'strength and weakness' do not act as a unit but there is an inclusiveness of both of them. The football coach identified some points of strength and other points of weakness. The difference between the two sentences is the number of the noun in the annexation structure (the noun in Jones's *n of X and Y*). In (172) it is singular while in (173) it is plural.

Therefore, in sentences included in the category Unity, the *X and Y* phrase might be replaceable by a single word (if one is available) that describes the dimension, for example, in (172) one is reconsidering the strengths of Jordan - or the 'strategic position' of Jordan.

The number of sentences in this category is 51 (26 in the arabiCorpus and 25 in the arTenTen12) comprising 1.7% of my data and found in similar percentages in both the newspaper and on-line corpora. The sentences in (174) - (178) below show other examples of pairs of antonyms functioning as a unit.

(174) ونتهز هذه المناسبة الوطنية لكي نحيي صاحب قرار الحرب والسلام الزعيم الراحل أنور
السادات (arabiCorpus: *Ahram99*, ref: 122099OPIN04)

> wa-nantahiz hādihi al-munāsabah al-waṭaniyah likay nuḥyyī ṣāḥib qarār
> and-we.seize this   the-occasion the-national to   salute owner decision
> **al-ḥarb wa-a-ssalām**   a-zzaʕīm a-rrāḥil ʔanwar assādāt
> **the-war and-the-peace** the-chief the-late Anwar Assadat

> We seize the opportunity of this national occasion to salute the late war-and-peace decision maker Anwar Assadat.[owner of the decision]

(175) وما نلبث أن نراه في حالة تأمل عميق في مسألة الحياة والموت راغبا في الإقدام على فعل
جليل (arTenTen12: doc.id: 3475351, s.id: 77328813)

wa-mā   nalbat̲ ʔan narā-h fī h̲ālati taʔamulin   ʕamīq fī masʔalati
and-not we.keep to   see-him in state contemplation deep in issue
al-h̲ayāt wa-l-mawt   rāġiban fī al-ʔiqdām ʕalā fiʕlin d͡ʒalīl
the-life and-the-death willing in the-plunge on   doing glorious

We keep seeing him in a state of deep contemplation on the issue of life and death
willing to do something glorious

(176) تحت قيادة أنور سلامة الذي يقود انتفاضة حقيقية في أداء الفريق بإصراره على تطبيق
سياسة الثواب والعقاب منذ توليه المهمة (arTenTen12: doc.id: 1644301, s.id:
38524201)

tah̲ta qiyādat   ʔawar salāmah allad̲ī yaqūdu intifād̲ah h̲aqīqiyah fī
under leadership Anwar Salama who   leads   upheaval real   in
ʔadāʔi   al-farīq bi-ʔiṣrāri-h   ʕalā taṭbīq   siyāsat **a-t̲t̲awāb**
performance the-team in-insistence-his on   application policy **the-reward**
wa-l-ʕiqāb   mund̲u tawallī-h   al-muhimmah
and-the-punishment since   assuming-his the-mission

under the leadership of Anwar Salama who leads a real upheaval in the team's
performance with his insistence to apply the policy of reward and punishment
since taking the mission.

The three sentences cited above give examples of antonyms as units. They all follow the

annexation structure. In sentence (174), for example, Anwar Assadat, Egypt's former

president, is referred to as the owner of the decision of war and peace. The antonymous

pair refer to one entity. Similarly, sentence (175), also, refers to the one issue of life and

death and sentence (176) refers to the policy of reward and punishment.

Some sentences do not have the noun preceding the frame but still give the meaning

of a unified antonymous pair. In these sentences the antonym pair consists of two definite

noun antonyms. Definiteness can be by procliticisation and marked by the prefix article

ال 'al-' as in sentence (177), or by encliticisation using a clitic pronoun as in (178).

(177) وعن الفوز والخسارة تحدث الرفاعي: تفاءلوا بالخير تجدوه (arabiCorpus: *Thawra*, ref: archive37136)

wa-ʕan **al-fawz** **wa-l-xasārah** taḥaddaṯ arrifāʕī tafāʔal-ū
and-about **the-winning and-the-losing** spoke AlRifa'i be.optimistic-you
bi-l-xayri taǧid-ū-h
in-the-goodness find-you-it

and on [the topic of] winning and losing AlRifa'i said: expect good and you'll find it.

(178) ففي الحالين نحن وأعمارنا وصراعاتنا، غنانا وفقرنا، علمنا وجهلنا، وكذا نصوصنا وأحبارنا، دمنا أو دماؤهم، حلمنا أو أحلامهم ما دام الإنسان لم يعد إنساناً (arabiCorpus: *Ghad01*, ref: A{442122}S{MainPage}D03-28-2011)

fa-fī al-ḥālayn naḥnu wa-ʔaʕmāru-nā wa-ṣirāʕāti-nā **ġinā-nā**
for-in the-two.situations we wa-lives-our and-struggles-our **richness-our**
wa-faqru-nā ʕilmu-nā wa-ǧahlu-nā wa-kaḏā nuṣūṣu-nā
and-poverty-our knowledge-our and-ignorance-our and-also scriptures-our
wa-ʔaḥbāru-nā damu-nā ʔaw dimāʔu-hum ḥulmu-nā ʔaw ʔḥlāmu-hum mā
and-scholars-our blood-our or blood-their mind-our or minds-their that
dāma al-ʔinsānu lam yaʕud ʔinsānan
still the-human not return human

in both situations we and our lives and our struggles, our wealth and poverty, our knowledge and ignorance, and also our scriptures and scholars, our blood or their blood, our mind or their minds, as long as a human is no longer a human.

In sentence (177), winning and losing are referred to as one entity. There is no noun preceding them such as 'the issue of' or 'the policy of'. Nevertheless, it can be understood from the sentence that when speaking about this unit it is best to be optimistic.

Sentence (178) exhibits a series of antonym pairs. Some of these pairs are coordinated to indicate inclusiveness, and others are presented as units. The writer here wonders what the difference is between death and a life with unfulfilled dreams if the end is the same (not achieving one's goals). The comparison involves many aspects of life in both situations. The pair in bold غنانا وفقرنا *ġinā-nā wa-faqrinā* 'our richness and poverty' refers to one's financial status. This status is the same when one is dead or when one is living a life they did not choose. Similarly, other pairs like علمنا وجهلنا *ʕilmu-nā wa-ǧahlu-nā* 'our knowledge and ignorance' and نصوصنا وأحبارنا *nuṣūṣunā wa-ʔaḥbārunā* 'our scriptures and scholars' are presented as one. In these phrases the scale is referred

to rather than the individual positions on the scale. On the other hand, the two pairs

دمنا أو دماؤهم حلمنا وأحلامهم *damunā ʔaw dimāʔuhum* 'our blood or their blood' and حلمنا وأحلامهم *ẖulmunā ʔaw ʔẖlāmuhum* 'our mind or their minds' use the frame *X or Y*. In these two phrases the words are not presented as units, but coordinated. Whether our blood or their blood is shed, our minds or theirs are sane, all these are insignificant if a human being is no longer a human. Then death and life are the same.

The function of Unity will be explored more in chapter 7 using SBCG.

5.14   Distinction

The category Distinction is similar to Jones's (2002) category Distinguished Antonymy. Jones defines this category as 'the co-occurrence of an antonymous pair within a framework that alludes to the inherent semantic dissimilarity of those words' (Jones, 2002: 81). The sentences in this category comprise 5.4% of Jones's data; but in my data there are only 51 sentences under Distinction (21 sentences in the arabiCorpus and 30 sentences in the arTenTen12), which makes 1.7% of the dataset.

The sentences in this category might be seemingly similar to some sentences in the category Comparison. A sub-type of Comparison is comparing two antonyms to show the difference between them. However, the category Distinction includes sentences where the two antonyms act as two ends of a certain pole and the point between them is referred to. Sentences (179) - (181) below show examples of this category.

(179) نتيجة لازدياد الواقع الإجتماعي تأزما واتساع الهوة بين الأغنياء والفقراء وارتفاع نسب
البطالة وصعوبة إيجاد السكن (arTenTen12: doc.id: 3650651, s.id: 81085558)

natīǧatan l-izdiyād   al-wāqiʕu al-ʔiǧtimāʕī taʔazuman wa-ittisāʕu
result   for-increase the-reality the-social   aggravation and-widening
al-huwah bayna   **al-ʔaġniyāʔa wa-l-fuqarāʔa** wa-irtifāʕu   nisab
the-gap   between **the-rich   and-the-poor** and-increasing percentage
al-baṭālah   wa-ṣuʕūbat ʔīǧād a-ssakan
the-unemployment and-difficulty finding the-housing

as a result of the increase of the aggravation of social reality, widening of the
gap between the rich and the poor, the increase of unemployment rates, and the
difficulty of finding housing.

(180) (arabiCorpus: ويشعر برتون في النهاية باشمئزاز للهوة بين الحياة الخاصة والعامة لرئيسه
Hayat96, ref: GEN1996:4706)

wa-yašʕur brutūn fī a-nnihāyah b-išmiʔzāz li-l-huwah bayna   al-ḥayāt
and-feel   Burton in the-end   in-disgust for-the-gap between the-life
al-xāṣah   wa-l-ʕāmah   li-raʔīsi-h
the-private and-the-public for-boss-his

at the end Burton is disgusted by the gap between the private and public life of
his boss.

(181) (arabiCorpus: فأصبح الفرق بين هذه المناطق والعاصمة كالفرق بين أفقر الدول وأغناها
Ghad02, ref: A{418692}S{Jordan}D03-28-2011)

fa-ʔaṣbaḫa al-farq   bayna   hāḏihi al-manāṭiq wa-l-ʕāṣimah
so-became the-difference between these the-districts and-the-capital
ka-l-farq   bayna   **ʔafqar** a-dduwal **wa-ʔaġnā-hā**
like-the-difference between **poorest** the-countries **and-richest-its**

so the difference between these districts and the capital became like the difference
between the poorest and the richest of countries.

In Jones's data, the sentences under the category Distinguished Antonymy mostly use
the frames *the difference between X and Y*, *separating X and Y*, and *a gap between X and
Y*. In the Arabic data, similar frames are used. The sentences in (179) and (180) use the
words الهوة بين *alhuwah bayna* 'the gap between'. Sentence (181) uses the words الفرق
بين *alfarq bayna* 'the difference between'.

The category Distinction is one of the categories that do not differ in both the MSA dataset and Jones's (2002) dataset.

5.15 Association

The category Association includes sentences where a link or tie between the pair of antonyms is referred to. Jones refers to this function of antonymy as the 'antithesis of distinction' (Jones, 2002: 98). Only seventeen sentences are found in Jones's (2002) category. In Swedish, however, 1.8% of their data is under the category Association. In the Arabic data in this study, 51 sentences showed an association between a pair of antonyms (34 in the arabiCorpus and seventeen in the arTenTen12) which makes 1.7% of the database.

(182) وأن تكون العلاقة بين الأسرتين الصغيرة والكبيرة مبنية على المعاملة الطيبة والاحترام
والتواضع مهما كان الشخص كبيرا أو صغيرا (arabiCorpus: *Ghad01*, ref:
A{473172}S{Jordan} D05-10-2011)

wa-ʔan takūn al-ʕalāqah   bayna   al-ʔusratayīn **a-ṣṣaġīrah**
and-that be   the-relationship between the-two.families **the-small**
wa-l-kabīrah mabniyah ʕalā al-muʕāmalah a-ṭṭayibah wa-l-ʔḫtirām
and-the-big based   on   the-treatment the-nice   and-the-respect
w-a-tawāḍuʕi   mahmā kāna a-ššaxṣu   kabīran ʔaw ṣaġīran
and-the-modesty however be   the-person old   or   young

and that the relationship between small and big families be based on nice treatment, respect, and modesty whether the person is old or young.

(183) في إطار تمويل مشاريع الشراكة بين القطاعين العام والخاص وحول مستقبل السياسة
(arabiCorpus: *Ghad01*, ref: A{477722}S{OurLife}D06-01-2011) النقدية في البلاد

fī ʔṭār tamwīl mašārīʕi a-ššarākah bayna al-qiṭāʕaīn **al-ʕām**
in frame funding enterprise the-partnership between the-sectors **the-public**
wa-l-xāṣ wa-ḫawla mustaqbal a-ssiyāsah a-nnaqdiyah fī
and-the-private and-around future the-policy the-monetary in
al-bilād
the-country

as part of funding the enterprise of partnership between the public and private
sectors and the future of monetary policy in the country

(184) حيث تنمي روح الإخاء بين الأغنياء والفقراء (arTenTen12: doc.id: 642751, s.id:
15884797)

ḫaytu tunammī rūḫa al-ʔixāʔi bayna **al-ʔaġniyāʔi wa-l-fuqarāʔ**
where nurture soul the-brotherhood between **the-rich and-the-poor**

because this nurtures the brotherhood between the rich and the poor

The sentences cited above show an association between a pair of antonyms. In sentence
(182), small and big families have a relationship, in sentence (183), public and private
sectors share an enterprise, and in sentence (184), the rich and poor have a brotherhood
that brings them together.

Association is a category that differs from Jones's (2002) Association category in
proportion only.

5.16   Conflict

Jones (2002) assigns the category Conflict for eighteen sentences in his data. These
sentences present an 'antonym in direct conflict with another' (Jones, 2002: 95). The
frames used in his English data are *X versus Y* or *the clash/conflict of X and Y*. The

Arabic data are similar in this respect. Some of the sentences use ضد *ḍidd* 'versus', as in (187), and some use words like *almuwāǧahah* and النزاع *annizāʕu* 'confrontation', as in (185) and (186). The number of sentences in this category is 47 (31 sentences from the arabiCorpus and sixteen sentences from the arTenTen12) which makes 1.5% of the dataset.

(185) التفوق العددي لا أهمية له حين المواجهة بين الحق والباطل (arTenTen12: doc.id: 54551, s.id: 1461191)

a-ttafawwuq   al-ʕadadī   lā ʔahammiyata la-h   ḥīna   al-muwāǧahah
the-superiority the-numerical no importance   to-it when the-confrontation
bayna   **al-ḥaqq   wa-l-bāṭil**
between **the-right and-the-wrong**

numerical superiority is not important when it comes to the confrontation between right and wrong.

(186) بعدما اتفقت الوفود على تأجيل النزاع بين الدول الغنية والفقيرة بشأن مستقبل (arabiCorpus: *Ghad02*, ref: A{404740}S{Arabs بروتوكول كيوتو حتى عام ٢٢ ٠١١ World}D03-06-2011)

baʕdamā ittafaqat al-wufūd   ʕalā taʔǧīl   a-nnizāʕi   bayna
after   agreed   the-delegations on   postponing the-conflict between
a-dduwal   **al-ġanīyah wa-l-faqīrah** bišaʔin mustaqbal brutukūl kyutu
the-countries **the-rich   and-the-poor** about   future   Protocol Kyoto
ḥatā ʕām 2011
until year 2011

after the delegations had agreed on postponing the conflict between the rich and poor countries on the Kyoto Protocol until 2011.

(187) مواصلا تفكيك لغم تلو الآخر، واقفا إلى جانب الحياة ضد الموت، وإلى جانب العراقيين أنفسهم، الذين تهددهم الألغام. (arabiCorpus: *Shuruq,* ref: A47093WkmAlrmzyD7-Apr-2010)

muwāṣilan tafkīk   luġum tulwa al-āxar   wāqifan ʔlā ǧānib **al-ḥayāt**
continuing disarming mine   after the-other standing to side   **the-life**
ḍidda **al-mawt**   wa-ʔilā ǧānib al-ʕrāqyīn ʔanfusa-hum alladīna
against **the-death** and-to side   the-Iraqis selves-their who
tuhadidu-hum al-ʔalġām
threatened   the-mines

continuing to disarm one mine after the other, standing next to life against death, and next to the Iraqis themselves, who are threatened by the mines.

The sentences in (185) - (187) show a type of conflict between the antonymous pairs. In (185) there is a confrontation between right and wrong. In (186), there is نزاع 'conflict' between rich and poor countries. Sentence (187), uses ضد 'against' to refer to the conflict between life against death.

5.17   Replacive

In the category Replacive, the schematic construction hosting antonyms indicates substitution or replacement. It is a category similar to Transition, the difference is that in Transition there is movement from one situation to its opposite or a gradual change from one antonym to the other. However, in Replacive, the referent of one antonym replaces the referent of the other, completely and without any transitional stages.

The framing-word used in all sentences in the replacive category is بدل *badal* 'substitute'. The English frame expressing this meaning is *X instead of Y*. This frame was included in Jones's (2002) category Negated Antonymy. Davies (2013), however, assigned it a different category which he labelled Replacive Opposition. This category includes the frames *X rather than Y* and *X instead of Y* as its typical frames. Davies describes

Replacive Opposition as a category that 'sits functionally somewhere in between the negatives and comparison' (Davies, 2013: 65) because Jones (2002) included the frame *X instead of Y* in Negated Antonymy and the frame *X rather than Y* in Comparative Antonymy. Davies calls this category Replacive Opposition following Quirk et al. (1972) where they explain that a replacive 'expresses an alternation to what has preceded [it]' (Quirk et al., 1972: 671).

In my data, replacive is expressed through بدل *badal* or بدلاً من *badalan min* 'instead (of)' 'lit. "as a substitute for"' (Badawi et al., 2005: 168). This frame is used in 40 sentences in my data (20 sentences in the arTenTen12 and 20 sentences in the arabiCorpus) accounting for 1.3% of my data. Examples of this use are listed in (188) - (192).

(188) (arTenTen12: المغرب في غنى عن هذه المشاريع ما دامت تخدم الصالح الخاص بدل العام
doc.id: 1804651, s.id: 42004892)

almaġrib fī ġinā   ʕan hādihi al-mašārīʕi mā dāmat taxdumu
Morocco in satisfaction of   this   the-projects that still   serve
a-ṣṣāliḥa **al-xāṣ**   badal **al-ʕām**
the-benefit **the-private** instead **the-public**

Morocco is in no need of these projects as long as they serve the private benefit instead of the public.

(189) وطالب المدرب الأندية البلجيكية بالدفاع عن دي كيرسميكر بدلا من مهاجمته
(arabiCorpus: *Masri2010*, ref: A243500I1677S297D10-Feb-2010)

wa-ṭālaba   al-mudarribu al-ʔandiyata al-balǧīkiyyah **b-i-ddifāʕi**
and-demanded the-coach   the-clubs   the-Belgian   **in-the-defending**
ʕan di kīrsmīkar   badalan min **muhāǧamati-h**
from De Keersmaeker instead of   **attacking-him**

The coach asked the Belgian clubs to defend De Keersmaeker instead of attacking him.

وقال: إن مصر غيرت مسار التاريخ في المنطقة عندما اختارت السلام بدلا من الحرب (190)
(arabiCorpus: *Ahram99*, ref: 031299FRON02)

wa-qāl ʔinna maṣr ġayyarat masāra a-ttārīx fī al-manṭiqah ʕindamā
and-said indeed Egypt change movement the-history in the-area when
ixtārat **a-ssalām** badalan min **al-ḫarb**
choose **the-peace** instead of **the-war**

He said that Egypt changed the movement of history in the region when it chose peace instead of war

وختم الأمير حديثه بالقول إن العالم اليوم يرفض أن تكون التهديدات بديلا من (191)
المفاوضات، والقوة بدل الدبلوماسية، والحرب بدل السلام (arabiCorpus: *Ghad01*, ref:
A{462707}S{MainPage}D03-31-2011)

wa-xatama al-ʔamīru ḥadīṯa-hu bi-l-qawli ʔinna al-ʕālama lyawm yarfiḍu
and-ended the-prince talk-his in-the-saying that the-world today refuse
ʔan takūna a-ttahdīdāt badīlan min al-mufāwaḍāt wa-l-quwwah badal
that be the-threats instead of the-negotiations and-the-force instead
a-ddublumāsiyah **wa-l-ḫarb** badal **a-ssalām**
the-diplomacy **and-the-war** instead **the-peace**

The prince ended his talk by saying that the world today refuses that threats would be in place of negotiations, force instead of diplomacy, war instead of peace

Sentence (188) uses بدل *badal* to show that the specified projects serve the 'private' interest instead of the 'public' interest. Sentence (189) uses بدلاً من *badalan min* to indicate that defending the footballer De Keersmaeker is preferred in place of attacking him. Similarly, السلام *assalām* 'peace' is chosen in place of الحرب *alḫarb* 'war' in (190). In sentence (191), three phrases use this frame. The third one الحرب بدل السلام *alḫarb badal assalām* 'war instead of peace' is the only one that hosts canonical antonyms. The other two trigger non-canonical opposition created by the frame and the parallelism of the words. An opposition is created between 'threats' and 'negotiations' where one is preferred over the other as a way of communication. A second non-canonical opposition is also created between 'force' and 'diplomacy' as means to achieve certain goals.

The sentence in (192) uses the same frame and expands it to include a longer phrase with love and compassion in one end of the frame and prejudice and hate in the other. In this sentence, an ancillary contrast is created between الرحمة *arraḥmah* 'compassion'

and التعصب *attaʕaṣṣub* 'prejudice' because each one of them was coordinated to an antonym.

(192) وهكذا نجد أن العقيدة قد عملت على قشع غيوم العصبية السوداء من القلوب، وقامت بتشكيل هوية اجتماعية جديدة للناس تقوم على الإيمان بالله ورسوله، وإشاعة مشاعر الحب والرحمة بدلا من مشاعر التعصب والكراهية (arTenTen12: doc.id: 3462401, s.id: 77068601)

wa-hākaḏā	naǧid	ʔanna	al-ʕaqīdah	qad ʕamalat ʕalā qašʕi	ġuyūm
and-thus	we.find	that	the-creed	- worked on removing	clouds

al-ʕaṣabiyyati a-ssawdāʔi min al-qulūb   wa-qāmat bi-taškīli   hawiyyah
the-racism   the-black   from the-hearts and-did   in-forming identity

ʔiǧtimāʕiyyah ǧadīdah l-i-nnās   taqūmu ʕalā al-ʔīmān bi-llāh
social   new   for-the-people based   on   the-faith in-Allah

wa-rasūlu-h   wa-ʔišāʕat   mašāʕir **al-ḥubbi** w-a-rraḥmah
and-messenger-his and-spreading feelings **the-love** and-the-compassion

badalan min mašāʕir i-ttaʕaṣub   **wa-l-karāhiyah**
instead of   feelings the-prejudice **and-the-hatred**

and thus we find that the Creed worked on removing the black clouds of racism from the hearts and formed a new social identity for people based on faith in Allah and His messenger and spreading feelings of love and compassion instead of prejudice and hatred.

Sentence (192) features the pair 'love/hatred' in the frame 'X instead of Y'. It states that people should spread love and compassion in place of prejudice and hatred. The sentence calls on people to act according to the preferred alternative.

The category Replacive is similar to negation in that one antonym functions to highlight the importance of the other. However, the sentences above show that there is an important difference that there is a choice between two antonyms and one of them is preferred.

5.18   Binarized Option

The Binarized Option category includes sentences where an option between the antonyms is referred to. This category is not one of Jones's (2002) categories, but was later introduced after investigation of antonyms across different corpora by Jones and Murphy (2005), where it was labelled Interrogative Antonymy and included sentences and questions like the one in (193). The category interrogative antonymy 'involves the forcing of a choice between the two members of the antonym pair' (Murphy et al., 2009: 2161).

(193)   Is she a good mommy or a bad mommy? (In Murphy and Jones, 2008: 424)

The coordination using 'or' does not indicate inclusiveness in this sentence. It indicates an option where only one of the antonyms is possible. Davies (2013) included this category in his classification of non-canonical opposition and labelled it Binarized Option, since Interrogative Antonymy suggests that all examples are questions. I follow Davies in calling this category Binarized Option. However, questions were found in my data and therefore, two subcategories are noted: Interrogative and non-interrogative.

   In my data, the frames used are أم *ʔam* 'or' or إما ... أو *ʔimmā ... ʔaw* 'either ... or'. The word أم *ʔam* is used in Arabic 'to imply an exclusive choice restricted to one of the alternatives' and أما *ʔmmā* 'renders a disjunctive coordination' (Badawi et al. 2004: 298-9). This group is a small one; only 21 sentences in the dataset indicate binarized option. Of these sentences eleven are from the arTenTen12 (eight questions and three sentences) and ten from the arabiCorpus (four questions and six sentences). The two types are discussed below.

interrogative

An option can be presented in a question, hence the name of this sub-category. The connector used in these questions is either أو *ʔaw* or أم *ʔam* 'or' as examples (194) - (196) show.

(194) أيهما أفضل أن أحب أو أكره؟ (arTenTen12: doc.id: 2151751, s.id: 49714191)

ʔayu-hmā   ʔafḍal ʔan ʔuḥibbu ʔaw ʔakrah
which-them best   that I.love   or   I.hate

Which is best: to love or to hate?

(195) هل المستقبل بالنسبة لليمن يعني السلام أو الحرب؟ (arTenTen12: doc.id: 212901, s.id: 5518460)

hal al-mustaqbal binnisbati li-lyaman yaʕnī a-ssalām ʔaw al-ḥarb
do the-future   concerning to-Yemen mean the-peace or   the-war

Does the future concerning Yemen mean peace or war?

(196) انظر هذا الفرخ ما أشبهه بأمه! قال: أمه ذكر أم أنثى؟ (arTenTen12: doc.id: 1666001, s.id: 38983694)

unḍur hāḏā al-farx   mā ʔašbaha-hu bi-ʔumm-ih qāla   ʔummu-hu ḏakar
look   this   the-chick how look.like-it in-mother-its he.said mother-its male
ʔam ʔunṯā
or   female

look how this chick looks like its mother, he said: is its mother male or female?

The question in (194) presents a choice between the two verbs أحب *ʔuḥibb* 'love' and أكره *ʔakrah* 'hate'. Only one choice is possible and as the word أفضل *ʔafḍal* 'better' suggests, only one is preferred. The question in (195) also presents a choice between two antonyms. The future of Yemen can either be one of peace or of one of war. In (196), the question uses أم *ʔam* to present the choice between male and female.

non-interrogative choice

The word أو *ʔaw* 'or' is used widely to indicate inclusiveness, as was discussed in the category Inclusiveness in section 5.1. However, in a small number of sentences, this

connector is preceded by إما *ʔimmā* 'either', as in (197) where it indicates option between the two antonyms.

(197) الدنيا تشبه لعبة في نهايتها إما فائز أو خاسر (arTenTen12: doc.id: 3072351, s.id: 69183067)

a-ddunyā tušbihu luʕbah fī nihāyati-hā ʔimmā **fāʔiz** ʔaw **xāsir**
the-life similar game in end-its either **winner** or **loser**

Life is like a game, in the end one is either a winner or a loser.

(198) كذلك فإني أرى عدم السماح بدخول المصارف الأجنبية في البداية إلا بالمشاركة إما مع القطاع الخاص أو مع القطاع العام (arabiCorpus: *Hayat96*, ref: BUS1996:36906)

kaḏālik fa-ʔinnī ʔarā ʕadam a-ssamāḥ bi-duxūl al-maṣārif
also so-I see not the-allowing in-introducing the-banks
al-ʔaǧnabiyyah fī al-bidāyah ʔillā bi-l-mušārakah ʔimmā maʕa
the-foreign in the-beginning unless in-the-participation either with
al-qiṭāʕi **al-xāṣ** ʔaw maʕa al-qiṭāʕi **al-ʕām**
the-sector **the-private** or with the-sector **the-public**

I also see not to allow the introduction of foreign banks at the beginning except in participation with either the private sector or the public sector.

Sentence (197) uses إما ... أو *ʔimmā ... ʔaw* 'either ... or' to express choice between 'winner' and 'loser' at the end of this life. In (198), the banks are given the choice to participate in the private sector or the public sector but not both and not neither.

Binarized Option is the smallest category in the MSA data. It is the only category that represents less than 1% of the 3000 dataset sentences. Ancillary opposition was not present in the sentences of this category.

5.19 Concluding remarks

The categories presented in this chapter represent the new classification of schematic constructions hosting co-occurring antonym pairs in MSA text. The classification was

introduced in the previous chapter and this chapter is a detailed introspection of each category with examples from the dataset. The classification I present in this study leave out some sentences in the dataset that do not fit nicely in these categories. Some of these sentences feature ancillary use of antonyms. However, because the ancillary category was eliminated, the present classification is able to show more clearly other uses of antonyms that were discussed in the sections of this chapter.

The examples presented here all feature a canonical pair of antonyms functioning a certain function in certain frames. This form-function pairing of antonym pairs lend itself very well to be treated as a grammatical construction in the sense found in Construction Grammar. For this reason, both the function of antonyms and the form of the structures in which they are used were taken in consideration in the presentation of the categories.

The next chapter introduces the theory of Construction Grammar in general and SBCG in particular in preparation for presenting a constructionist account of both antonyms and coordination as the frequent host of antonyms. As was discussed previously, the largest proportion of the dataset uses antonym pairs in a coordination construction; which is a phenomenon not specific to Arabic antonymy but was found in previously investigated languages, too.

Chapter 6

Sign-Based Construction Grammar

'[I]f a certain form is used often enough with a certain meaning, it becomes a construction with idiosyncratic form-meaning characteristics and therefore gains an independent status in the theoretical model' (Heine, 2011: 63). Antonym pairs, as well as the frames they appear in, are used frequently in text in the similar functions across languages, and therefore it has been proposed that they should be treated as constructions (Murphy, 2006; Jones et al., 2012).

This chapter provides an overview of constructionist approaches to linguistics in general and of Sign-Based Construction Grammar in particular. Section 6.1 discusses where constructionist approaches stand in relation to other theories of linguistics, and presents the general assumptions shared by construction grammar models. Section 6.2 introduces Sign-Based Construction Grammar with reference to how it relates to other construction approaches to grammar, and explains the basics of Sign-Based Construction Grammar, which is the model used to account for Arabic antonym constructions here. Section reviews a previous account of English antonyms as constructions presented by Jones et al. (2012).

6.1 Constructionist approaches to linguistics

Constructionist approaches to linguistics are a group of linguistic models that share some similarities in how they account for linguistic phenomena. The key term that brings these models together is *the construction* which builds on Saussure's notion of 'sign' and

expands it to include grammatical structures that may (or may not) incorporate lexical items in them. A construction is usually defined as a conventionalized form-meaning pairing which can be used to describe all levels of grammatical description (Trijp, 2013).

The constructionist approaches to grammar (henceforth CxG) include Cognitive Construction Grammar (CCG) (Goldberg, 2006) or, as some call it, the Goldbergian Construction Grammar (Trijp, 2013), Fluid Construction Grammar (FCG) (Steels, 2011), Radical Construction Grammar (RCG) (Croft, 2001), Embodied Construction Grammar (ECG) (Bergen and Chang, 2009), Berkeley Construction Grammar (BCG) (Fillmore and Kay, 1995), and Sign-Based Construction Grammar (SBCG) (Sag, 2012). These approaches differ in some respects. For example, CCG, RCG and FCG are based on the principles of Cognitive Grammar and therefore focus on the production and reception of linguistic signs and how they are cognitively construed. They avoid formalized generative rules in accounting for linguistic phenomena. On the other hand, BCG and SBCG are generative models in the sense that they rely on static structures that generate signs. *Static* means that they assign constraints on a particular construction, and those constraints need to be realized in all occurrences of that construction; this is in contrast to, for example, Optimality Theory (Keger, 1999) where constraints can be violated.

Constructionist approaches have basic shared assumptions that bring them together. First, phrasal and clausal phenomena are analysed in order to account for all aspects of a speaker's knowledge of language. When CxG developed in the 1980s it opposed dividing linguistic phenomena into core and peripheral, which prevailed in generative grammar tradition starting with Chomsky (1957). In generative grammar peripheral structures are the ones that are only partially productive, therefore cannot be used to derive generalizations. Examples of constructions that would be considered peripheral are partially filled idiomatic constructions (Goldberg, 2013) such as *the Xer the Yer* in *The bigger they grow, the stronger they are.* In CxG, however, grammatical structures at varying levels of complexity are treated equally. CxG views grammatical constructions as the building blocks of linguistic analysis. This contrasts with the Chomskyan view of constructions as helpful for description but with no meaning, and therefore no theoretical power (Boas, 2013).

Construction Grammars are not transformational grammars; there is no deep structure and focus is always on surface form (Goldberg, 2013). There are no multiple layers of linguistic representation. Instead, the constructions in a given language are related to each other via a default inheritance network (Goldberg, 2013). For example, a question like *Where did John go?* is not derived from a declarative sentence like *John went where.* It is formed by the interaction of different constructions: *wh-* construction, subject-auxiliary inversion construction, NP construction, and VP construction. These constructions can simultaneously satisfy the constraints on linguistic objects and therefore can unify. In other words, there is no conflict between these constructions and this allows them to interact together to license words to go in the constructions and form a grammatical question.

Another similarity among constructionist approaches is the treatment of phenomena cross-linguistically. CxG tends to investigate languages independently, because, according to CxG, variability across languages regarding certain linguistic features is more prominent than universality. This does not mean that there are no cross-linguistic tendencies (Goldberg, 2013). One generalization is that languages have a tendency to have a passive construction. This tendency is explained via external universal pressures and processing constraints. The passive constructions in different languages 'are identified by their related functions: they are constructions in which the topic and/or agentive argument is essentially "demoted," appearing optionally or not at all' (Goldberg, 2013: 24). Arabic and English, for example, both have a passive structure that functions by 'demoting' the agent as in the examples in (199) below.

(199)   a. My bike was stolen (by some kids).

        b. سُرِقَت دراجتي

           suriqat darrāǧat-ī
           stolen   bicycle-my
           My bike was stolen.

The realization of the passive differs cross-linguistically according to the constraints in each language. In English, an auxiliary is compulsory and the agent can appear as a non-subject oblique as in (199a). Arabic passive verbs, on the other hand, make use of a passive template for the verb and the omission of the agent is mandatory as in (199b) (Badawi et al., 2004).

The four basic assumptions discussed above - constructions as building blocks of language, focus on surface form, no transformations, and treatment of linguistic phenomena across languages; are shared by constructionist approaches to grammar. However, these approaches differ in how they operationalize these basic assumptions. For example, in CCG a construction is defined as a conventional, learned form-function pairing (Goldberg, 2006). The 'function' combines both semantic function and discourse function (Goldberg, 2003). However, BCG defines a construction as any conventionalized pairing of form and meaning (Fillmore and Kay, 1995). In FCG, constructions are defined as a mapping between a semantic pole and a syntactic pole that captures conventionalized mappings (Trijp, 2013: 98). SBCG defines constructions as descriptions that license classes of linguistic objects (Sag, 2012: 72). Therefore, while a construction is mostly defined as a form-meaning pairing, different approaches of CxG operationalize this definition differently.

Another difference among CxG approaches is that CCG and RCG aim at providing a psychologically plausible account of language and use cognitive semantics (Boas, 2013), while BCG and SBCG aim at finding maximal generalizations for linguistic phenomena.

Therefore, CCG and RCG emphasize the importance of 'motivation' in order to explain the cognitive processes behind the formation of a certain construction and how it came to be that way (Boas, 2013). On the other hand, SBCG does not emphasize the role of 'motivation'; instead, it presents a theory of constructional meaning. In SBCG, constructions are related to conditions of use. These conditions are presented in the construction as semantic and pragmatic features (Michaelis, 2013).

The next section explains SBCG in more detail.

6.2   Sign-Based Construction Grammar

The framework used to model antonym relations in this thesis is Sign-Based Construction Grammar because it is a formalized version of Construction Grammar (Michaelis, 2013). This section reviews the historical development of SBCG and explains how it works.

development of SBCG

The goal behind the introduction of SBCG 'is to expand the empirical coverage of HPSG [Head-driven Phrase Structure Grammar], while at the same time putting BCG on a firmer theoretical footing' (Sag, 2012: 70). This section discusses the historical development of SBCG for the purpose of understanding how similar and different it is to related theories of grammar, namely BCG and HPSG. SBCG is a combination of two models with different backgrounds: BCG, which is influenced by Cognitive Grammar, and HPSG, which is a theory of Formal Grammar (Sag et al., 2012).

The two models, BCG and HPSG, can be related to each other in a number of ways. For example, they both view language as a set of signs with blurry distinction between what is lexical and what is grammatical (Sag et al., 2012). BCG and HPSG also view a grammar as 'a system of constraints that work together to license and delimit the signs of a given language' (Sag et al., 2012: 5). These constraints represent constructions that are modelled in terms of complex and recursive feature structures rather than atomic symbols like V, N, or PP. However, while constructions are viewed in both models as constraints that license certain recursive structures, these constraints are modelled differently. In

BCG they are modelled as trees with feature structures in the nodes (Fillmore and Kay, 1995), and in HPSG they are modelled as derived graphs or Attribute-Value Matrices (AVMs) (Pollard and Sag, 1994).

The formalism of BCG proves useful for delimiting the interaction of constructions compared to CCG. In the case of the ditransitive, for example, Goldberg (1995) requires a grammatical-function assignment, and thus a verb like *give* needs a valence of three arguments: an agentive subject, a recipient, and a theme. The weakness of Goldberg's account is that if the verb is in the active voice these roles are predictable from the *active voice construction* and would differ if it were in the passive (Fillmore and Kay, 1995: 156). However, in BCG the representation of the ditransitive is associated with only one constraint, which gives this model an elegance of representation. The theme argument in the ditransitive in BCG is realized as a nominal oblique and the construction is called the *Nominal-Oblique Construction* (Fillmore and Kay, 1995). This construction can unify with either the passive construction or the active construction. In this way the representation of the ditransitive is delimited and constraints are easily recognized.

The representation of the ditransitive in BCG is more formalized and with fewer constrains than the representation in Goldberg (1995). However, the grammar in BCG consists of a partially filled hierarchy of constructions, in contrast to HPSG which sets total type hierarchies (Michaelis, 2013). The type hierarchies determine which constructions are able to unify, which gives it an advantage over BCG where construction interaction is undetermined. In addition, BCG allows any number of compatible constructions, which can also inherit other constructions, to integrate to form a grammatical sentence. Placing the constructions in a hierarchy like this leads to vagueness of representation especially in cases where one lexical item can inherit two non-compatible constructions (Sag et al., 2012). For example, in the case of the lexeme *give*, both the ditransitive construction and oblique construction are applicable. Because BCG sets the constructions themselves in hierarchies, it is not clear which one is higher and which one is broader and therefore gets selected and/or cancelled by the other. The introduction of 'type hierarchies' from HPSG to SBCG instead of 'construction hierarchies' fixes the problem of lexemes like *give* that can be licensed by two different constructions by assigning the lexical item

to the type that licenses the construction and blocking the interaction between the two constructions (Sag et al., 2012).

Both BCG and HPSG had points of strength and weakness and SBCG is the result of combining the two models. The way SBCG represents signs and constructions is similar to BCG in the sense that it makes use of MOTHER-DAUGHTER levels of representation. It is also similar to HPSG in the sense that it uses feature structures and assigns values to them. The modelling of SBCG is discussed in the following part of this section.

representation of signs and constructions in SBCG

SBCG is a constraint-based framework. Well-formed linguistic items are represented as constraints that reflect their behaviour specifically. This framework consists of two parts that complement each other. The first part is feature-structure descriptions of signs and constructions that represent linguistic items. The second part is a signature, similar to a blueprint of how to interpret the descriptions. This section presents how signs and constructions are described and modelled in SBCG starting with an example of a *type* in the grammar's signature and looking at its specific constructions in order to introduce the different terminology along with how SBCG works.

Linguistic items in SBCG are assigned a certain *type*. In the grammar's signature, the different *types* included in the grammar are listed and assigned different features. These types are arranged in a hierarchy that governs how constructions interact. A type that has no types projected from it is called a *maximal type*. For example, the sentence in (200) is of the maximal type *ns-wh-interrogative-clause*.

(200)   {[Where] [does Pat] [live]?}

In the grammar signature, there is also a list of constructs that license these maximal types. A construct is 'a functional FS [feature structure] that specifies values for the MOTHER (MTR) feature and the DAUGHTERS (DTRS) feature. The value of a MTR is a sign and the value of a DTR is a nonempty list of signs' (Sag, 2012: 72). The bracketing in (200) shows the different constructs combined to form the sentence: *auxiliary-initial-construct, headed-construct, verbal, wh-interrogative-clause, interrogative-clause,*

core-clause, and *clause*. Constructs are represented as in (201).

(201)   *wh-interrogative-clause* $\Longrightarrow$ *...*

The dots represent the *combinatoric construction* which represents rules that license the construct. The DTRs in a construct are feature-structures that correspond to the constructions that license the signs. So both constructs and signs are modelled using feature structures. *Signs* are linguistic items that are represented in SBCG as in Figure[1] 6.1 which shows the modelling of the word *Pat*. The different parts of this sign are explored below starting from the top of the Attribute Value Matrix (AVM) to the bottom.

Figure 6.1: A model of the word *Pat* (Sag, 2012: 99)

$$
\begin{bmatrix}
\textit{word} \\
\text{PHON} & \text{/pæt/} \\
\text{FORM} & \langle \text{Pat} \rangle \\
\text{ARG-ST} & \langle \rangle \\
\text{SYN} & \begin{bmatrix}
\textit{syn-obj} \\
\text{CAT} & \begin{bmatrix} \textit{noun} \\ \text{CASE} & \textit{nom} \\ \text{SELECT} & \textit{none} \\ \text{XARG} & \textit{none} \end{bmatrix} \\
\text{VAL} & \langle \rangle \\
\text{MRKG} & \textit{det}
\end{bmatrix} \\
\text{SEM} & \begin{bmatrix} \textit{sem-obj} \\ \text{IND} & i \\ \text{FRAMES} & \langle \rangle \end{bmatrix} \\
\text{CNTXT} & \begin{bmatrix} \textit{context-obj} \\ \text{BCKGRND} & \left\langle \begin{bmatrix} \textit{naming-fr} \\ \text{LABEL} & l_2 \\ \text{ENTITY} & i \\ \text{NAME} & \langle \textit{Pat} \rangle \end{bmatrix} \right\rangle \end{bmatrix}
\end{bmatrix}
$$

The italicised *word* at the top represents which type this sign is; some of the other possible signs include *phrase, pronoun-lexeme, s-transitive-verb-lexeme*. The features in capitals

---

[1]SBCG uses figures for specific instantiations of signs and numbered examples for abstract constructions and general rules.

on the left-hand side of the AVM are the six main parts of any sign.[2] Each of these features are assigned values. For example, the feature PHON is given a *phonological-object (phon-obj)* value represented by phonemic transcription; the feature FORM is given a *morph-obj* value which can list all parts of the sign, if it is a phrase for example. The feature structure ARG-ST shows all the arguments this sign can satisfy. The angle brackets indicate that what is inside of them is a list of values.

The next feature, SYN, is modelled as a *syn-obj* that consists of sub-features that show the syntactic representation of this sign. The sub-features include (CAT)EGORY, (VAL)ANCE, and MARKING (MRKG). Category values include *noun, verb, prep, comp, adv,* and *adj* and category features differ accordingly. In this example, category *noun* requires the features CASE, SELECT, and EXTERNAL ARGUMENT STRUCTURE (XARG). The feature XARG lists the external arguments of the sign outside of its domain. It is related to the VAL feature which is part of the SYN feature but outside the category. The feature XARG lists all arguments that this sign requires, and the feature VAL lists all arguments that are yet to be satisfied. The last feature in SYN is MRK which assigns value to the marking of this sign which can be *det, unmarked*, among others.

The next feature in the modelling of a sign is SEM which assigns the semantic values of the sign. SBCG is compatible with any semantic model. However, most research uses Frame Semantics (Fillmore et al., 2012) along with Minimal Recursion Semantics (Copestake et al., 2005). In Frame Semantics, cognitive processes, like organization for example, are used to assign frames for signs. Frames are lists of the knowledge one needs to understand the meaning of a word. A frame is written as a matrix with the name of the frame in italics on the top left side and information is recorded in the form of frame elements usually in capitals. Frame elements have values.

A semantic object (*sem-obj*) in the construction consists of values for its (IND)EX which specifies the referent of the sign, its LOCAL-TOP (LTOP) which specifies the local top frame of the sign, and its FRAMES which list the frames distinguishing this sign (Sag, 2012: 89). The value of IND in Figure 6.1 is *i*, short for index, which is the same

---

[2]Other features were proposed in order to account for different phenomena. See Sag (2012), Beavers and Sag (2004), Chaves (2014) among others.

value of ENTITY in BCKGRND to show that these two values are the same. The value of LTOP is borrowed from MRS and is usually given the label l_0. It is used to mark the top frame inside the FRAMES list. This is a helpful method to determine the top referent of the phrase. It is important to note here that constructions in SBCG do not have to carry meaning, therefore not all constructions are assigned a SEM feature.

The last feature in a sign is its context (CNTXT) which is 'based on such features as BACKGROUND (BCKGRND) and CONTEXTUAL-INDICES (C-INDS), where the latter specifies values for such features as SPEAKER (SPKR), ADDRESSEE (ADDR), and UTTERANCE-LOCATION (UTT-LOC)' (Sag, 2012: 96). The BCKGRND feature is a list of frames of propositions around that sign, hence, the angle brackets. In Figure 6.1, the only frame in the list is the *naming-fr*. It has the features LABEL with the value l_2. It is indexed as ENTITY and because it is a *naming-fr*, it has a feature NAME with the value Pat.

The lexeme *Pat* is of type *pr-noun lexeme* (proper noun lexeme) and therefore must satisfy all type constraints sketched out in (202). The type higher than *pn-lxm* in the type hierarchy is indicated in brackets ($\uparrow$ *invariant-lxm*).

(202)   Proper Noun Construction ($\uparrow invariant\text{-}lxm$) (Sag, 2012: 109)

$$
pn\text{-}lxm \Rightarrow
\begin{bmatrix}
\text{FORM} & L \\
\text{SYN} & \begin{bmatrix}
\text{CAT} & \begin{bmatrix} noun \\ \text{SELECT} & none \\ \text{XARG} & none \end{bmatrix} \\
\text{VAL} & \langle\rangle \\
\text{MRKG} & def
\end{bmatrix} \\
\text{SEM} & \begin{bmatrix} \text{IND} & i \\ \text{FRAMES} & \langle\rangle \end{bmatrix} \\
\text{CNTXT} & \begin{bmatrix} \text{BCKGRND} & \langle \begin{bmatrix} naming\text{-}fr \\ \text{ENTITY} & i \\ \text{NAME} & L \end{bmatrix} \rangle \end{bmatrix}
\end{bmatrix}
$$

The lexeme *Pat* in *Where does Pat live?* appears in a *wh-interrogative clause* which is one of the Filler-Gap constructions. In SBCG, Filler-Gap constructions are treated as having a value for a gap feature [Gap <NP>] (Sag, 2012). This means that if the value of this feature is empty, [Gap < >], then there is no gap in the clause. The proper

noun *Pat* can also combine with a verb to form a phrase like *Pat left*. The verb *left* is of type *strict-intransitive-verb-lexeme* (*sintrans-v-lxm*), and therefore is licensed by the *sintrans-v-lxm* construction. This verb is modelled in Figure 6.2.

Figure 6.2: A model of the word *left*

$$
\begin{bmatrix}
\textit{word} \\
\text{PHON} \quad /l\varepsilon\text{ft}/ \\
\text{FORM} \quad \langle \textit{left} \rangle \\
\text{ARG-ST} \quad \langle \text{NP}[\textit{nom}]_i \rangle \\
\text{SYN} \quad
\begin{bmatrix}
\textit{syn-obj} \\
\text{CAT} \quad
\begin{bmatrix}
\textit{verb} \\
\text{VF} \quad \textit{fin} \\
\text{SELECT} \quad \textit{none} \\
\text{XARG} \quad \text{NP}[\textit{nom}]_i \\
\text{LID} \quad \left\langle
\begin{bmatrix}
\textit{leaving-fr} \\
\text{LABEL} \quad l_3 \\
\text{SIT} \quad s \\
\text{S-SRCE} \quad i
\end{bmatrix}
\right\rangle
\end{bmatrix} \\
\text{MRKG} \quad \textit{unmk} \\
\text{VAL} \quad \langle \text{NP}[\textit{nom}]_i \rangle
\end{bmatrix} \\
\text{SEM} \quad
\begin{bmatrix}
\textit{sem-obj} \\
\text{IND} \quad s \\
\text{LTOP} \quad l_0 \\
\text{FRAMES} \quad \left\langle
\begin{bmatrix}
\textit{leaving-fr} \\
\text{LABEL} \quad l_3 \\
\text{SIT} \quad s \\
\text{S-SRCE} \quad i
\end{bmatrix},
\begin{bmatrix}
\textit{past-fr} \\
\text{LABEL} \quad l_2 \\
\text{ARG} \quad s
\end{bmatrix}
\right\rangle
\end{bmatrix}
\end{bmatrix}
$$

In Figure 6.2, the features PHON, FORM, ARG-ST, SYN, and SEM are specified similar to the modelling of the noun in Figure 6.1. The features PHON and FORM record the phonological representation and the form of the word, respectively. The feature ARG-ST lists the arguments required by this word, which is an NP. The feature SYN shows that the category of the word is *verb* and lists its feature structures. In its SEM feature, the word in indexed as a SITUATION.

The verb *left* is an intransitive verb of the type *sintrans-v-lxm*. In the type hierarchy, an *sintrans-v-lxm* is an intransitive lexeme that is a sub type of the type *verb-lxm*, and an *sintrans-v-lxm* is also a *main-v-lxm*. Therefore, the verb *left* needs to satisfy the constraints on both types. The verb lexeme construction is sketched out in (203). In the construction, the value of XARG is one of the list of values of ARG-ST, which in an intransitive verb is also the only one. The main verb lexeme construction is modelled in (204). In this construction, the features of AUX (auxiliary) and INV (infinitive) have a negative boolean value (-) in their syntax. Main verbs are also indexed as situations in their semantics.

(203)   Verb Lexeme Construction (↑ *lexeme*) (Sag, 2012: 112)

$$verb\text{-}lxm \Rightarrow \begin{bmatrix} \text{ARG-ST} & \langle X\ ,\ ... \rangle \\ \text{SYN} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} verb \\ \text{LID} & L \\ \text{SELECT} & none \\ \text{XARG} & X \end{bmatrix} \\ \text{MRKG} & unmk \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{LTOP} & l_{0=q1} \\ \text{FRAMES} & L : \langle [\text{LABEL}\quad l_1] \rangle \end{bmatrix} \end{bmatrix}$$

(204)   Main Verb Lexeme Construction (Sag, 2012: 113)

$$main\text{-}v\text{-}lxm \Rightarrow \begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} \text{AUX} & \text{-} \\ \text{INV} & \text{-} \\ ... \end{bmatrix} \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{IND} & s \\ \text{FRAMES} & \langle [\text{SIT}\quad s] \rangle \end{bmatrix} \end{bmatrix}$$

The phrase as a whole *Pat left* is a combination of the two signs in Figures 6.1 and 6.2. It is a simple declarative sentence that is licensed by the Subject-Predicate construction in (205). 'This construction says that two signs can combine as long as the second is a finite (and hence verbal) sign that selects the first via the VAL feature' (Sag, 2012: 146). Looking at the construction from the bottom up, the HD-DTR feature determines which of the two daughters is the head daughter (Z). The DTRS feature lists two daughters: X and Z. The syntax of the second daughter is labelled Y. The MTR feature specifies

that the feature SYN has value Y, the same syntax of the second daughter except that the VAL feature must be empty because the VAL feature of the second daughter, the predicate, has selected the argument needed.

(205)   Subject-Predicate Construction ($\uparrow$*subj-head-cxt*) (Sag, 2012: 146)

$$subj\text{-}pred\text{-}cl \Rightarrow \begin{bmatrix} \text{MTR} & \begin{bmatrix} \text{SYN } Y \text{ ! } \begin{bmatrix} \text{VAL } \langle\rangle \end{bmatrix} \end{bmatrix} \\[4ex] \text{DTRS} & \left\langle X, Z : \begin{bmatrix} \text{SYN} & Y : \begin{bmatrix} \text{CAT} & \begin{bmatrix} \text{VF} & fin \\ \text{INV} & \text{-} \\ \text{AUX} & \text{-} \end{bmatrix} \\ \text{MRKG} & unmk \\ \text{VAL} & \langle X \rangle \end{bmatrix} \end{bmatrix} \right\rangle \\[4ex] \text{HD-DTR} & Z \end{bmatrix}$$

The Subject-Predicate construction does not specify any semantic features for the mother or daughters. This is because its frames are specified through the Principle of Compositionality (Sag et al., 2003; Sag, 2012). The Principle of Compositionality states that all frames in the semantics of the daughters in any given construct combine to form the semantics of the mother (Sag, 2012). This is modelled in (206) below. Thus the phrase *Pat left* is formed by both the Subject-Predicate construction and the Principle of Compositionality together, and the resulting model is sketched out in Figure 6.3.

(206)   Principle of Compositionality (Sag, 2012: 185)

$$construct \Rightarrow \begin{bmatrix} \text{MTR} \begin{bmatrix} \text{SEM} \begin{bmatrix} \text{FRAMES} & L_0 \oplus ... \oplus L_n \end{bmatrix} \end{bmatrix} \\[2ex] \text{DTRS} \left\langle \begin{bmatrix} \text{SEM} \begin{bmatrix} \text{FRAMES} & L_1 \end{bmatrix} \end{bmatrix}, ... , \begin{bmatrix} \text{SEM} & \begin{bmatrix} \text{FRAMES} & L_N \end{bmatrix} \end{bmatrix} \right\rangle \\[2ex] \text{CXT-CONTENT } L_0 \end{bmatrix}$$

Two signs, *Pat* and *left*, unify to form a phrase, which is by itself a sign that can unify with other signs. The phrase *Pat left* modelled in Figure 6.3 is mapped onto the Subject-Predicate Construction modelled in (205) to show this unification. This mapping is modelled in Figure 6.4.

Figure 6.3: The phrase *Pat left*

$$
\begin{bmatrix}
\textit{phrase} \\
\text{PHON} \quad \text{/pæt\#'lɛft/} \\
\text{FORM} \quad \left\langle \textit{Pat, left} \right\rangle \\
\text{SYN} \quad
\begin{bmatrix}
\textit{syn-obj} \\
\text{CAT} \quad
\begin{bmatrix}
\textit{verb} \\
\text{VF} \quad \textit{fin} \\
\text{SELECT} \quad \textit{none} \\
\text{XARG} \quad \text{NP}[\textit{nom}]_i \\
\text{LID} \quad \left\langle
\begin{bmatrix}
\textit{leaving-fr} \\
\text{LABEL} \quad l_3 \\
\text{SIT} \quad s \\
\text{S-SRCE} \quad i
\end{bmatrix}
\right\rangle
\end{bmatrix} \\
\text{VAL} \quad \langle\rangle \\
\text{MRKG} \quad \textit{unmk}
\end{bmatrix} \\
\text{SEM} \quad
\begin{bmatrix}
\textit{sem-obj} \\
\text{IND} \quad s \\
\text{LTOP} \quad l_1 \\
\text{FRAMES} \quad \left\langle
\begin{bmatrix}
\textit{leaving-fr} \\
\text{LABEL} \quad l_3 \\
\text{SIT} \quad s \\
\text{S-SRCE} \quad i
\end{bmatrix},
\begin{bmatrix}
\textit{past-fr} \\
\text{LABEL} \quad l_2 \\
\text{ARG} \quad s
\end{bmatrix}
\right\rangle
\end{bmatrix} \\
\text{CNTXT} \quad
\begin{bmatrix}
\textit{context-obj} \\
\text{BCKGRND} \quad \left\langle
\begin{bmatrix}
\textit{naming-fr} \\
\text{LABEL} \quad l_5 \\
\text{ENTITY} \quad i \\
\text{NAME} \quad \left\langle \textit{Pat} \right\rangle
\end{bmatrix}
\right\rangle
\end{bmatrix}
\end{bmatrix}
$$

Figure 6.4: modelling of the Subject-Predicate clause *Pat left*
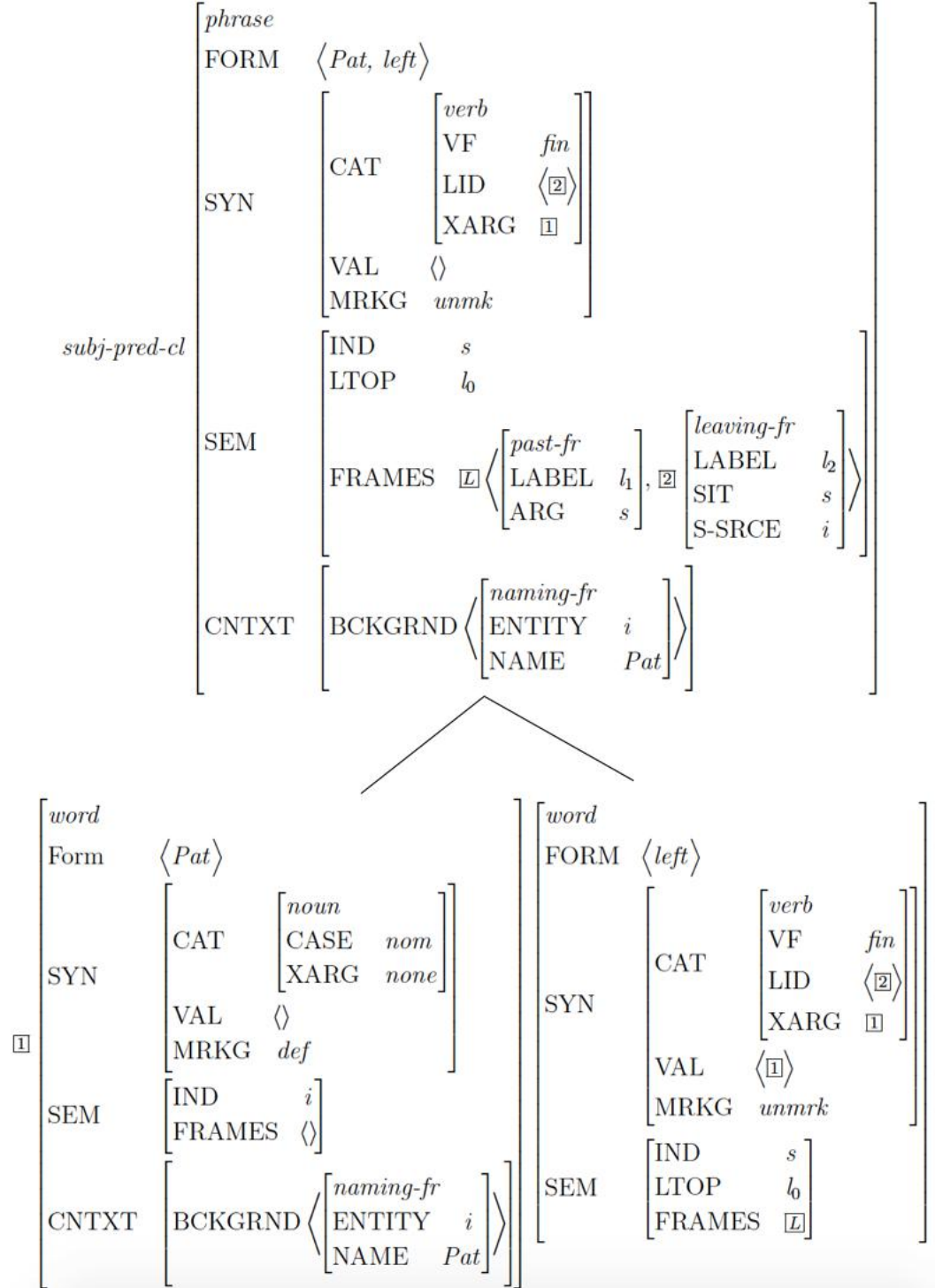
Another phrase, like *Jane stayed*, would be licensed and modelled in the same way: a *pro-noun lexeme* construction unifying with an *sinterans-v-lxm* construction through the Subject-Predicate construction and the Principle of Compositionality giving way to a phrase similar to the one in Figure 6.3. Furthermore, the two phrases can combine to form a clause like the one in (207).

(207)   a. {[Pat left] [but] [Jane stayed]}.

      b. {[[Pat] and [Jane]] [left]}

In sentence (207a) above, the two clauses are coordinated using contrastive *but*. In the sentence (207b), the signs *Pat* and *Jane* are coordinated using *and*. I will now explain how SBCG can account for coordinating two signs in this way following Chaves (2012) and Sag (2012). The coordination construction is a non-headed construction that forms a phrase or a clause by connecting two phrases or clauses. The coordinated phrases have to be of the same syntactic form that is also shared by the resulting phrase, the mother of the construction.

The lexical entry of *and* in Figure 6.5 shows the values for its features PHON, SYN, SEM, and CRD. The feature PHON shows the phonology of the sign. The feature SYN shows that the word *and* is of category *coord* for coordinator. Coordinators are allowed to choose a sign that is unmarked with a coordinator and attach to it through the feature SELECT. The feature CRD was first introduced by Beavers and Sag (2004). They assume that all signs have a feature CRD that has a Boolean value (+/-). Chaves (2012) introduced the MODE feature for coordinators that specifies the coordination type. In the case of *and*, the MODE is + which means that it is a conjunction type. Other MODE values include $\vee$ for disjunction, $\prec$ for temporal precedence, and $\rightarrow$ for causal conjunction (Chaves, 2012: 502).

Going back to the example *Pat and Jane left*, the coordinator *and* connects two noun phrases to form a larger noun phrase *Pat and Jane*. This operation in governed by the coordination construction. Before discussing the coordination construction, there are two other constructions that need to be explained first: the Head-Functor Construction and the Non-Headed Construction.

Figure 6.5: The connector *and* (Chaves, 2012: 503).

$$
\begin{bmatrix}
word \\
\text{PHON} & \langle \text{and} \rangle \\
\text{SYN} & \begin{bmatrix} \text{CAT} & coord \\ \text{SELECT} & \begin{bmatrix} \text{CRD} & unmarked \end{bmatrix} \\ \text{VAL} & \langle \rangle \end{bmatrix} \\
\text{SEM} & \begin{bmatrix} \text{FRAMES} & \langle \rangle \end{bmatrix} \\
\text{CRD} & \begin{bmatrix} marked \\ \text{MODE} & + \end{bmatrix}
\end{bmatrix}
$$

The Head-Functor Construction in (208), taken from Sag (2012: 156), allows a head to attach to a non-head daughter. This construction accounts for how adjuncts, determiners, and complementizers are formed. In the case of the coordinators, Chaves (2012) argues, following Van Eynde (2003), that they have a feature SELECT which allows them to impose constraints on the phrase.

(208)

$$
head\text{-}func\text{-}cxt \Rightarrow
\begin{bmatrix}
\text{MTR} & \begin{bmatrix} \text{SYN } X \text{ ! } \begin{bmatrix} \text{MRKG } M \end{bmatrix} \end{bmatrix} \\
\text{DTRS} & \left\langle \begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{CAT } \begin{bmatrix} \text{SELECT } Y \end{bmatrix} \\ \text{MRKG } M \end{bmatrix} \end{bmatrix}, Y{:}\begin{bmatrix} \text{SYN } X \end{bmatrix} \right\rangle \\
\text{HD-DTR} & Y
\end{bmatrix}
$$

The *head-func-cxt* in (208) shows how the mother takes its valence from the head second daughter, and the first daughter selects the second daughter. Chaves (2012) assumes all sign have a SLASH (GAP) feature whose values are not signs but gaps that can be either percolating gap (*pg*) or filled gap (*fg*). In the *head-func-cxt*, the head daughter has a *pg* value for its SLASH feature which makes it unable to allow for extraction.

Although coordinators are not viewed as heads in SBCG but as markers in their phrases (Chaves, 2012), they combine with the Head-Functor Construction in order to be able to attach to the coordinated phrases. Therefore, the word *and* in Figure 6.5 is mapped onto the *head-func-cxt* in (208). This mapping is illustrated in Figure 6.6 which produces in our case *and Jane*.

The other construction that needs to be discussed prior to presenting the Coordination

Figure 6.6: Coordinate head-functor construct (Chaves, 2010: 504).

$$
\begin{array}{c}
\text{NP} \\
\left[\text{CRD}\;\boxed{2}\begin{bmatrix}\textit{marked}\\ \text{MODE}\;+\end{bmatrix}\right]\quad(\textit{hd-func-cxt})
\end{array}
$$

$$
\begin{array}{cc}
\text{Coord} & \text{NP} \\
\begin{bmatrix}\text{SYN}\,|\,\text{CAT}\,|\,\text{SELECT}\;\boxed{1}\\ \text{CRD}\;\boxed{2}\end{bmatrix} & \boxed{1}\begin{bmatrix}\text{CRD}\;\textit{unmarked}\end{bmatrix}\\
| & \\
\text{and} &
\end{array}
$$
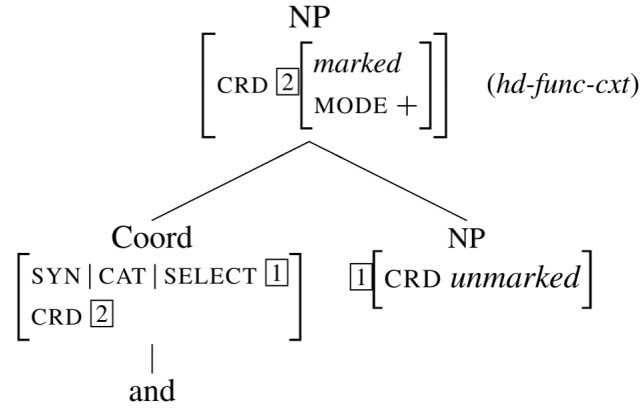
Construction is the Non-Headed Construction. Chaves (2012) illustrates two generalizations about the Non-Headed Constructions that can be captured in the construct in (209) below. The two generalizations are: the mother has the same syntax as its daughters and these constructions cannot discharge gaps (Chaves, 2012: 504).

(209)

$$
\textit{non-headed-cxt} \Rightarrow
\begin{bmatrix}
\text{MTR} & \begin{bmatrix}\text{SYN} & \boxed{1}\end{bmatrix}\\[1ex]
\text{DTRS} & \left\langle\begin{bmatrix}\text{SYN} & \boxed{1}\\ \text{SLASH} & \textit{set(pg)}\end{bmatrix},\begin{bmatrix}\text{SYN} & \boxed{1}\\ \text{SLASH} & \textit{set(pg)}\end{bmatrix}\right\rangle
\end{bmatrix}
$$

The Coordination Construction, *coord-cxt*, is of type *non-headed construction* and must satisfy the constraints in it. Therefore, the mother in the *coord-cxt* has the same syntax feature as its daughters. However, the number of the daughters is not restricted to two, but only the first daughter has an unmarked CRD feature.The *coord-cxt* is illustrated in (210) below.

(210)

$$
\textit{coord-cxt} \Rightarrow
\begin{bmatrix}
\text{MTR} & \begin{bmatrix}\text{SEM}\begin{bmatrix}\text{INDEX}\;\boxed{x}\end{bmatrix}\\ \text{CRD}\begin{bmatrix}\text{MODE}\;\boxed{2}\end{bmatrix}\end{bmatrix}\\[3ex]
\text{DTRS} & \left\langle\begin{bmatrix}\text{SEM}\begin{bmatrix}\text{INDEX}\;\boxed{y}\end{bmatrix}\\ \text{CRD}\;\textit{unmarked}\end{bmatrix},\begin{bmatrix}\text{SEM}\begin{bmatrix}\text{INDEX}\;\boxed{z}\end{bmatrix}\\ \text{CRD}\begin{bmatrix}\textit{marked}\\ \text{MODE}\;\boxed{2}\end{bmatrix}\end{bmatrix}\right\rangle\\[3ex]
\text{CX-SEM} & \left\langle\begin{bmatrix}\text{RELN}\;\boxed{2}\\ \text{INDEX}\;\boxed{x}\\ \text{ARG}_1\;\boxed{y}\\ \text{ARG}_2\;\boxed{z}\end{bmatrix}\right\rangle
\end{bmatrix}
$$

The *coord-cxt* is a *non-headed construction*, so it has a mother that has the same syntax

as its two daughters and none of the daughters is a head. This construction differs from other non-headed constructions in that the construction itself adds an additional meaning. This meaning is encoded in the CONSTRUCTION-SEMANTICS (CX-SEM) feature. The CX-SEM is indexed in the same index as the mother, and it assigns a RELATION (RELN) between two arguments, ARG_1 and ARG_2. These two arguments are the two daughters and are indexed as such.

The relation that coordination introduces between the the coordinated arguments differs from coordinator to coordinator. In the case of the phrase *Pat and Jane* the relation is conjunction. Figure 6.7 illustrates the coordination in this phrase. The mother of this phrase is a noun phrase and it selects a head verb through the *subj-pred-cl* construction discussed earlier.

Figure 6.7: The coordinated phrase *Pat and Jane*

$$
\begin{bmatrix}
\text{MTR} & \begin{bmatrix} \text{SYN} \begin{bmatrix} noun\ phrase \end{bmatrix} \\ \text{SEM} \begin{bmatrix} \text{INDEX } x \end{bmatrix} \\ \text{CRD} \begin{bmatrix} \text{MODE } + \end{bmatrix} \end{bmatrix} \\
\text{DTRS} & \left\langle \begin{bmatrix} Pat \\ \text{SEM} \begin{bmatrix} \text{INDEX } y \end{bmatrix} \\ \text{CRD } unmarked \end{bmatrix}, \begin{bmatrix} and\ Jane \\ \text{SEM} \begin{bmatrix} \text{INDEX } z \end{bmatrix} \\ \text{CRD } + \end{bmatrix} \right\rangle \\
\text{CX-SEM} & \left\langle \begin{bmatrix} \text{RELN} & + \\ \text{INDEX} & x \\ \text{ARG}_1 & y \\ \text{ARG}_2 & z \end{bmatrix} \right\rangle
\end{bmatrix}
$$

This section has explained how SBCG developed and discussed the basics of how it works. I presented what signs are, how they are licensed, and how they combine to form larger signs. I also discussed how combinatoric constructions, such as the Subject-Predicate construction, license the interaction of these signs. Lastly, I discussed how SBCG accounts for coordination in English using the example of two coordinated proper nouns. This discussion forms the basis for treating coordination in MSA in the next chapter. The following section introduces the treatment of canonical antonym pairs as

constructions.

6.3   Antonyms as constructions

This section reviews previous work on treating antonyms as constructions which was proposed by Murphy (2006) and developed by Murphy and colleagues in Jones et al. (2012). They examined English antonym constructions within Berkeley Construction Grammar, as developed by Fillmore and Kay (1995). The section starts with presenting an argument for treating antonym pairs as constructions, then moves to discussing the treatment of English antonyms.

why antonym pairs are constructions

Semantically, antonyms are pairs of incompatible lexical items that are minimally different. In discourse these pairs co-occur in text more than chance would allow. This co-occurrence of antonyms is found in high frequency in different languages and different genres (Charles and Miller, 1989; Fellbaum, 1995; Jones, 2002; Murphy and Jones, 2008; Murphy et al., 2009; Muehleisen and Isono, 2009; Kostić, 2011). Frequent occurrences of a particular linguistic phenomenon leads to it being conventionalized (Goldberg, 2006).

In order to account for this sentential co-occurrence, Murphy (2006) proposed a constructionist model for accounting for the syntagmatic property of antonyms by treating them as constructions, in which antonyms are presented as discontinuous lexical items. For example, an antonymous pair like *rich/poor* represents one lexical construction that appears discontinuously in a sentence like (211) below. These complex lexical units tend to be used within contrastive grammatical constructions, which makes them semantically compatible. The pair *rich/poor* in sentence (211) is used in a coordinating frame *X and Y*.

(211)   He was always very gracious to everyone, **poor** and **rich**. (Murphy, 2006: 14)

Construction Grammar is an appropriate theoretical model for accounting for canonical antonym pairs because it does not separate syntax and semantics. Constructions are pairings of form and meaning, and they are considered to be the building blocks of

grammar. The characteristics of canonical antonyms correspond to how a grammatical construction is defined, and therefore CxG can be easily applied in the description of canonical antonyms. Canonical antonyms refer to antonymous lexical items that are conventionally recognized as such with no need for contextual cues (Murphy, 2003). These pairs co-occur in text in contrasting constructions serving certain functions in high frequency. Frequency is another characteristic that canonical antonyms share with constructions. The degree to which a certain construction is conventionalized is dependent on how frequent this grammatical construction is used for that meaning. Antonymous pairs co-occur frequently in certain frames to signal particular pragmatic functions, which makes them a strong candidate to be constructions.

Moreover, psycholinguistic studies show that canonical antonyms need form-based as well as meaning-based mental representations (Paradis et al., 2009; Jones et al., 2012; Weijer et al., 2014). Antonyms are opposed to each other on the level of concept (Fellbaum, 1995). For example, *hot, warm,* and *boiling* can be antonyms of *cool, freezing,* and *cold* because conceptually, they lie on opposing sides of the temperature scale. However, canonical antonyms require lexical conventionalization in addition to conceptual opposition. Therefore, different pairings of these words lie on different levels of conventionalization, and therefore canonicity. An evidence for this is presented by Murphy (2003) in the pair *black* and *white.* Their entrenchment as antonyms leads to the contrastive sense to be transferred to their other 'non-contrastive' senses. For example, *white coffee* was used as an opposite to *black coffee* because *white* is the lexical (form-based) antonym of *black* and not because the colour of coffee with milk is white (meaning-based).

Research also suggests that language users often construe *ad hoc* opposing phrases either in the vicinity of canonical pairs as in the case of ancillary use of antonyms (Jones, 2002) or not (Davies, 2013). This is because antonymy relation is construed on context (Murphy, 2003). Canonical antonym pairs are also context sensitive. For instance, while *cool* and *warm* are canonical anotnyms, *cool* is not a good antonym of *warm* when referring to coats *warm coat/ # cool coat - light coat* (Jones et al., 2012: 103).

A pair of co-occurring canonical antonyms shares similar properties with a grammatical construction. Therefore, canonical antonyms are treated as constructions. The

following section presents the constructionist account of English antonym pairs as presented in Jones et al. (2012).

6.3.1   English Antonym Constructions in BCG

This part of the section reviews the constructionist treatment of English antonymous pairs (Jones et al., 2012). Although the framework followed for this purpose is Berkeley Construction Grammar, 'the properties of CxG that are relevant for the present purposes are generic properties of all constructionist approaches' (Jones et al., 2012: 103). To explain the approach adopted by Jones et al. (2012), I take the pair *tall/short* as an example of canonical antonyms.

In the treatment presented by Jones et al. (2012), particular pairs of antonyms, like *tall* and *short*, are thought of as instantiations of a schematic Antonym Construction. The construction of the pair *tall/short* is modelled formally in Figure 6.8 which shows that the two words are the daughters of a lexical mother with a syntax of [+LEX] and UNIT 2, and pragmatics of contrast. The feature [+LEX] indicates that the mother is a lexical item, and the feature UNIT2 indicates that this mother consists of two parts which are also lexical. The pragmatic feature contrast means that opposition is at the level of pragmatics. This feature allows the construction to unify with contrastive frames. In BCG, constructions are put in a hierarchy which allows them to unify if their features are compatible.

Figure 6.8: The antonym construction *tall/short*
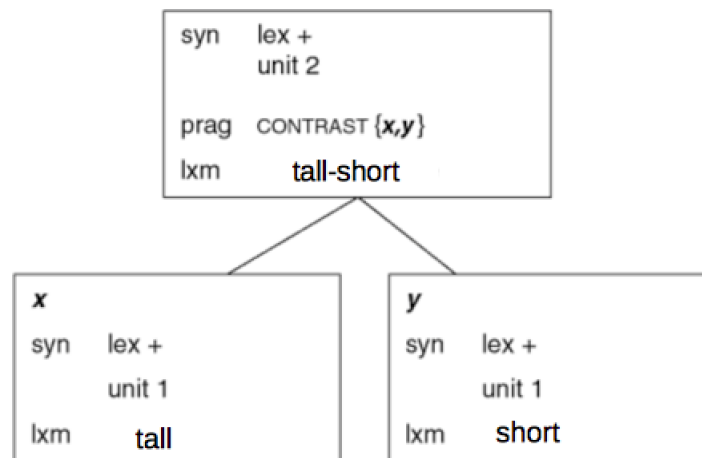
The schematic Antonym Construction, however, is lexically unfilled. It is defined as 'an unlexicalized construction that serves as the framework for lexicalized antonym constructions and that can also be used in the generation of new antonym pairings in context (i.e. antonym constructs)' (Jones et al., 2012: 116). Jones et al. (2012) give a schematic representation of the antonym construction, repeated in Figure 6.9. This representation allows the Antonym Construction to license opposition in context because it does not specify a certain opposition relation, such as converseness for example (Jones et al., 2012: 119). The construction is licensed when the context indicates contrastive proposition.

Figure 6.9: The Antonym Construction (Jones et al., 2012: 119)
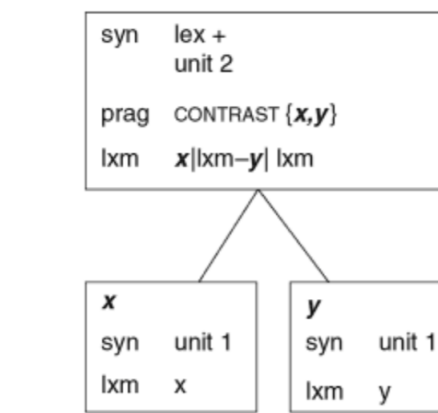
The Antonym Construction is assigned four properties (Jones et al., 2012: 116). These four properties constrain the construction as follows. The first property states that 'the entire construction is specified as lexical [+LEX]'. This is in order to distinguish it from phrasal -LEX constructions. By introducing this feature, they introduced a type of lexical construction that has daughters. The second property of the Antonym construction assigns two daughters for it. These two daughters are usually +LEX, too; which means that the construction consists of two discontinuous lexical items. The third property states that 'a feature UNIT is specified as 2'. This means that this feature is introduced to specify that this construction consists of two lexical items not just one. Finally, the fourth property is that 'pragmatically, the two daughters are considered to be minimally different for the purposes at hand'. This refers to the pragmatic feature specification CONTRAST that aligns pragmatic and semantic properties of the pair of

antonyms. It is a feature of the mother not the daughters. This allows for accounting for both conventionalized antonymous pairs (canonical ones) and those that are contextually instantiated.

The antonym construction 'posits no linear or hierarchical syntactic relations among the members of the antonym pair' (Jones et al., 2012: 121). This allows variation in antonym order.

Looking at antonyms as a single constructions in this way is beneficial in several ways. First the Antonym Construction provides a means to explain the observed high co-occurrence of antonymous pairs. The Antonym Construction can also help account for the special case of canonical antonyms and their representation in the lexicon. Canonical antonyms require both semantic and lexical relation between two concepts. Finally, the Antonym Construction can explain how certain pairs of antonyms have become so conventionalized in their frames that they acquired an idiomatic meaning as in the Idiomatic Antonymy category.

6.4   Concluding remarks

This chapter has presented an introduction to Construction Grammar with special reference to SBCG. It showed that CxG offers a suitable model for accounting for antonymous pairs in text, and explained previous work on canonical antonyms form a construction grammar point of view. The importance of this chapter is that it showed that canonical antonyms are suitable candidates to be constructions because they represent a form-meaning pairing. The chapter sets the floor for an investigation of antonymy in Arabic using SBCG which is a modal for the syntax-semantics interface. Antonym constructions and coordination constructions in Arabic are presented in the following chapter.

Chapter 7

A SBCG account of antonyms and coordination in MSA

The main goal of this chapter is to provide a constructionist account of antonymous pairs co-occurring in Arabic text using Sign-Based Construction Grammar. Pairs of canonical antonyms are argued to be an instantiation of a lexical construction, the *antonym-cxt*. I use SBCG to present an account of antonyms as constructions, and of some conventionalised uses of antonyms. First, section 7.1 introduces the antonym construction. It is divided into two subsections. The first subsection discusses semantic and pragmatic aspects of antonymy in which I follow Murphy (2003) in that 'semantic considerations are at least as important as pragmatic' ones (Murphy, 2003: 174). The second subsection discusses the formalised antonym construction and the construct *antonym-cxt* that licenses it.

As was discussed in the previous chapters, antonymous pairs are found coordinated in text more than in any other construction, such as negation or comparison. Therefore, section 7.2 of this chapter investigates the coordination construction. A general discussion of Arabic coordination and agreement is presented with examples. On the basis of this discussion, I present the SBCG account of Arabic coordination.

Lastly, some uses of coordinated antonyms become conventionalised over time so that they develop specific meanings of their own. An example of this is when antonyms are coordinated in order to refer to a single domain shared by the pair. This use is referred

to as Unity in Jones's (2002) investigation of English antonyms and is hound in the MSA data in this study, see section 5.13. In this use the pair of antonyms is presented 'as one large noun phrase rather than two small noun phrases' (Jones, 2002: 100). The third section of this chapter investigates Unity as an example of conventionalisation of constructions and compares it to coordinating antonyms for Inclusiveness.

7.1 Antonym constructions in SBCG

A construction in SBCG sketches out relevant information regarding all levels of linguistic representation. The relevant information for the antonym construction is in its semantic and pragmatic features. For this reason, the first part of this section reviews some semantic and pragmatic considerations regarding antonymy. These two levels are equally important because contrast is triggered on the contextual level, and conventionalised canonical pairs share a semantic relation. The syntax and, in more cases than not, morphological template of the construction are parallel to each other. When a pair is presented as pragmatically contrastive, less parallel semantic and morphological features are overlooked. When pairs of antonyms are conventionalised and they acquire a canonical status, they appear in less parallel structures.

Semantic and pragmatic considerations

This section sets the background for understanding how a conventionalised antonym construction is used in discourse. It presents a link between our understanding of antonymy relations in context and how this understanding is represented in SBCG terminology. First, I review how an antonymous implicature is construed pragmatically in context. Then a conventionalised pair of antonyms is discussed as having a semantic relation.

Canonical pairs of antonyms co-occur in certain parallel contrastive structures. This phenomenon was found in a number of languages: English (Mettinger, 1994; Jones, 2002; Jones and Murphy, 2005), Swedish (Murphy et al., 2009), Japanese (Muehleisen and Isono, 2009), Serbian (Kostić, 2011), Qura'anic Arabic (Hassanein, 2012), and Chinese (Hsu, 2015). These contrastive structures were also found in English to host non-

canonical oppositions, triggering a contrastive implicature between them (Davies, 2013).

Contrast is generated locally in context; and therefore, words have different opposites in different contexts. For example, while the two words *aloof* and *human* are not in an opposition relation lexically, they are presented as opposed to each other in the sentence (212).

(212)   Let the professionals remember that the politicians that the public likes best are not the **aloof** ones but the **human** ones.(*Guardian*; In Jeffries, 2010: 36)

The opposition between these words is triggered in this context by the fact that they are parallel to each other along with the contrastive structure *X but Y* (Jeffries, 2010; Jones et al., 2012). From a Frame Semantics point of view, contrasting phrases share the same frame or at least a higher inherited frame (Uchida and Fujii, 2011). The two opposing words in (212), for example, both refer to TRAITS OF POLITICIANS. In other words, the context these two words are found in frames them as opposites. They are two adjectives used to describe two types of the same group. The opposition relation between *aloof* and *human* is not a lexical relation; instead, the contrast between these two words is triggered in actual language use through a contrastive implicature. The implicature in this sentence is that politicians who keep their distance are less human than those who are closer to the public. It also implicates that the word *human* entails *warm* and *empathetic* (Jeffries, 2010).

Contrast originates pragmatically in conversational implicature, and using the same construction for the same implicature frequently can lead to the implicature being semantically associated with the construction. This process of form-meaning association can lead to implicature conventionalisation (Kay and Fillmore, 1999). A construction that received much investigation in the construction grammar literature is the 'what's X doing Y' (WXDY). This construction is not a contrastive construction, but it shows how implicature can be conventionalised:

> While the WXDY construction may have had its origin in conversational implicatures - through situations in which the individual A is clearly up to no good and B asks what A is doing - the semantics of incongruity is now CONVENTIONALLY associated with a special morphosyntax of WXDY constructs. (Kay and Fillmore, 1999: 5; emphasis original)

This conventionalisation of implicature can happen both over time and over the course of language acquisition (Bybee, 2013). The result is a construction that has to be accounted for independently of its compositional meaning.

Going back to the sentence in example (212), if the words *human* and *aloof* are used repeatedly over time in different contrastive structures, they may acquire a canonical antonym status. Only then do parallel contrastive constructions become less required to frame these two words as contrastive.

Following from this argument, less conventionalised pairs of opposites need to be parallel to each other syntactically and semantically. *Syntactically parallel* means that the two pairs share the same distribution in the sentence, such as *not the aloof ones but the human ones* in sentence (212). Both *human* and *aloof* occur in the structure *the ADJ ones. Semantically parallel*, on the other hand, means that they share all of their semantic features except one (Murphy et al., 2015). However, more conventionalised antonymous pairs, i.e. canonical antonyms, do not always require these contrastive frames. Therefore, less parallel use of antonymous pairs can emerge.

A constructionist account of canonical antonyms

This section presents a formalised account of the antonym construction in Arabic using SBCG by outlining where it stands in the type hierarchy, what combinatorial construction licenses its construct, and how it accounts for the co-occurrence of antonymous pairs in text. Examples from Arabic are then presented to show this construction at work.

SBCG assumes two parts in a grammar of a language. The first part is the constructicon which lists the listemes and constructions of the language that provide the descriptions of specific feature structures of the language. The other part of the grammar is the grammar signature which specifies general properties of feature structures and outlines the type hierarchy of the language. In the constructicon, the antonym con-

struction proposed in this chapter is an *expression* that is licensed by a combinatorial construction with the name *antonym-cxt* which is composed of feature structures that impose certain constraints on its mother and two daughters. This *antonym-cxt* is specified in the grammar signature as of type *symmetrical relation expression* and is incorporated in the type hierarchy as is shown in (213).

(213)   *expression*

          overt-expr   *covert-expr*

      phrase   *sym-rel-expr*
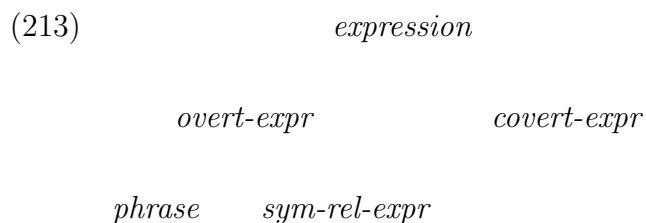
The tree in (213) outlines part of the type hierarchy presented by Sag (2012). I propose that this part is the same as the type hierarchy of the Arabic language. The tree shows the type *expression* and the types below it. A construction of the type *expression* can be either covert or overt. A covert expression is not lexically realised such as *gap*. An overt expression has the maximal type *phrase* and the proposed *symmetrical-relation-expression*. The type *symmetrical-relation-expression* (*sym-rel-expr*) is a maximal type that satisfies all its super-types *overt-expr* and *sign*. It is a 'relation expression' because the expression is composed of two semantically related words. It is also 'symmetrical' because the two words share a reciprocal relationship. A symmetrical relation is a relation shared by two signs, as such each one bears the same relation to the other. For example, the antonym of *long* is *short* and the antonym of *short* is *long*.

The maximal type *sym-rel-expr* can arguably account for any semantically related words that have symmetrical relation like antonyms, synonyms, and co-hyponyms. However, for the purpose of this study, only the antonym construction is examined as of type *symmetrical-relation-expression*.

The construct that licenses the *antonym-cxt* is sketched out in (214) below. The mother of the *antonym-cxt* poses further restrictions on its semantics in addition to the compositionality principle discussed earlier.[1] There are two restrictions: that they have a lexical relation, and that this relation is reciprocal. Before going through the construction in detail, I first introduce the frame *word-relation-fr* used in it. This frame is adopted

---

[1]The compositionality principle states that the semantics of the daughters combine to form the semantics of the mother (Sag et al., 2003). See chapter 6.

from FrameNet (*https://framenet.icsi.berkeley.edu*)[2]. It specifies the frame element *signs* for the two related words when they are symmetrical. For example, antonym pairs like *long/short* or co-hyponyms like *table/chair* are both labelled *signs* as one unit. Otherwise, the frame elements *sign$_1$* and *sign$_2$* are assigned for asymmetrical word relations, e.g. *mother/daughter*.

(214) The *antonym-cxt* ($\uparrow$ *symmetrical-relation-expression*)

$$
\begin{bmatrix}
\text{MTR} \begin{bmatrix}
\text{SEM} \begin{bmatrix}
\text{INDEX} & \boxed{x} \\
\text{FRAMES} \left\langle \begin{bmatrix} \textit{word-relations-fr} \\ \text{signs} \quad \boxed{y}\,\boxed{z} \end{bmatrix}, \begin{bmatrix} \textit{recip-fr} \\ \text{RECIP\_SIT} \ s \end{bmatrix} \oplus L_1, L_2 \right\rangle
\end{bmatrix} \\
\text{CNTXT} \quad \left\langle \boxed{x} : \begin{bmatrix} \textit{contrastive-fr} \\ \text{INCOMPATIBLE} & l_1 \\ \text{MINIMALLY\_DIFFERENT} & l_2 \end{bmatrix} \right\rangle
\end{bmatrix} \\
\text{DTRS} \left\langle \begin{bmatrix} \text{SEM} \begin{bmatrix} \text{LABEL} & \boxed{y} \\ \text{LTOP} & l_0 \\ \text{FRAMES} & L_1 \end{bmatrix} \end{bmatrix}, \begin{bmatrix} \text{SEM} \begin{bmatrix} \text{LABEL} & \boxed{z} \\ \text{LTOP} & l_0 \\ \text{FRAMES} & L_2 \end{bmatrix} \end{bmatrix} \right\rangle
\end{bmatrix}
$$

Looking at the construction in (214) from top to bottom, the semantics of the mother in the antonym construction is indexed as x. The FRAMES feature lists two frames in addition to the principle of compositionality represented in the construction as $\oplus$ L_1, L_2. The first frame is the *word-relations-fr*, which has the frame element *signs* with the two daughters, y and z, as its value. The second frame is the *recip-fr* which applies the second restriction on the pair that they are reciprocal. The CNTXT feature specifies that the mother is contrastive. The *contrastive-fr* is a frame that I introduce in order to account for a pair of antonyms. It has two frame elements: *incompatible* which labelled as l_1. This is to show that the mother in any antonym construction chooses two incompatible signs to be its daughters. The other frame element is *minimally-different* which is labelled as l_2, to indicate that these incompatible signs have to be minimally different.

The DTRS feature of the *antonym-cxt* is a list of two daughters labelled y and z. Because the *antonym-cxt* is a non-headed construction, neither of the two daughters is labelled *HD-DTR* (head daughter), and therefore nothing is said about their order. The local top handle for both daughters is the same. This labels the shared frame between the

---

[2]FrameNet is a project run by the University of Berkeley based on frame semantics (Fillmore, 1982).

two daughters, because as was show earlier when the semantic and pragmatic properties of antonyms were discussed, a pair of antonyms have a top frame that they share. Their semantic frames combine to be added to the word relation frame (*word-relations-fr*) and reciprocal frame (*recip-fr*) in the mother.

This schematic construction represents how co-occurring canonical antonym pairs are represented in any language. The English antonymous pair *leave/stay* in the sentence *Pat left but Jane stayed* is licensed by the same construction. Two incompatible but minimally different words that stand in a symmetrical word relation are contrasted.

The *antonym-cxt* says nothing about the syntax of the mother and daughters. It only poses restrictions on their semantics and pragmatics. This allows oppositions of different syntactic categories to be construed locally. This construction accounts for canonical antonymous pairs that have been conventionalised in the lexicon so that less parallel occurrences are allowed.

The focus of this chapter, however, is to investigate the *antonym-cxt* in Arabic. The sentence in (215) shows an example of the *antonym-cxt*. The two nouns الحب *alḫubb* 'love' and الكره *alkurh* 'hate' occur in a coordinated construction. They are licensed together as two contrasting word instantiations of a single domain.

(215) لا تفرط في الحب والكره، فقد ينقلب الصديق عدواً والعدو صديقاً (arTenTen: doc.id: 120751, s.id: 3174846)

lā   tufriṭ fī **al-ḫubb wa-l-kurh**   fa-qad   yanqalibu a-ṣṣadīqu
don't overdo in **the-love and-the-hate** for-might turn   the-friend
ʕaduwan wa-l-ʕaduwu   ṣadīqan
enemy   and-the-enemy friend

Don't overdo/exaggerate love and hate for one day the friend might turn to an enemy and the enemy to a friend

I first sketch out the constructions for الحب *alḫubb* 'love', in Figure 7.1, and الكره *alkurh* 'hate', in Figure 7.2, separately, then show them in an antonym construction.

Figure 7.1: Representation of the sign الحب *alḫubb* 'love'

$$
\begin{bmatrix}
\textit{sign} \\
\text{MORPH} & \begin{bmatrix} \text{ROOT} & h\text{ - }b\text{ - }b \\ \text{TEMPLATE} & \textit{CuCC} \end{bmatrix} \\
\text{SYN} & \begin{bmatrix} \textit{syn-obj} \\ \text{CAT} & \begin{bmatrix} \textit{noun} \\ \text{CASE} & \textit{genitive} \\ \text{GENDER} & \textit{masc} \\ \text{DEF} & \textit{yes} \end{bmatrix} \\ \text{MRKG} & \textit{unmrk} \end{bmatrix} \\
\text{SEM} & \begin{bmatrix} \textit{sem-obj} \\ \text{IND} & i \\ \text{LTOP} & l_0 \\ \text{FRAMES} & \left\langle \begin{bmatrix} \textit{emotion-fr} \\ \text{LABEL} & l_0 \\ \text{STATE} & \text{love} \end{bmatrix}, \begin{bmatrix} \textit{loving-fr} \\ \text{LABEL} & l_1 \\ \text{STATE} & i \end{bmatrix} \right\rangle \end{bmatrix}
\end{bmatrix}
$$

Figure 7.2: Representation of the sign الكره *alkurh* 'hate'

$$
\begin{bmatrix}
\textit{sign} \\
\text{MORPH} & \begin{bmatrix} \text{ROOT} & k\text{ - }r\text{ - }h \\ \text{TEMPLATE} & \textit{CuCC} \end{bmatrix} \\
\text{SYN} & \begin{bmatrix} \textit{syn-obj} \\ \text{CAT} & \begin{bmatrix} \textit{noun} \\ \text{CASE} & \textit{genitive} \\ \text{GENDER} & \textit{masc} \\ \text{DEF} & \textit{yes} \end{bmatrix} \\ \text{MRKG} & \textit{unmrk} \end{bmatrix} \\
\text{SEM} & \begin{bmatrix} \textit{sem-obj} \\ \text{IND} & i \\ \text{LTOP} & l_0 \\ \text{FRAMES} & \left\langle \begin{bmatrix} \textit{emotion-fr} \\ \text{LABEL} & l_0 \\ \text{STATE} & \text{hate} \end{bmatrix}, \begin{bmatrix} \textit{hating-fr} \\ \text{LABEL} & l_1 \\ \text{STATE} & i \end{bmatrix} \right\rangle \end{bmatrix}
\end{bmatrix}
$$

The FORM feature in the AVM is replaced by a MORPH feature in Arabic signs (Islam et al., 2010). MORPH lists the root and template of Arabic words. The LTOP in both words is the *emotions-fr*.[3] The two signs share their morphological template, their syntax, and much of their semantics.

Figure 7.3 (overleaf) shows a mapping of the two signs into the schematic *antonym-cxt*.

The representation of the *antonym-cxt* in (214) accounts for co-occurring antonymous pairs sharing a lexical relation. They do not have to be parallel in terms of their syntax. The construction of the antonym pair *love/hate* in Figure 7.3, however, indicates that the mother and daughters share the same syntax. This is a reflection of their use in this particular construction rather than a rule for all antonym pairs. This construction shows antonyms co-occurring in a given sentence in the same part of speech, having the same argument structure, and in more cases than not having the same morphology, i.e. the prototypical pair.

Minimal difference is key to the prototypicality of antonym pairs, and parallelism forces members of an antonym pair to be morphosyntactically similar such that both items can serve similar roles in a grammatical structure. In the Arabic data, 92% of antonymous pairs are parallel to each other syntactically. Therefore, I regard antonym pairs with parallel syntax as the prototypical antonym construction, as it has been proposed since Lakoff (1987) that regular constructions are prototypes while idiosyncratic ones inherit properties from more central constructions. However, my treatment does not put these constructions in a hierarchy that would allow inheritance. The *antonym-cxt* accounts for canonical antonyms co-occurring in text.

The *antonym-cxt* does not enforce syntactic parallelism on the co-occurring antonym pair, as it is a condition imposed on the antonyms from the schematic constructions that host them. The advantage of not including information about parallel syntax in the antonym construction is that less parallel antonym co-occurrences are included in the constraints posited by the construction. This is because less-parallel occurrences cannot inherit all features of their super-type; and inheritance in SBCG must be complete

---

[3]The frame *emotion-fr* is adopted from FrameNet list of frames in *https://framenet.icsi.berkeley.edu*

Figure 7.3: Formal representation of الحب 'love' and الكره 'hate' as a construction

$$
\begin{bmatrix}
\text{MTR} \begin{bmatrix}
\text{MORPH} \quad \begin{bmatrix} \text{TEMPLATE} & \boxed{2} \end{bmatrix} \\
\text{SYN} \quad \boxed{1}\,! \begin{bmatrix} \text{MRKG} \end{bmatrix} \\
\text{SEM} \begin{bmatrix}
\text{INDEX} \quad \boxed{x} \\
\text{FRAMES} \left\langle \begin{bmatrix} \textit{word-relations-fr} \\ \text{signs} \quad \boxed{y}\ \boxed{z} \end{bmatrix}, \begin{bmatrix} \textit{recip-fr} \\ \text{RECIP\_SIT}\ s \end{bmatrix} \oplus L_1,\ L_2 \right\rangle
\end{bmatrix} \\
\text{CNTXT} \quad \left\langle \boxed{x} : \begin{bmatrix} \textit{contrastive-fr} \\ \text{incompatible} \qquad \text{signs} \\ \text{minimally different} \quad \text{signs} \end{bmatrix} \right\rangle
\end{bmatrix} \\[2em]
\text{DTRS} \left\langle
\begin{bmatrix}
\text{MORPH} \begin{bmatrix} \text{ROOT} & h\text{-}b\text{-}b \\ \text{TEMPLATE} & \boxed{2} : CuCC \end{bmatrix} \\
\text{SYN} \quad \boxed{1} : \begin{bmatrix} \text{CAT} \begin{bmatrix} \textit{noun} \\ \text{CASE} & \textit{genitive} \\ \text{DEF} & + \\ \text{GENDER} & \textit{masculine} \end{bmatrix} \\ \text{MRKG} \quad \textit{mrk} \end{bmatrix} \\
\text{SEM} \begin{bmatrix} \text{INDEX} & \boxed{y} \\ \text{LTOP} & l_0 \\ \text{FRAMES} & L_1 \end{bmatrix}
\end{bmatrix},
\begin{bmatrix}
\text{MORPH} \begin{bmatrix} \text{ROOT} & k\text{-}r\text{-}h \\ \text{TEMPLATE} & \boxed{2} : CuCC \end{bmatrix} \\
\text{SYN} \quad \boxed{1} : \begin{bmatrix} \text{CAT} \begin{bmatrix} \textit{noun} \\ \text{CASE} & \textit{genitive} \\ \text{DEF} & + \\ \text{GENDER} & \textit{masculine} \end{bmatrix} \\ \text{MRKG} \quad \textit{unmrk} \end{bmatrix} \\
\text{SEM} \begin{bmatrix} \text{INDEX} & \boxed{z} \\ \text{LTOP} & l_0 \\ \text{FRAMES} & L_2 \end{bmatrix}
\end{bmatrix}
\right\rangle
\end{bmatrix}
$$

because partial inheritance is not allowed (Boas, 2013).

7.2   The coordination construction

The antonym construction is a lexical construction and does not generally stand alone. Therefore, it is always hosted inside another syntactic construction. The *antonym-cxt* is found in a coordination schematic construction more than any other construction, or syntactic frame as it is referred to in the literature (Jones, 2002; Davies, 2013; Murphy et al., 2009; Kostić, 2011). In fact, 49.33% of the Arabic dataset consists of sentences hosting antonymous pairs in coordinated signs or clauses. This high co-occurrence of antonyms in coordination constructions is found cross-linguistically, as has been shown earlier in chapter 5. For this reason, I present a constructionist treatment of coordination in Arabic in this section. My treatment of coordination in Arabic takes after Chaves (2007, 2012, 2014), discussed in chapter 6.

I first present idiosyncratic characteristics of coordination in Arabic that would need special treatment not present in Chaves's treatment of English coordination such as dual number and gender agreement. After that, I resolve agreement issues between the coordination construction and the verbal head for Arabic. At the end of the section, more examples are provided to show how the antonym construction and the coordination construction combine.

Idiosyncrasies of Arabic coordination

In Arabic, only phrases of the same syntactic category are coordinated. Coordinates also always share the same case, in coordinated noun phrases, and the same mood, in coordinated verb phrases. This makes Chaves's (2012) treatment appealing as it poses the constraint that all coordinates need to have the same category.

However, there are several uses of *wa-* 'and' where the two connected parts do not share the same syntax. One of these uses is exemplified in sentence (216).

(216) تحدث وإياه مطولا (Ryding: 2005, 308)

taḥaddaṯa wa-ʔiyāhu muṭawwalan
talked   and-him   for.a.long.time

He talked with him for a long time.

In this sentence, *wa-* does not function as a conjunction particle but rather as a 'connector which takes the accusative case (*waaw al-maʕiyya*) on a following noun, signifying concomitance or accompaniment' (Ryding, 2005: 308). Yet another use of *wa-* is presented in sentence (217).

(217)   ألا يجور ويقصد (ʔabī allaḫām, http://*www.lesanarab.com/kalima/*قصد)

ʔallā yaǧūra wa-yaqṣidu
not.to oppress and-be.fair

[he has to] not oppress. Be fair.

Sentence (217) above shows the particle و *wa-* 'and' in a non-coordinating use. In this sentence, *wa-* is used as an introductory particle that introduces a new topic (Ryding, 2005). It indicates 'that the argument or discussion is still ongoing with no major breaks' (Al-Batal, 1990: 246). In this use, the second phrase does not share the same inflection for case or mood with the first phrase.

The present treatment concerns conjunction only. The examples presented throughout the following discussion show several ways in which agreement between the verb and subject is affected by word order and conjunction.

'[T]he coordinate structure has the same grammatical function and category as the conjuncts' (Chaves, 2007: 19). Therefore, agreement between a coordinated phrase and the verb needs to be addressed. Regarding number agreement, a coordinated structure is semantically plural (Al-Batal, 1990). Coordination has an additive nature where two

single phrases make a plural mother.[4] Sentence (218) below shows that this is also the case for Arabic.

(218) الطلاب ومدرستهم رسموا جدارية.

a-ṭṭullābu wa-mudarrisatu-hum rasamū ʤidāriyyah
the-studentsMASC.PL and-teacher-theirFEM.SNG drew3RD.MASC.PL mural

The students and their teacher drew a mural.

In this sentence, 'the students', which is a plural noun, along with 'their teacher' have painted a mural. This plurality is shown on the verb رسموا as it is marked with plural suffix و 'ū'. However, sentences in (219) below show that two singular noun phrases give a dual coordination construction, which is also marked on the verb.

(219) a. الطالب ومدرسه رسما جدارية.

a-ṭṭālibu wa-mudarrisu-hu rasamā ʤidāriyyah
the-studentMASC.SNG and-teacher-hisMASC.SNG drew3RD.MASC.DL mural
The student and his teacher drew a mural.

b. الطالبة ومدرستها رسمتا جدارية.

a-ṭṭālibatu wa-mudarrisatu-hā rasamatā ʤidāriyyah
the-studentFEM.SNG and-teacher-herFEM.SNG drew3RD.FEM.DL mural
The student and her teacher drew a mural.

In sentence (219a), the student is a singular masculine noun and 'his teacher' is a singular masculine noun, too. The verb is, therefore, marked as dual and masculine. Similarly, sentence (219b) shows a similar pattern as sentence (219a); it only differs in that the nouns, and therefore the verb, are feminine. I follow Chaves (2014) that the features of the daughters are unified in the features of the mother. If the coordinates are both singular, the mother's number feature is dual. If one or more of the coordinates is a dual or plural noun, the number feature in the mother is plural.

---

[4]Chaves (2014) argues that this cumulative nature is not restricted to noun phrases; verb phrases produce event pluralities, too.

The same feature unification procedure can be used to account for gender agreement where two masculine/feminine coordinates give a masculine/feminine mother as in (219a) and (219b) respectively. When two phrases that differ in gender are coordinated the mother is always masculine, as in (220) below.

(220) الطالب ومدرسته رسما جدارية.

a-ṭṭālibu   wa-mudarrisatu-hu   rasamā   ʤidāriyyah
the-studentMASC.SNG and-teacher-hisFEM.SNG drew3RD.MASC.DL mural

The student and his teacher drew a mural.

Agreement in Arabic, however, is not straightforward and there are several syntactic and semantic constraints that need to be taken in consideration. As seen in the examples above, the verb is marked for agreement with the subject in number, person, and gender. This agreement paradigm is affected by word order (Aoun et al., 2009). For example, the verb shows full agreement with the subject in sentences with SVO order as in the sentences (218) - (220) discussed above, and in sentence (221) below.

(221) الطلاب رسموا جدارية جميلة.

a-ṭṭullābu   rasamū   ʤidāriyyatan ʤamīlah
the-studentsMASC.PL drew3RD.MASC.PL mural   beautiful

The students drew a beautiful mural.

However, the verb shows partial agreement in VSO order. In VSO order, the verb is always singular but agrees in gender with the subject as in sentence (222) below.

(222) رسم الطلاب جدارية جميلة.

rasama   a-ṭṭullābu   ʤidāriyyatan ʤamīlah
drew3RD.MASC.SNG the-studentsMASC.PL mural   beautiful

The students drew a beautiful mural.

Both sentences (221) and (222) have the same interpretation in English. Sentence (221) is in SVO word order. The verb agrees fully with the subject; it is marked as masculine and plural. Sentence (222), on the other hand, is in VSO word order. In this case the verb agrees partially with the subject, i.e. in gender only. The subject is masculine and therefore the verb is masculine, too. Similarly, when the subject is feminine as in (223) below, the verb is marked as feminine, too.

(223) رسمت الطالبات جدارية جميلة.

rasamat   a-ṭṭālibātu   ʤidāriyyatan ʤamīlah
drew3RD.FEM.SNG the-studentsFEM.PL mural   beautiful

The students drew a beautiful mural.

The subject الطالبات *aṭṭālibātu* 'the students' is in the regular feminine plural ending with ات. The verb agrees with it in gender and is marked with ت at the end.

Agreement is even more complicated when the subject is a coordinated construction. The SVO sentences (218) - (220) above show the verb agreeing with the coordinated construction as a whole. The verb is marked as dual when the coordinated phrases are singular as in (219a) - (220); or as plural otherwise as in (218). However, when the sentence is in VSO order, the verb agrees only with the first conjunct as in sentence (224) below.

(224) رسمت المدرسة وطلابها جدارية.

rasamat   al-mudarrisatu   wa-ṭullābu-hā   ʤidāriyyah
drew3RD.FEM.SNG the-teacherFEM.SNG and-students-herMASC.PL mural

The teacher and her students drew a mural.

The verb is marked as singular and feminine because it agrees with the first conjunct in the coordination construction, المدرسة *almudarrisah* 'the teacher'. This special case of agreement is called in the literature Arabic Conjunct-Sensitive Agreement (ACSA).

This agreement asymmetry cannot be captured by feature unification. Therefore, I propose that the VSO construction imposes an agreement paradigm of its own and blocks agreement with the mother of the coordination construction.

Based on the characteristics of Arabic agreement discussed above, the next section explains how coordination in Arabic can be accounted for in SBCG.

Coordination Construction

The account presented by Chaves (2012) for the coordination construction (*coord-cxt*) can be extended to Arabic coordination. The daughters in the *coord-cxt* are two, or more, conjuncts. The first of these conjuncts is marked as [CRD -] while the rest are marked as [CRD +]. The number and gender values of the daughters get unified in the mother where agreement is decided. I propose that the Arabic Conjunct-Sensitive Agreement (ACSA) is not determined by the *coord-cxt* but rather enforced by the *head-complement-cxt* when the verb is combined with its complement. In this section both constructions are discussed.

Chaves (2014) presents a SBCG account of one type of coordination, one that he calls the non-Boolean conjunction. The main characteristic of this type of coordination is that it combines the features of the daughters to make a plurality. The formalism for this type of coordination is sketched out in (225) where the first conjunct is marked as [CRD -], while the CRD feature for the second, and subsequent, daughters has the value *(conj)unction.*

(225)   Non-Boolean conjunction (and the shared dependent condition) (Chaves, 2014: 859)

$$
\left[
\begin{array}{l}
\begin{bmatrix}
phrase \\
\text{SYN} \left[\Gamma \left\langle \text{XP}_0^{z_0}, \ldots, \text{XP}_n^{z_n} \right\rangle \right] \\
\text{SEM} \begin{bmatrix} \text{INDEX } k \\ \text{RELS} \left\{ k = i \oplus j,\ z_0 = x_0 \oplus y_0,\ \ldots\ z_n = x_n \oplus y_n \right\} \cup P \cup Q \end{bmatrix}
\end{bmatrix} \\[2em]
\rightarrow
\begin{bmatrix}
\text{SYN} \left[\Gamma \left\langle \text{XP}_0^{x_0}, \ldots, \text{XP}_n^{x_n} \right\rangle \right] \\
\text{SEM} \begin{bmatrix} \text{INDEX } i \\ \text{RELS } P \end{bmatrix} \\
\text{CRD -}
\end{bmatrix}
\begin{bmatrix}
\text{SYN} \left[\Gamma \left\langle \text{XP}_0^{y_0}, \ldots, \text{XP}_n^{y_n} \right\rangle \right] \\
\text{SEM} \begin{bmatrix} \text{INDEX } j \\ \text{RELS } Q \end{bmatrix} \\
\text{CRD } conj
\end{bmatrix}
\end{array}
\right]
$$

Chaves uses formal semantics in this construction. The feature relations (RELS) replaces the feature FRAMES which is based on frame semantics. In this feature the mother's index k shows the unification of the index of both daughters $k = i \oplus j$. The unification of the daughters' relations $P \cup Q$ is similar to the compositionality principle where the lists of frames in the daughters are combined in the mother $L_1 \oplus L_2$. The Γ in the SYN feature records all shared syntactic dependencies (EXTRA, VAL, SLASH [GAP], and SEL), and any one of these dependencies can replace Γ (Chaves, 2014: 259). This feature accounts for across-the-board extraction, deletion, and agreement. I argue that in order to account for gender agreement both summative agreement and first conjunct agreement are needed. This is explored further below when ACSA is addressed.

Some features presented by Chaves (2007, 2012), and adopted here, are based on the ellipsis-based account of coordination presented in Beavers and Sag (2004) using HPSG. However, the coordination construction here is viewed as a unit rather than a shortened version of another clause. A *coord-cxt* can function as a constituent in the sentence similar to a single sign. For example, in sentence (226), the construction أكبر وأصغر *ʔakbar wa-ʔṣġar* 'bigger and smaller' shows two signs of the category adjective coordinated to form a single adjective phrase that functions as a predicative adjective in the sentence.

(226) ومعلومات إن بدت ساءت، ومعلومات أكبر وأصغر من السائل (arTenTen: doc.id: 4911851, s.id: 106506189)

wa-maʕlūmātin ʔin badat sāʔat wa-maʕlūmātin **ʔakbaru wa-ʔaṣġaru**
and-information if revealed upset and-information **bigger and-smaller**
min a-ssāʔil
than the-asker

and information if revealed will upset people, and information that is bigger and smaller than the person asking about it.

In other words, the coordinated phrases make up a bigger phrase that can also function as a constituent in the sentence. The sentence (226), for example, is not related to similar sentences like the ones in (227). Instead, each of the sentences in (227) is the result of different coordination. The coordination in (227a) is a coordination of two clauses; and the coordination in (227b) is a coordination of two phrases.

(227) a. ومعلومات أكبر من السائل ومعلومات أصغر من السائل

wa-maʕlūmātin **ʔakbaru** min a-ssāʔil wa-maʕlūmātin **ʔaṣġaru** min
and-information **bigger** than the-asker and-information **smaller** than
a-ssāʔil
the-asker

and information bigger than the asker and information smaller than the asker.

b. ومعلومات أكبر من السائل وأصغر من السائل

wa-maʕlūmātin **ʔakbaru** min a-ssāʔil **wa-ʔaṣġaru** min a-ssāʔil
and-information **bigger** than the-asker **and-smaller** than the-asker

and information bigger than the asker and smaller than the asker.

Moreover, sentence (228) shows that two coordinate singular nouns have a dual mother. In the first part of the sentence, the word شيئان *šayʔān* 'two things' is dual and requires a dual referent. In the second part of the sentence, which is introduced by فـ *fa-*, the two nouns الموت والحياة *al-mawt wa-l-ḥayāt* 'life and death' provide the dual referent.

(228) فأما الشيئان المتباغضان فالموت والحياة (arTenTen: doc.id: 2239701, s.id: 51611814)

fa-ʔammā a-ššayʔān   al-mutabāġiđān   fa-l-mawtu wa-l-ḥayāt
and-as.for the-two.things the-hateful.of.each.other -the-death and-the-life

the two things hateful of each other are death and life

Sentence (228) is an equational clause with no verb present. Verbal clauses, on the other hand, can have either SVO word order or VSO word order. I discuss the use of the *antonym-cxt* as a subject in both word orders in order to account for the ACSA discussed above. To do this, I first discuss the Subject-Predicate construction that licenses SVO sentences. After that I discuss the Head-Complement Construction that licenses VSO sentences.

The *subj-pred-cl* construction in (229) below is taken from Sag (2012). I add the feature AGR for agreement to its SYN feature to show that the head daughter agrees with the subject in number and gender. If the subject is a coordinated phrase, then agreement is decided through Γ that unifies gender features of the daughter coordinates. Therefore, the head daughter in the subject-predicate construction, i.e. the verb, agrees with the mother of the *coord-cxt*.

(229) Subject-Predicate Construction ($\uparrow$*subj-head-cxt*):

$$
\begin{bmatrix}
\text{MTR} & \begin{bmatrix} \text{SYN } Y \text{ ! } \begin{bmatrix} \text{VAL } \langle\rangle \end{bmatrix} \end{bmatrix} \\
\\
\text{DTRS} & \left\langle X: \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{CASE } nominative \end{bmatrix} \\ \text{AGR} \begin{bmatrix} \text{NUMBER } i \\ \text{GENDER } j \end{bmatrix} \end{bmatrix}, Z: \begin{bmatrix} \text{SYN } Y: \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{VF } fin \\ \text{INV -} \\ \text{AUX -} \end{bmatrix} \\ \text{MRKG} \quad unmrk \\ \text{VAL} \quad \langle X \rangle \\ \text{AGR} \begin{bmatrix} \text{NUMBER } i \\ \text{GENDER } j \end{bmatrix} \end{bmatrix} \end{bmatrix} \right\rangle \\
\\
\text{HD-DTR} & Z
\end{bmatrix}
$$

I move to the Head-Complement Construction. Sag (2012) presents two types of the Head-Complement Construction: the Predicational Head-Complement construction (*pred-hd-comp-cxt*) in (230) and the Saturational Head-Complement Construction (*sat-hd-comp-cxt*) in (231).

(230) Predicational Head-Complement Construction (↑*headed-cxt*):

$$
\textit{pred-hd-comp-cxt} \Rightarrow
\begin{bmatrix}
\text{MTR} & \begin{bmatrix} \text{SYN } X \text{ ! } \begin{bmatrix} \text{VAL } \langle Y \rangle \end{bmatrix} \end{bmatrix} \\
\text{DTRS} & \langle Z \rangle \ \oplus L \text{ :nelist} \\
\text{HD-DTR} & Z{:}\begin{bmatrix} \textit{word} \\ \text{SYN } X{:}\begin{bmatrix} \text{CAT} & \begin{bmatrix} \text{XARG } Y \end{bmatrix} \\ \text{VAL} & \langle Y \rangle \oplus L \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

(231) Saturational Head-Complement Construction (↑*headed-cxt*):

$$
\textit{sat-hd-comp-cxt} \Rightarrow
\begin{bmatrix}
\text{MTR} & \begin{bmatrix} \text{SYN } X \text{ ! } \begin{bmatrix} \text{VAL } \langle \rangle \end{bmatrix} \end{bmatrix} \\
\text{DTRS} & \langle Z,\ Y : \begin{bmatrix} \text{AGR} \begin{bmatrix} \text{GENDER } i \end{bmatrix} \end{bmatrix} \rangle \oplus L \\
\text{HD-DTR} & Z : \begin{bmatrix} \textit{word} \\ \text{SYN } X : \begin{bmatrix} \text{CAT} \begin{bmatrix} \textit{verb} \\ \text{XARG NP} \end{bmatrix} \\ \text{AGR} \begin{bmatrix} \text{NUMBER } sng \\ \text{GENDER } i \end{bmatrix} \\ \text{VAL } Y \oplus L \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

A sentence with SVO order is licensed by the Subject-Predicate Construction that produced S-VO, and the Predicational Head-Complement Construction that produces V-O. On the other hand, VSO is considered an incident of a Saturational Head-Complement Construction (Pollard and Sag, 1994)

I add to the daughters of the *sat-hd-comp-cxt* the sign Y that acts as the subject of the verb Z. The agreement feature in Y is indexed i for its gender to show agreement in the verb. The construction in (231) licenses sentences like *rasamat a-ṭṭālibātu ʤidāriyyatan ʤamīlah* repeated from (223) above. The verb is singular as specified in the *sat-hd-comp-cxt*. It is also marked as feminine because the subject daughter (Y) is feminine. However, in the sentence *rasamat al-mudarrisatu wa-ṭullābu-hā ʤidāriyyah* repeated from (224) above, the gender agreement comes from the first conjunct in the coordinated structure. The Arabic coordination construction I propose in (232) accounts for this agreement asymmetry.

(232)   Non-Boolean conjunction in Arabic

$$
\begin{bmatrix}
phrase \\
\text{SYN} \begin{bmatrix} \text{CAT} & \boxed{1} \\ \text{AGR}_{sum} & \begin{bmatrix} \text{NUMBER } num_{i\oplus j} \\ \text{GENDER } gend_{i\oplus j} \end{bmatrix} \\ \text{AGR}_i & \boxed{2} \end{bmatrix} \\
\text{SEM} \begin{bmatrix} \text{INDEX } k \\ \text{FRAMES } L_1 \oplus L_2 \end{bmatrix} \\
\rightarrow \begin{bmatrix} \text{SYN} \begin{bmatrix} \text{CAT} & \boxed{1} \\ \text{AGR}_i \ \boxed{2} : \begin{bmatrix} \text{NUMBER } num_i \\ \text{GENDER } gend_i \end{bmatrix} \end{bmatrix} \\ \text{SEM} \begin{bmatrix} \text{INDEX} & i \\ \text{FRAMES} & L_1 \end{bmatrix} \\ \text{CRD -} \end{bmatrix}, \begin{bmatrix} \text{SYN} \begin{bmatrix} \text{CAT} \ \boxed{1} \\ \text{AGR}_j \begin{bmatrix} \text{NUMBER } num_j \\ \text{GENDER } gend_j \end{bmatrix} \end{bmatrix} \\ \text{SEM} \begin{bmatrix} \text{INDEX} & j \\ \text{FRAMES} & L_2 \end{bmatrix} \\ \text{CRD } conj \end{bmatrix}
\end{bmatrix}
$$

Chaves (2014) proposed the use of Γ as a variable for dependencies. In the coordination construction I propose for Arabic, I replace Γ with AGR_{sum} to indicate summative agreement. I also add the feature AGR_i indexed with the first conjunct's index to indicate ACSA. A verb in the *sat-hd-comp-cxt* selects the feature AGR_i for agreement.

Semantically, the coordination construction adds a plurality by combining both meanings of the conjoined phrases. It puts these meanings into a relationship that represents the meaning of the coordinating particle. For example, the coordinator *wa-* 'and' which operates on different levels of discourse has an additive function (Al-Batal, 1990). The coordinator *fa-* 'and then' signals a successive order of the conjoined phrases in addition to its additive function (Al-Batal, 1990). The coordinator *walākinna* 'but' is an adversative that cancels an expectation based on the first conjoined part (Al-Batal, 1990). Chaves (2007) argues that adversative conjunction 'is also a plurality-forming conjunction' (Chaves, 2007: 81). He provides the example in (233) below to show that an adverb can refer to the frequency of two event-types.

(233)   Often, Tom goes to the beach but I stay at home. (In Chaves, 2007: 81)

In sentence (233), the adverb *often* predicates over both coordinated clauses *Tom goes to the beach* and *I stay at home.*

The examples presented in the discussion of coordination above are all composed of two coordinated parts because the study is based on pairs of antonyms. However, the treatment of the coordination construction can be extended to coordination in Arabic with more than two coordinates, and without the integration with an antonym construction as some of the examples discussed above have shown.

In this section, I have presented a SBCG account of coordination in Arabic because the antonym construction is used in a coordination construction more often than any other construction. The section started with presenting how coordination is used in Arabic and a discussion of ACSA. After that the coordination construction was presented with some examples from the Arabic dataset. The section ended with an explanation of how the antonym construction fits within both types of VSO and SVO sentences in Arabic.

7.3 Conventionalised uses of the antonym construction

The work in this thesis presented different functions of the antonym construction. These functions differ according to the schematic constructions that host the antonym construction. However, coordination of antonyms is used for a number of functions because, as was discussed earlier in chapter 4, the coordination structure is polysemous. This section presents a SBCG account of two conventionalized uses of coordination, namely Inclusiveness and Unity.

7.3.1 Inclusiveness

Inclusiveness is the most used antonym function of coordination, and of all other antonym functions in MSA and in other languages, too (see chapter 5). In the category of Inclusiveness, antonym pairs are used in a coordinating structure to indicate inclusiveness of the pair. This use of antonyms is similar to non-Boolean conjunction that was discussed in section 7.2. For example, in Inclusiveness, as in non-Boolean conjunction, the coordinated antonyms represent a plurality as sentence (234) shows.

(234) بالإضافة إلى إدارة خاصة بتمليك الشركات بمعرفة أسباب نجاحها وفشلها (arabiCorpus: *Ahram99*, ref: 090199ECON04)

bi-l-ʔiđāfah   ʔilā ʔidārah   xāṣah bi-tamlīk   a-ššarikāt
in-the-addition to   department special in-possession the-companies
bi-maʕrifat   ʔasbāb **naʤāḫi-hā wa-fašali-hā**
in-identifying reasons **success-its and-failure-its**

in addition to a special department for handing possession to companies by know-ing the reasons behind its success and failure.

In this sentence, an annexation structure is used. The annexation structure consists of a noun أسباب and an annexed coordination structure of the antonyms نجاحها وفشلها. The noun أسباب *ʔasbāb* 'reasons' is plural because the coordination phrase نجاحها وفشلها *naʤāḫi-hā wa-fašali-hā* 'success and failure' refer to two distinct properties before which the word *both* can be easily inserted: 'reasons behind both its success and failure'. Even though the SBCG account of coordination does not endorse the idea that coordination is a result of ellipsis, a non-elliptical construction of these cases is possible: 'reasons behind its success and reasons behind its failure'.

The coordination construction نجاحها وفشلها *naʤāḫi-hā wa-fašali-hā* 'success and failure' can be represented as in Figure 7.4, overleaf. The mother of the construction is an *antonym-cxt* which marked for conjunction in its CRD feature. The two daughters are the antonym pair *naʤāḫi-hā/fašali-hā*. Finally, the CXT-SEM show the relation between the arguments.

The following section presents an account of another use of coordination: Unity.

Figure 7.4: Representation of the coordination construction نجاحها وفشلها 'success and failure'

$$
\begin{bmatrix}
\text{MTR} &
\begin{bmatrix}
\text{SYN} &
\begin{bmatrix}
\text{CAT} & \boxed{1} \\
\text{AGR}_{sum} & num_i{\oplus}_j \\
\text{AGR}_i & \boxed{2}
\end{bmatrix} \\[6pt]
\text{SEM} &
\begin{bmatrix}
\text{INDEX} & \boxed{x} \\
\text{FRAMES} & \left\langle
\begin{bmatrix} \textit{word-relations-fr} \\ \text{signs} \quad \boxed{y}\,\boxed{z} \end{bmatrix},
\begin{bmatrix} \textit{recip-fr} \\ \text{RECIP-SIT} \quad s \end{bmatrix}, L_1 \oplus L_2
\right\rangle
\end{bmatrix} \\[6pt]
\text{CNTXT} & \left\langle
\begin{bmatrix}
\textit{contrastive-fr} \\
\text{incompatible} & l_1 \\
\text{minimally different} & l_2
\end{bmatrix}
\right\rangle \\[6pt]
\text{CRD} & \begin{bmatrix} \text{MODE} & + \end{bmatrix}
\end{bmatrix} \\[10pt]
\text{DTRS} \left\langle
\begin{bmatrix}
\textit{najāḫihā} \\
\text{SYN} & \begin{bmatrix} \text{CAT} \, \boxed{1} & \begin{bmatrix} \textit{noun} \\ \text{CASE} & \textit{genitive} \\ \text{GENDER} & \textit{masc} \\ \text{DEF} & \textit{yes} \end{bmatrix} \end{bmatrix} \\[6pt]
\text{SEM} & \begin{bmatrix} \text{LABEL} & \boxed{z} \\ \text{L-TOP} & l_0 \\ \text{FRAMES} & L_1 \end{bmatrix} \\[6pt]
\text{CRD} & -
\end{bmatrix},
\begin{bmatrix}
\textit{fašalihā} \\
\text{SYN} & \begin{bmatrix} \text{CAT} \, \boxed{1} & \begin{bmatrix} \textit{noun} \\ \text{CASE} & \textit{genitive} \\ \text{GENDER} & \textit{masc} \\ \text{DEF} & \textit{yes} \end{bmatrix} \end{bmatrix} \\[6pt]
\text{SEM} & \begin{bmatrix} \text{LABEL} & \boxed{y} \\ \text{L-TOP} & l_0 \\ \text{FRAMES} & L_2 \end{bmatrix} \\[6pt]
\text{CRD} & \begin{bmatrix} \textit{marked} \\ \text{MODE} & + \end{bmatrix}
\end{bmatrix}
\right\rangle \\[10pt]
\text{CXT-SEM} &
\begin{bmatrix}
\text{RELN} & + \\
\text{INDEX} & \boxed{x} \\
\text{ARG}_1 & \boxed{y} \\
\text{ARG}_2 & \boxed{z}
\end{bmatrix}
\end{bmatrix}
$$

7.3.2 Unity

Unity refers to the use of a pair of antonyms coordinated using 'and' in English and *wa-* in Arabic. This function differs from coordination for Inclusiveness in that the pair of antonyms refers to a shared domain rather than an inclusiveness of the two separate antonyms (Jones, 2002).

I choose to account for Unity for a number of reasons. First, it has not been accounted for yet from a construction grammar point of view. Jones et al. (2012) accounted for coordination in English specifically within the larger construction *X and Y alike* but not for Unity. Another reason for choosing this function pertains to the fact that Unity uses a coordination construction. However, the coordination construction discussed in the previous section does not account for this function. In Unity, the resulting coordination is not a plurality of the two coordinated antonym pairs but rather the construction is used to refer to a combined singular domain that unifies the pair together. 'Antonyms have been brought so close together in these contexts that they function as single mulit-word units; as one large noun phrase rather than two smaller noun phrases' (Jones, 2002: 100).

The meaning of the antonym construction along with the coordination construction in Unity is different from the compositional meaning of both constructions. This use differs from other uses of coordination in meaning and this is reflected in its syntax, too. As was discussed in section 5.13, most sentences in Unity in the Arabic data and in the English data investigated by Jones (2002) feature a noun preceding the antonym pair. The noun preceding the coordinated pair is always singular. In Arabic, this noun is combined to the coordinated pair using an annexation structure. In English, this noun appears in the frame *n of X and Y* (Jones, 2002).

The excerpt in (235) below is an example from the Arabic dataset of Unity of antonym pairs.

(235) التطبيق العادل والعاجل لمبدأ الثواب والعقاب، والذي في غيابه يتساوى كل شيء

(arabiCorpus: *Ahram99*, ref: 020499WRIT05)

a-ttaṭbīq   al-ʕādil wa-l-ʕāǧil   <u>li-mabdaʔi</u> **a-ttawābi**
the-enforcement the-fair and-the-immediate <u>for-principle</u> **the-reward**
wa-l-ʕiqāb   wa-lladī fī ġiyābi-h   yatasāwā kullu šayʔ
and-the-punishment and-that in absence-its be.equal every thing

the fair and immediate enforcement of the principle of reward and punishment

which in its absence everything is equal

In sentence (235), the pair الثواب والعقاب *a-ttawāb wa-l-ʕiqāb* 'reward and punishment' is referred to as one principle that needs to be enforced. Therefore, the coordination here cannot be accounted for using the *coord-cx* discussed above because the coordination in this case dose not result in a plurality. Instead, I present the construction sketched out in (236) below to account for this particular use of coordination.

Similar to the Inclusiveness construction discussed above, the construction accounting for Unity in (236) combines both the *antonym-cxt* and the *coord-cxt*. It is similar to the *antonym-cxt* in that the mother specifies two restrictions on the two daughters. The daughters should have a reciprocal word relation. It also specifies that they are contrastive. The construction is similar to the *coord-cxt* in that the syntax of the mother is similar to the syntax of the two daughters. Also, the CRD feature in the second daughter is marked. Another similarity is that the CXT-SEM indicates that there is a coordination relation between ARG_1 and ARG_2 which is indexed as the mother of the construction.

(236)   A coordination construction specific for Unity

$$
\begin{bmatrix}
\text{MTR} \begin{bmatrix}
\text{SYN} \begin{bmatrix} \text{CAT} & \boxed{1} \\ \text{AGR}_{sum} & singular \end{bmatrix} \\[2ex]
\text{SEM} \begin{bmatrix} \text{INDEX} & \boxed{x} \\ \text{L-TOP} & l_0 \\ \text{FRAMES} \left\langle \begin{bmatrix} word\text{-}relations\text{-}fr \\ \text{signs} & \boxed{y}\,\boxed{z} \end{bmatrix}, \begin{bmatrix} recip\text{-}fr \\ \text{RECIP-SIT} & s \end{bmatrix} \right\rangle \end{bmatrix} \\[3ex]
\text{CNTXT} \left\langle \begin{bmatrix} contrastive\text{-}fr \\ \text{incompatible} & l_1 \\ \text{minimally different} & l_2 \end{bmatrix} \right\rangle \\[2ex]
\text{CRD} \begin{bmatrix} \text{MODE} & \text{U} \end{bmatrix}
\end{bmatrix} \\[6ex]
\text{DTRS} \left\langle \begin{bmatrix} \text{SYN} \quad \text{CAT} \quad \boxed{1} \\ \text{SEM} \begin{bmatrix} \text{LABEL} & \boxed{z} \\ \text{L-TOP} & l_0 \\ \text{FRAMES} & L_1 \end{bmatrix} \\ \text{CRD} \quad - \end{bmatrix}, \begin{bmatrix} \text{SYN} \quad \text{CAT} \quad \boxed{1} \\ \text{SEM} \begin{bmatrix} \text{LABEL} & \boxed{y} \\ \text{L-TOP} & l_0 \\ \text{FRAMES} & L_2 \end{bmatrix} \\ \text{CRD} \begin{bmatrix} marked \\ \text{MODE} & \text{U} \end{bmatrix} \end{bmatrix} \right\rangle \\[6ex]
\text{CXT-SEM} \begin{bmatrix} \text{RELN} & \text{U} \\ \text{INDEX} & \boxed{x} \\ \text{ARG}_1 & \boxed{y} \\ \text{ARG}_2 & \boxed{z} \end{bmatrix}
\end{bmatrix}
$$

Two features in this construction are different from the coordination construction. First, the relation of the coordination is not + as in the construct for non-boolean conjunction. Instead, the relation here is marked as U indicating a unification of the antonym pair. The mother also has the same L-TOP as the daughters which gives the mother its meaning. Therefore, there is no $L_1 \oplus L_2$ in the mother's FRAMES feature that combines the frames of the daughter.

The second different feature in this construction is that the mother is singular. There is no summative agreement for number and gender as there is in the non-Boolean coordination which was discussed in the previous section. All instances of this construction in the Arabic dataset are either in an annexation structure or a predicate of a preposition.

Based on the schematic construction presented in (236), the pair الثواب والعقاب that is functioning as unit in sentence (235) is sketched out in Figure 7.5 overleaf. In this construction, the category *noun* has a case feature with the value *genitive* because it is in an annexation structure. This category of the mother is the same category in the two daughters. The L-TOP feature is indicated to show the unit that this construction refers to, discipline.

Unity is not a productive[5] construction in the sense that not all coordinated antonym pairs are unified in this way that they refer to a shared domain. In the Arabic dataset, fourteen pairs of the 28 pairs of roots used in this investigation are used in this category. There are 51 sentences in this category, but 43.13 per cent of these 51 concordance lines contained either the nominal pairs عقاب/ثواب *ṯawāb/ʕiqāb* 'reward/punishment' or سلام /حرب *salām/ḫarb* 'peace/war'. Table 7.1 lists the antonym pairs used in this sense with their frequency. What brings all the antonym pairs used in this sense together is that they are nominal antonyms referring to abstract entities. This suggests that Unity can be productive among abstract noun pairs.

Table 7.1: Antonym pairs used in Unity

antonym pair		frequency		
English	Arabic	arTenTen12	arabiCorpus	Total
life/death	*mawt/ḥayāt*	3	2	5
beginning/end	*bidāyah/nihāyah*	2	1	3
easiness/difficulty	*suhūlah/ṣuʕūbah*	1	0	1
success/failure	*naǧāḥ/fašal*	1	1	2
male/female	*ḏukūr/ʔināṯ*	0	1	1
largeness/smallness	*kubr/ṣuġr*	1	1	2
length/shortness	*ṭūl/qusr*	1	0	1
winning/losing	*fawz/xasārah*	0	3	3
optimism/pessimism	*tafāʔul/tašāʔum*	0	2	2
war/peace	*ḫarb/salām*	3	5	8
rich/poor	*ġinā/faqr*	5	1	6
public/privatisation	*ʕām/xaṣxaṣah*	1	0	1
reward/punishment	*ṯawāb/ʕiqāb*	5	9	14
right/wrong	*ḫaq/bāṭil*	1	0	1
strength/weakness	*quwwah/ḍaʕf*	1	0	1
Total		25	26	51

---

[5]Kay (2013) argues that such semi-productive constructions should not be considered as part of the grammar as *constructions* but as *patterns of coinage*.

Figure 7.5: A model of the coordinated antonyms الثواب والعقاب functioning as a unit

$$
\begin{bmatrix}
\text{MTR} & \begin{bmatrix}
\text{SYN} & \begin{bmatrix} \text{CAT} & \boxed{1} \\ \text{AGR}_{sum} & singular \end{bmatrix} \\[2ex]
\text{SEM} & \begin{bmatrix} \text{INDEX} & \boxed{x} \\ \text{L-TOP} & l_0 \\ \text{FRAMES} & \left\langle \begin{bmatrix} \textit{word-relations-fr} \\ \text{signs} & \boxed{y}\,\boxed{z} \end{bmatrix}, \begin{bmatrix} \textit{recip-fr} \\ \text{RECIP-SIT} & s \end{bmatrix} \right\rangle \end{bmatrix} \\[3ex]
\text{CNTXT} & \left\langle \begin{bmatrix} \textit{contrastive-fr} \\ \text{incompatible} & l_1 \\ \text{minimally different} & l_2 \end{bmatrix} \right\rangle \\[2ex]
\text{CRD} & \begin{bmatrix} \text{MODE} & \text{U} \end{bmatrix}
\end{bmatrix} \\[8ex]
\text{DTRS} \left\langle \begin{bmatrix}
\text{SYN} & \begin{bmatrix} \text{CAT}\,\boxed{1} \begin{bmatrix} \textit{noun} \\ \text{CASE} & genitive \\ \text{GENDER} & masc \\ \text{DEF} & yes \end{bmatrix} \end{bmatrix} \\[2ex]
\text{SEM} & \begin{bmatrix} \text{LABEL} & \boxed{z} \\ \text{L-TOP} & l_0 \\ \text{FRAMES} & L_1 \end{bmatrix} \\[1ex]
\text{CRD} & -
\end{bmatrix}, \begin{bmatrix}
\text{SYN} & \begin{bmatrix} \text{CAT}\,\boxed{1} \begin{bmatrix} \textit{noun} \\ \text{CASE} & genitive \\ \text{GENDER} & masc \\ \text{DEF} & yes \end{bmatrix} \end{bmatrix} \\[2ex]
\text{SEM} & \begin{bmatrix} \text{LABEL} & \boxed{y} \\ \text{L-TOP} & l_0 \\ \text{FRAMES} & L_2 \end{bmatrix} \\[1ex]
\text{CRD} & \begin{bmatrix} \textit{marked} \\ \text{MODE} & \text{U} \end{bmatrix}
\end{bmatrix} \right\rangle \\[8ex]
\text{CXT-SEM} & \begin{bmatrix} \text{RELN} & \text{U} \\ \text{INDEX} & \boxed{x} \\ \text{ARG}_1 & \boxed{y} \\ \text{ARG}_2 & \boxed{z} \end{bmatrix}
\end{bmatrix}
$$

The schematic constructions used for Unity in Arabic host nominal antonym pairs in an annexation structure. In English, Jones (2002) found that the frame *n of X and Y* is used to trigger the meaning of a unified unit. There were four instances where adjectives were used. In these cases the adjectives function as substantives because in Arabic adjectives do fill in as noun substitutes as they do in English (Ryding, 2005). Badawi et al. (2004) refers to adjectives functioning as substantives as *nominalized adjectives* that function in similar structures as nouns to refer to a previously mentioned noun or have this function due to ellipsis. For example, the phrase وزن الفارغة *waznu alfāriġah* means 'weight of the empty [vehicle]' where the adjective 'the empty' refers to a previously mentioned vehicle (Badawi et al., 2004: 119). In English, similar phrases would need a noun or the pronoun *one* after the adjective .

When adjectives are used in Unity, they occur in the same schematic construction as substantives and not adjectives. Therefore, it is hardly possible that parts of speech other than substantives could be used for the function of referring to the whole domain shared by the antonyms. The following sentence is an example of Unity using adjectival antonyms.

(237)   يدخل الرازي في جدلية الحي والميت (arabiCorpus: *Thawra*, ref: archive49015)

yadxul al-rāzī fī ǧadaliyyat **al-ḫay   wa-l-mayyit**
enter   Rhazes in dialectic   **the-alive and-the-dead**

Rhazes enters the dialectic of the living and the dead.

The sentence in (237) presents a use of the adjective pair الحي والميت *alḫay walmayyit* 'the living and the dead' functioning as a unit. This function is usually occupied by nouns but as discussed earlier adjectives sometimes function as nouns. So generally the antonym function Unity can be said to be exclusively for nominal antonyms.

This use of antonyms in Unity contrasts with other coordination of antonyms in a

number of respects. First, as was discussed earlier it does not produce a plurality of the antonym pair. Second, the semantics of the pair is neutralised and only the top frame in both is referred to. Moreover, sentences in Unity cannot be the result of ellipsis; to speak of the issue of death and the issue of life is not similar to speaking of the one issue of life and death, for instance. A final difference between Unity and inclusiveness was pointed out by Jones (2002): sentences with coordinated antonyms 'can sustain the word *both* before the *X and Y* phrase. However, this would create an uneasiness in the sentences [of this category]' (Jones, 2002: 100).

The functions of Inclusiveness and Unity use a polysemous structure for different meanings. This difference is captured in SBCG by using two separate constructions. SBCG does not allow polysemy of constructions. Therefore, similar forms used for different meanings are accounted for in different constructions that capture subtle differences between them.

7.4   Concluding remarks

This chapter accounted for the antonym construction, coordination as the most frequent host of antonyms, and the function of Unity as a conventionalization of both the antonym construction and the coordination construction together. The function Unity is then compared to coordination of antonyms that signals inclusiveness of the pair. These form-meaning pairings were accounted for within the framework of SBCG.

Throughout the thesis, it was argued that canonical antonym pairs stand in a lexical as well as conceptual relation. Therefore, antonym pairs deserve a constructionist account as pairings of form and meaning. Antonym pairs are also related paradigmatically as well as syntagmatically. This type of relation is captured well within a constructionist theory of grammar.

The next chapter summarises the results of this study and discusses how they can inform our knowledge regarding antonymy and culture. It also highlights implications of these results on future investigations of antonymy.

Chapter 8

Conclusion

This thesis investigates antonymy in Modern Standard Arabic using on-line and newspaper corpora. There are three objectives for this study. The first objective is to arrive at a better classification for antonym functions in text than there is available in the literature. Previous classifications either generalized the use of ancillary opposition which hid other uses of antonyms (Jones, 2002) or focused mainly on novel oppositions in text (Davies, 2013). The second objective of the present study is to compare how antonyms are used in MSA and English, because a comparison between the use of antonyms in the Arabic text to English can highlight similarities and differences in antonym use. The third objective is to present a constructionist account for antonyms because they are form - meaning pairings. A formalized version of Construction Grammar was chosen for this analysis. A summary of the outcomes of these objectives is presented in section 8.1 followed by a discussion of how these findings reflect Arabic culture in general in section8.2. Section 8.3 discusses some implications of findings on future research.

8.1   Summary

This section presents a summary of the results of the present investigation. The section is divided into three parts. Each part is confined to one goal of the study.

New classification of antonym functions

In order to arrive at the new classification of antonym functions, two Modern Standard Arabic corpora were used to complement each other. These two corpora are the ar-TenTen12 corpus provided at the SketchEngine website and the All Newspapers part of the arabiCorpus in the BYU website. The methodology followed for data collection was based largely on Jones (2002). However, the main difference is that this study investigated nominal, adjectival, verbal, and adverbial antonym pairs for each root representing a conceptual antonym pair (See chapter 3).

A new classification of antonym functions in text was presented in chapter 4 and discussed in detail in chapter 5. This new classification takes in consideration both form and function of the antonym pair and the constructions hosting them. Schematic constructions hosting pairs of antonyms are first classified according to the syntactic structure used in them such as coordination, negation, comparative structure, preposition phrase, and subordination. Then, the function for each one when hosting antonym constructions is specified. These functions are grouped to form the categories of the new taxonomy of antonym functions in Arabic text. The data showed that the coordination construction is the most widely used structure to host antonym pairs, and that it is found across categories, such as Inclusiveness, Antithesis, Conflict, Unity, Specification, and Association.

In addition to specific functions linked to specific forms, canonical pairs of antonyms can trigger novel oppositions in context as was introduced by Jones (2002) in his Ancillary Antonymy category. The Ancillary use of canonical antonyms operates when these antonyms are parallel to each other and at the same time associated syntactically to another parallel pair whether through annexation structure, modification, or other grammatical relations. Consequently, a contextual contrast is generated between these pairs regardless of their schematic constructions and therefore regardless of which category of the taxonomy they belong to.

I argued in Chapter 4 that the ancillary use of antonyms must be viewed as being on a different level of categorization. The antonym construction can appear in different schematic constructions with specific form and function on one level; on a different level,

the antonym construction can either trigger another contrast or not within that schematic construction.

Comparison of Arabic data and English data

Another goal this thesis sets out to achieve is a comparison between Arabic and English antonyms based on the Arabic dataset from this study and Jones's (2002) analysis of his English dataset. The functions of antonyms found in Arabic are similar to the ones in English with minor differences as was shown in chapter 5. However, different proportions of these functions were observed. For example, the category Inclusiveness comprises only 21.7% of the data compared to 38.4% in Jones's Coordinated Antonymy category. Nevertheless, a very clear and precise comparison of categories cannot be achieved because of the differences in the sampling methods and because of differences in categorisation in the two studies (See chapter 4). So numbers presented in this study can show general tendencies of antonym functions in Arabic based on my descriptions of each function rather than a definite difference form how antonyms are used in English.

In a comparison on antonym order in both languages presented in Chapter 4, English was found to be more stable regarding which antonym comes first in the sentence. Although Arabic pairs did show some preference towards a certain order, this preference occurred in fewer antonymous pairs and in a smaller number of times.

Antonyms in different parts of speech behave similarly in Arabic and English. For example, both Arabic and English adverbs are predictable in their behaviour. They co-occur mostly within coordinated constructions. However, nouns and adjectives are less predictable in that they appear in all constructions hosting antonym pairs. Investigating cross-categorical antonyms helped in finding less parallel structures that were not found in Jones's (2002) dataset. Therefore, some categories of antonym functions were identified, such as the sub-category Verbal, where a verb acts on its nominal antonym. See chapter 5.

Presenting a constructionist account of antonyms in Arabic

The third goal of this thesis was to present a construction-grammar perspective of antonymy in Arabic using SBCG as the theoretical model. Based on a discussion of antonym constructions in English sketched out in chapter 6, I presented the *antonym-cxt* that accounts for canonical antonyms in text in chapter 7.

The antonym construction is a lexical construction that accounts for both paradigmatic and syntagmatic properties of antonyms. The antonym pair is a paradigm, a pair of words with a special relation, and therefore, being part of one construction reflects this property. The antonym pair has also a syntagmatic relation, and therefore, being part of one construction explains this co-occurrence.

In chapter 7, I also discussed coordination as a construction. I chose to focus on coordination because it is the most frequent host of antonyms. My account of the coordination construction was based on Chaves' (2007, 2012, 2014) account for English coordination and it included an explanation of how this construction fits in Arabic sentences with SVO and VSO word order. Lastly, I discussed Unity as a function of antonyms from a constructionist point of view and compared it to coordination for Inclusiveness. Unity is not a highly used function in Arabic and even less so in English. However, it shows a special use of coordination and this is the basic reason of accounting for it.

The results of the three goals of this thesis combined are in keeping with previous findings regarding antonymy relations. Antonyms are recognized in all investigated languages (Raybeck and Herrmann, 1996), however, cultural effects influence how antonyms are used in context (Jones et al., 2012). The following section reflects on how antonym use in MSA is influenced by culture.

8.2   Cultural implications

This section presents a discussion of the results that was not covered in the main body of the thesis regarding cultural implications of antonym functions. Cultural perspectives can reflect relations of conceptual thought, and because the relation of antonyms is conceptual as well as lexical, they are an integral part of culture.

The comparison between the two languages points to the direction of cultural differences. As discussed in the introduction to the thesis, antonyms are viewed differently in different cultures. In Arabic culture, the two extremes are viewed as bad, inappropriate, or as representatives of vice. The middle point between two opposites is preferred and appear good, appropriate, virtue.

The results of this study are in line with this perspective on how antonyms are viewed in Arabic. The results show that antonym neutralising contexts; such as unity, simultaneity, coordination of negated antonym and equal comparison; are used in 9.2% of the dataset. In addition, 22.1% of the data are used in a coordination for Inclusiveness construction.

The first neutralising context is Unity. This function makes use of a coordination construction in which the antonyms' shared domain is referred to rather than the pair itself. The second function of antonyms that neutralises the contrast between them is Simultaneity. In contexts of simultaneity, both antonyms are true of the same situation at the same time. This function is also found in higher rates in Swedish (Murphy et al., 2009) and Japanese (Muehleisen and Isono, 2009), which has also been linked to cultural factors. However, a possible reason for the difference in numbers of sentences in this category is that different coders can code sentences differently.

Another neutralising context is coordination of negated antonyms. This construction cancels both antonyms and focuses attention on the area in between as in the construction ولا لا *not X and Y* and أو *(not) X or Y*. This construction has the same effect in both gradable and non-gradable antonyms, despite the fact that there is no area in between the conceptual domain of the non-gradable pairs. For instance, the pair *alive/dead* is considered non-gradable out of context. However, in the sentence *he is not alive to be sought after, and not dead to be forgotten,* these antonyms are cancelled and an area between them is created.

Moreover, the largest category of antonym function in this study can reflect some neutralisation of antonyms. In coordination for Inclusiveness, two antonyms are coordinated in order to include them in a shared proposition. Jones (2002) explains that in the context of the coordination construction:

> an antonymous pair is presented equally by the text. In other words (and perhaps paradoxically), it is the similarity between the antonyms (i.e. their shared status as co-hyponyms of a given superordinate), rather than their inherent semantic dissimilarity, which is the primary focus of attention. (Jones, 2002: 63)

Another aspect of antonym use found in this study that might reflect that Arabic refrains from extreme points and prefers the middle status is that the use of extreme antonymy is not found in the dataset. In extreme antonymy a coordination structure is used that enhances the contrast between the antonym pair and refers to them rather than including the area in between (Jones, 2002). This use was found in forty sentences in the English dataset (Jones, 2002: 91). This use was also found in the Qura'an, but it was found only once in a dataset of 1425 sentences (Hassanein, 2012).

These results suggest that antonym use is governed by cultural aspects of a language community. Next, I show how the results are useful for future research on antonymy in Arabic and antonymy in general.

8.3   New directions for future research

Implications of the results of this study can be summarised in three areas: investigating the ancillary use of antonyms, the constructionist account of antonyms, and investigating antonym use in other languages.

Reclassifying antonym functions as presented in this study shows that canonical antonym pairs function on two levels. On one level, they have certain local function reflected by the construction hosting them and on another level they have a function that projects on other words in the sentence. A possible area of investigation is whether there is a structure, or several structures, that appear repeatedly in sentences within

ancillary use. Two structures were noted in this study: annexation structure and modification. However, an investigation specific on this use of antonyms could show the structures triggering the ancillary effect. Finding these structures can shed light on the grammatical relations of words in that structure and how it affects opposition construal in context.

Work on construction grammar could be extended to cover other constructions and aspects of antonyms in Arabic. One particular area of interest is how similar or different the use of coordinators other than *and* on the function projected by antonyms. For example the construction of *X or Y* was found to signal inclusiveness of antonyms and exhaustiveness of the domain shared by the antonym pair. The same construction was also found to signal choice in the category Binarized Option. A constructionist account similar to the one done on Unity in this thesis can capture the semantic and syntactic properties of this construction. Moreover, one finding of this study is that Unity is used among abstract nominal antonym pairs. This point needs more investigation to find out whether it is exclusively for abstract nouns and whether Unity is a productive construction among this category of nouns.

This thesis adds MSA to the list of investigated languages in the antonym literature. Although use of antonyms is relatively similar cross-linguistically, each investigated language is unique in terms of proportions of each function and the fact that some minor functions emerge. These differences differ according to the culture using each language. Therefore, this study demonstrates the need to look at other languages that might add new functions of antonyms.

Concluding remarks

This thesis provides a corpus driven description of how antonym pairs are used in Modern Standard Arabic. It has shown that antonym functions in Arabic are to a certain degree similar to those found in other languages. It has presented a new classification of these functions which refers to the ancillary use of antonyms as an effect projected on other words regardless of the hosting construction. It has compared the use of antonyms in

Arabic to that of English. It also has shown how an SBCG account of antonyms can capture their syntagmatic and paradigmatic properties which taps on the lexical-syntactic interface of grammar.

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Appendices

Appendix A

Arabic information sheet and questionnaire

بحث في المتضادات العربية

السلام عليكم ورحمة الله وبركاته،

أرجو منك المشاركة في بحث دكتوراه، ولكن قبل الموافقة أتمنى أن تقرأ هذه الورقة لتعرف أكثر عن البحث وموضوعه.

هذا البحث تعده الباحثة رقية محمد الهدياني لنيل درجة الدكتوراه في اللسانيات من جامعة ساسكس البريطانية. وهذا البحث سيساهم باذن الله في خدمة اللغة العربية وفي فهم عمل المتضادات في النص العربي.

في البداية أطلب من مجموعة من المشاركين الاتيان بضد بعض الكلمات في اللغة العربية وذلك حتى أحدد مدى التنوع في مضادات الكلمات الموجود في مختلف مناطق العالم العربي. وبناءً على ذلك سأختار بإذن الله التضادات المناسبة لبحثي، حيث أحاول معرفة عمل التضادات في النص العربي وماإذا كانت تتكرر داخل تركيبات لغوية معينة.

علما بأن الوقت المطلوب منك لا يتعدى النصف ساعة تقريبا، وأن الباحثة هي الوحيدة التي ستطلع على هذا الاستبيان، وأن أي معلومات خاصة تذكر هنا هي فقط من أجل فرز الاستبيانات الواردة وسيتم حذفها في حال اضطرت الباحثة إلى اطلاع أي شخص آخر على البيانات.

واعلم أنك غير مرغم أبدا على المشاركة، وأنك عند تعبئتك للاستبيان وتسليمه فهذا يعني موافقتك على المشاركة في البحث، وأنك حتى بعد أن توافق فلك الحق في أن تنسحب في أي وقت شئت ودون ابداء أسباب.

أشكر لك مشاركتك في البحث وأقدر اعطاءك جزء من وقتك لذلك، فالفائدة التي نخلص إليها من هذا البحث كبيرة.

للاستفسار تستطيع مراسلة الباحثة على الايميل:

R.Alhedayani@sussex.ac.uk

رقية الهدياني

مبتعثة من جامعة الملك سعود

تحت اشراف الدكتورة لين مرفي

2013

السلام عليكم ورحمة الله وبركاته،

في هذا الاستبيان أطلب منكم الاتيان بمضاد كلمات بالعربية الفصحى، وهو جزء من بحث تعده طالبة الدكتوراه رقية محمد الهدياني الطالبة في جامعة ساسكس البريطانية. وهذا البحث سيساهم باذن الله في خدمة اللغة العربية وفي فهم عمل التضادات في النص العربي.

علما بأن الباحثة هي الوحيدة التي ستطلع على هذا الاستبيان، وأن أي معلومات خاصة تذكر هنا هي فقط من أجل فرز الاستبيانات الواردة وسيتم حذفها في حال اضطرت الباحثة إلى اطلاع أي شخص آخر على البيانات.

شاكرة لكم تعاونكم ومشاركتكم في بحثي المتواضع.

الجنسية : ....

العمر: ()دون العشرين () بين العشرين والثلاثين () بين الثلاثين والأربعين () فوق الأربعين

المؤهل العلمي: () دون الجامعي () جامعي () أعلى من جامعي

التخصص في الجامعة : ....

لغة التدريس في الجامعة: () العربية () غير العربية () مزيج من العربية وغيرها

شاكرة لكم مشاركتكم مرة أخرى، وإن أردتم معرفة أي شيء عن البحث الرجاء مراسلة الباحثة:

رقية الهدياني R.Alhedayani@sussex.ac.uk

* رجاء اكتب(ي) ضد (عكس) الكلمات التالية بالعربية الفصحى، دون التفكير فيها مطولا .

يوافق	....	ايجابي	....
بشكل سيئ	....	يهاجم	....
يؤكد	....	ازدهار	....
يشجع	....	صعب	....
جاف	....	ينفي	....
فشل	....	حقيقة	....
انثوي	....	سريع	....
قاسي	....	اجرام	....
قانوني	....	ثقيل	....
اساسي	....	طويل	....
متفائل	....	جديد	....
خاص	....	دائم	....
حق	....	عقاب	....
مساوئ	....	مدني	....
سيء	....	حي	....
بارد	....	يبدأ	....
مباشرةً	....	خاطئ	....
بوضوح	....	أمين	....
خطأ	....	يفشل	....
سعيد	....	أنثى	....
عالي	....	يكره	....
يخسر	....	كبير	....
رسمياً	....	متزوج	....
سلام	....	تفاؤل	....
خصوصي	....	فقير	....
بسرعة	....	قوة	....

Appendix B

English information sheet and questionnaire

INFORMATION SHEET

Dear participant,

I am asking you to participate in a study on Antonymy in Modern Standard Arabic. Before you take part in this questionnaire, please read this information sheet on the topic of the research.

The research will be presented to the University of Sussex for the fulfillment of PhD requirements. At the beginning, I ask respondents to provide the opposites of a number of words in Arabic in order to determine the search words to be used in my study.

This questionnaire will take up to half an hour of your time to fill in. Any personal details that appear in this questionnaire will be deleted before any person other than the researcher is allowed to look at them.

Please be informed that you do not have to participate in this questionnaire, and if you do, you have the right to withdraw from the study at any time without providing reasons. Your submission of an answered questionnaire is an indication of your acceptance to participate.

Thank you for taking the time to read this paper. Your participation in the questionnaire will be greatly appreciated.

For any quires regarding the questionnaire or the research, please do not hesitate to contact the researcher:

Rukayah AlHedayani

R.Alhedayani@sussex.ac.uk

Under the supervission of Dr M. Lynne Murphy

2013

University of Sussex

The purpose of this questionnaire is to determine the opposite of some Arabic words. It is designed by Rukayah AlHedayani, a PhD student at the University of Sussex in the United Kingdom. This research will enhance our knowledge about Arabic antonymy.

Please be assured that the questionnaires will be handled by the researcher alone; and that all participants will remain anonymous. Thank you for the time you spend responding to this questionnaire. Your participation is greatly appreciated.

Nationality: .... Age: ()less than 20 ()20-30 ()30-40 ()above 40

Education: ()below college level ()Bachelor's ()graduate

major at college: ....

language of education:

()Arabic ()a language other than Arabic ()a mix of Arabic and another language

Please provide the opposite for each of the following words in MSA; please spend as little time as possible:

active	....	agree	....
attack	....	badly	....
boom	....	confirm	....
difficult	....	encourage	....
disprove	....	dry	....
fact	....	failure	....
fast	....	feminine	....
guilt	....	hard	....
heavy	....	legal	....
long	....	major	....
new	....	optimistic	....
permanent	....	private	....
punishment	....	right	....
rural	....	disadvantage	....
alive	....	bad	....
begin	....	cold	....
incorrect	....	directly	....
honest	....	explicitly	....
fail	....	false	....
female	....	happy	....
hate	....	high	....
large	....	lose	....
married	....	officially	....
optimism	....	peace	....
poor	....	privately	....
quickly	....	strength	....

Thank you for you participation. If you need any information about the research please do not hesitate to contact the researcher.

Rukayah AlHedayani
R.Alhedayani@sussex.ac.uk

Appendix C

Different forms of antonymous roots and the number of seed strings used for each

	perfective	imperfective	noun	adjective	adverb	strings
attack	هاجم	يهاجم	هجوم	هجومي	هجوماً	3
	هجم	يهجم	هجمة			
defend	دافع	يدافع	دفاع	دفاعي	دفاعاً	2
bad	ساء	يسيء	سيئة	سيء		3
			مساوئ			
good	أجاد	يجيد	جودة	جيد		3
good	أحسن	يحسن	حسنة	حسن		2
			محاسن			
confirm	أكد	يؤكد	تأكيد	مؤكد	أكيد	3
deny	نفى	ينفي	نفي	منفي	نفياً	2
difficult	صعّب	يصعب	صعوبة	صعب		3
easy	سهّل	يسهل	سهولة	سهل		2
right	أحق	يحق	حقّ	حقّ	حقاً	1
wrong	بطل	يبطل	بطلان	باطل		2
			باطل			
new	جدد	يجدد	تجديد	جديد		2
old	قدم	يقدم	قدم	قديم		2
large/old	كبر	يكبر	كبر	كبير		3
small/young	صغر	يصغر	صغر	صغير		3
punishment	عاقب	يعاقب	عقوبة			3
reward	أثاب	يثيب	مثوبة			4
			ثواب			

	perfective	imperfective	noun	adjective	adverb	strings
alive	حيا	يحيي	حياة	حي		1
dead	أمات	يميت	موت	ميت		3
fast	أسرع	يسرع	سرعة	سريع	بسرعة	2
slow	أبطأ	يبطئ	بطء	بطيء	ببطء	3
feminine	أنث	يؤنث	أنثى	مؤنث		2
masculine	ذكر	يذكر	ذكر	ذكوري		2
fail	فشل	يفشل	فشل	فاشل		2
succeed	نجح	ينجح	نجاح	ناجح		3
happy	أسعد	يسعد	سعادة	سعيد	بسعادة	3
sad	أحزن	يحزن	حزن	حزين	بحزن	2
optimism	تفائل	يتفائل	تفاؤل	متفائل	بتفاؤل	3
pessimism	تشاءم	يتشاءم	تشاؤم	متشائم	بتشاؤم	2
peace	سالم	يسالم	سلام	مسالم	بسلام	3
			سلم	سلمي	سلمياً	
war	حارب	يحارب	حرب	حربي	حربياً	2
poor	أفقر	يفقر	فقر	فقير		2
rich	أغنى	يغني	غنى	غني		2
strength	قوى	يقوي	قوة	قوي	بقوة	3
weakness	أضعف	يضعف	ضعف	ضعيف	بضعف	2
hate	كره	يكره	كراهيه كره	كريه		3
love	أحب	يحب	محبة حب	حبيب		1
high	على	يعلو	علو	عالي		3
low	انخفض	ينخفض	انخفاض	منخفض		2
long	طال	يطول	طول	طويل		3
short	قصر	يقصر	قصر	قصير		2
dry	جفّ	يجف	جفاف	جاف		3
wet	رطب	يرطب	رطوبة	رطب		2
married	تزوج	يتزوج	زواج	متزوج		2
unmarried			عزوبية	أعزب		2
dishonest	خان	يخون	خيانة	خائن		4
honest	أمن	يؤمن	أمانة	أمين		4
lose	خسر	يخسر	خسارة	خاسر		3
win	فاز	يفوز	فوز	فائز		3

	perfective	imperfective	noun	adjective	adverb	strings
heavy	ثقل	يثقل	ثقل	ثقيل		2
light	خفّ	يخف	خفة	خفيف	بخفة	2
hard	قسى	يقسو	قسوة	قاسي	بقسوة	4
soft	لان	يلين	ليونة	لين		4
begin	بدأ	يبدأ	بداية			2
end	اتهى	يتهي	نهاية			3
private	خص	يخص	خصوصية	خاص خصوصي		3
public	عمّ	يعم	عمومية	عام عمومي		3

Appendix D

Word class distribution in both corpora

Antonymous pairs in the following two tables are indicated by translations to English for easy reference. The first column shows the correspondent pair in Jones's list. Column two shows the number of noun/noun co-occurrences of each root. Column three shows the percentages of these co-occurrences in the corpus. Column four shows the number of co-occurring nouns the dataset should contain. Columns five to seven record the same information for verbs, columns 8 - 10 for adverbs, columns 11-13 for adjectives and columns 14-16 for sentences with co-occurrence of antonyms from different parts of speech.

Table D.1: Frequency of co-occurrence of antonym pairs across part of speech in the arTenTen12 corpus.

	N	N %	data	V	V %	data	Adv	Adv %	data	Adj	Adj %	data	misc	misc %	data
alive/dead	1193	79.7	90.8	71	4.7	5.4	0	0.0	0.0	39	2.6	3.0	194	13.0	14.8
attack/defend	453	68.9	34.5	24	3.7	1.8	10	1.5	0.8	76	11.6	5.8	94	14.3	7.2
bad/good	176	46.6	13.4	0	0.0	0.0	2	0.5	0.2	189	50.0	14.4	11	2.9	0.8
begin/end	935	45.8	71.2	813	39.8	61.9	2	0.1	0.2	0	0.0	0.0	292	14.3	22.2
confirm/deny	63	61.2	4.8	36	35.0	2.7	0	0.0	0.0	0	0.0	0.0	4	3.9	0.3
difficult/easy	33	11.2	2.5	5	1.7	0.4	2	0.7	0.2	156	52.9	11.9	99	33.6	7.5
dis-/honest	123	71.1	9.4	1	0.6	0.1	0	0.0	0.0	2	1.2	0.2	47	27.2	3.6
dry/wet	26	31.0	2.0	0	0.0	0.0	0	0.0	0.0	32	38.1	2.4	26	31.0	2.0
fail/succeed	302	72.9	23.0	6	1.4	0.5	1	0.2	0.1	55	13.3	4.2	50	12.1	3.8
fast/slow	21	18.1	1.6	1	0.9	0.1	9	7.8	0.7	54	46.6	4.1	31	26.7	2.4
feminine/masc-	1295	89.1	98.6	4	0.3	0.3	0	0.0	0.0	139	9.6	10.6	16	1.1	1.2
happy/sad	52	58.4	4.0	0	0.0	0.0	0	0.0	0.0	31	34.8	2.4	6	6.7	0.5
hard/soft	6	35.3	0.5	1	5.9	0.1	0	0.0	0.0	6	35.3	0.5	4	23.5	0.3
hate/love	150	31.6	11.4	293	61.8	22.3	5	1.1	0.4	0	0.0	0.0	26	5.5	2.0
heavy/light	31	14.8	2.4	19	9.1	1.4	0	0.0	0.0	125	59.8	9.5	34	16.3	2.6
high/low	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	97	59.5	7.4	66	40.5	5.0
large/small	680	21.6	51.8	8	0.3	0.6	16	0.5	1.2	2334	74.0	177.7	115	3.6	8.8
long/short	66	12.5	5.0	102	19.4	7.8	0	0.0	0.0	350	66.4	26.6	9	1.7	0.7
lose/win	141	42.2	10.7	103	30.8	7.8	0	0.0	0.0	56	16.8	4.3	34	10.2	2.6
married/un-	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	47	100.0	3.6	0	0.0	0.0
new/old	0	0.0	0.0	0	0.0	0.0	1	0.1	0.1	1247	94.6	94.9	70	5.3	5.3
optimism/pessi-	43	63.2	3.3	0	0.0	0.0	1	1.5	0.1	19	27.9	1.4	5	7.4	0.4
peace/war	616	96.1	46.9	8	1.2	0.6	0	0.0	0.0	0	0.0	0.0	17	2.7	1.3
poor/rich	200	18.6	15.2	3	0.3	0.2	0	0.0	0.0	837	77.9	63.7	35	3.3	2.7
private/public	9	0.7	0.7	0	0.0	0.0	0	0.0	0.0	1193	93.8	90.8	70	5.5	5.3
punish/reward	295	98.3	22.5	2	0.7	0.2	1	0.3	0.1	0	0.0	0.0	2	0.7	0.2
right/wrong	1276	98.6	97.1	0	0.0	0.0	3	0.2	0.2	4	0.3	0.3	11	0.9	0.8
strong/weak	713	47.2	54.3	13	0.9	1.0	0	0.0	0.0	467	30.9	35.5	319	21.1	24.3
total	8898	45.2		1513	7.7		53	0.3		7555	38.3		1687	8.6	

Table D.2: Frequency of co-occurrence of antonym pairs across part of speech in arabiCorpus.

	N	N %	data	v	V %	data	Adv	Adv%	data	Adj	Adj%	data	misc	misc %	data
alive/dead	1857	75	53	0	0	0	0	0	0	434	18	12	179	7.2	5
attack/defend	1935	52	55	94	3	3	14	0	0	809	22	23	876	23.5	25
bad/good	7	10	0.20	8	12	0	0	0	0	43	63	1	10	14.7	0
begin/end	2375	57	68	376	9	11	23	1	1	0	0	0	1393	33.4	40
confirm/deny	259	22	7	562	47	16	1	0	0	0	0	0	374	31.3	11
difficult/easy	84	9	2	25	3	1	10	1	0	441	47	13	378	40.3	11
dis-/honest	94	58	3	4	2	0	0	0	0	13	8	0	51	31.5	1
dry/wet	34	30	1	0	0	0	0	0	0	43	38	1	35	31.3	1
fail/succeed	930	51	27	514	28	15	3	0	0	102	6	3	275	15.1	8
fast/slow	60	20	2	3	1	0	33	11	1	95	32	3	109	36.3	3
feminine/masc-	1719	91	49	1	0	0	0	0	0	137	7	4	25	1.3	1
happy/sad	12	10	0	17	14	0	0	0	0	67	54	2	29	23.2	1
hard/soft	12	38	0	1	3	0	0	0	0	12	38	0	7	21.9	0
hate/love	352	44	10	385	49	11	19	2	1	1	0	0	36	4.5	1
heavy/light	51	11	1	17	4	0	0	0	0	276	60	8	116	25.2	3
high/low	1	0	0	12	3	0	0	0	0	187	53	5	155	43.7	4
large/small	586	10	17	182	3	5	4	0	0	4891	82	140	301	5.0	9
long/short	71	5	2	235	17	7	0	0	0	938	68	27	139	10.1	4
lose/win	1351	45	39	944	31	27	0	0	0	49	2	1	673	22.3	19
married/un-	37	28	1	0	0	0	0	0	0	65	49	2	30	22.7	1
new/old	3	0	0	0	0	0	0	0	0	3828	93	110	279	6.8	8
optimism/pess-	183	56	5	1	0	0	1	0	0	112	34	3	29	8.9	1
peace/war	3864	89	111	1	0	0	76	2	2	20	0	1	383	8.8	11
poor/rich	242	11	7	3	0	0	0	0	0	1782	83	51	119	5.5	3
private/public	8	0	0	0	0	0	0	0	0	6796	94	195	450	6.2	13
punish/reward	330	98	9	5	1	0	0	0	0	0	0	0	1	0.3	0
right/wrong	866	98	25	1	0	0	0	0	0	5	1	0	14	1.6	0
strong/weak	1826	48	52	98	3	3	0	0	0	1013	27	29	854	22.5	24
total	19149	37		3489	7		184	0		22159	42		7320	14.0	

Appendix E

Jones's ancillary sentences reclassified

5a I **love** to cook but I **hate** doing the dishes - so I'd have a dishwasher or a family of gypsies to do the washing up.	*concession*
5b Robin Cook, Labour's health spokesman, demanded: 'How can it be **right** to limit the hours worked by lorry drivers and airline pilots, but **wrong** to limit the hours of junior hospital doctors undertaking complex medical treatment?'	*concession*
5c Since then, of course, they've all had knighthoods, usually when they're too **old** to play Hamlet but too **young** to play butlers in Hollywood movies.	*concession*
5d Eighty-five per cent of 'firm Tories' **agree** that 'a Labour government would wreck the economy'; only six per cent **disagree**.	*antithesis*
5e At Worcester on Wednesday, Botham-apart from bowling well-was wandering around in a T-shirt with the message: 'Form is **temporary**, class is **permanent**'.	*antithesis*
5f As the Governor of Kumomoto province told me, 'This is a **rich** country, with **poor** people'.	*overlapping*
5g It is meeting **public** need, not **private** greed.	*negation*
5h If so, unemployment may rise more **quickly** now, but more **slowly** later.	*concession*
5i He also suggests discipline should be tailored differently, saying **extroverts** are most motivated by **reward** while **introverts** respond more to **punishment**.	*comparison*
6a 'The issue at the next election will be between **fair** taxation under Labour and **unfair** taxation under the Conservatives', he said.	*conflict*
6b Broadly speaking, the community charge was **popular** with Conservative voters and **unpopular** with Labour voters.	*antithesis*
6c Communism may be **dead**, but fascism is most assuredly **alive**.	*concession*
7a Mrs Thatcher has been a **lucky** prime minister, Mr Heath was an **unlucky** one.	*antithesis*
7b Charles, **unskilfully**, is playing for the popular vote; Diana, very **skilfully**, is doing the same.	*antithesis*
7c Kennedy **dead** is more interesting than Clinton **alive**.	*comparison*

8a Munich was widely hailed as a **success**, Reykjavik a **failure**. *antithesis*

8b A separate poll of consumers in the US and Japan showed growing **optimism** among Americans in contrast to deepening **pessimism** in the Japanese population. *comparison*

8c Historians have largely only differed on whether they saw the German 'takeover' of the empire as a **good** thing (if they were German historians) or a **bad** thing (if they were French or Italian). *option*

9a The **bad** news is now largely behind, the **good** news is to come. *antithesis*

9b The most interesting is that countries which have, in the Eighties, done rather **badly** will, in the Nineties, do rather **well**. *antithesis*

9c What was **immoral** and **unnecessary** six months ago cannot be **moral** and **necessary** today. *negation*

10a The other aspect of his plan is that his bill would end the two-year wait for **uncontested** divorces and five years for **contested** ones. *specification*

10b On the question of extending the embargo to cover food and medical supplies, 40 per cent **agree** but 45 per cent **disagree**. *concession*

10c It was the old story: **success** has many fathers, **failure** has none. *antithesis*

11a Then, and now, the Royal Festival Hall is a cool, rather clinical building that it is **easy** to respect and **difficult** to love. *antithesis*

11b Archer was a formal, eccentric man, **long** on acquaintances and **short** on friends. *antithesis*

11c The West German authorities demurred: under West German law creme de cassis had too **low** an alcohol content to be classed as a liqueur but too **high** an alcohol content to be considered a wine. *concession*

12a The day's business opened with other foreign matters, Foreign Office questions, during which Secretary of State Douglas Hurd said Britain would welcome a return by South Africa to the Commonwealth as 'a **happy** end to a **sad** chapter'. *overlapping*

12b But a couple of Libyans are only likely to be **small** minnows in a very **large** pond. *overlapping*

12c But a Romanian dissident recently dismissed the new regime as 'the same **old** brothel with **new** whores'. *overlapping*

13a In this account, the **rich** get to choose, and the **poor** get the queues. *antithesis*

13b For at least one viewer, who had regarded **male** wrestlers as morons and **female** wrestlers as oxymorons, it was an enlightening experience. *comparison*

13c Baxter's **active** can-do has been overtaken by the **passive** why-bother. *transitive*

14a It's certainly rare to hear anyone speaking about the future of British production in terms of its boundless potential; one can only hope that the next few years prove Puttnam's **optimism** justified and his **pessimism** groundless. *antithesis*

14b As the old adage put it, oppositions do not **win** elections; governments **lose** them. *antithesis*

14c Now these orders of time have been reversed: the **rich** rise at dawn; the **poor** sleep late. *antithesis*

15a It is at the moment *illegal* to buy a bible on Sunday, even from a cathedral shop, but perfectly **legal** to buy pornographic magazines. *concession*

15b I bicycled to work, as it was the fastest way of getting there, and as a result I was constantly in danger of death by car, either **slowly** from asphyxiation or **quickly** from being run over. *option*

15c During the Eighties it was **easy** to obtain consent to build Canary Wharf and **difficult** to obtain consent to build an ex-urban house in Wiltshire or Suffolk. *antithesis*

16a The new edition appeared in the United States about two weeks ago; when I heard the news of the coup it seemed **bad** news for democracy, but very **good** news for the book. *concession*

16b Now it denotes **high** butter mountains and a **low** boredom threshold. *antithesis*

16c Heathcote Williams' Whale Nation (Cape) backed all the **right** animal causes but all the **wrong** poetic ones. *concession*

17a There is praise for **success**, condemnation for **failure**. *antithesis*

17b The peace is usually **male**, the disturbance **female**, though in two stories the positions are reversed, and one story, The Image Trade, dispenses altogether with the tension of gender. *antithesis*

17c He leans forward and quotes from a piece of writing in French by Samuel Ullman, which roughly translates as:'You are as **young** as your faith, as **old** as your doubts.' *antithesis*

18a Bofors might indicate **failure**, but Venus and Saturn spell **success**. *concession*

18b The First Division of the Endsleigh League is like a well-**easy** to fall into but **difficult** to get out of. *concession*

18c He was perceived as being **able** to manoeuvre in a Cold War forum, but **unable** to adapt to new realities. *concession*

19a International support is **long** on words and **short** on deeds. *antithesis*

19b You want your friends to **hate** the sin and **love** the sinner. *antithesis*

19c On Saturday night, as news of Claudio's death spread, the police presence in Vaulx was **heavy**, and the violence relatively **light**. *antithesis*

20a While **success** is sexy; **failure** is on a par with cheesy feet. *comparison*

20b While many **succeed**, however, a significant number **fail**. *comparison*

20c Not only did the IMF **implicitly** reject US calls for measures to strengthen growth in the industrial world, it **explicitly** dismissed demands for a more expansionary Japanese fiscal policy. *inclusion by negation*

21a As does the absence of easily identifiable heroes and villains, characters to **love** and characters to **hate**. *inclusiveness*

21b Around the cornices of Greek temples (as of teh Royal Opera House or of Buckingham palace) there runs the egg and dart carving which symbolises the **feminine** and the **masculine** principle. *inclusiveness*

21c Such divorceless marriages and intractable moral issues are the stuff of Keepers of the Flame, which makes an understandably disenchanted survey of what Henry James brilliantly calls 'the quarrel beside which all others are mild and arrangeable, the eternal dispute between the **public** and the **private**, between curiosity and delicacy'. *conflict*

Appendix F

Root frequencies in the arabiCorpus

Table F.1: Frequency counts for each root of the antonym pair in arabiCorpus.

R1	frequency	R2	frequency
alive	168,032	dead	491,568
attack	69,256	defend	75,701
bad	4,173	good	154,380
begin	226,720	end	215,286
confirm	269,826	deny	140,634
difficult	62,432	easy	36,119
dishonest	13,866	honest	81,455
dry	2,743	wet	1,846
fail	37,460	succeed	89,516
fast	67,176	slow	12,578
feminine	7,829	masculine	169,212
happy	70,696	sad	14,806
hard	41,117	soft	67,762
hate	26,413	love	66,692
heavy	16,404	light	116,775
high	861,034	low	32,218
large	296,901	small	56,906
long	169,257	short	42,575
lose	40,549	win	90,379
married	67,452	unmarried	378
new	519,176	old	154,497
optimism	10,967	pessimism	2,106
peace	149,209	war	142,839
poor	49,096	rich	17,968
private	255,892	public	595,370
punishment	18,170	reward	5,228
right	629,186	wrong	35,561
strength	172,618	weakness	61,972

Appendix G

Antonym sequence statistics

Table G.1: Antonym sequence statistics in arTenTen12.

percent	W1-W2	W1-W2	W2-W1	Total	Percent	p
100.00%	4	married/unmarried	0	4	0.00%	0.062
100.00%	5	optimism/pessimism	0	5	0.00%	0.031
76.90%	10	dishonest/honest	3	13	23.10%	0.046
76.50%	75	right/wrong	23	98	23.50%	<0.001
73.40%	113	begin/end	41	154	26.60%	<0.001
70.00%	28	long/short	12	40	30.00%	0.008
60.90%	14	difficult/easy	9	23	39.10%	0.202
60.90%	70	strength/weakness	45	115	39.10%	0.0123
58.30%	7	high/low	5	12	41.70%	0.387
57.10%	28	peace/war	21	49	42.90%	0.195
50.90%	58	alive/dead	56	114	49.10%	0.462
50.00%	4	fast/slow	4	8	50.00%	0.636
44.00%	22	attack/defend	28	50	56.00%	0.838
43.90%	36	poor/rich	46	82	56.10%	0.161
42.90%	3	happy/sad	4	7	57.10%	0.773
41.40%	99	large/small	140	239	58.60%	0.004
38.00%	38	new/old	62	100	62.00%	0.01
37.50%	3	confirm/deny	5	8	62.50%	0.363
33.30%	2	dry/wet	4	6	66.70%	0.343
33.30%	1	hard/soft	2	3	66.70%	0.5
31.30%	5	heavy/light	11	16	68.80%	0.105
28.00%	7	lose/win	18	25	72.00%	0.022
27.60%	8	bad/good	21	29	72.40%	0.012
23.70%	23	private/public	74	97	76.30%	<0.001
22.20%	8	hate/love	28	36	77.80%	<0.001
19.80%	22	feminine/masculine	89	111	80.20%	<0.001
18.80%	6	fail/succeed	26	32	81.30%	<0.001
8.70%	2	punishment/reward	21	23	91.30%	<0.001

Table G.2: Antonym sequence statistics in arabiCorpus *All Newspapers.*

percent	W1-W2	W1-W2	W2-W1	Total	Percent	p
100.00%	2	hard/soft	0	2	0.00%	0.25
90.00%	9	high/low	1	10	10.00%	0.013
72.00%	18	right/wrong	7	25	28.00%	0.002
66.70%	2	dry/wet	1	3	33.30%	0.5
65.70%	46	alive/dead	24	70	34.30%	0.005
65.00%	26	long/short	14	40	35.00%	0.04
62.30%	76	begin/end	46	122	37.70%	0.004
61.70%	66	strength/weakness	41	107	38.30%	0.009
55.60%	5	optimism/pessimism	4	9	44.40%	0.5
51.70%	61	new/old	57	118	48.30%	0.391
50.00%	2	happy/sad	2	4	50.00%	0.687
47.60%	30	poor/rich	33	63	52.40%	0.401
47.20%	59	peace/war	66	125	52.80%	0.295
45.60%	78	large/small	93	171	54.40%	0.142
44.40%	12	difficult/easy	15	27	55.60%	0.35
44.40%	4	fast/slow	5	9	55.60%	0.5
40.00%	2	dishonest/honest	3	5	60.00%	0.5
39.40%	41	attack/defend	63	104	60.60%	0.019
32.40%	11	confirm/deny	23	34	67.60%	0.028
30.80%	4	heavy/light	9	13	69.20%	0.133
29.10%	60	private/public	146	206	70.90%	<0.001
29.10%	25	lose/win	61	86	70.90%	<0.001
28.80%	15	fail/succeed	37	52	71.20%	<0.001
25.00%	1	married/unmarried	3	4	75.00%	0.312
21.70%	5	hate/love	18	23	78.30%	0.005
20.40%	11	feminine/masculine	43	54	79.60%	<0.001
10.00%	1	punishment/reward	9	10	90.00%	0.01
0.00%	0	bad/good	4	4	100.00%	0.062